Draft

Initial Study / Mitigated Negative Declaration

City of Avenal Water Transmission Pipeline Replacement Project

PREPARED FOR:

City of Avenal
919 Skyline Blvd.
Avenal, CA 93204

March 2018

NOTICE OF PUBLIC REVIEW AND NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

The City of Avenal proposes to adopt a Mitigated Negative Declaration (MND) pursuant to the California Environmental Quality Act of (Section 15000 et seq., Title 14, California Code of Regulations) (CEQA) for the Water Transmission Pipeline Replacement Project (project). The City of Avenal proposes to install a new 18-inch water transmission line to the east of State Route (SR) 269 between Interstate 5 and an existing water tank at Skyline Road. The new pipeline would replace an existing water transmission line of the same size that is located along the same alignment. The existing pipeline was installed in 1986 and require constant maintenance and repairs.

The 30-day period for public review and comment on the proposed MND begins March 14, 2018. All comments must be submitted by April 13, 2018. Please address comments on the proposed MND as follows:

City of Avenal
Attn: Fernando Santillan
919 Skyline Blvd.
Avenal, CA 93204
Or email: fsantillan@cityofavenal.com

A copy of the proposed MND and supporting documents can be reviewed at the City's Community Development Department office at the above address. For further information regarding the proposed MND and the City's schedule to consider adoption of the document, please contact Fernando Santillan at (559) 386-5782.

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PREPARED FOR:

City of Avenal
919 Skyline Blvd.
Avenal, CA 93204

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March 2018

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ACRONYMS/ABBREVIATIONS

APE	area of potential effect
BMPs	best management practices
CalEMA	California Emergency Management Agency
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CO	carbon monoxide
CO_2	carbon dioxide
CWA	Clean Water Act
EIR	environmental impact report
ESA	Federal Endangered Species Act
FEMA	Federal Emergency Management Agency
GHGs	greenhouse gases
IS/MND	Initial Study/Mitigated Negative Declaration
MLD	Most Likely Descendent
MND	Mitigated Negative Declaration
$MTCO_2e$	metric tons of carbon dioxide equivalents
NAHC	Native American Heritage Commission
NIC	Natural Investigations Company
NIMS	National Incident Management System
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
O_3	ozone
OES	Office of Emergency Services
OPR	Office of Planning and Research
PG&E	Pacific Gas and Electric
PM_{10}	particulate matter
$PM_{2.5}$	fine particulate matter
RCEM	Roadway Construction Emissions Model
SEMS	Standardized Emergency Management System
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
WA	Williamson Act

1 INTRODUCTION

1.1 INTRODUCTION AND REGULATORY GUIDANCE

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared to evaluate the potential environmental effects associated with replacement of an 18-inch water transmission pipeline by the City of Avenal (City) within the Kettleman Hills near Avenal, in Kings County. The project consists of an approximately 4-mile pipeline alignment east of State Route (SR) 269 between I-5 and SR 33. Project activities include replacement of existing piping that conveys potable (drinking) water to the City of Avenal.

This document has been prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000 et seq.). An IS is prepared by a lead agency to determine if a project may have a significant effect on the environment (State CEQA Guidelines Section 15063[a]), and thus to determine the appropriate environmental document. In accordance with State CEQA Guidelines Section 15070, a "public agency shall prepare…a proposed negative declaration or mitigated negative declaration…when: (a) The [IS] shows that there is no substantial evidence in light of the whole record before the agency, that the project may have a significant impact on the environment, or (b) The [IS] identifies potentially significant effects but (1) revisions in the project plans or proposal made by or agreed to by the applicant before a proposed mitigated negative declaration and [IS] are released for public review would avoid the effect or mitigate the effects to a point where clearly no significant effects would occur, and (2) there is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment." In this circumstance, the lead agency prepares a written statement describing its reasons for concluding that the project would not have a significant effect on the environment and, therefore, does not require the preparation of an environmental impact report (EIR). By contrast, an EIR is required when the project may have a significant environmental impact that cannot clearly be reduced to a less-than-significant effect by adoption of mitigation or by revisions in the project design.

As described in the IS, the project would not result in significant environmental impacts with incorporation of mitigation measures and/or revisions in project plans. Therefore, a mitigated negative declaration (MND), supported by analysis prepared in an IS, is the appropriate document for compliance with the requirements of CEQA. This IS conforms to the content requirements of State CEQA Guidelines Section 15063 and an MND was subsequently prepared that conforms to the content requirements of Section 15071.

The Project Description section of this IS/MND provides a description of the project components, as well as a description of timing and construction.

As required by CEQA, this document is being made available to the Office of Planning and Research (OPR), each responsible and trustee agency, and the public for a 30-day review and comment period from March 14, 2018 to April 13, 2018.

If you wish to send written comments (including via e-mail), they must be received by close of business on April 13, 2018. Written comments should be addressed to:

City of Avenal
Attn: Fernando Santillan
919 Skyline Blvd.
Avenal, CA 93204

E-mail comments may be addressed to fsantillan@cityofavenal.com. If you have questions regarding the IS/MND, please call Fernando Santillan at (559) 386-5782.

Digital copies of the IS/MND are available on the internet at: http://www.centralsan.org/index.cfm?navid=1. Paper copies of the IS/MND are available for public review at the following locations:

City of Avenal
Community Development Department
919 Skyline Blvd.
Avenal, CA 93204

1.2 DOCUMENT ORGANIZATION

This IS/MND is organized as follows:

Chapter 1: Introduction. This chapter provides an introduction to the environmental review process and describes the purpose and organization of this document.

Chapter 2: Project Description and Background. This chapter describes the purpose of and need for the project, identifies project objectives, and provides a detailed description of the project.

Chapter 3: Environmental Checklist. This chapter presents an analysis of a range of environmental issues identified in the CEQA Environmental Checklist and determines if the project would result in no impact, a less-than-significant impact, or a potentially significant impact. If any impacts were determined to be potentially significant, further study of the potential impact will be conducted and disclosed as part of the EIR.

Chapter 4: References. This chapter lists the references used in preparation of this IS.

2 PROJECT DESCRIPTION

This IS/MND has been prepared by the City to evaluate the potential environmental effects of approving the Water Transmission Pipeline Replacement Project.

2.1 PROJECT LOCATION

The project site (Township 21 South and 22 South, Range 17 E, City of Avenal, Kings County) includes a 4-mile pipeline alignment that runs in a generally north-south direction on the east side of SR 269 between I-5 and an existing water tank at Skyline Drive (Exhibit 2-1). The project site is located entirely within the incorporated limits of the City of Avenal in western Kings County, California (Exhibit 2-2). The project area is also located within the northern portion of the Kettleman Hills, within an area called the "North Dome," along the western edge of the San Joaquin Valley. The pipeline alignment traverses portions of the North Dome oil field, which is currently operated by the Chevron Corporation.

2.2 BACKGROUND

The City of Avenal water supply is derived from State Water Project supplies via the California Aqueduct, and conveyed to the City's water storage tank located along Skyline Drive through existing water transmission lines located east of SR 269. There are currently two lines, a 12-inch pipeline installed in 1971 and an 18-inch pipeline installed in 1986. Joints within the existing 18-inch pipeline have increasingly been subject to failure, resulting in frequent leaks and loss of water supply and pipeline pressure. The 12-inch pipeline continues to function properly and is not in need of repair or subject to maintenance to the extent of the 18-inch pipeline.

As part of existing maintenance practices, City of Avenal staff drive on existing roadways to inspect the pipelines on a weekly basis. If City staff are alerted to a leak by Chevron employees (who routinely drive the roadways along the pipeline alignment), or if an earthquake occurs, inspections may be more frequent.

Water received via the existing pipelines is used for municipal and irrigation purposes by the City. Per the US Census Bureau, the City has a current population of 12,466 people (US Census Bureau 2016). It should be noted that the City's population estimate includes inmates associated with Avenal State Prison, which is located within city limits.

2.3 PROJECT PURPOSE AND OBJECTIVES

The City of Avenal has identified the following goals and objectives for the project:

- to replace aging infrastructure and increase reliability of water delivery to the City of Avenal and its residents;
- to maintain water service during construction;
- to ensure that the City meets water demands now and in the future;
- to limit disturbance of natural conditions and infrastructure; and
- to minimize adverse effects on plants and wildlife

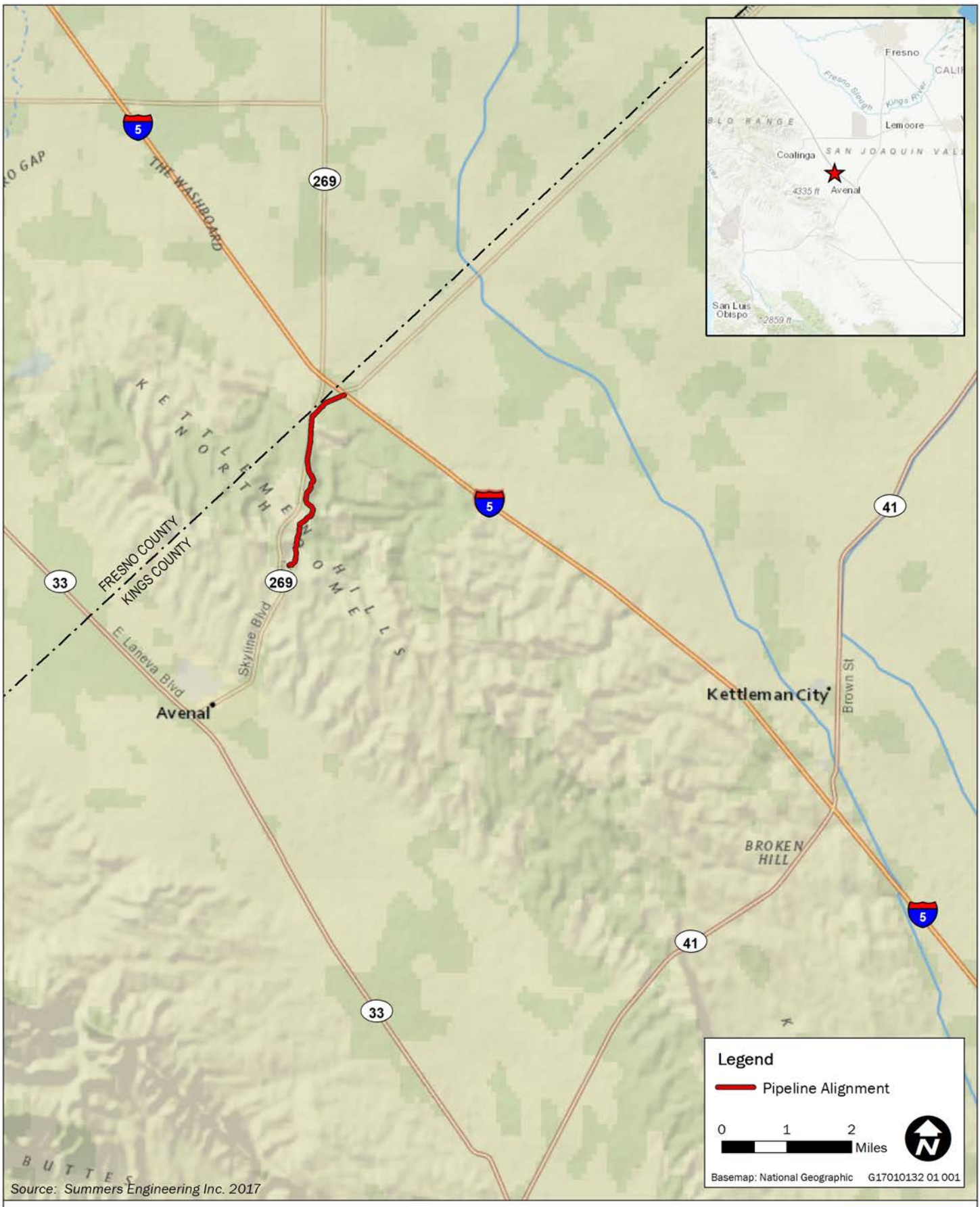


Exhibit 2-1 **Project Vicinity**



Exhibit 2-2 **Project Site**

ASCENT ENVIRONMENTAL

2.4 PROJECT COMPONENTS

The City of Avenal would replace the existing 18-inch water transmission pipeline with a new 18-inch, steel water transmission pipeline. To maintain water service to City residents and customers, sections of the existing 18-inch pipeline would be replaced in places, while the new 18-inch pipeline would be installed adjacent to the existing 12-inch and 18-inch pipelines in other locations. Where the pipeline is installed adjacent to the existing pipelines, the corresponding sections of the existing 18-inch pipeline would be taken out of service and abandoned in place.

Construction of the new pipeline would take place within 35 feet of the existing 30-foot easement where the existing 12-inch and 18-inch pipelines are located. Construction vehicles and equipment (e.g., pipeline trencher, backhoe, excavator) would use existing roads. Construction of new access roads is not expected to be necessary. Three construction staging areas would be established within the construction footprint and would be used for storage of vehicles, equipment, and construction materials. These staging areas would be located near existing vehicle access points along SR 269.

Pipeline segments would be installed with a pipeline trencher and a backhoe or excavator. Construction depths would vary between 3 and 5 feet. Trenches within existing paved areas, unpaved shoulders, or proposed paved areas would be repaved following pipeline installation. Trenches within open areas would be filled with native material to the level of the existing field grade.

Project construction would occur over an estimated period of approximately 6-8 months, following project approval and may begin as early as mid-2018. Typical construction hours would be 8:00 a.m. to 5:00 p.m., Monday through Friday excluding holidays. Pipeline trenching and replacement would generally begin at the southern terminus, heading north along the alignment, and would take place in segments of approximately 1,000 feet at a time.

Project construction would require up to 15 people on any given day. Construction equipment may include pipeline trenchers, excavators, backhoes, and trucks.

2.5 POTENTIAL PERMITS AND APPROVALS REQUIRED

Elements of the project could be subject to permitting and/or approval authority of other agencies. As the lead agency pursuant to CEQA, the City of Avenal is responsible for considering the adequacy of the Initial Study, and determining if the overall project should be approved. Other potential permits required from other agencies could include:

FEDERAL

- **U.S. Fish and Wildlife Service:** Compliance with the Federal Endangered Species Act (ESA) if any sensitive species would be affected.
- **U.S. Army Corps of Engineers:** Compliance with the Clean Water Act (CWA) if there is potential for waters of the US to be filled during construction.

STATE

- **California Department of Fish and Wildlife:** Compliance with the California Fish and Game Code section 1600 if streambeds would be affected.
- **Caltrans:** Right-of-Way, Encroachment.

- **Central Valley Regional Water Quality Control Board (Region 5F):** National Pollutant Discharge Elimination System (NPDES) construction general permit (2009-0009-DWQ) for projects that involve disturbance of more than 1 acre or that are part of a larger development plan involving disturbance of more than one acre.

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3 ENVIRONMENTAL CHECKLIST

PROJECT INFORMATION

1.	Project Title:	City of Avenal Water Transmission Pipeline Replacement Project
2.	Lead Agency Name and Address:	City of Avenal 919 Skyline Blvd. Avenal, CA 93204
3.	Contact Person and Phone Number:	Fernando Santillan
4.	Project Location:	Kettleman Hills, Kings County, California.
5.	Project Sponsor's Name and Address:	
6.	General Plan Designation:	Agriculture/Open Space
7.	Zoning:	AE (Extensive Agriculture) AI (Intensive Agriculture)
8.	Description of Project:	See Chapter 2 of this Initial Study
9.	Surrounding Land Uses and Setting: (Briefly describe the project's surroundings)	The project site is surrounded mostly by open annual grassland habitat with some agricultural and scrub habitat. The pipeline alignment runs through the North Dome oil field, which is currently operated by the Chevron Corporation. Historic oil equipment (e.g. pipes, pump jacks, building foundations) are present throughout the project area and adjacent to the pipeline alignment.

10: Other public agencies whose approval may be required: (e.g., permits, financing approval, or participation agreement) See Chapter 2 of this Initial Study

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

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

☐ Aesthetics	☐ Agriculture and Forest Resources	☐ Air Quality
☒ Biological Resources	☐ Cultural Resources	☐ Geology / Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation / Traffic	☐ Utilities / Service Systems	☐ Mandatory Findings of Significance
		☐ None with Mitigation

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project could not have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.

☒ I find that although the proposed project COULD have a significant effect on the environment, there WILL NOT be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.

☐ I find that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.

☐ I find that the proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier **EIR** or **NEGATIVE DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Printed Name	Title
Agency	

EVALUATION OF ENVIRONMENTAL IMPACTS

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

3.1 AESTHETICS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. 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 day or nighttime views in the area?	☐	☐	☐	☒

3.1.1 Environmental Setting

The pipeline alignment is located within private property with no public access. The entire length of the alignment is adjacent to SR 269, which is not an eligible or designated state scenic highway (Caltrans 2011). The project site currently does not have a high degree of visual quality. The existing pipelines are located underground, and most stretches of the alignment are not visible from either I-5 or SR 269 because they are obscured by existing topography (i.e., hills).

3.1.2 Discussion

a) Have a substantial adverse effect on a scenic vista?

Less than Significant. The proposed alignment is located completely within private property and is not accessible by the public. As noted above, the majority of the pipeline alignment is not visible from SR 269 because it is obscured by existing topography. However, some areas may be visible from I-5 or SR 269, and temporary presence of construction crews and equipment could be visible from these roadways. However, construction would be temporary, and the entire pipeline alignment, which is completely underground, would be returned to existing conditions once construction is complete. As a result, no permanent effect on views in the area would occur. This impact would be less than significant, and no mitigation is required.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. There are no officially designated state scenic highways within the project site, or within Kings County. The nearest eligible scenic state highway (not officially designated) is SR 41, several miles southwest of the proposed alignment. Project-related activities would not be visible from this highway. There would be no impact, and no mitigation is required.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant. As described in (a) above, the project would consist of an underground pipeline located within an existing pipeline easement and adjacent to existing underground pipes. When construction is completed, the project site would be returned to existing conditions. As a result, the project would not

substantially degrade the existing visual character or quality within the project site. This impact would be less than significant, and no mitigation is required.

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

No impact. The project would involve installation of an underground water transmission pipeline, and upon completion would not produce any new sources of light. Further, no nighttime construction is anticipated. As a result, no impact would occur, and mitigation is not required.

3.2 AGRICULTURE AND FOREST RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. Agriculture 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, as updated) 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, because of their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

3.2.1 Environmental Setting

The San Joaquin Valley is one of the most productive agricultural regions in the world, and the agricultural industry is a large contributor to the economy of Kings County. The top five agricultural commodities in Kings County are dairy products, cotton, cattle, pistachios, and almonds (Kings County 2016a). The Kettleman Hills on the western edge of the San Joaquin Valley do not contain fertile agricultural land, but the area has been historically used for sheep and cattle grazing.

The Kings County Important Farmland 2016 map indicated that the project site consists of grazing land (DOC 2016). This means that the land contains existing vegetation that is suited to the grazing of livestock. No areas of the proposed alignment have been mapped as Farmland or Statewide or Local Importance, Unique Farmland, or Prime Farmland by the Farmland Mapping and Monitoring Program. The site does not contain any designated "Farmland" per the Farmland Mapping and Monitoring Program (California Department of Conservation 2016).

The California Land Conservation Act of 1965—commonly referred to as the Williamson Act (WA)—enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than similarly situated properties because they are based upon farming and open space uses as opposed to full market value. A portion of the pipeline alignment runs through an area designated as "non-prime agricultural land" under the Williamson Act (California Department of Conservation 2015).

3.2.2 Discussion

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?

No Impact. The FMMP identifies the project site as "grazing land." No Important Farmland occurs on the site (DOC 2016). Thus, implementation of the project would not convert Important Farmland to a non-agricultural use. There would be no impact, and no mitigation is required.

b) Conflict with existing zoning for agricultural use or a Williamson Act contract?

Less than Significant. A portion of the pipeline alignment runs through an area designated as "non-prime agricultural land" under the Williamson Act (California Department of Conservation 2016). The pipeline alignment is designated as "Extensive Agricultural" and "Intensive Agricultural" under the City of Avenal General Plan (City of Avenal 2005). Project implementation would not result in a change in land use, as the project site would be restored to existing conditions following construction and the new pipeline would be installed within the existing easement. This impact would be less than significant, and no mitigation is required.

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))?

No Impact. As mentioned in (b) above, the pipeline alignment is designated as "Extensive Agriculture" and "Intensive Agriculture" under the City of Avenal General Plan (City of Avenal 2005). There are no forestry resources or native trees within the proposed alignment or in the surrounding Kettleman Hills. As such, there would be no impact, and mitigation is not required.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. As discussed in (b) above, the project site is designated as "Extensive Agriculture" and "Intensive Agriculture" under the City of Avenal General Plan (City of Avenal 2005). No forest lands are associated with the project. There would be no impact, and mitigation is not required.

e) Involve other changes in the existing environment, which, because of their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

No Impact. As discussed in (b) above, the project site is designated as "Extensive Agriculture" and "Intensive Agriculture" under the City of Avenal General Plan (City of Avenal 2005). The project does not include any changes in use along the proposed pipeline alignment. There would be no impact, and no mitigation is required.

3.3 AIR QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. Air Quality. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on 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?	☐	☐	☒	☐

3.3.1 Environmental Setting

The project site is in the eastern portion of San Joaquin Valley Air Basin, which includes the counties of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Tulare, along with a portion of Kern County. The San Joaquin Valley Air Pollution Control District (SJVAPCD) monitors air pollutant levels continuously throughout the basin.

The SJVAPCD has adopted both the national and California ambient air quality standards for a variety of pollutants, including ozone (O_3), carbon monoxide (CO), oxides of nitrogen (NO_X), sulfur dioxide, particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$). The region is currently in nonattainment for O_3, PM_{10}, and $PM_{2.5}$ under the California standards, and O_3 and $PM_{2.5}$ under the national standards (SJVAPCD 2010).

