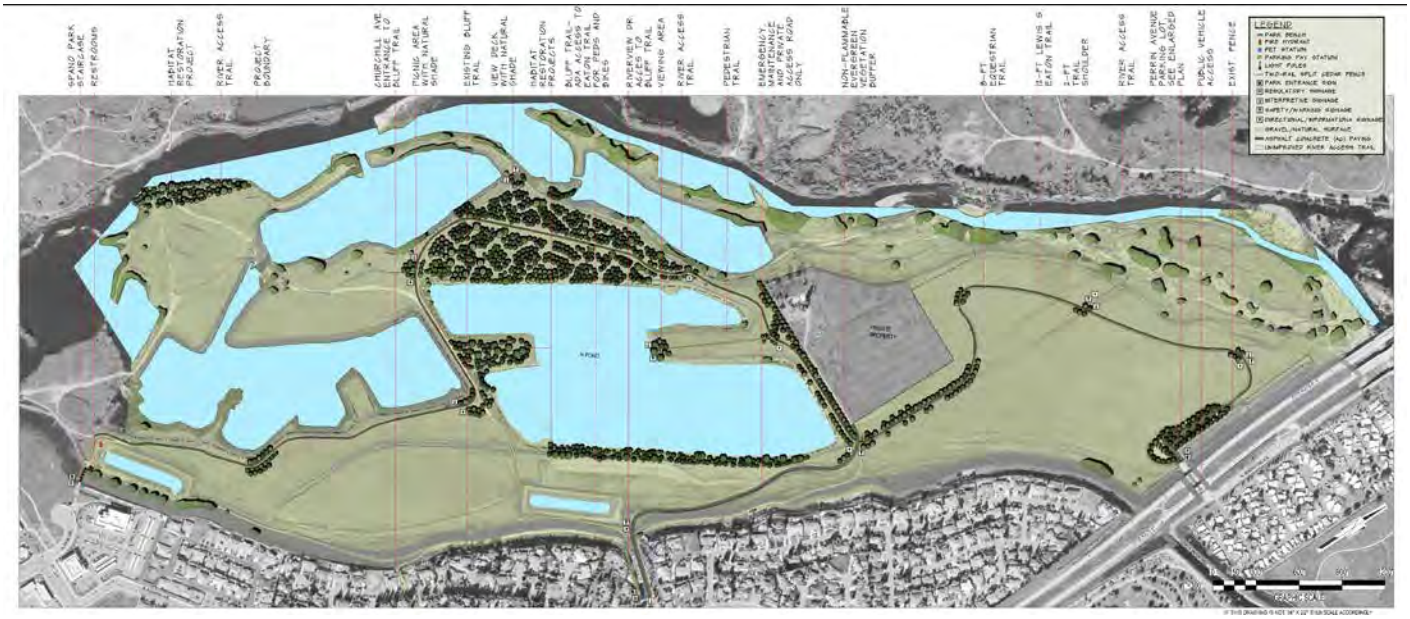
EXHIBIT F

Draft EIR

Draft Environmental Impact Report
State Clearinghouse No. 2014061017

San Joaquin River Conservancy River West Fresno, Eaton Trail Extension Project



Prepared for:

San Joaquin River Conservancy

AECOM

February 2017

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State Clearinghouse No. 2014061017

San Joaquin River Conservancy River West Fresno, Eaton Trail Extension Project

Prepared for:

San Joaquin River Conservancy
5469 E. Olive Avenue
Fresno, CA 93727

Contact:

Melinda Marks, Executive Officer
info@sjrc.ca.gov

Prepared by:

AECOM
1360 E. Spruce Avenue, Suite 101
Fresno, CA 93720

Contact:

David Young
559.490.8324

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Acronyms and Other Abbreviations

°F	degrees Fahrenheit
AB	Assembly Bill
ADA	Americans with Disabilities Act
amsl	above mean sea level
APCO	Air Pollution Control Officer
ARB	California Air Resources Board
Basin Plan	*Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*
bgs	below ground surface
bluffs	San Joaquin River Bluffs
BMP	best management practice
BNSF	Burlington Northern Santa Fe
BP	Bluff Preservation
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH_4	methane
City	City of Fresno
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide

CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
Conservancy	San Joaquin River Conservancy
Conservancy Act	San Joaquin River Conservancy Act
County Background Report	*Fresno County General Plan Revised Public Review Background Report*
CRHR	California Register of Historical Resources
CUPA	Certified Unified Program Agency
CVFPB	Central Valley Flood Protection Board
CWA	Clean Water Act
dB	decibel(s)
dBA	A-weighted decibel(s)
DEIR	draft environmental impact report
DTSC	California Department of Toxic Substances Control
EIR	environmental impact report
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FMFCD	Fresno Metropolitan Flood Control District
General Plan 2025	*2025 Fresno General Plan*
General Plan Update 2035	updated *Fresno General Plan* (approved December 2014)
General WDRs	State Water Board Order No. 2004-0004-DWQ, "Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by USACE to be Outside Federal Jurisdiction"
GHG	greenhouse gas
GWP	global warming potential
HRRP	habitat restoration and revegetation plan
HWCL	Hazardous Waste Control Law
K-12	kindergarten through 12th grade
L_{dn}	day/night noise level
LED	light-emitting diode
LOS	level of service
MBTA	Migratory Bird Treaty Act
mph	miles per hour
MPO	metropolitan planning organization
$MTCO_2e$	metric tons of carbon dioxide equivalent
NAAQS	national ambient air quality standards