3.3.2 Discussion

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant. The SJVAPCD is the primary agency responsible for managing local air quality and administering other California and federal air pollution control programs ensuring attainment and maintenance of the ambient air quality standards. Generally, a project may be inconsistent with the applicable air quality management plan or attainment plan if it could cause population and/or employment growth or growth in vehicle-miles traveled in excess of the growth forecasts included in the attainment plan. The proposed pipeline replacement project would not create additional permanent employment

opportunities and would replace an existing 18-inch pipeline with a new 18-inch pipeline. As a result, no growth associated with employment opportunities in the area or indirect growth through the provision of additional infrastructure would occur. As a result, the project would not cause an increase in population and/or employment within SJVAPCD jurisdiction. Further, conducting project construction activities in compliance with applicable SJVAPCD rules and regulations would ensure that activities are consistent with SJVAPCD efforts to achieve attainment and maintenance of the standards. Project-related emissions occurring in compliance with these rules and regulations would not conflict with or obstruct implementation of any applicable air quality plan. This impact would be less than significant, and no mitigation is required.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than Significant. Emissions during construction of the project would result from the operation of construction equipment within the proposed alignment and construction worker commute. These temporary increases in criteria air pollutants could contribute to existing or projected violations of the ambient air quality standards for ozone and PM_{10}. Based on information provided in Chapter 2, "Project Description," the potential increases in criteria pollutants were modeled using the Roadway Construction Emissions Model (RCEM) developed by the Sacramento Metropolitan Air Quality Management District (SMAQMD). This model is considered appropriate for the estimation of emissions resulting from linear construction projects, such as roadways, electrical transmission lines, and pipelines, such as the project. During construction, emissions would be generated along the proposed alignment, at staging yards, and along the roadways used to access these locations. Construction emissions would be caused by exhaust from vehicles and equipment (e.g., ozone precursors [volatile organic compounds and NO_x], CO, and particulate matter [PM_{10} and $PM_{2.5}$]) and fugitive dust/particulate matter from ground-disturbing activities and travel on unpaved roads. Diesel and gasoline-powered construction equipment at work sites would include excavators, backhoes, trenching equipment, and trucks for lifting, delivery, water, and work crews. Outside of work sites, exhaust emissions would be caused by vehicles transporting equipment and supplies to the sites, trucks removing debris or importing fill, and workers commuting to and from work sites. Table 3.3-1 summarizes the estimated total construction emissions.

Table 3.3-1 Estimated Construction Emissions

	Estimated Emissions (tons/year)				
	ROG	NO_x	SO_x	PM10	PM2.5
Project-Related Emissions During Construction	0.19	1.41	0.00	0.76	0.23
SJVAPCD Significance Threshold	10	10	N/A	15	15
Significant Impact?	No	No	No	No	No

Source: Modeling results compiled by Ascent Environmental in 2017 and provided in Appendix A

As show above, project-generated emissions would not exceed significance criteria established by SJVAPCD, and further, project construction activities would be conducted in compliance with applicable SJVAPCD rules and regulations. Through compliance with SJVAPCD rules and regulations and because project-related construction emissions would not exceed applicable thresholds, this impact would be less than significant. No mitigation is required.

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)?

Less than Significant. As noted above, construction of the project would result in air pollutant emissions that would not exceed SJVAPCD thresholds. The thresholds established by SJVAPCD are intended to evaluate an individual project's contribution to the cumulative condition of the air basin. As a result, if a project does not exceed the thresholds shown above in Table 3.3-1, its emission levels are considered less than cumulatively considerable. Thus, the project would have a less-than-significant impact, and mitigation is not required.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant. Construction of the project would generate pollutants, but the project site is located no less than 2 miles from any residential structures. The potential for project-related emissions, while temporary, to affect area residents would not be considerable, and impacts would be less than significant. No mitigation is required.

e) Create objectionable odors affecting a substantial number of people?

Less than Significant. The project involved replacement of a water transmission pipeline. Construction activities may result in localized odors associated with operation of the specific equipment, but such odors would dissipate rapidly and would likely not be perceivable beyond the limits of construction. Further, operation of the water transmission pipeline would not create any objectionable odors. Impacts would be less than significant. No mitigation is required.

3.4 BIOLOGICAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. Biological Resources. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the 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, or regulations or by the California Department of Fish and Wildlife or the 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?	☐	☐	☒	☐

3.4.1 Environmental Setting

A Biological Resources Technical Report was prepared that summarized results of site surveys conducted on November 16 and November 17, 2017, and is included in Appendix B of this document. This report included exhibits (e.g., land cover, aquatic resources, special-status species occurrence maps) and photos of the project site.

HABITATS

The project site contains mostly annual grassland habitat, including native and non-native grasses (e.g., *Bromus* sp., *Festuca* sp.). Native and nonnative forbs observed within grassland habitat on the project site included fiddleneck (*Amsinckia* sp.), Douglas's milkvetch (*Astragalus douglasii*), glandular big tarweed (*Blepharixonia laxa*), yellow star thistle (*Centaurea solstitialis*), turkey mullein (*Croton setiger*), Jimson weed (*Datura stramonium*), tarplant (*Holocarpha* sp.), and vinegarweed (*Trichostema lanceolatum*). A portion of grassland along the northern end of the pipeline alignment is composed of a monoculture of nonnative

barley; likely common barley (*Hordeum vulgare*). The area was either previously used for agricultural purposes, or the barley is an escapee from a nearby grain field.

The project site also contains scrub habitat, with native and nonnative saltbush scrub-associated species such as allscale (*Atriplex polycarpa*) and various other saltbush species (*Atriplex* sp.), matchweed (*Gutierrezia californica*), burro weed (*Ambrosia dumosa*), and Russian thistle (*Salsola* sp.). The scrub habitat on the project site is dense in some limited areas, but overall is sparse and distributed throughout the dominant grassland habitat.

The project site is nearly devoid of trees, but one small specimen of nonnative tree tobacco (*Nicotiana glauca*) was observed and a small grove of nonnative Athel tamarisk (*Tamarix aphylla*) is present adjacent to the pipeline alignment. A drainage area directly downhill from the water tank contained green vegetation, including various grass species, shrubs, and two small areas of cattail (*Typha* sp.). This area is approximately 300 feet east of the pipeline alignment.

COMMON WILDLIFE SPECIES

The project site contains suitable habitat for many common wildlife species, and many of these species were observed during the November 16 and 17 surveys. All wildlife observed within the project site are listed in the Biological Resources Technical Report (Appendix B).

Signs of kangaroo rat (*Dipodomys* sp.) and other rodent activity, including tracks, scat, and burrows were present throughout the project site in large quantities. Desert cottontail (*Sylvilagus audubonii*) and black-tailed jackrabbit (L*epus californicus*) scat was observed throughout the project site, and a jackrabbit was also observed directly. Large burrows that were potentially suitable for mammals such as foxes and American badger (*Taxidea taxus*) were observed within the project site, albeit in smaller numbers than rodent burrows. One burrow system was potentially associated with an American badger because of the large mound of dirt at the burrow opening, the size of the burrow entrance, and suspected claw marks at the entrance.

A burrowing owl (*Athene cunicularia*), which is a California Department of Fish and Wildlife (CDFW) species of special concern, was observed within approximately 500 feet east of the pipeline alignment near an active burrow. The burrowing owl was being harassed by a loggerhead shrike (*Lanius ludovicianus*), which is also a CDFW species of special concern. Another active burrowing owl burrow was observed near the sighting. The burrow was presumed to be active because of the presence of a small owl pellet containing insect parts, and owl scat.

SPECIAL-STATUS SPECIES

Searches of the CNDDB and the CNPS Inventory of Rare and Endangered Plants were conducted for sensitive biological resources that have been documented within a five-mile radius of the project site (CNDDB 2017; CNPS 2017). Additionally, an Ascent biologist conducted two reconnaissance surveys of the site on November 16 and November 17, 2017. Based on a review of the results of the database searches, a site survey, documented species ranges, and the habitat condition of the project site, a total of 10 special-status plant species and eight special-status animal species could occur on the project site (See Appendix B).

Of the 11 special-status plants identified during the review of existing data, 10 species could occur, including: brittlescale (*Atriplex depressa*), round-leaved filaree (*California macrophylla*), California jewelflower (*Caulanthus californicus*), Lemmon's jewelflower (*Caulanthus lemmonii*), recurved larkspur (*Delphinium recurvatum*), Kern mallow (*Eremalche parryi* ssp. *kernensis*), Temblor buckwheat (*Eriogonum temblorense*), pale-yellow layia (*Layia heterotricha*), showy golden madia (*Madia radiata*), and San Joaquin woollythreads (*Monolopia congdonii*). All 10 species are associated with chenopod scrub and valley and foothill grassland, on alkaline, sandy, or loamy soils.

Of the 16 special-status wildlife species identified during the review of existing data, eight species could occur, including: blunt-nosed leopard lizard (*Gambelia sila*), San Joaquin coachwhip (*Masticophis flagellum ruddocki*), burrowing owl, loggerhead shrike, tricolored blackbird (*Agelaius tricolor*), American badger, Nelson's antelope squirrel (*Ammospermophilus nelsoni*), and San Joaquin kit fox (*Vulpes macrotis mutica*).

WETLANDS AND OTHER WATERS OF THE UNITED STATES OR STATE

There are several natural drainages within the project site associated with gullies within the Kettleman Hills, and low-lying areas leading to the valley floor (USFWS 2017a). The pipeline alignment currently crosses at least four of these drainages. During the November 16 and 17 surveys, most low-lying areas did not contain water; however, these drainage areas had notably different vegetation than the surrounding upland areas. This vegetation included shrub species, such as matchweed, and nonnative forbs, such as Jimson weed.

3.4.2 Discussion

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 the U.S. Fish and Wildlife Service?

Less than Significant with Mitigation Incorporated. Based on the review of recorded occurrences of sensitive plant and wildlife species within a five-mile radius of the project site and reconnaissance surveys on November 16 and 17, 2017, 10 special-status plants (brittlescale, round-leaved filaree, California jewelflower, Lemmon's jewelflower, recurved larkspur, Kern mallow, Temblor buckwheat, pale-yellow layia, showy golden madia, and San Joaquin woollythreads) and eight special-status wildlife species (blunt-nosed leopard lizard, San Joaquin coachwhip, burrowing owl, loggerhead shrike, tricolored blackbird, American badger, Nelson's antelope squirrel, and San Joaquin kit fox) could occur on the project site.

SPECIAL-STATUS PLANTS

Brittlescale, round-leaved filaree, California jewelflower, Lemmon's jewelflower, recurved larkspur, Kern mallow, Temblor buckwheat, pale-yellow layia, showy golden madia, and San Joaquin woollythreads. Kern mallow, San Joaquin woollythreads, and California jewelflower are listed as endangered under ESA, and California jewelflower is also listed as endangered under CESA (Appendix B). All of these species are either associated with chenopod scrub or valley and foothill grassland habitat, which are present within the project site. Project activities, such as ground disturbance during trenching, staging of construction equipment, storage of dirt excavated during trenching, and construction vehicle use in off-road areas, could result in direct loss of special-status plant species. This would be a potentially significant impact.

MM-BIO-1: Special-Status Plant Surveys

Prior to commencing ground disturbance activities, the City of Avenal will implement the following measures to reduce potential impacts to special-status plants:

- Prior to project initiation and during the blooming period for the special-status plant species with potential to occur in the project site, a qualified botanist will conduct protocol-level surveys for special-status plants in areas where potentially suitable habitat would be removed or disturbed by project activities in accordance with *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2009). Table 3.4-1 summarizes the normal blooming periods for special-status plant species with potential to occur on the project site, which generally indicates the optimal survey periods when the species are most identifiable.

- If no special-status plants are found, the botanist will document the findings in a letter report to USFWS, CDFW, and the City of Avenal and no further mitigation will be required.
- If special-status plant species are found that cannot be avoided during construction, the City of Avenal will consult with CDFW and/or USFWS (depending on the status of the species) to determine the appropriate mitigation measures for direct and indirect impacts that could occur as a result of project construction. The City of Avenal will implement the agreed-upon mitigation measures to achieve no net loss of occupied habitat or individuals. Mitigation measures may include preserving and enhancing existing populations, creation of offsite populations on project mitigation sites through seed collection or transplantation, and/or restoring or creating suitable habitat in sufficient quantities to achieve no net loss of occupied habitat and/or individuals.

Table 3.4-1 Normal Blooming Period for Special-Status Plants with Potential to Occur on the Project Site

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
brittlescale *Atriplex depressa*				■	■	■	■	■	■	■
round-leaved filaree *California macrophylla*			■	■	■					
California jewelflower *Caulanthus californicus*		■	■	■	■					
Lemmon's jewelflower *Caulanthus lemmonii*		■	■	■	■					
recurved larkspur *Delphinium recurvatum*			■	■	■	■				
Kern mallow *Eremalche parryi* ssp. *kernensis*	■	■	■	■	■					
Temblor buckwheat *Eriogonum temblorense*				■	■	■	■	■	■	
pale-yellow layia *Layia heterotricha*			■	■	■	■				
showy golden madia *Madia radiata*			■	■	■					
San Joaquin woollythreads *Monolopia congdonii*		■	■	■	■					

Source: Data compiled by Ascent Environmental in 2017

SPECIAL-STATUS WILDLIFE

Blunt-nosed leopard lizard

Blunt-nosed leopard lizard is listed as endangered under ESA and CESA, and is also designated as fully protected under California Fish and Game Code. The nearest known occurrence of blunt-nosed leopard lizard is less than 1 mile southwest of the project site within similar habitat, and there are three additional known occurrences within 5 miles of the project site (CNDDB 2017). The project site contains potentially suitable scrub habitat for this species. Blunt-nosed leopard lizard use small burrows made by mammals (e.g., kangaroo rats, squirrels, mice) for cover and egg-laying. The project site contained numerous rodent burrows throughout the entire pipeline alignment, and many of these burrows were located within the construction easement area. Fully protected species may not be taken at any time, and no licenses or permits may be issued for their take. Consequently, fully protected species must be fully avoided during project construction activities.

Project construction activities, including ground disturbance during pipeline trenching could result in destruction of many potentially active rodent-sized burrows, which could be occupied by blunt-nosed leopard lizards, and could result in direct loss of lizards. Loss of blunt-nosed leopard lizard would be a potentially significant impact.

MM-BIO-2: Blunt-nosed leopard lizard surveys and avoidance

Prior to commencing ground disturbance activities, the City of Avenal will implement the following measures in accordance with the *Approved Survey Methodology for the Blunt-nosed Leopard Lizard* (CDFW 2004) to reduce potential impacts to blunt-nosed leopard lizard:

- If blunt-nosed leopard lizards have the potential to be present within the project site, at least two qualified biologists will conduct a total of 17 surveys between April and September, including spring adult surveys and fall hatchling surveys. Biologists will conduct visual search surveys while walking in parallel on adjacent transects that cover all areas within the project site with potential blunt-nosed leopard lizard habitat. Biologists will stop periodically to scan the transect for blunt-nosed leopard lizard using close-focusing binoculars.
  - A total of 12 adult surveys will take place during the optimal survey period (April 15 to July 15) with a maximum of 4 survey days per week and 8 days within any 30-day time period. At least one survey session will be conducted for 4 consecutive days.
  - A total of 5 additional hatchling surveys will take place during the optimal survey period (August 1 to September 15).
- If blunt-nosed leopard lizards are observed, biologists will record the location (UTM coordinates) and the presence of habitat features important for blunt-nosed leopard lizard (e.g., washes, playas, relative abundance of small mammal burrows). The project applicant will initiate consultation with CDFW to examine project plans and to determine whether the project can be designed to completely avoid blunt-nosed leopard lizards and potentially occupied habitat.
- All blunt-nosed leopard lizard observations must be reported to the CNDDB within 30 days.
- If no blunt-nosed leopard lizards are observed during the survey period, then further mitigation for this species is not required. Surveys will be accepted for one year from the date of completion.

San Joaquin kit fox

San Joaquin kit fox is listed as endangered under ESA and threatened under CESA. The nearest known occurrence of San Joaquin kit fox is approximately 1.6 miles southeast of the project site within the Kettleman Hills, and there are nine additional known occurrences within 5 miles of the project site (CNDDB 2017). The project site contains suitable grassland and scrub habitat for this species. Large burrows (i.e., with burrow openings 4 inches or greater), potentially associated San Joaquin kit fox, were present throughout the project site, but were less numerous than the rodent burrows. Most of the large burrows were outside of the construction easement, but several were within the easement.

Project construction activities, including ground disturbance during pipeline trenching could result in disturbance to or destruction of large burrows which could be occupied by San Joaquin kit fox. This could result in the direct loss of San Joaquin kit fox or destruction of active dens. Disturbance or direct loss of San Joaquin kit fox would be a potentially significant impact.

MM-BIO-3: San Joaquin kit fox surveys and avoidance measures

The project may affect San Joaquin kit fox and consultation with USFWS may be required under ESA as part of a federal action for the project, such as issuance of a CWA permit by USACE or use of federal funding administered through the State Water Board. If occupied dens cannot be avoided, consultation with CDFW

would be required under CESA as well. The following measures in accordance with the *USFWS Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 2011) will be implemented to reduce potential impacts to San Joaquin kit fox. Additional measures may be required based on consultation with USFWS.

- Preconstruction surveys will be conducted by a qualified biologist no less than 14 days and no more than 30 days prior to the beginning of ground disturbance or construction activities or any project activity likely to impact the San Joaquin kit fox. Surveys will identify San Joaquin kit fox habitat features on the project site (e.g. dens), evaluate use by kit fox, and assess the potential impacts to the kit fox by the proposed activity. Survey methods will include thoroughly inspecting the project site for kit fox dens using walking line transects. The status of all dens will be determined and mapped.

- If no San Joaquin kit fox or potential dens are found, the qualified biologist will document the findings in a letter report to USFWS, CDFW, and the City of Avenal and no further mitigation will be required.

- Exclusion zones will be established for all dens within the project site and construction activity or ground disturbance will be prohibited within these zones. Potential dens will be marked with flagged stakes 50 feet from the den entrance. Known dens will be demarcated using USFWS-approved fencing including an area of 100 feet around the den entrance.

- If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, USFWS will be immediately notified and the den will not be disturbed or destroyed without prior authorization or a take permit.

- If potential dens are identified (i.e., a burrow at least four inches in the diameter that opens within two feet), the den entrances will be dusted, and camera and scent stations will be deployed 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 removed. Den removal must be appropriately monitored and conducted by a qualified wildlife biologist.

- Written results of preconstruction surveys must be received by USFWS within five days after survey completion and prior to the start of ground disturbance or construction activities.

- During construction, the City of Avenal will observe the following measures to minimize impacts to San Joaquin kit fox:

  - All construction activities will cease one hour before sunset and will not begin prior to one hour after sunrise. This excludes transit of vehicles to and from the project site, employee and safety meetings, servicing and maintaining equipment, and material deliveries involving trucks and forklifts.

  - Artificial lighting of the project site during night time hours is prohibited during all activities.

  - A 20-mph daytime speed limit and 10-mph night-time speed limit will be observed on the project site at all times. Off-road traffic outside of designated project areas will be prohibited.

  - All excavated holes or trenches will be covered at close of each working day, or one or more escape ramps will be provided.

  - Holes or trenches must be inspected daily to ensure that no animal has become trapped despite covers. All holes or trenches will be thoroughly inspected before filling.

  - All pipes, culverts, or similar structures with a diameter of 4 inches or greater will be inspected for kit foxes before they are buried, capped, used, or moved in any way.

  - All trash will be properly disposed of and removed from project site at least once a week.

- No firearms shall be allowed on the project site
- No pets shall be permitted on the project site.
- Use of rodenticides and herbicides in project areas shall be restricted.
- Plastic mono-filament matting will not be used for erosion control or other purposes. Instead tightly woven fiber or similar material will be used.
- Upon project completion, all disturbed areas will be returned to conditions prior to construction activity, including storage and staging areas, temporary roads, pipeline corridors. The areas will be re-contoured if necessary and revegetated to promote restoration of the area to pre-project conditions.
- If a kit fox is trapped:
    - Personnel shall immediately report the incident to their onsite representative.
    - Escape ramps or structures will be installed immediately.
    - If the fox cannot escape, USFWS shall be contacted for guidance.
    - The onsite representative shall notify USFWS and CDFW immediately by telephone or email within 24 hours.
- If a kit fox is injured or killed:
    - Personnel shall immediately report the incident to their onsite representative.
    - Project activities will cease until USFWS and CDFW provide guidance.
    - The onsite representative shall notify USFWS and CDFW immediately with the date, time, and location of the incident.
    - Consultation with USFWS will be reinitiated.

Nelson's antelope squirrel

Nelson's antelope squirrel is listed as threatened under CESA. The nearest known occurrence of Nelson's antelope squirrel is approximately 1.5 miles south of the project site within the Kettleman Hills and there are two additional known occurrences of the species within 5 miles of the project site (CNDDB 2017). The project site contains suitable scrub and grassland habitat for this species. Nelson's antelope squirrels dig their own burrows or will use existing kangaroo rat burrows. The project site contained numerous rodent burrows throughout the entire pipeline alignment, and many of these burrows were located within the construction easement area.

Project construction activities, including ground disturbance during pipeline trenching could result in destruction of many potentially active rodent-sized burrows, which could be occupied by Nelson's antelope squirrel, and could result in direct loss of the squirrels if present. Loss of Nelson's antelope squirrel would be a potentially significant impact.