N_2O	nitrous oxide
NO	nitric oxide
NO_2	nitrogen dioxide
NOP	notice of preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NTU	nephelometric turbidity unit
O_3	ozone
OES	Governor's Office of Emergency Services
Parkway	San Joaquin River Parkway
Parkway Master Plan	*San Joaquin River Parkway Master Plan*
PM	particulate matter
$PM_{2.5}$	particulate matter equal to or less than 2.5 micrometers in diameter
PM_{10}	particulate matter equal to or less than 10 micrometers in diameter
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PRC	California Public Resources Code
project	Proposed River West Fresno, Eaton Trail Extension Project
RCRA	Resource Conservation and Recovery Act
Reporting Rule	Final Mandatory Greenhouse Gas Reporting Rule
River	San Joaquin River
ROG	reactive organic gas
RWQCB	regional water quality control board
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
Scoping Plan	*Climate Change Scoping Plan*
Settlement Act	San Joaquin River Restoration Settlement Act
SIP	State Implementation Plan
SJKF	San Joaquin kit fox
SJRRP	San Joaquin River Restoration Program
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide
SR	State Route
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board

TAC	toxic air contaminant
Task Force Plan	*San Joaquin River Parkway Task Force Plan*
TMDL	total maximum daily load
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VdB	vibration decibel(s)
VELB	valley elderberry longhorn beetle
WDR	waste discharge requirement

Chapter 1
Executive Summary

1.1 Introduction

Under the California Environmental Quality Act (CEQA), when discretionary projects are undertaken by public agencies, an environmental impact report (EIR) is required if the lead agency determines that the project may cause a significant environmental impact. On June 9, 2014, pursuant to Section 15082 of the State CEQA Guidelines, the San Joaquin River Conservancy (Conservancy) circulated a notice of preparation (NOP) of the draft EIR (DEIR) for the proposed River West Fresno, Eaton Trail Extension Project (project) to local and State agencies and other interested parties. A public review period was set from June 9 to July 8, 2014. An open house public scoping meeting was held on June 17, 2014, at the Pinedale Community Center, located at 7170 N. San Pablo Avenue in Fresno, California. The purpose of the NOP and the scoping meeting was to solicit guidance from agencies and the public as to the scope and content of environmental information to be included in the EIR in accordance with the State CEQA Guidelines.

The NOP provided a description of the project, location, alternatives and identified potential environmental effects. The NOP, and agency and public comments received during the scoping period are found in Appendix A of this DEIR.

The purpose of an EIR is to provide full disclosure of the potentially significant environmental effects of the project to the public and the decision-makers and explore the means to mitigate (i.e., reduce, avoid, or eliminate) those impacts through special mitigation measures or alternatives to the project. CEQA intends for preparation of an EIR to be a public process that provides meaningful opportunities for public input regarding environmental effects.

Section 15123 of the State CEQA Guidelines requires that an EIR contain a brief summary of the proposed action and its consequences. This executive summary is required to identify:

- each significant effect, with proposed mitigation measures and alternatives that would reduce or avoid that effect;
- areas of controversy known to the lead agency, including issues raised by agencies and the public; and
- issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects.

This DEIR has been prepared in accordance with CEQA to evaluate the potential environmental impacts associated with the project. This DEIR has been prepared in accordance with CEQA (California Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations [CCR] Title 14, Section 15000 et seq. [14 CCR Section 15000 et seq.]).

The purpose of this DEIR is to inform public agency decision makers, representatives of affected and responsible agencies, the public, and other interested parties of the potential environmental effects of implementing the project. In addition to identifying potential environmental effects, this DEIR identifies methods by which these impacts can be mitigated, reduced, minimized, or avoided.

1.2 Project Description

The Conservancy proposes to extend the existing Lewis S. Eaton Trail (Eaton Trail) by constructing a multipurpose trail extension with ancillary recreation support features. The Eaton Trail would be extended approximately 2.4 miles, from the Perrin Avenue alignment near State Route (SR) 41 on the east to Spano Park on the west.

The proposed trail would be about 22 feet wide, with a 12-foot-wide paved surface, a parallel 8-foot-wide hard natural surface for equestrian use, and a 2-foot shoulder (opposite the natural surface area) and generally would proceed from SR 41 to a point below the Spano Park overlook.

A parking lot (Perrin Avenue parking lot) for 50 vehicles with a controlled vehicle entrance would be constructed adjacent to SR 41. Vehicle access to the parking lot would be at the Perrin Avenue undercrossing of SR 41. A gate and an unmanned parking pay station would be included to manage vehicle access. The parking lot would accommodate up to three horse trailer stalls and would have a fire hydrant, a drinking fountain, a public information bulletin board, a small pet station, and a two-vault restroom. The trail, restroom and parking lot would be Americans with Disabilities Act (ADA) accessible. The pet station would be located at the Perrin Avenue entrance. Light-emitting diode (LED) light sets with rechargeable batteries and a solar panel would be mounted on light poles, providing sufficient illumination for security and maintenance. The area surrounding the parking lot would be landscaped with native vegetation. Stormwater would be directed into vegetated bioswales. An emergency/service gate would provide access to the trail extension for emergency first responders and maintenance staff. Fire hydrants would be added at three locations if feasible: at the Perrin Avenue parking lot, near the private property parcel, and near the toe of the bluff below Spano Park.

Pedestrian and bicycle access would be provided at four locations—Perrin Avenue, Spano Park, and the West Riverview Drive and Churchill Avenue entrances to the Bluff Trail. The Bluff Trail is an existing neighborhood trail, located on land owned by the City of Fresno (City). A 12-foot-wide paved connector trail would be constructed to provide access from the Bluff Trail to the trail extension near West Riverview

Drive. A wide staircase with bicycle guides would be constructed from Spano Park to the proposed trail. The Spano Park access and Bluff Trail access would be constructed on the steep slope of the San Joaquin River Bluffs (bluffs).

The trail extension would be landscaped at intervals with native vegetation for habitat enhancement, visual screening, and shade. The landscaping would be irrigated until the vegetation is permanently established. Picnic areas, tables, benches, public safety and information signs, and wildlife observation areas would be provided along the trail extension at various locations. An ADA accessible vault restroom would be added near the toe of Spano Park.

Existing unimproved hiking paths to the riverbank would be connected to the trail extension. These paths would be widened up to 6 feet and overlaid with a permeable surface, such as decomposed gravel. These hiking paths would not be landscaped.

On completion, the project would provide low-impact public recreational activities along the San Joaquin River (River), such as hiking, bicycling, horse riding, fishing, and nature observation, consistent with the *San Joaquin River Parkway Master Plan* (San Joaquin River Conservancy 1997a) (Parkway Master Plan). A summary of the policies and goals of the Parkway Master Plan are found in Appendix B of this DEIR.

The project would cover approximately 8.9 acres—5.9 acres of paved, impermeable surface and 3.0 acres of unpaved, permeable surfaces (e.g., gravel) within approximately 358 acres of public lands.

1.3 Project Location

The study area[1] is located along the River between SR 41 and Spano Park within the city limits of Fresno (Figure 2-1 in Chapter 2). The boundary extends from the River south to the bluffs and westward from SR 41 to Spano Park, near the intersection of Palm Avenue and Nees Avenue. The project area is sited within Sections 21, 28, and 29 of Township 12S, Range 20E, Mount Diablo Baseline and Meridian, Fresno North 7.5-minute series, U.S. Geological Survey (USGS) topographic quadrangle.

The study area that is analyzed in this DEIR is approximately 358 acres and is located on the south side of the River. A majority of the land is owned by the State of California under the management jurisdiction of the Conservancy. Two parcels, owned by the City, are adjacent to Conservancy-owned land. Implementation of a portion of the project may occur on the city's parcels.

[1] "Study area" and "project site" are interchanged throughout this document in context to the 358-acre project defined in the project description. The term "project area" is used when referring to the project site and the surrounding area.

Three other parcels in the study area are owned by others and would not be part of the project. One parcel, privately owned land located near the center of the study area, is occupied by two residences. Access to these residences is via a paved road from West Riverview Drive. The other two parcels, owned by Fresno Metropolitan Flood Control District (FMFCD), contain stormwater detention basins.

A residential subdivision is located on the bluffs, adjacent to the southern project boundary and on top of the bluffs approximately 60 feet above the project site. The subdivision is within the city limits of Fresno.

1.4 Project Objectives

A primary, broad objective of the Conservancy is to link all public recreational areas and natural reserves between SR 99 and Friant Dam with a continuous, multipurpose trail on land and with canoe put-in, take-out, and rest areas along the river, to create a recreation system with a variety of recreational opportunities within the planned San Joaquin River Parkway (Parkway), and to connect the multipurpose trail with other local and regional trails and bikeways originating in surrounding areas consistent with Parkway Master Plan policies. The objective of the proposed project is to extend the existing Eaton Trail from Woodward Park for about 2.4 miles downstream along the San Joaquin River across State-owned land and provide recreation amenities consistent with the Parkway Master Plan policies.

1.5 Potential Areas of Concern and Issues to be Resolved

The State CEQA Guidelines require that an EIR provide a list of issues that are likely to raise controversy and are of particular interest to the public. The following issues are most likely to produce controversy in reviewing and considering the project:

- access to the study area from the Fresno side of the River;
- access to the study area via West Riverview Drive;
- access to the study area from the vicinity of Palm Avenue and Nees Avenue;
- public access and ADA compliance;
- trail access to the River;
- parking to support access to the project;
- location of the trail extension alignment;
- consistency with the *Fresno General Plan* (2014)[2];

[2] During preparation of this DEIR, the City of Fresno released the draft Fresno General Plan on July 2, 2014. The Fresno City Council approved the general plan on December 18, 2014 (City of Fresno 2014a).

- risk of wildland fire extending to the bluffs' residential area;
- public safety (e.g., public nuisances, loitering, crime);
- air quality effects associated with the Perrin Avenue vehicular access;
- recreational amenities;
- support for specific alternatives; and
- wildlife conservation and viewing.

1.6 Summary of Impacts and Mitigation Measures

Table 1.6-1 (beginning on the next page) summarizes the impacts of the project (with impact conclusions of either No Impact, Less-than-Significant Impact, or Potentially Significant or Significant Impact) and mitigation measures that would be implemented to reduce these impacts.

1.7 Unavoidable Significant Environmental Effects

A project would result in unavoidable significant environmental effects if the impacts resulting from the project (both construction-related and operational impacts) would be significant and for which no feasible mitigation or only partial mitigation is feasible.[3] Approval and implementation of a project that involves unmitigable significant effects typically require a statement of overriding considerations by the lead agency.

As described in Chapter 3, "Affected Environment, Environmental Consequences, and Mitigation Measures," the proposed River West Fresno Eaton Trail Extension Project would involve multiple potentially significant impacts. However, with the implementation of best management practices (BMPs) that have been incorporated into the project design (refer to Section 2.5.1, "Best Management Practices") and with implementation of specific proposed mitigation measures where needed (e.g., for biological resources and aesthetic and visual resources), all potentially significant impacts associated with implementation of the project would be avoided and reduced to less-than-significant levels with the exception of the following resource area presenting a potentially unavoidable significant impact: Environmental Justice—Disadvantaged Communities, as described in Section 4.2.