MM-BIO-4: Nelson's antelope squirrel surveys and avoidance

Prior to commencing ground disturbance activities, the City of Avenal will implement the following measures to reduce potential impacts to Nelson's antelope squirrel:

- If Nelson's antelope squirrels have the potential to be present within a work area, a qualified biologist will make an initial site visit to determine if suitable habitat for the species may exist within and adjacent to the vicinity of the project footprint. If suitable habitat is present, daytime visual surveys will be conducted using line transects with 10 to 30-meter spacing when temperatures are between 68°and 86° F (20°- 30° C). Focused live trapping may also be required when visual surveys are inconclusive.

- If no Nelson's antelope squirrels are found, the qualified biologist will document the findings in a letter report to CDFW and the City of Avenal and no further mitigation will be required.

- If Nelson's antelope squirrels are detected, a 50-foot minimum no disturbance buffer will be maintained from all small mammal burrows of suitable size.

Tricolored blackbird

Tricolored blackbird is a candidate for endangered listing under CESA. The nearest known occurrence of this species is approximately 4.5 miles southwest of the project site near Avenal State Prison and there is one additional known occurrence of the species within 5 miles of the project site (CNDDB 2017). While optimal tricolored blackbird nesting habitat includes dense riparian vegetation near wetland and other aquatic habitat, tricolored blackbirds in California often nest within agricultural habitat; particularly grain fields. The northernmost extent of the pipeline alignment contains an area dominated by nonnative barley, which, in the spring, could provide potentially suitable nesting habitat for tricolored blackbird. There is no suitable habitat elsewhere along the alignment.

MM-BIO-5: Tricolored blackbird nest surveys and avoidance

Prior to commencing ground disturbance or vegetation removal activities, the City of Avenal will implement the following measures to reduce potential impacts to tricolored blackbird:

- To minimize the potential for loss of tricolored blackbird, removal of vegetation within the agricultural field on the northern end of the pipeline alignment will commence during the nonbreeding season (September 1-January 31). If all suitable nesting habitat is removed during the nonbreeding season, no further mitigation would be required.

- Prior to removal of any vegetation, or any ground-disturbing activities between February 1 and August 31, a qualified biologist will conduct preconstruction surveys for tricolored blackbird nests within the agricultural field on the northern end of the pipeline alignment. The surveys will be conducted no more than 14 days before construction commences.

- If no active nests or tricolored blackbird colonies are found during focused surveys, no further action under this measure will be required. If active nests are located during the preconstruction surveys, the biologist will notify CDFW. If necessary, modifications to the project design to avoid removal of occupied habitat while still achieving project objectives will be evaluated, and implemented to the extent feasible. If avoidance is not feasible or conflicts with project objectives, construction will be prohibited within a minimum of 100 feet of the outer edge of the nesting colony to avoid disturbance until the nest colony is no longer active.

Loggerhead shrike

Loggerhead shrike is a CDFW species of special concern. There is one known occurrence of loggerhead shrike within 5 miles of the project site (CNDDB 2017), and a shrike was observed on the project site during the November 16 and 17 surveys. Loggerhead shrike nest within dense shrub and brush habitat, which is present within portions of the project site. The pipeline alignment along Old Skyline Drive in particular is lined with dense saltbush scrub habitat that would be suitable nesting habitat for this species, and is within the construction easement.

Project construction activities, including ground disturbance and vegetation removal during pipeline trenching could result in disturbance to loggerhead shrike or tricolored blackbird, as well as direct loss of birds, chicks, or eggs. Disturbance or direct loss of tricolored blackbird or loggerhead shrike would be a potentially significant impact.

MM-BIO-6: Loggerhead shrike and other nesting bird surveys and avoidance

Prior to commencing ground disturbance or vegetation removal activities, the City of Avenal will implement the following measures to reduce potential impacts to loggerhead shrike:

- To minimize the potential for loss of loggerhead shrike or other bird nests, any removal of saltbush scrub habitat, if planned, will commence during the nonbreeding season (September 1-January 31). If all suitable nesting habitat is removed during the nonbreeding season, no further mitigation would be required.

- Prior to removal of any saltbush scrub habitat, or any ground-disturbing activities between February 1 and August 31, a qualified biologist will conduct preconstruction surveys for nests on any structure or vegetation identified for removal. The surveys will be conducted no more than 14 days before construction commences. If no active nests are found during focused surveys, no further action under this measure will be required. If active nests are located during the preconstruction surveys, the biologist will notify CDFW. If necessary, modifications to the project design to avoid removal of occupied habitat while still achieving project objectives will be evaluated, and implemented to the extent feasible. If avoidance is not feasible or conflicts with project objectives, construction will be prohibited within a minimum of 100 feet of the nest to avoid disturbance until the nest colony is no longer active. These recommended buffer areas may be reduced through consultation with CDFW.

San Joaquin coachwhip

San Joaquin coachwhip is a CDFW species of special concern. The nearest known occurrence of San Joaquin coachwhip is approximately 3.4 miles southwest of the project site near the City of Avenal (CNDDB 2017). The project site contains suitable annual grassland and saltbush scrub habitat for this species. San Joaquin coachwhip use small burrows made by mammals (e.g., kangaroo rats, squirrels, mice) for cover and egg-laying. The project site contained numerous rodent burrows throughout the entire pipeline alignment, and many of these burrows were located within the construction easement area.

Project construction activities, including ground disturbance during pipeline trenching could result in destruction of many potentially active rodent-sized burrows, which could be occupied by San Joaquin coachwhip, and could result in direct loss of the snakes if present. Loss of San Joaquin coachwhip would be a potentially significant impact.

MM-BIO-7: San Joaquin coachwhip surveys, avoidance, and minimization measures

Prior to commencing ground disturbance activities, the City of Avenal should implement the following measures to reduce potential impacts to San Joaquin coachwhip:

- A qualified biologist will conduct preconstruction surveys within 24 hours prior to ground-disturbing activities (e.g., equipment staging, vegetation removal, grading) associated with the program. If any San Joaquin coachwhips are found, work will not begin until they are moved out of the work area to a CDFW-approved relocation site. Relocation of San Joaquin coachwhip requires a letter from CDFW authorizing this activity.

- If no San Joaquin coachwhip are found, the qualified biologist will document the findings in a letter report to CDFW and the City of Avenal and no further mitigation will be required.

- No monofilament plastic will be used for erosion control.

- Where applicable, barrier fencing will be used to exclude San Joaquin coachwhip. Barrier fencing will be removed within 72 hours of completion of work.

- Work crews or an onsite biological monitor will inspect open trenches and pits and under construction equipment and materials left onsite for special-status reptiles each morning and evening during construction.

- Ground disturbance in suitable habitat will be minimized.

- Vegetation within the proposed work area will be removed prior to trenching activities. Prior to clearing and grubbing operations, a qualified biologist will clearly mark vegetation within the work area that will be avoided. Vegetation outside the work area will not be removed. Where possible hand tools (e.g., trimmer, chain saw) will be used to trim or remove vegetation. All vegetation removal will be monitored by the qualified biologist to minimize impacts on special-status reptiles.

American badger

American badger is a CDFW species of special concern. The nearest known occurrence of American badger is approximately 2 miles east of the project site within the Kettleman Hills (CNDDB 2017). The project site contains suitable grassland habitat and friable soils for this species, and an ample rodent prey population. A series of large burrows with features suggestive of an American badger (e.g., large mounds of dirt outside of burrow, possible claw marks at burrow entrance, large burrow opening) were observed approximately 30 feet east of the pipeline alignment. Most additional large burrows were outside of the construction easement, but several were within the easement.

Project construction activities, including ground disturbance during pipeline trenching could result in disturbance to or destruction of large burrows which could be occupied by American badger. This could result in the direct loss of American badger or destruction of active dens. Disturbance or direct loss of American badger would be a potentially significant impact.

MM-BIO-8: American badger surveys and avoidance

Prior to commencing ground disturbance activities, the City of Avenal will implement the following measures to reduce potential impacts to American badger:

- A qualified wildlife biologist will conduct surveys to identify any American badger burrows/dens. These surveys will be conducted not more than 15 days prior to the start of construction. If occupied burrows are not found, further mitigation will be not required. If occupied burrows are found, impacts to active badger dens will be avoided by establishing exclusion zones around all active badger dens, within which construction-related activities will be prohibited until denning activities are complete or the den is abandoned. A qualified biologist will monitor each den once per week to track the status of the den and to determine when a den area has been cleared for construction.

Burrowing owl

Burrowing owl is a CDFW species of special concern. There are five known occurrences of burrowing owl within 5 miles of the project site (CNDDB 2017). During the November 16 and 17 surveys, a burrowing owl was observed within approximately 500 feet east of the pipeline alignment near an active burrow. Another large, active burrowing owl burrow was observed near the sighting. Burrowing owls are dependent on existing burrows made by mammals, and typically use large burrows made by ground squirrels or badgers. The project site contains suitable grassland habitat and many potentially suitable burrows for this species within the entire pipeline alignment.

Project construction activities, including ground disturbance during pipeline trenching could result in disturbance to or destruction of large burrows which could be occupied by burrowing owl. This could result in the direct loss of burrowing owl or destruction of active dens. Disturbance or direct loss of burrowing owl would be a potentially significant impact.

MM-BIO-9: Burrowing owl surveys and avoidance

Prior to commencing ground disturbance activities, the City of Avenal will implement the following measures to reduce potential impacts to burrowing owl:

- The applicant will retain a qualified biologist to conduct focused breeding and nonbreeding season surveys for burrowing owls in areas of suitable habitat on and within 1,500 feet of the project site. Surveys will be conducted prior to the start of construction activities and in accordance with Appendix D of CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFW 2012).

- If no occupied burrows are found, a letter report documenting the survey methods and results will be submitted to CDFW and no further mitigation will be required.

- If an active burrow is found during the nonbreeding season (September 1 through January 31), the applicant will consult with CDFW regarding protection buffers to be established around the occupied burrow and maintained throughout construction. If occupied burrows are present that cannot be avoided or adequately protected with a no-disturbance buffer, a burrowing owl exclusion plan will be developed, as described in Appendix E of CDFW's 2012 Staff Report. Burrowing owls will not be excluded from occupied burrows until the project's burrowing owl exclusion plan is approved by CDFW. The exclusion plan will include a plan for creation, maintenance, and monitoring of artificial burrows in suitable habitat proximate to the burrows to be destroyed, that provide substitute burrows for displaced owls.

- If an active burrow is found during the breeding season (February 1 through August 31), occupied burrows will not be disturbed and will be provided with a 150- to 1,500-foot protective buffer unless a qualified biologist verifies through noninvasive means that either: (1) the birds have not begun egg laying, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. The size of the buffer will depend on the time of year and level disturbance as outlined in the CDFW Staff Report (CDFW 2012). The size of the buffer may be reduced if a broad-scale, long-term, monitoring program acceptable to CDFW is implemented to ensure burrowing owls are not detrimentally affected. Once the fledglings are capable of independent survival, the owls can be evicted and the burrow can be destroyed per the terms of a CDFW-approved burrowing owl exclusion plan developed in accordance with Appendix E of CDFW's 2012 Staff Report.

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

No Impact. The project site does not contain riparian habitat or any other sensitive natural community. While the project site crosses several drainages, there is no riparian habitat associated with these drainages. Impacts to drainages or other waters of the United States or state are addressed in discussion c) below. There would be no impact, and no mitigation is required.

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?

Less than Significant with Mitigation Incorporated. The pipeline alignment currently crosses at least four drainages, including areas associated with gullies and low-lying areas leading to the valley floor. All of these drainages would likely qualify as waters of the United States or state and may be regulated by CDFW under Section 1602 of the California Fish and Game Code. Project construction activities, including ground disturbance during pipeline trenching could result in direct or indirect fill of waters of the United States or state. This would be a potentially significant impact.

MM-BIO-10: Wetland Delineation and Permitting for Impacts to Waters of the United States or State

Prior to commencing ground disturbance activities, the City of Avenal will implement the following measures to reduce potential impacts to waters of the United States or waters of the State:

- Prior to ground disturbance activities on the project site, an aquatic feature delineation will be prepared by a qualified biologist following USACE Sacramento District 2016 *Minimum Standards for Acceptance of Aquatic Resources Delineation Reports* to determine if the aquatic features are subject to USACE jurisdiction. The delineation will also evaluate if aquatic features are subject to regulation by RWQCB or CDFW.

- The delineation will be submitted to and verified by USACE. If, based on the verified delineation, it is determined that fill of waters of the United States or state would result from implementation of the project, authorization for such fill will be secured from USACE through the Section 404 permitting process. Any impacts to waters of the United States or state will be temporary in nature and drainages will be returned to original conditions following construction.

- In association with the Section 404 permit (if applicable) and prior to the issuance of any grading permit, Section 401 Water Quality Certification from the RWQCB will be obtained. *Procedures for Regulation of Discharges of Dredged or Fill Material to Waters of the State* (California Water Board) will be followed for impacts to waters of the state that are not subject to USACE jurisdiction.

- The project applicant will notify CDFW before commencing any activity within the bed, bank, or riparian corridor of any waterway. If activities require the need for a Streambed Alteration Agreement, the proponent will obtain an agreement from CDFW before project approval. The project applicant will conduct construction activities in accordance with the agreement, including implementing reasonable measures in the agreement necessary to protect the fish and wildlife resources, when working within the bed or bank of waterways that function as a fish or wildlife resource or in riparian habitats associated with those waterways.

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?

Less than Significant. The project site is located within the North Dome of the Kettleman Hills. The Kettleman Hills contain a large area of open, natural land that provides connection to natural landscape blocks to the north and south. Large interstate and state highways are located to the north (I-5), south (SR 33), and west (SR 269) of the project site, and are all substantial impediments to wildlife movement to the east and west of the project site. Project construction activities, such as trenching and operation and staging of construction vehicles may temporarily interfere with wildlife species movement during project construction, however; the project site will be restored to original conditions following construction. This impact would be less than significant, and no mitigation is required.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The City of Avenal General Plan (City of Avenal 2005) do not contain any policies regarding protection of natural resources other than a general policy to maximize wildlife habitat preservation. The project involves replacement of an existing water transmission pipeline within an existing pipeline alignment that runs through potential wildlife habitat. However, the project site will be restored to existing conditions following construction, and the project will not result in any destruction of wildlife habitat. Therefore, there will be no impact, and no mitigation is required.

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?

Less than Significant. The project site is located within the plan area for the Pacific Gas and Electric (PG&E) San Joaquin Valley Operation and Maintenance Habitat Conservation Plan (HCP; PG&E 2006). Covered activities under this HCP include routine operations and maintenance activities conducted by PG&E. This project is not under the jurisdiction of PG&E, and thus this HCP would not apply to the project. In addition, the project would not result in any permanent habitat loss and would not interfere with PG&E's ability to implement their HCP. As a result, no conflicts with the existing HCP would occur. Impacts would be less than significant, and no mitigation is required.

3.5 CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. Cultural Resources. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 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?	☐	☐	☒	☐
e) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code § 21074 and that is listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code § 5020.1(k)?	☐	☐	☒	☐
f) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code § 21074 and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision c) of Public Resources Code § 5024.1?	☐	☐	☒	☐

3.5.1 Environmental Setting

Natural Investigations Company (NIC) prepared a cultural resources inventory for the proposed alignment (NIC 2017). This study evaluated the potential project footprint, as well as areas beyond the limits of the project to include buffer areas, that together comprise the area of potential effect (APE).

Investigations performed as part of the cultural resources inventory included a literature search, a Sacred Lands File search, an intensive-level pedestrian survey of the APE, and a project effects assessment. No prehistoric or historic-era archaeological sites, ethnographic sites, or historic-era built environment resources were identified during survey of the APE. Existing underground water pipelines within the APE are less than 50 years of age and are common utility elements that are not exceptionally important, for which a detailed historic review, evaluation, or formal recordation was unwarranted (NIC 2017).

The Native American Heritage Commission (NAHC) indicated on November 16, 2017 that their Sacred Lands File search failed to indicate the presence of Native American sacred lands within the immediate project vicinity. The sensitivity is very low for discovery of archaeological deposits, materials, or features, by project implementation, which is within an extensively disturbed APE that is underlain by sediments deposited mainly prior to the presence of humans in the Central Valley. The City of Avenal also issued letters in

February 2017 to those tribes that had previously notified the city of their desire to consult on projects within their traditional and culturally-affiliate territory. No tribes responded within the 30-day response period mandated by Assembly Bill (AB) 52 related to the identification of tribal cultural resources.

3.5.2 Discussion

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

No Impact. As discussed above, potential impacts to historical resources were evaluated within the APE. As noted above, no historic-era built environment resources were identified during survey of the APE (NIC 2017). Therefore, there would be no impact, and no mitigation is required.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

No Impact. As discussed above, potential impacts to archaeological resources were evaluated within the APE. No prehistoric or historic-era archaeological sites or ethnographic sites were identified during survey of the APE (NIC 2017). Therefore, there would be no impact, and no mitigation is required.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant. The soil formations along the proposed alignment are associated with the oil fields in the central and southern San Joaquin Valley and have some paleontological potential (NIC 2017). However, areas that have been previously disturbed by trenching for placement of underground pipelines, by oil and gas recovery and associated infrastructure, by roadway construction, and by agricultural practices are considered to have a low paleontological potential. Additionally, no unique geologic features are known to exist within the project alignment. Excavation within the previously disturbed easement at the depths identified in Chapter 2, "Project Description," is unlikely to yield any paleontological resources. Impacts would be less than significant, and no mitigation is required.

d) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less than Significant. Based on the results of the cultural resources inventory conducted for the project, the potential for encountering human remains is considered low. Although unlikely, the discovery of human remains is always a possibility. State of California Health and Safety Code Section 7050.5 covers these findings, except on federal lands. This code section states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. The County Coroner must be notified of the find immediately. If the human remains are determined to be of Native American origin, the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendent (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Thus, impacts related to the disturbance of human remains would be less than significant, and no mitigation is required.

e) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code § 21074 and that is listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code § 5020.1(k)?

Less than Significant. As part of the preparation of the cultural resources inventory, NIC staff contacted the NAHC requesting a search of their Sacred Lands File for traditional cultural resources within or near the APE. The reply from the NAHC, dated November 16, 2017, states that the search failed to indicate the presence of Native American sacred lands or traditional cultural properties in the immediate vicinity.

By letter dated November 29, 2017, NIC then contacted each of the six Native American tribes or individuals identified by the NAHC as potentially having additional information. NIC requested any additional information regarding sacred lands or other heritage sites that might be affected by the project. To date, one response has been received from the Table Mountain Rancheria, stating that the project is not within the Table Mountain Tribe territory (NIC 2017). Additionally, as noted above, the city issued letters to interested tribes pursuant to AB 52, and no tribe indicated the potential presence of tribal cultural resources or a need to consult pursuant to AB 52.

While the project site and surrounding area are not known to contain any Tribal Cultural Resources, inadvertent discovery is possible. As discussed in (b-d) above, state and local regulations provide guidance in the event of previously-unknown resources, such as human remains. Thus, impacts related to substantial adverse changes in Tribal Cultural Resources would be less than significant, and no mitigation is required.

f) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code § 21074 and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision c) of Public Resources Code § 5024.1?

Less than Significant. Refer to Impact discussion e) above.

3.6 GEOLOGY AND SOILS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Geology and Soils. 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 California Geological Survey 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, as updated), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

3.6.1 Environmental Setting

The project is located within the Kettleman Hills and the Great Valley geomorphic province. The Kettleman Hills, which parallel I-5, are the preeminent geologic feature within the project site.

GEOLOGY

The Kettleman Hills are part of the foothills of the California Coast Range; however, they are separated from the mountains by the Kettleman Plain. The Kettleman hills were formed as a result of movement along the San Andreas fault which approximately 20 miles west of the hills. The Kettleman Hills contain Pliocene and Pleistocene sediments (approximately 12,000 to 5 million years old) of marine and non-marine origin including mostly sandstone, siltstone, and limestone. Marine sediments are present as a result of an inland sea that spanned the valley between the Sierra Nevada and the Coast Range 3 to 4 million years ago. Non-marine sediments originated from rivers flowing east from the Coast Range which fed into inland deltas that eventually filled the now dry Tulare Lake Basin. Tulare Lake was an expansive, shallow freshwater lake that

represented the accumulation of flood waters from the Kings River and other streams. Tulare Lake contained water as recently as the late 19th century, but was drained or otherwise altered for agricultural purposes. A large oil field called the North Dome oil field is located within the Kettleman Hills including the project site, with oil originating from Miocene sediments trapped under shale within the folds created during the formation of the Kettleman Hills (Alt and Hyndman 2000).

SEISMICITY

The project site is located near several known active faults, including the San Andreas fault approximately 20 miles to the east. However, the project site is not located on any mapped active faults or State of California Earthquake Fault Zones for known active faults (California Department of Conservation 2010).

SOIL CONDITIONS

The project site is mostly underlain by alluvium consisting of sandstone, siltstone, and limestone. The bedrock features beneath the Kettleman Hills are associated with the Great Valley Sequence which includes sedimentary rock such as shale, sandstone, and conglomerate (Alt and Hyndman 2000).

GROUNDWATER

Data collected from local wells near the project site generally identified a depth to groundwater of 450 to 500 feet; thus, shallow groundwater is not anticipated (Groundwater Information Center 2017)

3.6.2 Discussion

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 California Geological Survey Special Publication 42.)

No Impact. As discussed above, no known active faults are located within the project site. The project would replace an existing pipeline within the project area, and no additional structures would be developed as part of the project. In addition, the project is on private land and would not increase public access to the project area. Therefore, the project would not increase the potential exposure of people or structure to rupture-related risks, and no impact would occur. No mitigation measures are required.

ii) Strong seismic ground shaking?