[3] California Code of Regulations, Title 14, Division 6, Chapter 3, California Environmental Quality Act Guidelines, Section 15126.2(b).

Table 1.6-1 Summary of Impacts and Mitigation Measures

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Aesthetics and Visual Resources			
Impact 3.2-1: The project would have a substantial adverse effect on a scenic vista.	**Temporary Impact** Less than significant	**Temporary Impact** No mitigation is required.	
	Long-Term Impact Potentially significant	**Long-Term Impact** **Aesthetics and Visual Resources-1:** The Conservancy shall use native plants for landscaping portions of the trail extension to allow for naturalization of these features. Landscaping and recreation facilities shall be designed to create visual buffers and in a manner complementary and/or compatible with the scenic nature of the area. Newly landscaped vegetation shall be irrigated until permanently established. The Conservancy shall select materials and colors for all facilities (e.g., vault toilet restrooms) that and shall be compatible with the surrounding natural environment.	**Long-Term Impact** Less than significant
Impact 3.2-2: The project could substantially damage scenic resources, including trees, rock outcroppings, and historic buildings within a State scenic highway.	Less than significant	No mitigation is required.	
Impact 3.2-3: The project would substantially degrade the existing visual character or quality of the site and its surroundings.	**Temporary Impact** Less than significant	**Temporary Impact** No mitigation is required.	
	Long-Term Impact Potentially significant	**Long-Term Impact** **Aesthetics and Visual Resources-2:** The Conservancy shall implement Mitigation Measure Aesthetics and Visual Resources-1.	**Long-Term Impact** Less than significant
Impact 3.2-4: The project would create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	**Temporary Impact** No impact		
	Long-Term Impact Potentially significant	**Long-Term Impact** **Aesthetics and Visual Resources-3:** The Conservancy shall implement the following measures regarding lighting design features: • All outdoor lights shall be fully shielded with full cutoff luminaires. • All up-lighting for any purpose shall be avoided.	Less than significant

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• Tree-mounted lights shall be avoided unless they are fully shielded and pointing downward toward the ground or shining into dense foliage.	
Agriculture and Forestry Resources			
Impact 3.3-1: The project could convert Prime Farmland, Unique Farmland, of Farmland of Statewide Importance (Farmland) to nonagricultural use.	Less than significant	No mitigation is required.	
Impact 3.3-2: The project could conflict with existing agricultural zoning or a Williamson Act contract.	Less than significant	No mitigation is required.	
Impact 3.3-3: The project could conflict with existing zoning or cause rezoning of forestland.	No impact		
Impact 3.3-4: The project could cause the loss or conversion of forestland to nonforest use.	No impact		
Impact 3.3-5: The project could involve other changes that could result in conversion of farmland to nonagricultural use or timberland to nonforest use.	No impact		
Air Quality			
Impact 3.4-1: The project could conflict with or obstruct implementation of the applicable air quality plan.	Less than significant	No mitigation is required.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Impact 3.4-2: The project could violate an air quality standard or could contribute substantially to an existing or projected air quality violation.	Less than significant	No mitigation is required.	
Impact 3.4-3: The project could result in a cumulatively considerable net increase of a criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).	Less than significant	No mitigation is required.	
Impact 3.4-4: The project could expose sensitive receptors to substantial pollutant concentrations.	Less than significant	No mitigation is required.	
Impact 3.4-5: The project could create objectionable odors affecting a substantial number of people.	Less than significant	No mitigation is required.	
Biological Resources			
Impact 3.5-1: The project would have a substantial adverse effect on a species identified as a candidate, sensitive, or special-status species.	**Special-Status Plant Species** Potentially significant	**Mitigation Measure Biological Resources-1 (Special-Status Plant Species):** Before any ground-disturbing activities, a qualified botanist shall conduct a botanical survey for California satintail and Sanford's arrowhead during their respective floristic periods (September to May and November to May). If it is determined that suitable habitat for special-status plants is present, the botanist shall conduct a focused survey for special-status plants during the appropriate time of the year to adequately identify special-status plants that could occur in the study area. The surveys shall be performed according to the *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities* (DFG 2009). Surveys shall be performed before the final alignment has been established to avoid special-status plants, and if the species are present before the start of construction as well.	Less than significant

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		One or more of the following measures shall be implemented to avoid and/or minimize impacts on sensitive natural communities and special-status plants as appropriate, per the botanist's recommendation: • Flag or otherwise delineate in the field the special-status plant populations and/or sensitive natural communities to be protected. Clearly mark all such areas to be avoided on construction plans and designate these areas as "no construction" zones. • Allow adequate buffers around plants or habitat; show the location of the buffer zone on the maintenance design drawings. Mark this exclusion zone in the field with stakes and/or flagging so that it is visible to maintenance personnel, without causing excessive disturbance of the sensitive habitat or population itself (e.g., from installation of fencing). • Time construction or other activities during dormant and/or noncritical life cycle period. • Limit the operation of construction equipment to established roads wherever possible.	
	Special-Status Wildlife Species—San Joaquin Kit Fox Potentially significant	**Mitigation Measure Biological Resources-2 (San Joaquin Kit Fox):** The following measures are summarized from the USFWS *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 2011). These measures shall be implemented to reduce impacts on SJKF entering the area during construction: • An employee education program shall be conducted. The program shall consist of a brief presentation by a qualified wildlife biologist. The program shall include a description of the SJKF and its habitat needs; a report of SJKF occurrence in the project area; an explanation of the status of the species and its protection under the ESA; and a list of measures being taken to reduce impacts on the species during project construction. A fact sheet conveying this information shall be prepared for distribution to construction personnel. • A representative shall be appointed to be the contact for any employee or contractor who might inadvertently kill or injure a kit fox	Less than significant

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		or who finds a dead, injured, or entrapped kit fox. The representative shall be identified during the employee education program and his or her name and telephone number shall be provided to USFWS and CDFW. • Project-related vehicles shall observe a daytime speed limit of 15 mph throughout the project site, except on State and federal highways; after dark, the speed limit shall be reduced to 10 mph. Off-road traffic outside of designated areas shall be prohibited. • Work at night shall not be allowed. • To prevent inadvertent entrapment of kit foxes or other animals during construction, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered with plywood or similar materials at the end of each work day. If the trenches cannot be closed, one or more escape ramps constructed of earthen fill or wooden planks shall be installed. Before such holes or trenches are filled, they shall be inspected for trapped animals. • All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until USFWS or CDFW has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped. • Holes or trenches more than 8 feet deep shall be covered or fenced at the end of the day. • All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from the project site. • Firearms shall not be allowed on the project site. • To prevent harassment, mortality of kit foxes, or destruction of dens, no pets shall be permitted on the project site.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• Rodenticides and herbicides shall not be used on the project site except to control invasive plant species. • Upon completion of the project, all areas subject to temporary ground disturbance, including staging areas, temporary roads, and borrow sites, shall be recontoured if necessary and revegetated to promote restoration of the area to preproject conditions. • Any death, injury, or entrapment of SJKF shall be reported to USFWS and CDFW staff immediately. Written reports shall be submitted within 3 working days of the event.	
	Special-Status Wildlife Species—American Badger Potentially significant	**Mitigation Measure Biological Resources-3 (American Badger):** The Conservancy shall conduct a preconstruction survey no less than 14 days and no more than 30 days before the beginning of ground-disturbing activities. If active American badger den sites are present, the Conservancy shall consult with CDFW and implement the following measures: • The entrances to dens shall be blocked for 3–5 days to discourage use. • After the 3- to 5-day period, the dens shall be hand-excavated with a shovel to prevent reuse during construction. • No disturbance of active dens shall take place when cubs may be present and dependent on parent care.	Less than significant
	Special-Status Wildlife Species—Avian Species Potentially significant	**Mitigation Measure Biological Resources-4 (Avian Species):** If project-related construction must occur during the breeding season (February through mid-September), the Conservancy shall have surveys performed for active nests no more than 30 days before commencing project-related activities. The surveys shall be conducted by a qualified biologist. A minimum no-disturbance buffer of 250 feet shall be delineated around active nests until the breeding season has ended, a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, or the biologist determines that the nest is no longer active. The results of the preconstruction survey and any subsequent monitoring shall be provided to CDFW.	Less than significant

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
	Special-Status Wildlife Species—Avian Species Potentially significant	**Mitigation Measure Biological Resources-5 (Bald Eagle):** Before initiating ground-disturbing activities, the Conservancy shall have preconstruction surveys performed for bald eagle nesting habitat and roost sites and foraging areas along the River within 2 miles of the project. Surveys shall be conducted in accordance with the CDFW *Bald Eagle Breeding Survey Instructions* (DFG 2010) or current guidance. If an active eagle's nest is found within 0.5 mile of the project, construction shall not occur during the breeding season, typically January through July or August. If project-related construction must occur during the breeding season, the Conservancy shall have surveys performed for active nests no more than 30 days before commencing project-related activities. The surveys shall be conducted by a qualified biologist. A minimum no-disturbance buffer of 250 feet shall be delineated around active nests until the breeding season has ended, a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, or the biologist determines that the nest is no longer active. The results of the preconstruction survey and any subsequent monitoring shall be provided to CDFW.	Less than significant
	Special-Status Wildlife Species—Burrowing Owl Potentially significant	**Mitigation Measure Biological Resources-6 (Burrowing Owl):** The Conservancy shall implement the following measures before initiating ground-disturbing activities: • Focused surveys shall be conducted following the survey methodology developed by the California Department of Fish and Game (now CDFW) *Staff Report on Burrowing Owl Mitigation* (DFG 2012). • If burrowing owls are found within the project footprint as a result of the required surveys, the recommendations of the *Staff Report on Burrowing Owl Mitigation* (DFG 2012) are mandatory; avoiding nesting sites must include implementation of no-disturbance buffer zones, unless a qualified biologist approved by CDFW verifies through noninvasive methods that either (1) the birds have not begun egg laying and incubation, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival.	Less than significant

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• If burrowing owls must be removed, passive relocation is required during the nonbreeding season. A burrowing owl relocation plan to be approved by CDFW shall be developed and implemented, including passive measures such as installing one-way doors in active burrows for up to 4 days, carefully excavating all active burrows after 4 days to ensure that no owls remain underground, and filling all burrows in the construction area to prevent owls from using them. Replacement of burrows with artificial burrows at a ratio of one burrow collapsed to one artificial burrow constructed (1:1) is required.	
	Special-Status Wildlife Species—Swainson's Hawk Potentially significant	**Mitigation Measure Biological Resources-7 (Swainson's Hawk):** The Conservancy shall implement the following measure before construction starts: • To avoid impacts on Swainson's hawks, no construction project shall occur between March 1 and August 31 unless a qualified biologist has performed nesting surveys following the survey methodology developed by the Swainson's Hawk Technical Advisory Committee (DFG 2000) before the start of project activities. Additional preproject surveys for active nests within a 0.5-mile radius of the project site shall be conducted by a qualified biologist no more than 10 days before the start of project activities and during the appropriate time of day to maximize detectability. A minimum no-disturbance buffer of 0.5 mile shall be delineated around active nests until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.	Less than significant
	Special-Status Wildlife Species—Raptor/Migratory Birds Potentially significant	**Mitigation Measure Biological Resources-8 (Raptors/Migratory Birds):** If construction begins between February 1 and August 31, the Conservancy shall conduct surveys for nesting birds within 1,000 feet of the trail extension, parking lot, and other construction areas. If active nests are found, a buffer of 250 feet shall be established. A smaller buffer area may be sufficient if, in consultation with CDFW, it is determined sufficient to avoid impacts. Buffers shall be maintained until the young have fledged or the nests become inactive.	Less than significant