Less than Significant. As discussed above, no known active faults are located along the proposed alignment. Earthquakes have historically occurred within the project site, largely associated with blind thrust faults deep beneath the Kettleman Hills. Because the project area is in a seismically-active region, the proposed pipeline would likely be subject to strong seismic ground shaking during its design life. However, the California Building Code (CBC) includes design standards that are intended to protect structures from the maximum credible earthquake that could occur on the site. The potential for seismic impacts would be minimized by applying all standard engineering and construction techniques in compliance with the requirements of the CBC for Seismic Zone 4. Because the project would be designed in accordance with the most recent provisions of the CBC, the project's seismic hazard impacts would be less than significant. No mitigation measures are required.

iii) Seismic-related ground failure, including liquefaction?

Less than Significant. Although the project is in a seismically-active location, liquefaction and other seismic-related ground failure primarily affect structures. Because the project would replace an existing pipeline and there are currently no structures on-site, impacts related to liquefaction would be less than significant. No mitigation is required.

iv) Landslides?

Less than Significant. The pipeline alignment is located on uneven terrain with some steep grade, and could be subject to landslides. However, landslides would not result in loss, injury, or death, as there are no structures or roads within the pipeline alignment, and the project does not include construction of buildings or other structures. This impact would be less than significant, and no mitigation is required.

b) Result in substantial soil erosion or the loss of topsoil?

Less than Significant. Implementation of the project would include trenching activities within an existing pipeline alignment. Where vegetation is removed from sloped areas or soils are unconsolidated in newly graded areas, surface water and wind could result in the loss of topsoil. However, a Stormwater Pollution Prevention Plan (SWPPP) would be developed for the project by a qualified SWPPP professional. The objectives of the SWPPP are to identify pollutant sources that may affect the quality of stormwater associated with construction activity and identify, construct, and implement stormwater pollution prevention measures to reduce pollutants in stormwater discharges during and after construction. Therefore, the SWPPP would include a description of potential pollutants, the management of dredged sediments, and hazardous materials present on the site during construction (including vehicle and equipment fuels). The SWPPP would also include details of how best management practices (BMPs) for sediment and erosion control would be implemented. Implementation of the SWPPP would comply with state and federal water quality regulations, and would minimize potential adverse impacts related to erosion and loss of topsoil at the project site. Impacts would be less than significant, and no mitigation is required.

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?

Less than significant. Generally, impacts associated with unstable soils relate to potential damage to structures. The project would replace an existing pipeline and would not develop any new structures. Therefore, no structures would be affected by unstable soils. Project-related impacts related to unstable soils would be less than significant. No mitigation is required.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?

Less than Significant. The Kettleman Hills contain expansive soils with shrink-swell potential, including bentonite and montmorillonite clay. These soils are likely present within the pipeline alignment as well. Project implementation involves replacement of a water transmission pipeline within an existing pipeline alignment. No buildings or other structures would be constructed on the project site; thus, the shrink-swell potential of soils on the project site would not create substantial risks to life or property. Further, as noted above, the project would be constructed in accordance with CBC requirements including those related to soils stability and structural integrity. This impact would be less than significant, and no mitigation is required.

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

No Impact. Implementation of the project would include replacement of a water transmission pipeline within an existing pipeline alignment. Project implementation would not include septic tanks or waste water disposal systems. There would be no impact, and no mitigation is required.

3.7 GREENHOUSE GAS EMISSIONS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. 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?	☐	☐	☒	☐

3.7.1 Environmental Setting

Certain gases in the earth's atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth's surface temperature. GHGs are responsible for "trapping" solar radiation in the earth's atmosphere, a phenomenon known as the greenhouse effect. Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

Emissions of GHGs have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. Although the emissions of one single project, would not cause global climate change, GHG emissions from multiple projects throughout the world could result in a cumulative impact with respect to global climate change.

3.7.2 Discussion

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than significant. Operation of the project would include routine maintenance similar to what occurs under existing conditions and would not increase the vehicle trips associated with operation and maintenance. Operation of the new water pipeline would not result in increased GHG emissions, because the project would not involve any new direct or indirect emission sources or increased activity by existing emissions sources (such as new motor vehicle trips or increased consumption of electricity).

Construction activities would result in temporary GHG emissions related to worker commute trips, delivery of materials, and off-road construction equipment. Project construction may commence as early as the end of the second quarter 2018 and take approximately 6 months to complete. Up to 15 workers would be on-site during construction and up to two truck deliveries of materials to or hauls from the site per day. Construction-related emissions were estimated using the RCEM, which is considered appropriate for the assessment of emissions for linear construction projects.

Project implementation would result in a net increase of 280 metric tons of carbon dioxide equivalents ($MTCO_2e$) over the entire construction period and no net increase during operation, as the project represents a replacement of existing pipeline. SJVAPCD has established best performance strategies (BPS) for evaluating significance of GHG emissions for development projects, however, use of BPS for the project is not considered appropriate. To present a conservative analysis, it was considered most appropriate to evaluate the proposed project's construction GHG emissions against a threshold of significance of 1,100

$MTCO_2e$/yr., which was originally proposed by the Bay Area Air Quality Management District (BAAQMD) (BAAQMD 2017). Although this threshold was designed to evaluate long-term operational emissions, it is considered an appropriate measure of potential GHG impacts under CEQA. The GHG emissions from the project would be substantially less than this threshold, and those emissions would cease after less than one year. Considering the low level of total emissions from project construction, the potential impact of the project as it relates to GHG emissions would be less than significant. No mitigation is required.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than significant. As discussed in item a) above, continued operation of the water pipeline would not result in increased GHG emissions because the project would not result in any new direct or indirect emission sources or increased activity by existing emissions sources. As also explained in item a) above, the project's one-time emissions of 280 MT CO_2e would be nominal. Therefore, the project would not conflict with or obstruct implementation of CARB's 2017 Scoping Plan Update (CARB 2017) for achieving GHG reductions consistent with AB 32 and Executive Orders S-3-05 and B-30-15. This impact would be less than significant. No mitigation is required.

3.8 HAZARDS AND HAZARDOUS MATERIALS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. 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/or accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.8.1 Environmental Setting

HISTORIC AND CURRENT LAND USE

The pipeline alignment contains an existing 12-inch and 18-inch pipeline, installed in 1971 and 1986, respectively. The site also contains historic oil equipment (e.g. pipes, pump jacks, building foundations) throughout the project area and adjacent to the pipeline alignment. More information related to the history of the project site is provided in the Section 3.5, Cultural Resources, of this Initial Study. The City of Avenal is approximately 2 miles southwest of the southern terminus of the pipeline alignment. There are five schools

within the City of Avenal, including Avenal High School, Avenal Elementary School, Reef Sunset Middle School, Tamarack Elementary School, and Sunrise High School. The nearest airport or airstrip to the project site, Avenal Airport, is located within the City of Avenal, approximately 2.7 miles southwest of the project site.

REGULATORY AGENCY DATABASE REVIEW

According to the State Water Resources Control Board (SWRCB) GeoTracker database, the pipeline alignment does not contain any known hazardous materials cleanup sites. The closest hazardous materials cleanup site to the project is located at 34453 Plymouth Avenue, the PG&E Kettleman Compressor Station, which consisted of contaminants (e.g., chromium, heavy metals). The site has undergone cleanup, and is currently considered inactive (SWRCB 2017).

ONSITE EMERGENCY SERVICES

The Kings County Office of Emergency Services (OES) is responsible for coordinating multi-agency responses to large-scale emergencies and disasters within Kings County. charged with development and implementation of the Kings County Emergency Operations Plan (Kings County 2015). The plan is based on the functions and principles of the California Standardized Emergency Management System (SEMS), the National Incident Management System (NIMS), and the Incident Command System (ICS). It identifies how the Kings County emergency operational system fits into the overall California and National risk-based, all-hazard emergency response and recovery operations plans. The OES coordinates information, plans for resources, and supports priorities among County agencies, local governments, and special districts. OES serves as a link between the Federal Emergency Management Agency (FEMA), California Emergency Management Agency (CalEMA) and the cities of Avenal, Corcoran, Hanford, and Lemoore, as well as the political subdivisions of the County (Kings County 2015).

3.8.2 Discussion

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant. Construction activities would involve the use of hazardous materials, such as fuels, gasoline, asphalt, and oil. The use and storage of these materials could potentially expose and adversely affect workers, the public, or the environment as a result of improper handling or use, accident, environmentally unsound disposal methods, or fire, explosion, or other emergencies, resulting in adverse health effects. All allowable uses would be subject to compliance with federal, state, and local hazardous materials regulations, and would be monitored by the State (e.g., Cal/OSHA and DTSC), County, and the City of Avenal. Therefore, it is anticipated that the routine use of these materials handled in accordance with these laws and regulations would not create any impacts to the public or the environment. This impact would be less than significant, and no mitigation is required.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?

Less than Significant. As described in (a) above, construction activities would involve the use of hazardous materials. However, use of these materials would be handled in accordance with applicable laws and regulations and, through compliance with existing regulations, would not create any reasonably foreseeable upset and/or accident conditions on the public or the environment. This impact would be less than significant, and no mitigation is required.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. The southern terminus of the pipeline alignment is located approximately 2 miles northeast of the nearest school (Sunrise High School). There are no existing or proposed schools within one-quarter mile of the pipeline alignment. There would be no impact, and no mitigation is required.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. As described above, under Environmental Setting, there are no hazardous materials sites within the pipeline alignment, and the nearest known site is approximately 0.7 miles east of the project site. However, the hazardous materials site has undergone cleanup efforts, and is currently considered inactive (SWRCB 2017). Thus, known hazardous materials sites would not be affected during implementation of the project. There would be no impact, and no mitigation is required.

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?

No Impact. There are no public airports located within two miles of the project site. Thus, there would be no impact, and no mitigation is required.

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?

No Impact. There are no private airstrips located within the vicinity of the project site. The nearest private airstrip, the Avenal Airport, is located approximately 2.7 miles southeast of the pipeline alignment. Thus, there would be no impact, and no mitigation is required.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. Implementation of the project would not affect traffic flows along I-5, SR 33 or SR 269, as all construction activity and staging would take place within the construction easement. Thus, the project would not affect evacuation routes associated with these roadways. There would be no impact, and no mitigation is required.

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?

No Impact. The project would be located along an existing pipeline alignment. Implementation of the project would not change land use in the area, or involve construction of buildings or other structures within wildlife areas. Additionally, the project site is not located within a very high or high fire severity zone (Cal Fire 2007). Thus, there would be no impact related to exposure of people or structures to wildland fires, and no mitigation is required.

3.9 HYDROLOGY AND WATER QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. 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 that would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or offsite erosion or siltation?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or offsite flooding?	☐	☐	☐	☒
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) Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐

3.9.1 Environmental Setting

Natural drainage patterns in the City of Avenal are dictated by the Kettleman Hills to the northeast and the Coast Range to the southwest. The project site is within the northeastern slopes of the Kettleman Hills, where surface waters flow in a predominantly northeasterly direction towards the lowlands of the San Joaquin Valley.

Groundwater resources in the project vicinity include the San Joaquin Valley groundwater basin and Pleasant Valley subbasin. The San Joaquin Valley basin extends northward toward the Sacramento-San Joaquin Delta, westward toward Coast Ranges, eastward toward the Sierra Nevada, and southward to the San Emigdio and Tehachapi Mountains.

According to the Federal Emergency Management District, most of the pipeline alignment does not contain special flood hazard areas, and is not subject to 100- and 500-year floods (FEMA 2009). However, a small portion of the northern extent of the pipeline alignment near I-5 coincides with flood zone area X, subject to 500-year floods (FEMA 2009).

3.9.2 Discussion

a) Violate any water quality standards or waste discharge requirements?

Less than Significant. Project construction activities would involve trenching and movement of soil, which could result in discharge of pollutants in onsite stormwater that could then drain to offsite areas. There is no stormwater infrastructure within the project site, and no nearby streams, creeks, rivers, or other bodies of water. It is unlikely that construction would result in degradation of local water quality. Even so, as noted previously, a SWPPP would be prepared and implemented during construction. The SWPPP would include details of how BMPs for sediment and erosion control would be implemented in accordance with state and federal water quality regulations. Implementation of the SWPPP and associated BMPs would minimize the potential for polluted runoff during construction. Operation of the project is not expected to violate any water quality standards or waste discharge requirements. Impacts would be less than significant, and no mitigation is required.

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 that would not support existing land uses or planned uses for which permits have been granted)?

No Impact. Implementation of the project would not require the use of groundwater supplies or otherwise affect recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. There would be no impact, and no mitigation is required.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or offsite erosion or siltation?

No Impact. The project involves installation of a water transmission pipeline within an existing pipeline alignment. The project site would be returned to existing conditions following pipeline replacement. The project would not affect drainage patterns of the site or area, and would not result in substantial on- or off-site erosion or siltation. There would be no impact, and no mitigation is required.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or offsite flooding?

No Impact. The project involves installation of a water transmission pipeline within an existing pipeline alignment. The project site would be returned to existing conditions following pipeline replacement. Thus, it would not affect drainage patterns of the site or area, and would not result in changes to surface runoff from the site. There would be no impact, and no mitigation is required.

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?

No Impact. As noted above, project construction activities would involve trenching and movement of soil, which could result in discharge of pollutants in onsite stormwater that could then drain to offsite areas. However, as noted before, a SWPPP would be prepared and implemented during construction, which would minimize the potential for polluted runoff during construction. There would be no impact, and no mitigation is required.

f) Otherwise substantially degrade water quality?

No Impact. The project would not affect drainage patterns of the site or area, or affect water quality in ways other than as described above. There would be no impact, and no mitigation is required.

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?

No Impact. The project does not include construction of housing within a 100-year flood hazard area. There would be no impact, and no mitigation is required.

h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?

No Impact. The project does not include construction of structures within a 100-year flood hazard area. There would be no impact, and no mitigation is required.

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?

No Impact. The project site is not located within a dam inundation area. There would be no impact, and no mitigation is required.

j) Result in inundation by seiche, tsunami, or mudflow?

Less than significant. The project is not located in an area subject to significant seiche or tsunami risk; however, the project is in an area with steep slopes that is subject to mudflows. The project would be generally constructed during the dry season to minimize the potential for mudflow risks to construction workers. Operation of the new pipeline would not increase the risks related to seiche, tsunami, or mudflow. This impact would be less than significant. No mitigation is required.

3.10 LAND USE AND PLANNING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. Land Use and 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, a 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?	☐	☐	☒	☐

3.10.1 Environmental Setting

The project site is located within Kings County (see Exhibit 2-1). Regional access is provided by I-5, SR 33, and SR 269; however, the pipeline alignment can only be accessed by private roads. Exhibit 2-2 shows the location of the pipeline alignment. The proposed pipeline would be installed within an existing pipeline alignment that is located within land zoned as Extensive Agriculture (AE) and Intensive Agriculture (AI) as designated by the City of Avenal General Plan.

3.10.2 Discussion

a) Physically divide an established community?

No Impact. The project consists of replacement of an existing pipeline within an undeveloped private property area. This would not physically divide established communities. There would be no impact and mitigation is not required.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. Implementation of the project would not conflict with or alter the existing land uses within the pipeline alignment. There would be no impact, and no mitigation is required.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

Less than Significant. The project site is located within the plan area for the Pacific Gas and Electric (PG&E) San Joaquin Valley Operation and Maintenance Habitat Conservation Plan (HCP; PG&E 2006). Covered activities under this HCP include routine operations and maintenance activities conducted by PG&E. This project is not under the jurisdiction of PG&E, and thus this HCP would not apply. In addition, the project would not result in any permanent habitat loss and would not interfere with PG&E's ability to implement their HCP. No conflicts with an existing HCP would occur. Impacts would be less than significant, and no mitigation is required.

3.11 MINERAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. 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?	☐	☐	☐	☒

3.11.1 Environmental Setting

The main mineral resources deposit within the project site is petroleum. The proposed pipeline alignment is located within the Kettleman Hills North Dome oil field, which is currently operated by Chevron Corporation. The project site also contains deposits of gypsum, which has a wide variety of applications, including building materials (e.g., drywall, plaster) and soil additives. The gypsum within the project site is not currently being mined, but the mineral was historically mined elsewhere in the Kettleman Hills (Mindat 2017).

3.11.2 Discussion

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?

No Impact. The project involved installation of a water transmission pipeline within an existing pipeline alignment. While the pipeline alignment runs through the Kettleman Hills North Dome oil field, implementation of the project would not limit the ability to access mineral resources considered to be of value to the region and the residents of the state because oil extraction infrastructure is already in place within the area. Thus, there would be no impact, and no mitigation is required.

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?

No Impact. The project site is not designated in the County's General Plan as an important mineral resource recovery area. As discussed in (a) above, the project would not limit the accessibility of mineral resources considered to be of value to the region and the residents of the state. Thus, there would be no impact, and no mitigation is required.

3.12 NOISE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. Noise. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) 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 or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

3.12.1 Environmental Setting

The project alignment is located in a predominantly undeveloped area within the City of Avenal. Primary noise generators include local and regional roadways, including SR 269, and the Avenal Regional Landfill (City of Avenal 2005).

3.12.2 Discussion

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?

Less than Significant. The project would result in a temporary increase in noise levels during construction. Construction-related noise sources would include both mobile and stationary on-site equipment (e.g., backhoes, excavators, pipeline trenchers, trucks). Construction would also generate truck and other vehicle trips associated with the delivery of supplies and personnel on local and regional roadways. The City of Avenal General Plan defines an area as "noise impacted" if noise levels exceed 65 dB L_{dn} (City of Avenal 2005). Due to the remote location of the project alignment (i.e., the nearest sensitive receptors to the alignment are located approximately 2 miles away) and where construction activities would occur, the potential for exposure to excessive noise levels during construction of the project is considered minimal.

Furthermore, the water transmission pipeline would be located underground and therefore would not be expected to generate operational noise of any kind. This would be a less-than-significant impact, and mitigation is not required.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant. Vibration resulting from construction activities are unlikely to affect populated areas because of the distance between the pipeline alignment and the closest receptors located within the City of Avenal. This impact would be less than significant, and no mitigation is required.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant. As discussed in (a) above, operation of the water transmission pipeline is not expected to result in any substantial increase in ambient noise levels. Operations and maintenance activities would be similar to existing conditions, however the frequency of such activities may decrease with project implementation because of a reduced need for pipeline repairs. Therefore, operations of the project would not increase the ambient noise level, and this would be a less-than-significant impact. No mitigation is required.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant. As discussed in (a) above, construction activities associated with the project could result in a temporary increase in ambient noise levels in the project vicinity. However, it is unlikely that construction-related noise would expose populated areas to noise levels in excess of adopted standard due to the distance between the pipeline alignment and nearby receptors. Therefore, this impact would be less than significant, and no mitigation is required.

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 expose people residing or working in the project area to excessive noise levels?

No Impact. The project site is not within an airport land use plan, nor is it within 2 miles of a public airport. Additionally, the project would not result in the development of any new noise-sensitive receptors, and as a result, the project would not result in the exposure of people to excessive noise levels from aircraft operations. Therefore, there would be no impact, and no mitigation is required.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The nearest private airstrip to the project site, Avenal Airport, is located within the City of Avenal, approximately 2.7 miles southwest of the project site. Because of the distance between the project site and the airstrip, there would be no impact and no mitigation is required.

3.13 POPULATION AND HOUSING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. 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 homes, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.13.1 Environmental Setting

POPULATION

Kings County's estimated 2016 population is 149,785 with 45,765 housing units (US Census Bureau 2016). The City of Avenal's estimated 2010 population was established by the 2010 Census to be 15,505 persons, with an estimated population of 12,466 in 2016; a nearly 20 percent decrease (US Census Bureau 2016). A total of 2,410 housing units were reported in 2010 in the City of Avenal (US Census Bureau 2016).

HOUSEHOLDS

The number of households is the number of occupied housing units. The number of households in the City of Avenal was established by the 2010 Census to be 2,410 households. The vacancy rate for housing in the City of Avenal was estimated by Kings County to be 7.8 percent (188 units) in 2010, up from 6.6 percent (137 units) in 2000 (US Census Bureau 2016).

EMPLOYMENT

As of 2013, Kings County had 60,000 people in its labor force and an unemployment rate of 13.5 percent (Kings County 2016b). The largest employer in the City of Avenal by far is Avenal State Prison, followed by Paramount Farms, and Reef-Sunset Unified School District (City of Avenal 2017).

3.13.2 Discussion

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)?

No Impact. The project does not include construction of new housing or commercial business. Project construction would require a workforce of approximately 15 people per day. It is assumed that qualified construction personnel would be available in the surrounding communities. Therefore, no direct population growth would result from implementation of the project. The project involves replacement of a water

transmission pipeline, and would not increase the capacity of the pipeline. There would be no impact, and no mitigation is required.

b) Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?

No Impact. Implementation of the project would not involve demolition of residences. Thus, there would be no displacement of existing homes. There would be no impact, and no mitigation is required.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. As described in (b) above, the project would not result in demolition of housing and would not otherwise displace people. There would be no impact, and no mitigation is required.

3.14 PUBLIC SERVICES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. Public Services. Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

3.14.1 Environmental Setting

The City of Avenal Police Department provides police protection services for all residential, commercial, and industrial areas within the City limits, which includes the project site.

3.14.2 Discussion

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

Fire protection?

No Impact. Implementation of the project would not include the construction or operation of new uses such that additional calls for service, which might affect fire protection service ratios, response times, or other performance objectives, would occur. The pipeline would not increase the potential for wildland fires or increase the population in the project vicinity, such that additional fire protection services would be needed. Therefore, the project would have a less-than-significant impact on fire protection. No mitigation is required.

Police protection?

No Impact. Implementation of the project would not include new residences or otherwise create a situation in which police protection service ratios, response times, or other performance objectives could not be met. The project does not include provisions of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities. Thus, there would be no impact and no mitigation is required.

Schools?

No Impact. The project does not include development of new residences and therefore would not result in a substantial effect on the permanent population in the area that would increase the demand for educational services. Implementation of the project would have no impact on schools, and no mitigation is required.

Parks?

No Impact. Implementation of the project would not include new residences or otherwise create a situation in which there would be an increased need for parks. Thus, there would be no impact, and no mitigation is required.

Other public facilities?

No Impact. As discussed above, implementation of the project would not include new residences or otherwise create a situation that would require provisions of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities. Thus, there would be no impact, and no mitigation is required.

3.15 RECREATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. 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 facility 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?	☐	☐	☐	☒

3.15.1 Environmental Setting

There are several public parks and recreational facilities within the City of Avenal, including the Avenal Sports Complex, the Avenal Recreation Center, and the Avenal Skate Park. The project site is located completely within private property, and does not contain any recreation resource.

3.15.2 Discussion

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

No Impact. Implementation of the project would not result in a change in the availability of public recreational facilities or otherwise increase the rate of physical deterioration of public recreational facilities because it would not include any features that would encourage additional residents/visitors to the area. Thus, the project would not affect use of recreational facilities associated with the project or surrounding areas. There would be no impact, and no mitigation is required.

b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No Impact. As described in (a) above, the project would not substantially increase population or result in expansion of recreational facilities. There would be no impact, and no mitigation is required.

3.16 TRANSPORTATION/TRAFFIC

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. Transportation/Traffic. Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards because of 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?	☐	☐	☒	☐

3.16.1 Environmental Setting

Regional access to the project site is provided by I-5, SR 33, and SR 269; however, the pipeline alignment is accessible only by private roads, including Old Skyline Drive. These private roads are used by staff from the City of Avenal and Chevron Corporation, and access is limited by locked gates along SR 269. SR 269 runs north-south from SR-145 in Fresno County to SR 33 in the City of Avenal. Near the project site, the roadway contains one north-bound and one south-bound lane. There is no public access to the pipeline alignment from SR 269.

There is no bicycle or other public access to the project site, which is located entirely within private property, or along SR 269.

3.16.2 Discussion

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?

Less than Significant. The pipeline would be installed through open trenching within the existing pipeline alignment, which is outside of any public roadway. There would be no lane closures as a result of the project on I-5, SR 33, or SR 269. Additionally, there is no mass transit infrastructure, or pedestrian or bicycle paths within or adjacent to the project site. As a result, conflicts with applicable plans and programs related to vehicular circulation are not anticipated. This would be a less-than-significant impact, and no mitigation is required.

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?

Less than Significant. Project construction would generate vehicle trips from the commutes of construction workforce and the movement of construction equipment, material, and spoils to and from the project site. Each construction worker is expected to generate two trips per day: one trip arriving during the morning and one trip departing in the afternoon. Carpooling is not assumed (which results in a conservatively high estimate of traffic) and minimal mid-shift construction worker trips (such as for lunch breaks) are expected. Mid-shift trips, if any, would be during off-peak hours and would not, therefore, affect peak roadway congestion. Based on an estimated workforce of approximately 15 workers and assuming that average vehicle ridership would be 2, daily construction activities would result in 16 one-way vehicle trips per day. Additionally, it is assumed that up to two deliveries to or from the site would occur each day, thereby resulting in a total increase in 20 one-way vehicle trips per day (up to 10 during both the AM and PM peak periods, respectively) during construction. Construction traffic would utilize existing access points to the pipeline alignment. The temporary addition of 10 vehicle trips to the local and regional roadway network during peak travel periods is not considered a substantial temporary increase such that traffic conditions would noticeably degrade.

Additionally, the pipeline would be installed through open trenching within the existing pipeline alignment, which is outside of any public roadway. There would be no lane closures as a result of the project on 1-5, SR 33, or SR 269. As a result, conflicts with applicable plans and programs related to vehicular circulation are not anticipated. This would be a less-than-significant impact, and no mitigation is required.

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?

No Impact. Implementation of the project does not involve development of structures that would exceed the height of surrounding development and, as a result, does not have the potential to alter air traffic patterns. No impact would occur, and no mitigation is required.

d) Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. The project would not alter existing roadway design features or result in the use of incompatible uses. The project involves replacement of a water transmission pipeline within an existing pipeline alignment outside of any public roadway. There would be no impact, and no mitigation is required.

e) Result in inadequate emergency access?

Less than Significant. During construction, all construction equipment and open trenches would be located within the construction easement, outside of any public roadway. There would be no lane closures on SR 269; however, slow-moving construction equipment and vehicles may have a temporary impact on traffic as they transit to the project site. Since traffic flow would not be prevented and construction would be staged outside of any public roadway, potential impacts to emergency vehicle access are not considered substantial. Further, the project does not involve permanent modifications to public roadways. As a result, this is considered to be a less-than-significant impact, and no mitigation is required.

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?

No Impact. The project does not include any changes to public transit bicycle, or pedestrian facilities, as the project site is located entirely within private property outside of any public roadways. There are no dedicated public transit, bicycle, or pedestrian facilities adjacent to the project site. There would be no impact, and no mitigation is required.

3.17 UTILITIES AND SERVICE SYSTEMS

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII.	**Utilities and Service Systems. Would the project:**				
a)	Exceed 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 serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	☐	☐	☐	☒
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?	☐	☐	☒	☐

3.17.1 Environmental Setting

The City currently provides water and wastewater services for its residents. As noted above, the two water pipelines located within the project alignment provide the water supplies available to the City from the California Aqueduct. Solid waste collection in the City of Avenal is provided by Mid Valley Disposal, and solid waste generated within the City is currently disposed of at the City of Avenal Landfill.

Electricity and natural gas services in most of Kings County, including the City of Avenal, are provided from the Pacific Gas and Electric Company (PG&E).

3.17.2 Discussion

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact. The project involves replacement of a water transmission pipeline within an existing pipeline alignment. Implementation of the project would not produce any wastewater or result in any changes to wastewater conveyance from the City of Avenal. There would be no impact, and no mitigation is required.

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?

No Impact. The project involves replacement of a water transmission pipeline within an existing pipeline alignment and would not result in or require the expansion of existing facilities. Water conveyed via the existing pipelines is currently routed to the City's water treatment facilities and would continue with implementation of the project. There would be no impact, and no mitigation is required.

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?

No Impact. The project involves replacement of a water transmission pipeline within an existing pipeline alignment. Implementation of the project would not result construction of new storm drainage facilities or expansion of existing facilities. There would be no impact, and no mitigation is required.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact. Construction of the project may require a minor amount of water for dust suppression, which would not affect existing water entitlements or resources. In addition, the project would replace an existing water pipeline without changing the capacity of the pipeline or demand for water in the service area. Therefore, the project would not require any new or expanded water entitlements. There would be no impact on available water supplies. No mitigation is required.

e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?

No Impact. As described in (a) and (b) above, the project would not produce any wastewater, result in any changes to wastewater conveyance, or result in construction of new wastewater treatment facilities. There would be no impact, and no mitigation is required.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less than Significant. Implementation of the project would require some grading and trenching to prepare for installation of pipelines and removal of some sections of existing pipeline. This would constitute a limited generation of solid waste that would not substantially affect permitted capacity at landfills. Additionally, excavated material during trenching would be used to backfill open trenches, and would not impact local landfill capacity. As a result, this impact would be less than significant, and no mitigation is required.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

Less-Than-Significant. As described in (f) above, the project involves very limited solid waste generation and would not conflict with federal, state, and local statutes or regulations related to solid waste. The impact is less than significant, and no mitigation is required.

3.18 MANDATORY FINDINGS OF SIGNIFICANCE

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII.	**Mandatory Findings of Significance.**				
a)	Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☒	☐	☐
c)	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Authority: Public Resources Code Sections 21083, 21083.5.
Reference: Government Code Sections 65088.4.
Public Resources Code Sections 21080, 21083.5, 21095; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

3.18.1 Discussion

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

Less than Significant with Mitigation Incorporated. The project could result in potentially significant impacts to biological resources, including impacts to special status species and waters of the United States or state. However, with mitigation incorporated, these impacts would be reduced to a less-than-significant level.

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

Less than Significant with Mitigation Incorporated. The project could result in potentially significant impacts to biological resources as described in (a) above; however, all potential impacts would be reduced to a less-than-significant level after implementation of mitigation measures.

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

Less than Significant. As identified in this IS/MND, all impacts on human beings that may occur as a result of the project would be temporary and would be less than significant. Therefore, implementation of the proposed water pipeline replacement would not result in substantial adverse effects on human beings, either directly or indirectly. No mitigation is required.

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Public Services

None.

Recreation

None.

Transportation/Traffic

None.

Utilities and Service Systems

None.

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Appendix A

Air Quality Modeling Results

Appendix A

Air Quality Modeling Results

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Avenal Pipeline Replacement

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	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
Grading/Excavation	2.86	25.74	21.36	11.59	1.59	10.00	3.41	1.33	2.08	0.05	4,631.33	0.82	0.06	4,670.18
Drainage/Utilities/Sub-Grade	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
Paving	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
Maximum (pounds/day)	2.86	25.74	21.36	11.59	1.59	10.00	3.41	1.33	2.08	0.05	4,631.33	0.82	0.06	4,670.18
Total (tons/construction project)	0.19	1.70	1.41	0.76	0.10	0.66	0.23	0.09	0.14	0.00	305.67	0.05	0.00	308.23

Notes:

Project Start Year ->	2018
Project Length (months) ->	6
Total Project Area (acres) ->	48
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	40	0	20	0	2,400	5
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Avenal Pipeline Replacement

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	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
Grading/Excavation	0.19	1.70	1.41	0.76	0.10	0.66	0.23	0.09	0.14	0.00	305.67	0.05	0.00	279.63
Drainage/Utilities/Sub-Grade	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
Paving	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
Maximum (tons/phase)	0.19	1.70	1.41	0.76	0.10	0.66	0.23	0.09	0.14	0.00	305.67	0.05	0.00	279.63
Total (tons/construction project)	0.19	1.70	1.41	0.76	0.10	0.66	0.23	0.09	0.14	0.00	305.67	0.05	0.00	279.63

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model
Data Entry Worksheet

Version 8.1.0

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with
yellow or blue background can be modified. Program defaults have a white backgrounc
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project type
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new proje

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Avenal Pipeline Replacemer	
Construction Start Year	2018	Enter a Year between 2014 and 2025 (inclusive)
Project Type For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee constructi
Project Construction Time	6.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	4.00	miles
Total Project Area	48.00	acres
Maximum Area Disturbed/Da	1.00	acre
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation	20.00	0.00	40.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

Mitigation Options

On-road Fleet Emissions Mitigatio	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/ceqa/mitigation.shtml). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Stands

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selecte

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.00	0.60		1/1/2018
Grading/Excavation	6.00	2.40	6/1/2018	1/1/2018
Drainage/Utilities/Sub-Grade	0.00	2.10	1/2/2018	7/3/2018
Paving	0.00	0.90	1/3/2018	7/3/2018
Totals (Months)	6		Note: You have entered a non-default starting date. Please provide starting date for all phases, or default values for other phases will be u	

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation	10.00			2	20.00
Miles/round trip: Drainage/Utilities/Sub-Grad				0	0.00
Miles/round trip: Paving				0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile	0.14	0.54	5.40	0.14	0.07	0.02	1,663.79	0.01	0.06	1,680.70
Draining/Utilities/Sub-Grade (grams/mile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.01	0.02	0.24	0.01	0.00	0.00	73.36	0.00	0.00	74.11
Tons per const. Period - Grading/Excavation	0.00	0.00	0.02	0.00	0.00	0.00	4.84	0.00	0.00	4.89
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.02	0.00	0.00	0.00	4.84	0.00	0.00	4.89

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grad				0	0.00
Miles/round trip: Paving				0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile	0.14	0.54	5.40	0.14	0.07	0.02	1,663.79	0.01	0.06	1,680.70
Draining/Utilities/Sub-Grade (grams/mile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction projec	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D113 through D11

Worker Commute Emissions	User Override of Worker			
User Input	Commute Default Values	Default Values		
Miles/ one-way trip	10		Calculated	Calculated
One-way trips/day	16		Daily Trips	Daily VMT
No. of employees: Grubbing/Land Clearin			0	0.00
No. of employees: Grading/Excavatio	15		240	2,400.00
No. of employees: Drainage/Utilities/Sub-Grad			0	0.00
No. of employees: Paving			0	0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile	0.03	1.33	0.15	0.05	0.02	0.00	393.83	0.01	0.01	395.91
Draining/Utilities/Sub-Grade (grams/mile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip	1.17	3.21	0.26	0.00	0.00	0.00	87.83	0.02	0.01	91.49
Draining/Utilities/Sub-Grade (grams/trip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavatio	0.77	8.72	0.91	0.25	0.11	0.02	2,130.26	0.07	0.04	2,143.19
Tons per const. Period - Grading/Excavatio	0.05	0.58	0.06	0.02	0.01	0.00	140.60	0.00	0.00	141.45
Pounds per day - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction projec	0.05	0.58	0.06	0.02	0.01	0.00	140.60	0.00	0.00	141.45

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated
User Input	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Daily VMT
Grubbing/Land Clearing - Exhaust					0.00
Grading/Excavation - Exhaust	1		5.00		5.00
Drainage/Utilities/Subgrade					0.00
Paving					0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile	0.14	0.54	5.40	0.14	0.07	0.02	1,663.79	0.01	0.06	1,680.70
Draining/Utilities/Sub-Grade (grams/mile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavatio	0.00	0.01	0.06	0.00	0.00	0.00	18.34	0.00	0.00	18.53
Tons per const. Period - Grading/Excavatio	0.00	0.00	0.00	0.00	0.00	0.00	1.21	0.00	0.00	1.22
Pounds per day - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction projec	0.00	0.00	0.00	0.00	0.00	0.00	1.21	0.00	0.00	1.22

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing			0.00	0.00	0.00	0.00
Fugitive Dust - Grading/Excavatio	1.00		10.00	0.66	2.08	0.14
Fugitive Dust - Drainage/Utilities/Subgrad			0.00	0.00	0.00	0.00

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is select

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Other Material Handling Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment

If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t

Number of Vehicles	Equipment Tier	Type		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	tons per phase		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation	Default Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Mitigation Option Default Equipment Tier		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tie	Excavators	0.60	6.76	6.39	0.31	0.28	0.01	1,072.06	0.33	0.01	1,083.19
			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Other Material Handling Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tie	Tractors/Loaders/Backhoes	0.54	4.72	5.31	0.38	0.35	0.01	632.00	0.20	0.01	638.55
2.00			Model Default Tie	Trenchers	0.94	5.51	8.45	0.64	0.59	0.01	705.32	0.22	0.01	712.63
			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipmen	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Grading/Excavation	pounds per day	2.07	16.99	20.15	1.33	1.22	0.02	2,409.38	0.75	0.02	2,434.36
	Grading/Excavation	tons per phase	0.14	1.12	1.33	0.09	0.08	0.00	159.02	0.05	0.00	160.67

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*		Equipment Tier		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Drainage/Utilities/Sub-Grade		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default Number of Vehicles	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Paving	pounds per day		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	tons per phase		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions all Phases (tons per construction period) =			0.14	1.12	1.33	0.09	0.08	0.00	159.02	0.05	0.00	160.67

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F4

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		85		8
Excavators		163		8
Forklifts		89		8
Generator Sets		84		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		46		8

END OF DATA ENTRY SHEET

Appendix B

Biological Resources Technical Report

Appendix B

Biological Resources Technical Report

December 2017

ASCENT ENVIRONMENTAL

City of Avenal Water Transmission Pipeline Replacement Project

BIOLOGICAL RESOURCES TECHNICAL REPORT



PREPARED FOR:
Summers Engineering

Biological Resources Technical Report

For the

City of Avenal Water Transmission Pipeline Replacement Project

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December 18, 2017

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ACRONYMS AND ABBREVIATIONS

CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
EPA	Environmental Protection Agency
ESA	Endangered Species Act
I-5	Interstate 5
NPPA	California Native Plant Protection Act
RWQCB	Regional Water Quality Control Board
SR	State Route (e.g., SR-33, SR-269)
USACE	US Army Corp of Engineers
USFWS	US Fish and Wildlife Service

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1 INTRODUCTION

This technical report presents the results of a biological constraints and opportunities analysis for the City of Avenal 18-inch Water Transmission Pipeline Replacement Project. The project site includes a 4-mile pipeline alignment that runs east of SR 269 between I-5 and SR 33 (Exhibit 1). The existing alignment includes a 12-inch pipeline installed in 1971 and an 18-inch pipeline installed in 1986. Joints within the aging existing pipeline have increasingly been subject to failure, resulting in frequent leaks. A new 18-inch water transmission pipeline will be installed next to the existing pipeline in some areas, and will replace the existing pipeline in other areas. Construction will take place within a 35-foot construction easement adjacent to an existing 30-foot easement where the existing pipeline occurs. The purpose of this report is to review the potential for occurrence and describe the existing biological resources within and adjacent to the project site, assess the potential impacts to these biological resources associated with the project, and recommend mitigation for impacts that may be considered significant as required under the California Environmental Quality Act (CEQA).

The project site is in the City of Avenal in western Kings County, California (Exhibit 2). The project is located within the northern portion of the Kettleman Hills, often referred to as the "North Dome." The Kettleman Hills are located along the western edge of the San Joaquin Valley. The pipeline alignment runs through the north dome oil field, which is currently operated by the Chevron Corporation. Historic oil equipment (e.g., pipes, pump jacks, building foundations) are present throughout the project site and adjacent to the pipeline alignment.

2 SURVEY METHODS

Potential biological constraints for the project site were evaluated by an Ascent biologist during reconnaissance-level surveys conducted on November 16 and 17, 2017. All wildlife species and notable plant species observed during the surveys were recorded and are reported in Table 1. Information on sensitive biological resources previously recorded in the project site was collected through a search of the California Natural Diversity Database (CNDDB), and other existing documentation pertaining to biological resources in the region as listed below.

- CNDDB record search within a 5-mile buffer (CNDDB 2017).
- eBird database search (eBird 2017).
- California Native Plant Society (CNPS), Inventory of Rare and Endangered Plants database search for 9 quadrangles surrounding the project site (CNPS 2017).
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (USFWS 2017a).
- USFWS IPaC Trust Resource Report (USFWS 2017b).
- Aerial images of the project site.

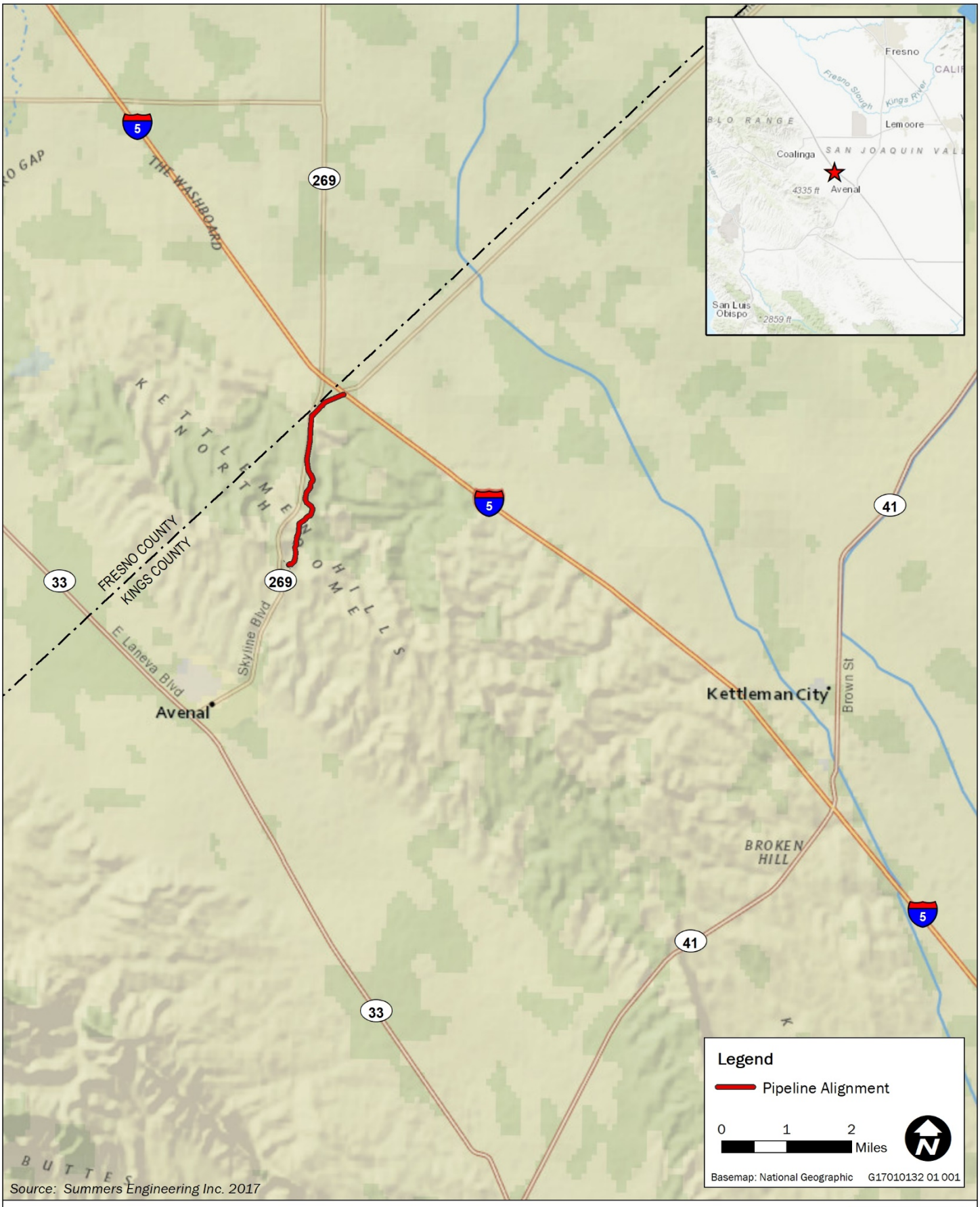
A list of special-status plant and wildlife species was compiled from these queries and is presented in Table 2 and 3. The tables includes common and scientific names, legal status, habitat requirements, and a brief assessment of the likelihood that the species would occur on the project site.