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
	Special-Status Wildlife Species—Silvery Legless Lizard Potentially significant	**Mitigation Measure Biological Resources-9 (Silvery Legless Lizard):** The Conservancy shall perform a survey for legless lizard presence and shall evaluate and map specific habitat areas within the riparian habitat along the unimproved hiking paths before construction. The survey shall use standard coverboard techniques for herpetofauna. If silvery legless lizard or specific habitat areas are found, the area shall be avoided.	Less than significant
	Special-Status Fish Species—Chinook Salmon No impact		
Impact 3.5-2: The project could have a substantial adverse effect on riparian habitat or other sensitive natural communities.	Less than significant	No mitigation is required.	
Impact 3.5-3: The project could have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means.	Less than significant	No mitigation is required.	
Impact 3.5-4: The project would interfere substantially with the movement of native resident or migratory fish or wildlife, or with established corridors.	Potentially significant	**Mitigation Measure Biological Resources-10 (Wildlife Movement):** The Conservancy shall implement the following measures: • The multiuse trail shall be located outside the riparian corridor in conformance to the buffers established in the Parkway Master Plan. • All ground-disturbing work, including construction and routine maintenance, and routine recreational operating hours shall occur during daylight hours. • At a minimum, dogs shall be required to be leashed at all times.	Less than significant

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Impact 3.5-5: The project could conflict with a local policy or ordinance protecting biological resources, such as a tree preservation policy or ordinance.	No impact		
Impact 3.5-6: The project could conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	No impact		
Cultural Resources			
Impact 3.6-1: The project could cause a substantial adverse change in the significance of a historical resource as defined in CEQA Section 15064.5.	Less than significant	No mitigation is required.	
Impact 3.6-2: The project would cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Section 15064.5.	Potentially significant	**Mitigation Measure Cultural Resources-1:** The Conservancy shall perform Extended Phase I subsurface testing along the alignment of the trail extension to determine the boundary of site CA-FRE-980 and identify the presence of additional archaeological deposits. The testing shall be performed before the start of any construction. The Conservancy shall ensure that all cultural resources identified shall be evaluated for eligibility for inclusion in the CRHR. All additional testing shall be performed by individuals who meet the United States Secretary of the Interior's professional standards in archaeological history. If archaeological resources are determined to be eligible for the CRHR, and if the impacts of project construction and visitor use of the alignment render these resources as ineligible for the CRHR, the alignment shall be moved a minimum of 100 feet.	Less than significant

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Impact 3.6-3: The project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Less than significant	No mitigation is required.	
Impact 3.6-4: The project could disturb human remains, including those interred outside formal cemeteries.	Potentially significant	**Mitigation Measure Cultural Resources-2:** If human remains or bone of unknown origin is found during any future project construction in the planning, all work shall stop in the vicinity of the find and the County Coroner shall be contacted immediately. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission. The Native American Heritage Commission shall notify the person considered to be the most likely descendant. The most likely descendant shall work with the project applicant to develop a program for the reinternment of the human remains and any associated artifacts. No additional work shall take place within the immediate vicinity of the find until the identified appropriate actions have been completed.	Less than significant
Geology and Soils			
Impact 3.7-1: The project could expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides.	Less than significant	No mitigation is required.	
Impact 3.7-2: The project would result in substantial soil erosion or loss of topsoil.	Potentially significant	**Mitigation Measure Geology and Soils-1:** The Conservancy shall implement the following measures: • Grading plans and design shall be signed by a professional engineer and submitted for approval within a reasonable time frame before the start of construction. • Construction slopes and grading shall be designed to limit the potential for slope instability and minimize the potential for erosion during and after construction.	Less than significant

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• In developing grading and construction procedures, the stability of both temporary and permanent cut, fill, and otherwise affected slopes shall be analyzed and properly addressed. • Development of the project site shall comply with the then-most-recent California Building Standards Code design standards and performance thresholds for construction on steep slopes to avoid or minimize potential damage from erosion. • Where soft or loose soils are encountered during investigations, design, or project construction, appropriate measures shall be implemented to avoid, accommodate, replace, or improve such soils. Depending on site-specific conditions and permit requirements, these measures may include: – locating construction facilities and operations away from areas of soft and loose soil; – overexcavating soft or loose soils and replacing them with engineered backfill materials; – increasing the density and strength of soft or loose soils through mechanical vibration and/or compaction; – installing material over construction access roads such as aggregate rock, steel plates, or timber mats; and – treating soft or loose soils in place with binding or cementing agents. • At the beginning of each construction day, the proposed staircase and trail along the bluff slope shall be evaluated for slope stability by qualified construction staff. • Fiber rolls shall be placed along the perimeter of the site to prevent sediment and construction-related debris and sediment from leaving the site. • Silt fences shall be placed downgradient of disturbed areas to slow runoff and sediment.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• During construction, slopes affected by construction activities shall be monitored by qualified construction staff and maintained in a stable condition. • Construction activities likely to result in slope instability shall be suspended, as necessary, during and immediately following periods of heavy precipitation when unstable slopes are more susceptible to failure.	
Impact 3.7-3: The project could be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially could result in on or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	Less than significant	No mitigation is required.	
Impact 3.7-4: The project could be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.	Less than significant	No mitigation is required.	
Impact 3.7-5: The project site could have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.	Less than significant	No mitigation is required.	
Greenhouse Gas Emissions			
Impact 3.8-1: The project could generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	Less than significant	No mitigation is required.	
Impact 3.8-2: The project could conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.	Less than significant	No mitigation is required.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Hazards and Hazardous Materials			
Impact 3.9-1: The project could create a significant hazard to the public or the environment through routine transportation, use or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	Less than significant	No mitigation is required.	
Impact 3.9-2: The project could 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		
Impact 3.9-3: The project could be located on a site which is included on a list of hazardous materials sites compiled pursuant to the Government Code Section 65962.5, and therefore would create a significant hazard to the public or the environment.	Less than significant	No mitigation is required.	
Impact 3.9-4: The project could be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, and the project could result in a safety hazard for people residing or working in the study area.	No impact		
Impact 3.9-5: The project could be in the vicinity of a private airstrip, and thus, project implementation could result in a	No impact		