Exhibit 1

Pipe Alignment

ASCENT ENVIRONMENTAL



Source: Summers Engineering Inc. 2017

Exhibit 2 **Vicinity**

The CNDDB is a statewide database, managed by the California Department of Fish and Wildlife (CDFW) that is continually updated with the location and condition of the state's rare and declining species and habitats. Although the CNDDB is the most current and reliable tool available for tracking occurrences of special-status species, it contains only those records that have been reported to the CNDDB. Therefore, it is possible that a rare plant or animal could be present on the project site but not documented in the CNDDB.

Sensitive biological resources are protected and/or regulated by federal, state, and/or local laws and policies. Sensitive biological resources include special-status species and sensitive natural communities.

Special-status species are plants and animals in the following categories:

- listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (ESA) or candidates for possible future listing;
- listed or candidates for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA);
- listed as rare under the California Native Plant Protection Act;
- listed as Fully Protected under the California Fish and Game Code;
- identified by CDFW as species of special concern;
- considered by CDFW to be "rare, threatened, or endangered in California" and assigned a California Rare Plant Rank (CRPR). The CDFW system includes six rarity ranks for categorizing plant species of concern, which are summarized as follows:
  - CRPR 1A - Plants presumed to be extinct in California;
  - CRPR 1B - Plants that are rare, threatened, or endangered in California and elsewhere;
  - CRPR 2A - Plants that are presumed extirpated in California, but more common elsewhere;
  - CRPR 2B - Plants that are rare threatened, or endangered in California, more common elsewhere;
  - CRPR 3 - Plants About Which More Information is Needed (review list);
  - CRPR 4 - Plants of limited distribution (watch list).
- considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA §15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G); or
- otherwise meets the definition of rare or endangered under CEQA §15380 (b) and (d).

Sensitive natural communities are of limited distribution statewide or within a county or region that provide important habitat value to native species. Most types of wetlands and riparian communities are considered sensitive natural communities due to their limited distribution in California. In addition, sensitive natural communities include habitats that are subject to U.S. Army Corps of Engineers (USACE) jurisdiction under Section 404 of the Clean Water Act (CWA), Section 1602 of the California Fish and Game Code, and the state's Porter-Cologne Water Quality Control Act, which protects waters of the state. Sensitive natural communities have high potential to support special-status plant and animal species. Sensitive natural communities can also provide other important ecological functions, such as enhancing flood and erosion control and maintaining water quality.

3 KEY REGULATORY ISSUES

Before implementation, it would be necessary for the project to be in compliance with the following regulations. For each regulatory issue a summary of the issue is provided.

Clean Water Act

Section 404 of CWA requires a project applicant to obtain a permit before engaging in any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Fill material is material placed in waters of the United States where the material has the effect of replacing any portion of a water of the United States with dry land, or changing the bottom elevation of any portion of a water of the United States. Waters of the United States include navigable waters of the United States; interstate waters; all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce; relatively permanent tributaries to any of these waters, and wetlands adjacent to these waters. Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Potentially jurisdictional wetlands must meet three wetland delineation criteria: hydrophytic vegetation, hydric soil types, and wetland hydrology. Wetlands that meet the delineation criteria may be jurisdictional under Section 404 of CWA pending USACE and U.S. Environmental Protection Agency (EPA) review.

Pursuant to Section 401 of CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain a water quality certification from the Regional Water Quality Control Board (RWQCB) indicating that the project would uphold state water quality standards.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it shall be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. The current list of species protected by the MBTA can be found in Title 50 of the Code of Federal Regulations (CFR), Section 10.13 (50 CFR 10.13). The list includes nearly all migratory birds native to the United States.

Federal Endangered Species Act

Pursuant to ESA, USFWS has authority over projects that may affect the continued existence of federally listed (threatened or endangered) species. Section 9 of ESA prohibits any person from "taking" an endangered or threatened fish or wildlife species or removing, damaging, or destroying a listed plant species on federal land or where the taking of the plant is prohibited by state law. Take is defined under ESA, in part, as killing, harming, or harassing. Under federal regulations, take is further defined to include habitat modification or degradation where it results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Section 10 of the ESA applies if a non-federal agency is the lead agency for an action that results in incidental take and no other federal agencies are involved in permitting the action. Section 7 applies if a federal discretionary action is required (e.g., a federal agency must issue a permit), in which case the involved federal agency is required to consult with USFWS if the action may affect listed species.

California Endangered Species Act

Pursuant to CESA, a permit from CDFW is required for projects that could "take" a species state listed as threatened or endangered. Section 2080 of CESA prohibits take of state listed species. Under CESA, take is defined as any activity that would directly or indirectly kill an individual of a species. The definition does not include “harm” or “harass” as in the federal act. As a result, the threshold for take under CESA is higher than under ESA (i.e., habitat modification is not necessarily considered take under CESA). The take of state-listed

species incidental to otherwise lawful activities requires a permit, pursuant to Section 2081(b) of CESA. The state has the authority to issue an incidental take permit under Section 2081 of the California Fish and Game Code or to coordinate with USFWS during the federal process to make the federal permit also cover state-listed species.

Fully Protected Species

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take. CDFW has informed nonfederal agencies and private parties that their actions must avoid take of any fully protected species unless the take is covered under a Natural Community Conservation Plan that is approved by CDFW.

Protection for Bird Nests and Raptors

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (e.g., hawks, owls, eagles, and falcons), including their nests or eggs. Section 3513 of the California Fish and Game Code codifies the federal MBTA.

California Native Plant Protection Act

In addition to the CESA, the California Native Plant Protection Act (NPPA) provides protection to endangered and "rare" plant species, subspecies, and varieties of wild native plants in California. The NPPA's definition of "endangered" and "rare" closely parallel the CESA definitions of "endangered" and "threatened" plant species.

Porter-Cologne Water Quality Control Act

Each of the nine RWQCBs in California must prepare and periodically update water quality control plans (basin plans) pursuant to the Porter-Cologne Water Quality Control Act. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Under the Porter-Cologne Act, wetlands are often classified as waters of the state. Projects that affect waters of the state must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification under Section 401 of the CWA.

California Environmental Quality Act

CEQA applies to projects proposed to be undertaken or requiring approval by state and local governmental agencies. "Projects" are public agency actions with potential to have a physical impact on the environment. Once an activity is determined to be a "project" under CEQA, the lead agency must decide whether it is exempt. If it is not exempt, the lead agency must assess the potential for significant environmental effects using thresholds of significance, which are based on applicable parts of Appendix G and Section 15065 of the State CEQA Guidelines.

Although the project is replacement or reconstruction project of existing utility systems, the potential impacts to wetlands and endangered species would prevent it from qualifying for a categorical exemption at this location.

4 RESULTS

4.1 HABITATS

The project site is located within the northern portion of the Kettleman Hills, often referred to as the North Dome. The site includes a 4-mile pipeline alignment that runs east of SR 269 between I-5 and SR 33 (Exhibit 1). A large water tank is present at the southern terminus of the alignment. The Kettleman Hills lie parallel to the San Andreas Fault, and are associated with sandy loam soils and large petroleum deposits. Elevation within the pipeline alignment ranges from 550 feet at the north end and 1,242 feet at the south end with many rolling hills and deep gullies.

The project site contains mostly annual grassland habitat, including native and non-native grasses (e.g., *Bromus* sp., *Festuca* sp.; Exhibit 3 and 4). A portion of grassland along the northern end of the pipeline alignment is composed of a monoculture of nonnative barley; likely common barley (*Hordeum vulgare*; see "Agriculture" vegetation type in Exhibit 3). The area was either previously used for agricultural purposes, or the barley is an escapee from a nearby grain field. Native and nonnative forbs observed within grassland habitat on the project site included fiddleneck (*Amsinckia* sp.), Douglas's milkvetch (*Astragalus douglasii*), glandular big tarweed (*Blepharixonia laxa*), yellow star thistle (*Centaurea solstitialis*), turkey mullein (*Croton setiger*), Jimson weed (*Datura stramonium*), tarplant (*Holocarpha* sp.), and vinegarweed (*Trichostema lanceolatum*).

The project site also contains scrub habitat, with native and nonnative saltbush scrub-associated species such as allscale (*Atriplex polycarpa*) and various other saltbush species (*Atriplex* sp.), matchweed (*Gutierrezia californica*), burro weed (*Ambrosia dumosa*), and Russian thistle (*Salsola* sp.; Exhibit 5). The scrub habitat on the project site is dense in some limited areas, but overall is sparse and distributed throughout the dominant grassland habitat.

The project site is nearly devoid of trees, but one small nonnative tree tobacco (*Nicotiana glauca*) was observed and a small grove of nonnative Athel tamarisk (*Tamarix aphylla*) is present adjacent to the pipeline alignment (Exhibit 6). A drainage area directly downhill from the water tank contained green vegetation, including various grass species, shrubs, and two small areas of cattail (*Typha* sp.). This area is approximately 300 feet east of the pipeline alignment.



Exhibit 3

Land Cover

ASCENT ENVIRONMENTAL



Exhibit 4 Typical grassland habitat within the project site



Exhibit 5 Typical scrub habitat within the project site



Exhibit 6 Grove of nonnative tamarisk trees within the project site



Exhibit 7 Cattails within a drainage area below the water tank

4.2 COMMON WILDLIFE SPECIES

The project site contains suitable habitat for many common wildlife species, and many of these species were observed during the November 16 and 17 surveys. All wildlife observed within the project site are listed in Table 1.

Table 1 Wildlife Observed on the Project Site During Wildlife Reconnaissance-level Surveys on November 16 and 17, 2017

Common Name	Scientific Name
Birds	
American Crow	*Corvus brachyrhynchos*
American Kestrel	*Falco sparverius*
Burrowing owl	*Athene cunicularia*
Common Raven	*Corvus corax*
Great horned owl or Barn owl (Pellets)	*Bubo virginianus* or *Tyto alba*, respectively
House Finch	*Haemorhous mexicanus*
Lesser Goldfinch	*Spinus psaltria*
Loggerhead shrike	*Lanius ludovicianus*
Mountain Bluebird	*Sialia currucoides*
Mourning Dove	*Zenaida macroura*
Prairie Falcon	*Falco mexicanus*
Red-tailed Hawk	*Buteo jamaicensis*
Say's Phoebe	*Sayornis saya*
Song Sparrow	*Melospiza melodia*
Turkey Vulture	*Cathartes aura*
Western Meadowlark	*Sturnella neglecta*
White-crowned Sparrow	*Zonotrichia leucophrys*
Reptiles and Amphibians	
Common Side-blotched Lizard	*Uta stansburiana*
Western Rattlesnake	*Crotalus oreganus*
Mammals	
Black-tailed Jackrabbit	*Lepus californicus*
Coyote (Scat, Tracks)	*Canis latrans*
Desert Cottontail (Scat)	*Sylvilagus audubonii*
Kangaroo Rat (Burrows, Scat, Tracks)	*Dipodomys* sp.

Mammals

Signs of kangaroo rat (*Dipodomys* sp.) and other rodent activity, including tracks, scat, and burrows were present throughout the project site in large quantities (Exhibit 8). Other rodents on or near the project site likely include deer mice (*Peromyscus maniculatus*), western harvest mouse (*Reithrodontomys megalotis*), San Joaquin pocket mouse (*Perognathus inornatus*), and California vole (*Microtus californicus*). Desert cottontail (*Sylvilagus audubonii*) and black-tailed jackrabbit (L*epus californicus*) scat were observed throughout the project site, and a jackrabbit was also observed directly.

Signs of coyote (*Canis latrans*) presence were observed throughout the project site, including tracks on dirt roads and large quantities of scat (Exhibit 9). Remains (feathers and bones) of two dead mourning doves (*Zenaida macroura*) were observed, and were likely preyed upon by a carnivore such as a coyote or a fox (*Vulpes* sp.). Large burrows that were potentially suitable for mammals such as foxes and American badger (*Taxidea taxus*) were observed within the project site, albeit in smaller numbers than rodent burrows (Exhibit 10). One burrow system was potentially associated with an American badger due to the large mound of dirt at the burrow opening, the size of the burrow entrance, and potential claw marks at the entrance (Exhibit 10).



Exhibit 8 Kangaroo rat tracks, burrow, and skull observed within the project site



Exhibit 9 Coyote scat observed within the project site.



Exhibit 10 Potential American badger burrow (left), and another large burrow (right) within the project site.

Birds

Many common bird species were observed during the November 16 and 17 surveys (Table 1). A burrowing owl (*Athene cunicularia*), which is a CDFW species of special concern, was observed within approximately 500 feet east of the pipeline alignment near an active burrow. The burrowing owl was being harassed by a loggerhead shrike (*Lanius ludovicianus*), which is also a CDFW species of special concern. Another active burrowing owl burrow was observed near the sighting (Exhibit 11). The burrow was presumed to be active due to the presence of a small owl pellet containing insect parts, and owl scat (Exhibit 11). Several raptor species were observed foraging over the grassland habitat within the project site, including red-tailed hawk (*Buteo jamaicensis*), prairie falcon (*Falco mexicanus*), and American kestrel (*Falco sparverius*). A large common raven (*Corvus corax*) nest was observed within an oil pump jack adjacent to the pipeline alignment, and many ravens were observed throughout the project site.



Exhibit 11 Active burrowing owl burrow within approximately 400 feet of the pipeline alignment.

Reptiles

Two reptile species were observed during the November 16 and 17 surveys, including common side-blotched lizard (*Uta stansburiana*) and western rattlesnake (*Crotalus oreganus*). Other common reptile species that likely occur within the project site include western fence lizard (*Sceloporus occidentalis*), California whiptail (*Aspidoscelis tigris munda*), and California kingsnake (*Lampropeltis californiae*). The project site contains many rodent burrows that would provide cover for these reptile species.

4.3 SPECIAL-STATUS SPECIES

A total of 10 special-status plant species and eight special-status animal species were identified as having potential to occur (CNDDB 2017, CNPS 2017, Table 2 and 3).

Special-Status Plant Species

Of the 11 special-status plants identified during the review of existing data, 10 species could occur, including: brittlescale (*Atriplex depressa*), round-leaved filaree (*California macrophylla*), California jewelflower (*Caulanthus californicus*), Lemmon's jewelflower (*Caulanthus lemmonii*), recurved larkspur (*Delphinium recurvatum*), Kern mallow (*Eremalche parryi* ssp. *kernensis*), Temblor buckwheat (*Eriogonum temblorense*), pale-yellow layia (*Layia heterotricha*), showy golden madia (*Madia radiata*), and San Joaquin woollythreads (*Monolopia congdonii*). All 10 species are associated with chenopod scrub and valley and foothill grassland, on alkaline, sandy, or loamy soils.

Table 2 Special Status Plant Species Known to Occur in the Project Region and their Potential for Occurrence in the Project Site

Species	Listing Status[1]			Habitat	Potential for Occurrence[2]
	Federal	State	CRPR		
brittlescale *Atriplex depressa*			1B.2	Alkali playa, wetland. Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools. Usually in alkali scalds or alkaline clay in meadows or annual grassland; rarely associated with riparian, marshes, or vernal pools. 3 to 1,066 ft in elevation. Blooms April-October.	May occur. The nearest known occurrence of brittlescale is approximately 5.6 miles northwest of the project site (CNPS 2017). The project site contains potentially suitable scrub and grassland habitat for this species.
round-leaved filaree *California macrophylla*			1B.2	Cismontane woodland, valley and foothill grassland. Clay soils. 49 to 3,937 ft in elevation. Blooms March-May.	May occur. The nearest known occurrence of round-leaved filaree is approximately 6 miles southwest of the project site (CNPS 2017). The project site contains potentially suitable grassland habitat for this species.
California jewelflower *Caulanthus californicus*	FE	SE	1B.1	Chenopod scrub, valley and foothill grassland, pinyon and juniper woodland. Sandy soils. 213 to 6,102 ft in elevation. Blooms February-May.	May occur. The nearest known occurrence of California jewelflower is approximately 6 miles southwest of the project site (CNPS 2017). The project site contains potentially suitable grassland habitat for this species.
Lemmon's jewelflower *Caulanthus lemmonii*			1B.2	Pinyon and juniper woodland, valley and foothill grassland. 246 to 5,200 ft in elevation. Blooms February-May.	May occur. The nearest known occurrence of Lemmon's jewelflower is approximately 2.5 miles southwest of the project site near the City of Avenal (CNDDB 2017). The project site contains potentially suitable grassland habitat for this species.
recurved larkspur *Delphinium recurvatum*			1B.2	Chenopod scrub, valley and foothill grassland, cismontane woodland. On alkaline soils; often in valley saltbush or valley chenopod scrub. 10 to 2,592 ft in elevation. Blooms March-June.	May occur. The nearest known occurrence of recurved larkspur is approximately 6 miles southwest of the project site (CNPS 2017). The project site contains potentially suitable grassland and scrub habitat for this species.
Kern mallow *Eremalche parryi* ssp. *kernensis*	FE		1B.2	Chenopod scrub, valley and foothill grassland, pinyon and juniper woodlands. On dry, open sandy to clay soils; usually within valley saltbush scrub; often at edge of balds. 230 to 4,249 ft in elevation. Blooms January-May.	Likely to occur. The nearest known occurrence of Kern mallow is approximately 0.6 mile east of the project site (CNDDB 2017). The project site contains potentially suitable scrub and grassland habitat.
Temblor buckwheat *Eriogonum temblorense*			1B.2	Valley and foothill grassland. Barren clay or sandstone substrates. 984 to 3,281 ft in elevation. Blooms April-September.	May occur. The nearest known occurrence of Temblor buckwheat is approximately 6 miles southwest of the project site (CNPS 2017). The project site contains potentially suitable grassland habitat for this species.
pale-yellow layia *Layia heterotricha*			1B.1	Cismontane woodland, coastal scrub, pinyon and juniper woodland, valley and foothill grassland. Alkaline or clay soils; open areas. 295 to 5,906 ft in elevation. Blooms March-June.	May occur. The nearest known occurrence of pale-yellow layia is approximately 6 miles southwest of the project site (CNPS 2017). The project site contains potentially suitable grassland and scrub habitat for this species.
showy golden madia *Madia radiata*			1B.1	Valley and foothill grassland, cismontane woodland. Mostly on adobe clay in grassland or among shrubs. 246 to 4,003 ft in elevation. Blooms March-May.	May occur. The nearest known occurrence of showy golden madia is approximately 6 miles southwest of the project site (CNPS 2017). The project site contains potentially suitable grassland habitat for this species.

Table 2 Special Status Plant Species Known to Occur in the Project Region and their Potential for Occurrence in the Project Site

Species	Listing Status[1]			Habitat	Potential for Occurrence[2]
	Federal	State	CRPR		
San Joaquin woollythreads *Monolopia congdonii*	FE		1B.2	Chenopod scrub, valley and foothill grassland. Alkaline or loamy plains; sandy soils, often with grasses and within chenopod scrub. 180 to 2,756 ft in elevation. Blooms February-May.	Likely to occur. The nearest known occurrence of San Joaquin woollythreads is approximately 0.9 mile south of the project site (CNDDB 2017). The project site contains suitable scrub and grassland habitat for this species.
Kings gold *Tropidocarpum californicum*			1B.1	Chenopod scrub. 213 to 590 ft in elevation. Blooms March.	Not expected to occur. There are no known occurrences of Kings gold within 10 miles of the project site. While the project site contains potentially suitable scrub habitat for this species, the distribution of the species is very limited.

Notes: USFWS = CRPR = California Rare Plant Rank; CNDDB = California Natural Diversity Database

[1] Legal Status Definitions

Federal:

E Endangered (legally protected by ESA)

T Threatened (legally protected by ESA)

State:

E Endangered (legally protected by CESA)

R Rare (legally protected by CNPPA)

California Rare Plant Ranks:

1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

2B Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

Threat Ranks

0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

[2] Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present on the project site due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

May occur: Suitable habitat is available at the project site; however, there are little to no other indicators that the species might be present.

Likely to occur: The species, or evidence of its presence, was observed at the project site during reconnaissance surveys, or was reported by others.

Sources: CNDDB 2017; CNPS 2017

Special-Status Wildlife Species

Of the 16 special-status wildlife species identified during the review of existing data, eight species could occur, including: blunt-nosed leopard lizard (*Gambelia sila*), San Joaquin coachwhip (*Masticophis flagellum ruddocki*), burrowing owl, loggerhead shrike, tricolored blackbird (*Agelaius tricolor*), American badger, Nelson's antelope squirrel (*Ammospermophilus nelsoni*), and San Joaquin kit fox (*Vulpes macrotis mutica*).

Table 3 Special Status Animal Species Known to Occur in the Project Region and their Potential for Occurrence in the Project Site

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
Reptiles and Amphibians				
blunt-nosed leopard lizard *Gambelia sila*	FE	SE FP	Chenopod scrub. Resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. Seeks cover in mammal burrows, under shrubs or structures such as fence posts; they do not excavate their own burrows.	Likely to occur. The nearest known occurrence of blunt-nosed leopard lizard is less than 1 mile southwest of the project site within similar habitat (CNDDB 2017). The project site contains potentially suitable scrub habitat, and ample rodent burrows for this species.
California red-legged frog *Rana draytonii*	FT	SSC	Aquatic, Artificial flowing waters, Artificial standing waters, Freshwater marsh, Marsh & swamp, Riparian forest, Riparian scrub, Riparian woodland, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters. Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. must have access to estivation habitat.	Not expected to occur. There are no known occurrences of California red-legged frog within 5 miles of the project site. The current range of this species does not include the Central Valley, though it was found there historically. Additionally, the project site is not located near a permanent source of fresh water, which is required for the species.
California tiger salamander *Ambystoma californiense*	FT	ST	Cismontane woodland, meadow and seep, riparian woodland, valley and foothill grassland, vernal pool, and wetlands. Central Valley DPS federally listed as threatened. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	Not expected to occur. The project site does not contain suitable vernal pool or wetland habitat for this species.
giant gartersnake *Thamnophis gigas*	FT	ST	Marsh and swamp, riparian scrub, wetland. Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches. This is the most aquatic of the garter snakes in California.	Not expected to occur. While the project site is near the historic range boundary of this species, the current range does not extend to Kings County.
San Joaquin coachwhip *Masticophis flagellum ruddocki*		SSC	Chenopod scrub, valley and foothill grassland. Open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in the San Joaquin Valley. Needs mammal burrows for refuge and oviposition sites.	May occur. The nearest known occurrence of San Joaquin coachwhip is approximately 3.4 miles southwest of the project site near the City of Avenal (CNDDB 2017). The project site contains suitable annual grassland and saltbush scrub habitat, as well as ample rodent burrows for this species.
Birds				
burrowing owl *Athene cunicularia*		SSC	Coastal prairie, coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, and valley and foothill grassland. Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Likely to occur. A burrowing owl and an active burrow were observed during the November 16, 2017 reconnaissance survey.
California condor *Gymnogyps californianus*	FE	SE FP	Chaparral, valley and foothill grassland. Require vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Deep canyons containing clefts in the rocky walls	Not expected to occur. California condor is known to occur within the Coast Range to the southwest if the project site and the Tehachapi Mountains to the southeast. It is remotely possible that a condor

Table 3 Special Status Animal Species Known to Occur in the Project Region and their Potential for Occurrence in the Project Site

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
			provide nesting sites. Forages up to 100 miles from roost/nest.	could forage over the project site; however, there are no known nesting occurrences within 5 miles of the project site (CNDDB 2017) and no recent sightings of the species near the project site (eBird 2017).
loggerhead shrike *Lanius ludovicianus*		SSC	Broadleaved upland forest, desert wash, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodlands, riparian woodland, Sonoran desert scrub. Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	Likely to occur. A loggerhead shrike was observed during the November 16, 2017 reconnaissance survey. Potentially suitable shrub nesting habitat is present within the project site.
tricolored blackbird *Agelaius tricolor*		CE SSC	Freshwater marsh, marsh and swamp, swamp, wetland. Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	May occur. The nearest known occurrence of this species is approximately 4.5 miles southwest of the project site near Avenal State Prison (CNDDB 2017). The project site contains potentially suitable nesting habitat for this species within an approximately 20-acre grain field on the northern end of the pipeline alignment near I-5 and the Avenal Cutoff. There is no suitable habitat elsewhere along the alignment.
Invertebrates				
vernal pool fairy shrimp *Branchinecta lynchi*	FT		Valley and foothill grassland, vernal pool, wetland. Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Not expected to occur. The project site does not contain suitable vernal pool or wetland habitat for this species.
Mammals				
American badger *Taxidea taxus*		SSC	Alkali marsh, alkali playa, alpine, alpine dwarf scrub, bog a fen, brackish marsh, broadleaved upland forest, chaparral, chenopod scrub, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal prairie. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Likely to occur. The nearest known occurrence of American badger is approximately 2 miles east of the project site within the Kettleman Hills (CNDDB 2017). The project site contains suitable grassland habitat and friable soils for this species, and an ample rodent prey population. Additionally, several large burrows, potentially associated with badger activity, were observed during the November 16, 2017 reconnaissance survey.
giant kangaroo rat *Dipodomys ingens*	FE	SE	Chenopod scrub, valley and foothill grassland. Annual grasslands on the western side of the San Joaquin Valley, marginal habitat in alkali scrub. Need level terrain and sandy loam soils for burrowing.	Not expected to occur. The nearest known occurrences of giant kangaroo rat are approximately 10 miles southeast of the project site in the south Kettleman Hills (CNDDB 2017). While the project site is within the historic range of this species, this range has been significantly reduced due to urban and agricultural development. Kangaroo rats within the project site

Table 3 Special Status Animal Species Known to Occur in the Project Region and their Potential for Occurrence in the Project Site

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
				are likely Heermann's kangaroo rats (*Dipodomys heermanni*).
Nelson's antelope squirrel *Ammospermophilus nelsoni*		ST	Chenopod scrub. Western San Joaquin Valley from 200-1,200 feet in elevation. On dry, sparsely vegetated loam soils. Dig burrows or use kangaroo rat burrows. Need widely scattered shrubs, forbs and grasses in broken terrain with gullies and washes	May occur. The nearest known occurrence of Nelson's antelope squirrel is approximately 1.5 miles south of the project site within the Kettleman Hills (CNDDB 2017). The project site contains suitable scrub and grassland habitat, as well as suitable kangaroo rat burrows for this species.
San Joaquin kit fox *Vulpes macrotis mutica*	FE	ST	Chenopod scrub, valley and foothill grassland. Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	May occur. The nearest known occurrence of San Joaquin kit fox is approximately 1.6 miles southeast of the project site within the Kettleman Hills (CNDDB 2017). The project site contains suitable grassland and scrub habitat for this species. Several large, suitable burrows were observed during the November 16 and 17, 2017 reconnaissance survey.
Tipton kangaroo rat *Dipodomys nitratoides nitratoides*	FE	SE	Chenopod scrub. Saltbrush scrub and sink scrub communities in the Tulare Lake Basin of the southern San Joaquin Valley. Needs soft friable soils which escape seasonal flooding. Digs burrows in elevated soil mounds at bases of shrubs.	Not expected to occur. The nearest known occurrences of Tipton kangaroo rat are approximately 10 miles southeast of the project site in the south Kettleman Hills (CNDDB 2017). Kangaroo rats within the project site are likely Heermann's kangaroo rats (*Dipodomys heermanni*).
Tulare grasshopper mouse *Onychomys torridus tularensis*		SSC	Chenopod scrub. Hot, arid valleys and scrub deserts in the southern San Joaquin Valley. Diet almost exclusively composed of arthropods, therefore needs abundant supply of insects.	Not expected to occur. The nearest known occurrence of Tulare grasshopper mouse is a historical record (1931) at an unspecific location that includes most of the Kettleman Hills (CNDDB 2017). While the project site contains suitable scrub habitat for this species, the current range of the species does not include the project area, and Tulare grasshopper mouse is considered rare throughout the San Joaquin Valley.

Note: CNDDB = California Natural Diversity Database

[1] Legal Status Definitions

Federal:

E Endangered (legally protected)
T Threatened (legally protected)
D Delisted
PT Proposed Threatened

State:

D Delisted
FP Fully protected (legally protected)
SC Species of special concern (no formal protection other than CEQA consideration)
E Endangered (legally protected)
T Threatened (legally protected)
CT Candidate Threatened

[2] Potential for Occurrence Definitions

Not expected to occur: *Species is unlikely to be present in the project area due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.*

May occur: *Suitable habitat is available in the project area; however, there are little to no other indicators that the species might be present.*

Likely to occur: *The species, or evidence of its presence, was observed in the project area during reconnaissance surveys, or was reported by others.*

Source: CNDDB 2017; eBird 2017; USFWS 2017b

4.4 WETLANDS AND OTHER WATERS OF THE UNITED STATES OR STATE

There are several natural drainages within the project site associated with gullies within the Kettleman Hills, and low-lying areas leading to the valley floor (USFWS 2017a, Exhibit 12). The pipeline alignment currently crosses at least four of these drainages (Exhibit 17). During the November 16 and 17 surveys, most low-lying areas did not contain water; however, these drainage areas had notably different vegetation (Exhibit 12). This vegetation included shrub species such as matchweed, and nonnative forbs such as Jimson weed.



Exhibit 12 Example of vegetation within a low-lying drainage on the project site.

Two areas within the project site contained water during the November 16 and 17 surveys. An area approximately 300 feet east of the pipeline alignment and directly downhill from the water tank contained a fresh pool of water and green vegetation including cattails. The water was being delivered from the top of the hill near the water tank via an approximately 6-inch pipe that was at least 550 feet long (Exhibit 13). This drainage crossed beneath the road to the north via a culvert, and the drainage continues to the northeast where it crosses the pipeline alignment. The entire drainage system may qualify as a jurisdictional water of the United States or state. Another wet area was observed near the northernmost portion of the pipeline alignment, and appeared to be due to a pipe leak (Exhibit 14). This area may not qualify as a jurisdictional wetland because it is not a natural occurrence.



Exhibit 13 **Area containing water downhill from the water tank (left), and closeup of pipe delivery within the same area (right).**



Exhibit 14 **Area containing water due to a potential equipment leak.**

5 CONCLUSIONS

5.1 SPECIAL-STATUS PLANTS

Based on a site visit and a review of the sensitive plant and wildlife species within five miles of the project site (CNDDB 2017, CNPS 2017), 10 special-status plant species could occur within the project site including: brittlescale, round-leaved filaree, California jewelflower, Lemmon's jewelflower, recurved larkspur, Kern mallow, Temblor buckwheat, pale-yellow layia, showy golden madia, and San Joaquin woollythreads. Kern mallow, San Joaquin woollythreads, and California jewelflower are listed as endangered under ESA, and California jewelflower is also listed as endangered under CESA (Table 2). All of these species are either associated with chenopod scrub or valley and foothill grassland habitat, which are present within the project site.

Project activities, such as ground disturbance during trenching, staging of construction equipment, storage of dirt excavated during trenching, and construction vehicle use in off-road areas, could result in direct loss of special-status plant species. This would be a potentially significant impact under CEQA.

5.2 SPECIAL-STATUS WILDLIFE

Several wildlife species, including blunt-nosed leopard lizard, San Joaquin coachwhip, burrowing owl, loggerhead shrike, tricolored blackbird, American badger, Nelson's antelope squirrel, and San Joaquin kit fox could occur within the project site.

Blunt-nosed leopard lizard

Blunt-nosed leopard lizard is listed as endangered under ESA and CESA, and is also designated as fully protected under California Fish and Game Code. The nearest known occurrence of blunt-nosed leopard lizard is less than 1 mile southwest of the project site within similar habitat, and there are three additional known occurrences within 5 miles of the project site (CNDDB 2017; Exhibit 15). The project site contains potentially suitable scrub habitat for this species. Blunt-nosed leopard lizard use small burrows made by mammals (e.g., kangaroo rats, squirrels, mice) for cover and egg-laying. The project site contained numerous rodent burrows throughout the entire pipeline alignment, and many of these burrows were located within the construction easement area.

San Joaquin kit fox

San Joaquin kit fox is listed as endangered under ESA and threatened under CESA. The nearest known occurrence of San Joaquin kit fox is approximately 1.6 miles southeast of the project site within the Kettleman Hills, and there are nine additional known occurrences within 5 miles of the project site (CNDDB 2017; Exhibit 16). The project site contains suitable grassland and scrub habitat for this species. Large burrows (i.e., with burrow openings 4 inches or greater), potentially associated San Joaquin kit fox, were present throughout the project site, but were less numerous than the rodent burrows. Most of the large burrows were outside of the construction easement, but several were within the easement.

Nelson's antelope squirrel

Nelson's antelope squirrel is listed as threatened under CESA. The nearest known occurrence of Nelson's antelope squirrel is approximately 1.5 miles south of the project site within the Kettleman Hills and there are two additional known occurrences of the species within 5 miles of the project site (CNDDB 2017). The project site contains suitable scrub and grassland habitat for this species. Nelson's antelope squirrels dig their own burrows or will use existing kangaroo rat burrows. The project site contained numerous rodent burrows throughout the entire pipeline alignment, and many of these burrows were located within the construction easement area.

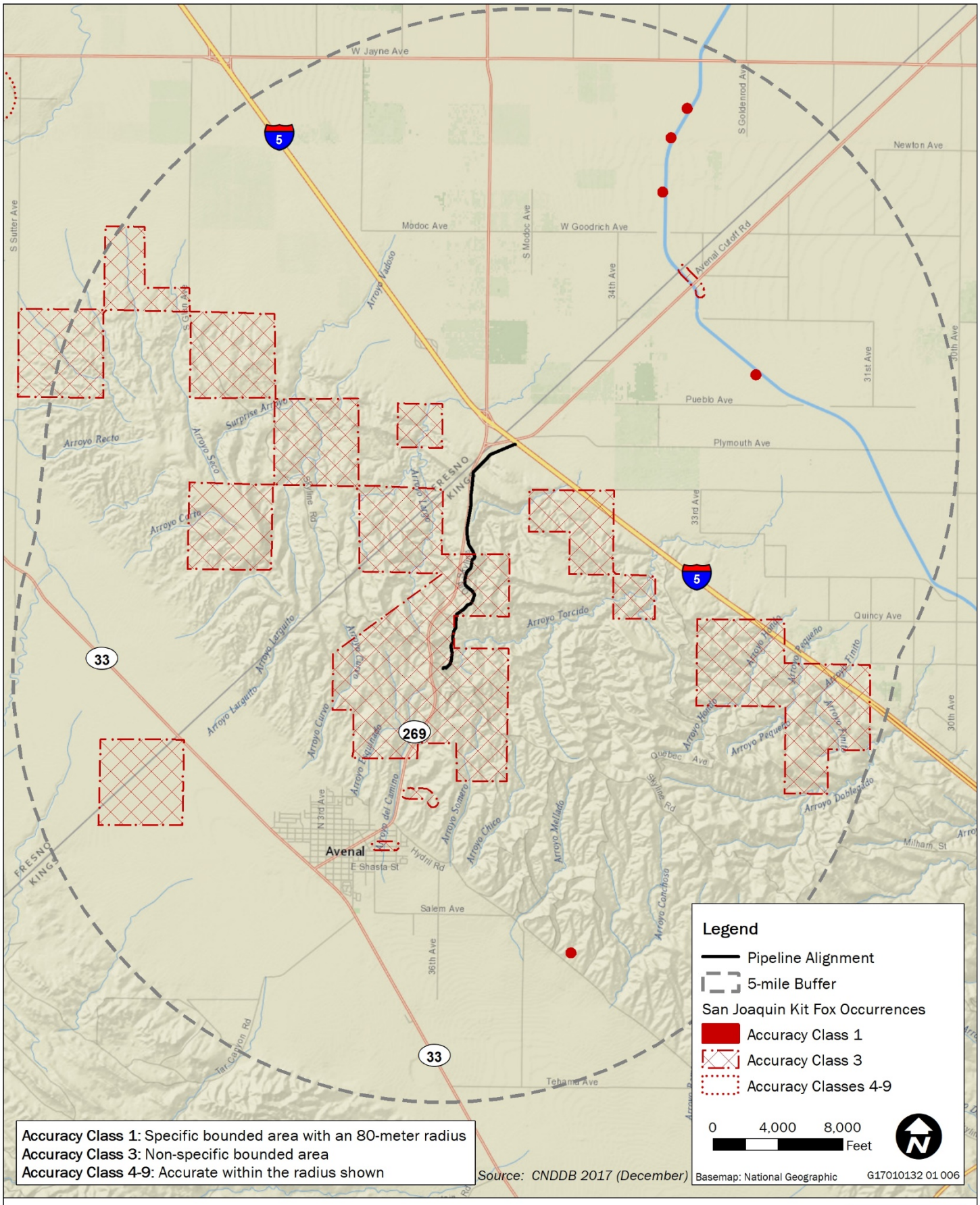


Exhibit 15

San Joaquin Kit Fox CNDDB Occurrences within 5-miles of the Pipeline Alignment

ASCENT ENVIRONMENTAL

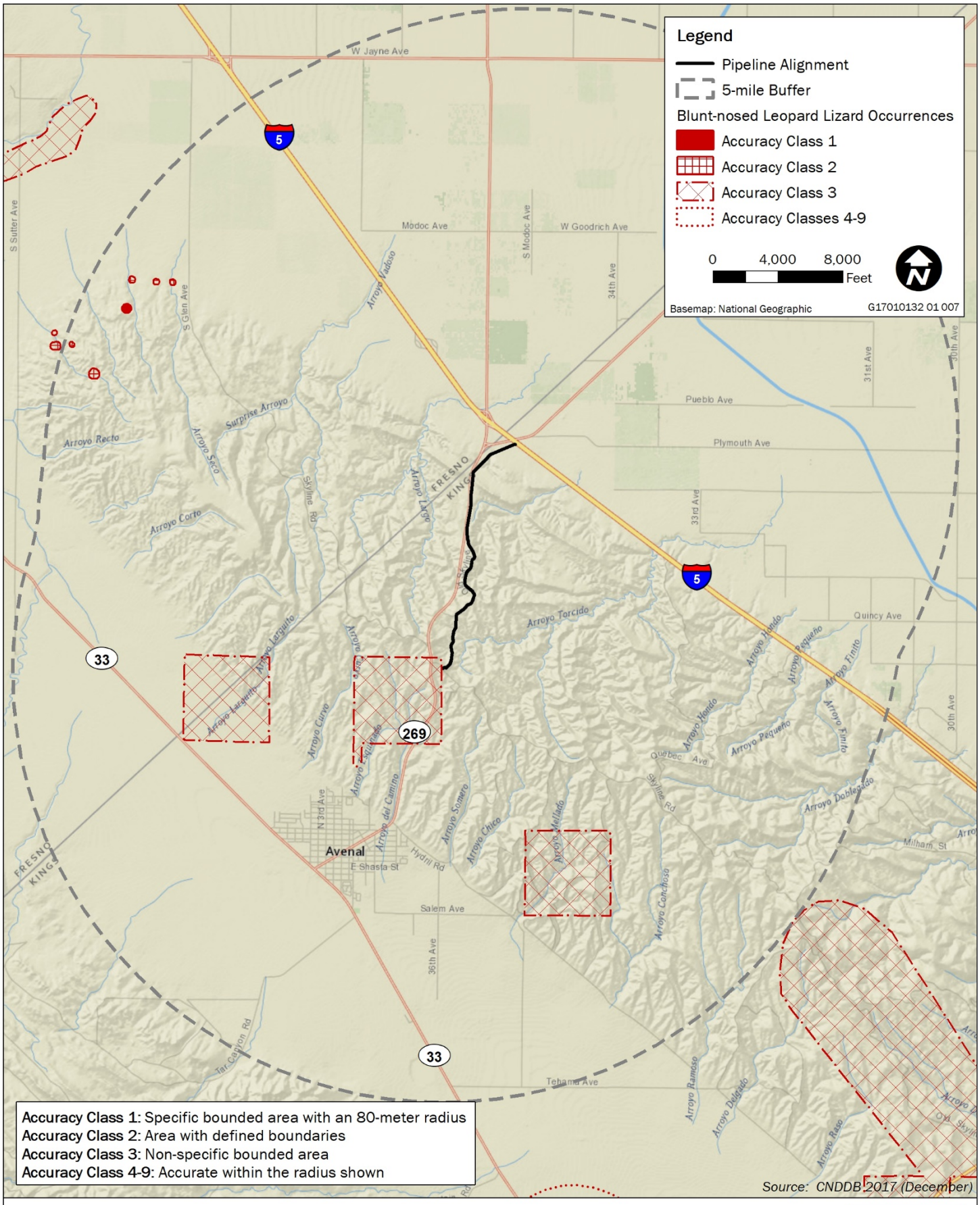


Exhibit 16

Blunt-nosed Leopard Lizard CNDDB Occurrences within 5-miles of the Pipeline Alignment

Tricolored blackbird

Tricolored blackbird is a candidate for endangered listing under CESA. The nearest known occurrence of this species is approximately 4.5 miles southwest of the project site near Avenal State Prison and there is one additional known occurrence of the species within 5 miles of the project site (CNDDB 2017). While optimal tricolored blackbird nesting habitat includes dense riparian vegetation near wetland and other aquatic habitat, tricolored blackbirds in California often nest within agricultural habitat; particularly grain fields. The northernmost extent of the pipeline alignment contains an area dominated by nonnative barley, which, in the spring, could provide potentially suitable nesting habitat for tricolored blackbird. There is no suitable habitat elsewhere along the alignment.

San Joaquin coachwhip

San Joaquin coachwhip is a CDFW species of special concern. The nearest known occurrence of San Joaquin coachwhip is approximately 3.4 miles southwest of the project site near the City of Avenal (CNDDB 2017). The project site contains suitable annual grassland and saltbush scrub habitat for this species. San Joaquin coachwhip use small burrows made by mammals (e.g., kangaroo rats, squirrels, mice) for cover and egg-laying. The project site contained numerous rodent burrows throughout the entire pipeline alignment, and many of these burrows were located within the construction easement area.

American badger

American badger is a CDFW species of special concern. The nearest known occurrence of American badger is approximately 2 miles east of the project site within the Kettleman Hills (CNDDB 2017). The project site contains suitable grassland habitat and friable soils for this species, and an ample rodent prey population. A series of large burrows with features suggestive of an American badger (e.g., large mounds of dirt outside of burrow, possible claw marks at burrow entrance, large burrow opening) were observed approximately 30 feet east of the pipeline alignment. Most additional large burrows were outside of the construction easement, but several were within the easement.

Burrowing owl

Burrowing owl is a CDFW species of special concern. There are five known occurrences of burrowing owl within 5 miles of the project site (CNDDB 2017). During the November 16 and 17 surveys, a burrowing owl was observed within approximately 500 feet east of the pipeline alignment near an active burrow. Another large, active burrowing owl burrow was observed near the sighting. Burrowing owls are dependent on existing burrows made by mammals, and typically use large burrows made by ground squirrels or badgers. The project site contains suitable grassland habitat and many potentially suitable burrows for this species within the entire pipeline alignment.