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
safety hazard for people residing or working in the study area.			
Impact 3.9-6: The project could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	No impact		
Impact 3.9-7: The project would 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.	Potentially significant	**Mitigation Measure Hazards and Hazardous Materials-1:** Safe access for emergency and wildland fire suppression equipment and civilian evacuation shall be provided at three entrance points and throughout the site on the paved trail system. Response agency–approved emergency responder access locks shall be maintained on all gates. **Mitigation Measure Hazards and Hazardous Materials-2:** Signs shall be posted that clearly indicate entrances and egresses for the multiuse trail (e.g., Perrin Avenue entrance, West Riverview Drive entrance), to minimize delay in response times to any wildfires that may occur. **Mitigation Measure Hazards and Hazardous Materials-3:** Any internal combustion engine that uses hydrocarbon fuels shall not be used on any grass- or brush-covered lands unless the engine is equipped with a spark arrester. All vehicles and construction equipment shall be equipped with an improved muffler. **Mitigation Measure Hazards and Hazardous Materials-4:** Signage containing the following or equally effective language shall be placed at all trail access points: • Wildland fires destroy habitat and can threaten lives and structures—be fire safe! The following prohibitions apply throughout the trail area: (a) No open fires, campfires, or fireworks. (b) No burning of any trash, vegetation, brush, stumps, logs, fallen timber, or any other flammable material. (c) Portable barbecues or grills may not be used. (d) No smoking. **Mitigation Measure Hazards and Hazardous Materials-5:**	Less than significant

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		The Conservancy shall maintain a fire-defensible firebreak or comply with the standards in the City of Fresno's weed abatement/fire prevention ordinance by annually disking or mowing at the site. The shoulders of developed trails shall also be mowed or disked no less often than annually. Ladder fuels and fuel loads shall be evaluated periodically and management measures such as trimming and fuel reduction activities shall be implemented in public use areas. **Mitigation Measure Hazards and Hazardous Materials-6:** Before the start of construction, a fire prevention plan for construction activities shall be prepared and implemented in coordination with the appropriate emergency service and/or fire suppression agencies of the applicable local or State jurisdictions. The plan shall describe fire prevention and response methods, including fire precaution, requirements for spark arrestors on equipment, and suppression measures that are consistent with the policies and standards of the affected jurisdictions. If heavy equipment is used for construction during the dry season, a water truck shall be maintained on the construction site. Materials and equipment required to implement the fire prevention plan shall be available on-site. Before construction begins, all construction personnel shall be trained in fire safety and informed of the contents of the fire prevention plan.	
Hydrology and Water Quality			
Impact 3.10-1: The project would violate water quality standards or WDRs.	Potentially significant	**Mitigation Measure Hydrology and Water Quality-1:** Construction staging areas, including hazardous-material storage areas and temporary stockpiles, shall be located outside the 100-year floodplain and designated floodway and away from drainages. Appropriate BMPs shall be implemented to ensure that runoff from these areas does not directly flow to surface waters. Before construction begins, locations for storage of hazardous materials, temporary stockpiles, and demolition debris piles within staging areas shall be designated outside the 100-year floodplain and designated floodway and away from drainages. Major storage and stockpile areas shall be designated in the SWPPP, as required for NPDES General Permit coverage for construction. Stockpile areas shall be identified in the SWPPP and appropriate BMPs shall be installed accordingly. The	Less than significant