Loggerhead shrike

Loggerhead shrike is a CDFW species of special concern. There is one known occurrence of loggerhead shrike within 5 miles of the project site (CNDDB 2017), and a shrike was observed on the project site during the November 16 and 17 surveys. Loggerhead shrike nest within dense shrub and brush habitat, which is present within portions of the project site. The pipeline alignment along Old Skyline Drive in particular is lined with dense saltbush scrub habitat that would be suitable nesting habitat for this species, and is within the construction easement.

Summary of Potential Impacts to Special-status Wildlife

Project construction activities, including ground disturbance during pipeline trenching could result in destruction of many potentially active rodent-sized burrows, which could be occupied by blunt-nosed leopard lizards, San Joaquin coachwhip, or Nelson's antelope squirrel, and could result in disturbance to or destruction of large burrows which could be occupied by American badger, San Joaquin kit fox, or burrowing owl. This could result in the direct loss of special-status wildlife species or destruction of active nests or dens. Project construction activities, including ground disturbance and vegetation removal during pipeline trenching could result in disturbance to loggerhead shrike or tricolored blackbirds, as well as direct loss of birds, chicks, or eggs. Disturbance or direct loss of special-status wildlife species would be a potentially significant impact under CEQA.

5.3 WETLANDS AND OTHER WATERS OF THE UNITED STATES OR STATE

The pipeline alignment currently crosses at least four drainages, including areas associated with gullies and low-lying areas leading to the valley floor (Exhibit 17). All of these drainages would likely qualify as waters of the United States or state. Project construction activities, including ground disturbance during pipeline trenching could result in direct or indirect fill of waters of the United States or state. This would be a potentially significant impact under CEQA.

6 RECOMMENDATIONS

6.1 SPECIAL-STATUS PLANT SURVEYS

Prior to commencing ground disturbance activities, the following measures are recommended to reduce potential impacts to special-status plants:

- Prior to project initiation and during the blooming period for the special-status plant species with potential to occur in the project site, a qualified botanist will conduct protocol-level surveys for special-status plants in areas where potentially suitable habitat would be removed or disturbed by project activities in accordance with *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2009). Table 4 summarizes the normal blooming periods for special-status plant species with potential to occur on the project site, which generally indicates the optimal survey periods when the species are most identifiable.

- If no special-status plants are found, the botanist will document the findings in a letter report to USFWS, CDFW, and the City of Avenal and no further mitigation will be required.

- If special-status plant species are found that cannot be avoided during construction, the City of Avenal will consult with CDFW and/or USFWS (depending on the status of the species) to determine the appropriate mitigation measures for direct and indirect impacts that could occur as a result of project construction. The City of Avenal will implement the agreed-upon mitigation measures to achieve no net loss of occupied habitat or individuals. Mitigation measures may include preserving and enhancing existing populations, creation of offsite populations on project mitigation sites through seed collection or transplantation, and/or restoring or creating suitable habitat in sufficient quantities to achieve no net loss of occupied habitat and/or individuals.

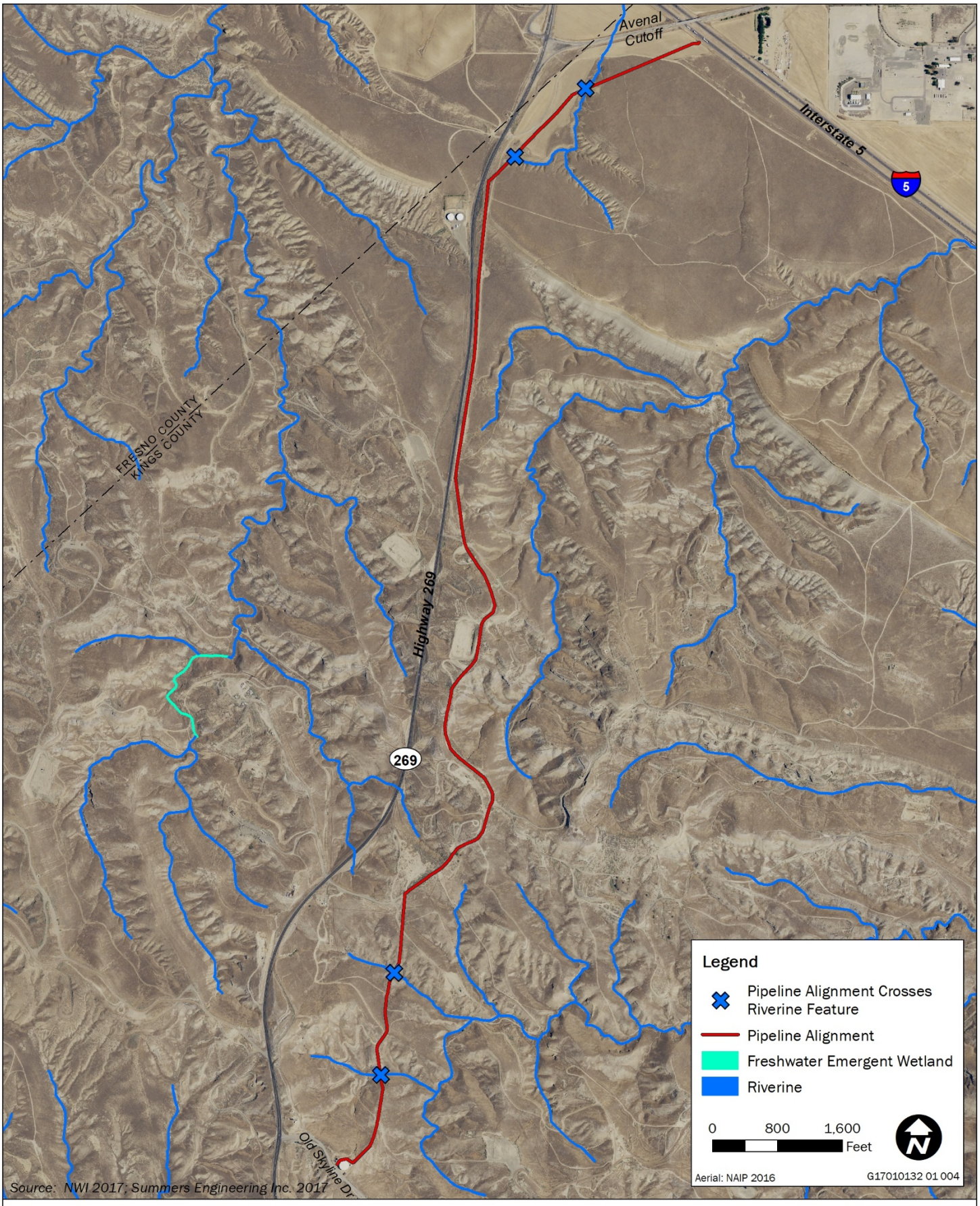


Exhibit 17 **Drainages within the Project Site**

ASCENT ENVIRONMENTAL

Table 4 Normal Blooming Period for Special-Status Plants with Potential to Occur on the Project Site

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
brittlescale *Atriplex depressa*				■	■	■	■	■	■	■
round-leaved filaree *California macrophylla*			■	■	■					
California jewelflower *Caulanthus californicus*		■	■	■	■					
Lemmon's jewelflower *Caulanthus lemmonii*		■	■	■	■					
recurved larkspur *Delphinium recurvatum*			■	■	■	■				
Kern mallow *Eremalche parryi* ssp. *kernensis*	■	■	■	■	■					
Temblor buckwheat *Eriogonum temblorense*				■	■	■	■	■	■	
pale-yellow layia *Layia heterotricha*			■	■	■	■				
showy golden madia *Madia radiata*			■	■	■					
San Joaquin woollythreads *Monolopia congdonii*		■	■	■	■					

Source: Data compiled by Ascent Environmental in 2017

6.2 SPECIAL-STATUS WILDLIFE SURVEYS AND AVOIDANCE

Blunt-nosed leopard lizard

Blunt-nosed leopard lizard is listed as endangered under ESA and CESA, and is also designated as fully protected under California Fish and Game Code. Fully protected species may not be taken at any time, and no licenses or permits may be issued for their take. Consequently, fully protected species must be fully avoided during project construction activities.

Prior to commencing ground disturbance activities, the following measures in accordance with the *Approved Survey Methodology for the Blunt-nosed Leopard Lizard* (CDFW 2004) are recommended to reduce potential impacts to blunt-nosed leopard lizard:

- If blunt-nosed leopard lizards have the potential to be present within the project site, at least two qualified biologists will conduct a total of 17 surveys between April and September, including spring adult surveys and fall hatchling surveys. Biologists will conduct visual search surveys while walking in parallel on adjacent transects that cover all areas within the project site with potential blunt-nosed leopard lizard habitat. Biologists will stop periodically to scan the transect for blunt-nosed leopard lizard using close-focusing binoculars.
  - A total of 12 adult surveys will take place during the optimal survey period (April 15 to July 15) with a maximum of 4 survey days per week and 8 days within any 30-day time period. At least one survey session will be conducted for 4 consecutive days.

- A total of 5 additional hatchling surveys will take place during the optimal survey period (August 1 to September 15).

- If blunt-nosed leopard lizards are observed, biologists will record the location (UTM coordinates) and the presence of habitat features important for blunt-nosed leopard lizard (e.g., washes, playas, relative abundance of small mammal burrows). The project applicant will initiate consultation with CDFW and USFWS to examine project plans and to determine whether the project can be designed to completely avoid blunt-nosed leopard lizards and potentially occupied habitat.

- All blunt-nosed leopard lizard observations must be reported to the CNDDB within 30 days.

- If no blunt-nosed leopard lizards are observed during the survey period, then further mitigation for this species is not required. Surveys will be accepted for one year from the date of completion.

San Joaquin kit fox

The project may affect San Joaquin kit fox and consultation with USFWS may be required under ESA as part of a federal action for the project, such as issuance of a CWA permit by USACE or use of federal funding administered through the State Water Board. If occupied dens cannot be avoided, consultation with CDFW would be required under CESA as well. The following measures in accordance with the *USFWS Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 2011) are recommended to reduce potential impacts to San Joaquin kit fox. Additional measures may be required based on consultation with USFWS.

- Preconstruction surveys will be conducted by a qualified biologist no less than 14 days and no more than 30 days prior to the beginning of ground disturbance or construction activities or any project activity likely to impact the San Joaquin kit fox. Surveys will identify San Joaquin kit fox habitat features on the project site (e.g. dens), evaluate use by kit fox, and assess the potential impacts to the kit fox by the proposed activity. Survey methods will include thoroughly inspecting the project site for kit fox dens using walking line transects. The status of all dens will be determined and mapped.

- If no San Joaquin kit fox or potential dens are found, the qualified biologist will document the findings in a letter report to USFWS, CDFW, and the City of Avenal and no further mitigation will be required.

- Exclusion zones will be established for all dens within the project site and construction activity or ground disturbance will be prohibited within these zones. Potential dens will be marked with flagged stakes 50 feet from the den entrance. Known dens will be demarcated using USFWS-approved fencing including an area of 100 feet around the den entrance.

- If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, USFWS will be immediately notified and the den will not be disturbed or destroyed without prior authorization or a take permit.

- If potential dens are identified (i.e., a burrow at least four inches in the diameter that opens within two feet), the den entrances will be dusted, and camera and scent stations will be deployed 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 removed. Den removal must be appropriately monitored and conducted by a qualified wildlife biologist.

- Written results of preconstruction surveys must be received by USFWS within five days after survey completion and prior to the start of ground disturbance or construction activities.

- During construction, the City of Avenal will observe the following measures to minimize impacts to San Joaquin kit fox:

- All construction activities will cease one hour before sunset and will not begin prior to one hour after sunrise. This excludes transit of vehicles to and from the project site, employee and safety meetings, servicing and maintaining equipment, and material deliveries involving trucks and forklifts.
- Artificial lighting of the project site during night time hours is prohibited during all activities.
- A 20-mph daytime speed limit and 10-mph night-time speed limit will be observed on the project site at all times. Off-road traffic outside of designated project areas will be prohibited.
- All excavated holes or trenches will be covered at close of each working day, or one or more escape ramps will be provided.
- Holes or trenches must be inspected daily to ensure that no animal has become trapped despite covers. All holes or trenches will be thoroughly inspected before filling.
- All pipes, culverts, or similar structures with a diameter of 4 inches or greater will be inspected for kit foxes before they are buried, capped, used, or moved in any way.
- All trash will be properly disposed of and removed from project site at least once a week.
- No firearms shall be allowed on the project site
- No pets shall be permitted on the project site.
- Use of rodenticides and herbicides in project areas shall be restricted.
- Plastic mono-filament matting will not be used for erosion control or other purposes. Instead tightly woven fiber or similar material will be used.
- Upon project completion, all disturbed areas will be returned to conditions prior to construction activity, including storage and staging areas, temporary roads, pipeline corridors. The areas will be re-contoured if necessary and revegetated to promote restoration of the area to pre-project conditions.
- If a kit fox is trapped:
    - Personnel shall immediately report the incident to their onsite representative.
    - Escape ramps or structures will be installed immediately.
    - If the fox cannot escape, USFWS shall be contacted for guidance.
    - The onsite representative shall notify USFWS and CDFW immediately by telephone or email within 24 hours.
- If a kit fox is injured or killed:
    - Personnel shall immediately report the incident to their onsite representative.
    - Project activities will cease until USFWS and CDFW provide guidance.
    - The onsite representative shall notify USFWS and CDFW immediately with the date, time, and location of the incident.
    - Consultation with USFWS will be reinitiated.

Nelson's antelope squirrel

Prior to commencing ground disturbance activities, the following measures are recommended to reduce potential impacts to Nelson's antelope squirrel:

- If Nelson's antelope squirrels have the potential to be present within a work area, a qualified biologist will make an initial site visit to determine if suitable habitat for the species may exist within and adjacent to the vicinity of the project footprint. If suitable habitat is present, daytime visual surveys will be conducted using line transects with 10 to 30-meter spacing when temperatures are between 68°and 86° F (20°- 30° C). Focused live trapping may also be required when visual surveys are inconclusive.

- If no Nelson's antelope squirrels are found, the qualified biologist will document the findings in a letter report to CDFW and the City of Avenal and no further mitigation will be required.

- If Nelson's antelope squirrels are detected, a 50-foot minimum no disturbance buffer will be maintained from all small mammal burrows of suitable size.

Tricolored blackbird

Prior to commencing ground disturbance or vegetation removal activities, the following measures are recommended to reduce potential impacts to tricolored blackbird:

- To minimize the potential for loss of tricolored blackbird, removal of vegetation within the agricultural field on the northern end of the pipeline alignment will commence during the nonbreeding season (September 1-January 31). If all suitable nesting habitat is removed during the nonbreeding season, no further mitigation would be required.

- Prior to removal of any vegetation, or any ground-disturbing activities between February 1 and August 31, a qualified biologist will conduct preconstruction surveys for tricolored blackbird nests within the agricultural field on the northern end of the pipeline alignment. The surveys will be conducted no more than 14 days before construction commences.

- If no active nests or tricolored blackbird colonies are found during focused surveys, no further action under this measure will be required. If active nests are located during the preconstruction surveys, the biologist will notify CDFW. If necessary, modifications to the project design to avoid removal of occupied habitat while still achieving project objectives will be evaluated, and implemented to the extent feasible. If avoidance is not feasible or conflicts with project objectives, construction will be prohibited within a minimum of 100 feet of the outer edge of the nesting colony to avoid disturbance until the nest colony is no longer active.

San Joaquin Coachwhip

Prior to commencing ground disturbance activities, the following measures are recommended to reduce potential impacts to San Joaquin coachwhip:

- A qualified biologist will conduct preconstruction surveys immediately prior to ground-disturbing activities (e.g., equipment staging, vegetation removal, grading) associated with the program. If any San Joaquin coachwhips are found, work will not begin until they are moved out of the work area to a CDFW-approved relocation site. Relocation of San Joaquin coachwhip requires a letter from CDFW authorizing this activity.

- If no San Joaquin coachwhip are found, the qualified biologist will document the findings in a letter report to CDFW and the City of Avenal and no further mitigation will be required.

- No monofilament plastic will be used for erosion control.

- Where applicable, barrier fencing will be used to exclude San Joaquin coachwhip. Barrier fencing will be removed within 72 hours of completion of work.

- Work crews or an onsite biological monitor will inspect open trenches and pits and under construction equipment and materials left onsite for special-status reptiles each morning and evening during construction.

- Ground disturbance in suitable habitat will be minimized.

- Vegetation within the proposed work area will be removed prior to trenching activities. Prior to clearing and grubbing operations, a qualified biologist will clearly mark vegetation within the work area that will be avoided. Vegetation outside the work area will not be removed. Where possible hand tools (e.g., trimmer, chain saw) will be used to trim or remove vegetation. All vegetation removal will be monitored by the qualified biologist to minimize impacts on special-status reptiles.

American Badger

Prior to commencing ground disturbance activities, the following measures are recommended to reduce potential impacts to American badger:

- A qualified wildlife biologist will conduct surveys to identify any American badger burrows/dens. These surveys will be conducted not more than 15 days prior to the start of construction. If occupied burrows are not found, further mitigation will be not required. If occupied burrows are found, impacts to active badger dens will be avoided by establishing exclusion zones around all active badger dens, within which construction-related activities will be prohibited until denning activities are complete or the den is abandoned. A qualified biologist will monitor each den once per week to track the status of the den and to determine when a den area has been cleared for construction.

Burrowing Owl

Prior to commencing ground disturbance activities, the following measures are recommended to reduce potential impacts to burrowing owl:

- The applicant will retain a qualified biologist to conduct focused breeding and nonbreeding season surveys for burrowing owls in areas of suitable habitat on and within 1,500 feet of the project site. Surveys will be conducted prior to the start of construction activities and in accordance with Appendix D of CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFW 2012).

- If no occupied burrows are found, a letter report documenting the survey methods and results will be submitted to CDFW and no further mitigation will be required.

- If an active burrow is found during the nonbreeding season (September 1 through January 31), the applicant will consult with CDFW regarding protection buffers to be established around the occupied burrow and maintained throughout construction. If occupied burrows are present that cannot be avoided or adequately protected with a no-disturbance buffer, a burrowing owl exclusion plan will be developed, as described in Appendix E of CDFW's 2012 Staff Report. Burrowing owls will not be excluded from occupied burrows until the project's burrowing owl exclusion plan is approved by CDFW. The exclusion plan will include a plan for creation, maintenance, and monitoring of artificial burrows in suitable habitat proximate to the burrows to be destroyed, that provide substitute burrows for displaced owls.

- If an active burrow is found during the breeding season (February 1 through August 31), occupied burrows will not be disturbed and will be provided with a 150- to 1,500-foot protective buffer unless a qualified biologist verifies through noninvasive means that either: (1) the birds have not begun egg laying, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. The size of the buffer will depend on the time of year and level disturbance as outlined in the CDFW Staff Report (CDFW 2012). The size of the buffer may be reduced if a broad-scale, long-term, monitoring program acceptable to CDFW is implemented to ensure burrowing owls are not detrimentally affected. Once the fledglings are capable of independent survival, the owls can be evicted and the burrow can be destroyed per the terms of a CDFW-approved burrowing owl exclusion plan developed in accordance with Appendix E of CDFW's 2012 Staff Report.

Loggerhead shrike

Prior to commencing ground disturbance or vegetation removal activities, the following measures are recommended to reduce potential impacts to loggerhead shrike:

- To minimize the potential for loss of loggerhead shrike or other bird nests, any removal of saltbush scrub habitat, if planned, will commence during the nonbreeding season (September 1-January 31). If all suitable nesting habitat is removed during the nonbreeding season, no further mitigation would be required.

- Prior to removal of any saltbush scrub habitat, or any ground-disturbing activities between February 1 and August 31, a qualified biologist will conduct preconstruction surveys for nests on any structure or vegetation slated for removal. The surveys will be conducted no more than 14 days before construction commences. If no active nests are found during focused surveys, no further action under this measure will be required. If active nests are located during the preconstruction surveys, the biologist will notify CDFW. If necessary, modifications to the project design to avoid removal of occupied habitat while still achieving project objectives will be evaluated, and implemented to the extent feasible. If avoidance is not feasible or conflicts with project objectives, construction will be prohibited within a minimum of 100 feet of the nest to avoid disturbance until the nest colony is no longer active. These recommended buffer areas may be reduced through consultation with CDFW.

Wetland Delineation and Permitting for Impacts to Waters of the United States or State

Prior to commencing ground disturbance activities, the following measures are recommended to reduce potential impacts to waters of the United States or waters of the State:

- Prior to ground disturbance activities on the project site, an aquatic feature delineation will be prepared by a qualified biologist following USACE Sacramento District 2016 *Minimum Standards for Acceptance of Aquatic Resources Delineation Reports* to determine if the aquatic features are subject to USACE jurisdiction. The delineation will also evaluate if aquatic features are subject to regulation by RWQCB or CDFW.

- The delineation will be submitted to and verified by USACE. If, based on the verified delineation, it is determined that fill of waters of the United States or state would result from implementation of the project, authorization for such fill will be secured from USACE through the Section 404 permitting process. Any impacts to waters of the United States or state will be temporary in nature and drainages will be returned to original conditions following construction.

- In association with the Section 404 permit (if applicable) and prior to the issuance of any grading permit, Section 401 Water Quality Certification from the RWQCB will be obtained. *Procedures for Regulation of Discharges of Dredged or Fill Material to Waters of the State* (California Water Board) will be followed for impacts to waters of the state that are not subject to USACE jurisdiction.

- The project applicant will notify CDFW before commencing any activity within the bed, bank, or riparian corridor of any waterway. If activities require the need for a Streambed Alteration Agreement, the proponent will obtain an agreement from CDFW before project approval. The project applicant will conduct construction activities in accordance with the agreement, including implementing reasonable measures in the agreement necessary to protect the fish and wildlife resources, when working within the bed or bank of waterways that function as a fish or wildlife resource or in riparian habitats associated with those waterways.

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