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		mitigation shall be implemented before any ground disturbance and shall continue throughout construction, as conditions require. **Mitigation Measure Hydrology and Water Quality-2:** The project design shall include structural BMPs for project operation to reduce and treat postconstruction stormwater runoff from the proposed parking lot and other impervious features. The runoff shall be treated through the use of detention basins or other means before it reaches on-site surface waters, wetlands, and the River. The selected BMPs shall minimize the velocity of stormwater flows and disperse the flows to the extent practicable. The selected BMPs also shall serve to infiltrate, filter, store, evaporate, and detain runoff close to its source, and shall enhance on-site recharge of groundwater. The structural BMPs shall be designed in accordance with applicable local and State regulations. BMPs such as bioswales, surface sand, other media filters, vegetated filter strips, and detention basins may be implemented to treat, detain, and percolate stormwater runoff. The mitigation shall be implemented before project designs are finalized. **Mitigation Measure Hydrology and Water Quality-3:** The proposed equestrian trails shall be sited, graded, and constructed consistent with Policy RDP11 of the Parkway Master Plan. The equestrian trail and staging area shall drain to detention swales, with no direct discharges to on-site waters or the River. Signage shall be posted, animal waste containers shall be provided, animal waste removal procedures shall be implemented, and the site shall be inspected periodically to determine the effectiveness of the measures. Vault toilets shall be cleaned daily and waste periodically trucked off-site for treatment.	
Impact 3.10-2: The project could substantially deplete groundwater supplies or could interfere substantially with groundwater recharge so that a net deficit in aquifer volume or a lowering of the local groundwater table could occur.	Less than significant	No mitigation is required.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Impact 3.10-3: The project would substantially alter existing drainage patterns, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.	**Temporary Impact** Less than significant **Long-Term Impact** Potentially significant	**Mitigation Measure Hydrology and Water Quality-4:** For improvements that require an encroachment permit and approval from the CVFPB, drainage and hydromodification studies shall be performed to evaluate and avoid modifications that would increase flooding in upstream or downstream areas, or that would cause obstructions during flood events. A professional civil engineer shall: • conduct a drainage and hydromodification study evaluating the location of all existing and proposed drainage features; • perform stormwater calculations for surface drainage flows occurring before and after project construction; • evaluate the potential for drainage and floodplain modifications to increase erosion on adjacent properties; and • determine the base flood elevation before and after construction, so that no net displacement of floodwaters shall occur. As necessary, the filling of floodplain or floodway areas below the base flood elevation shall be compensated for and balanced by excavation of a hydraulically equivalent area, taken from below the base flood elevation, to achieve no net increase in the base flood elevation greater than 0.10 foot, as measured at the property lines of the parcels being developed. The Conservancy shall perform hydraulic studies in accordance with applicable floodplain management regulations, prepare an encroachment permit application, and obtain an encroachment permit before construction begins. **Mitigation Measure Hydrology and Water Quality-5:** Mitigation Measure Hydrology and Water Quality-2 shall be implemented as described above, to prevent and reduce potential alterations to drainage patterns that can result in erosion or siltation.	Less than significant

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Impact 3.10-4: The project would substantially alter the 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 flooding on- or off-site.	**Temporary Impact** Less than significant **Long-Term Impact** Potentially significant	**Mitigation Measure Hydrology and Water Quality-6:** Mitigation Measures Hydrology and Water Quality-2, Hydrology and Water Quality-4, and Hydrology and Water Quality-5 shall be implemented as described above.	Less than significant
Impact 3.10-5: The project would create or contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems or would provide substantial additional sources of polluted runoff.	Potentially significant	**Mitigation Measure Hydrology and Water Quality-7:** Mitigation Measures Hydrology and Water Quality-1, Hydrology and Water Quality-2, and Hydrology and Water Quality-3 shall be implemented to reduce pollutants in runoff from project construction and postconstruction activities.	Less than significant
Impact 3.10-6: The project would otherwise substantially degrade water quality.	Potentially significant	**Mitigation Measure Hydrology and Water Quality-8:** Mitigation Measures Hydrology and Water Quality-1, Hydrology and Water Quality-2, and Hydrology and Water Quality-3 shall be implemented to reduce project-related degradation of water quality.	Less than significant.
Impact 3.10-7: The project could place housing within a 100-year floodplain hazard area as mapped on flood hazard delineation maps.	No impact		
Impact 3.10-8: The project would place structures within a 100-year flood hazard area that would impede or redirect flood flows.	Potentially significant	**Mitigation Measure Hydrology and Water Quality-9:** Mitigation Measure Hydrology and Water Quality-4 shall be implemented to reduce potential impacts from flood hazards.	Less than significant
Impact 3.10-9: The project could expose people or structures to a significant risk of loss, injury, or death involving flooding because of the failure of a levee or dam.	Less than significant	No mitigation is required.	
Impact 3.10-10: The project could cause inundation by seiche, tsunami, or mudflow.	**Seiche/Tsunami** No impact	No mitigation is required.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
	Mudflow Less than significant		
Land Use and Planning			
Impact 3.11-1: The project could physically divide an established community.	No impact		
Impact 3.11-2: The project could conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.	Less than significant	No mitigation is required.	
Impact 3.11-3: The project could conflict with an applicable habitat conservation plan or natural community conservation plan.	No impact		
Mineral Resources			
Impact 3.12-1: The project could 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		
Impact 3.12-2: The project could 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		
Noise			
Impact 3.13-1: The project would result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards	**Temporary Impact** Potentially significant	**Mitigation Measure Noise-1:** The plans, specifications, and bid documents for each construction project shall include noise control measures to reduce noise impacts to the extent feasible. The measures shall include the following: • The project shall be designed to meet the City of Fresno's standards	Less than significant

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
of other agencies.	**Long-Term Impact** Less than significant	for nonscheduled, intermittent, short-term operations of mobile construction equipment (e.g., backhoes, bulldozers, motor graders, and scrapers), and the noise standards for repetitively scheduled and relatively long-term constructions operations of stationary equipment (e.g., compressors and generators). • Muffled construction equipment shall be used whenever possible. • Impact noise associated with construction shall be minimized by using noise control techniques, procedures, and acoustically treated equipment. For example, when practical, bins used to transport excavated material, including rocks and debris, could be constructed of nonmetallic liner to reduce impact noise; similarly, dump trucks could have resilient bed liners installed to minimize impact noise. • Construction hours shall be restricted to meet City of Fresno standards, which restrict hours of construction to between 7 a.m. and 9 p.m., Monday through Saturday, and prohibit activity on Sundays and federal holidays.	
Impact 3.13-2: The project could result in exposure of persons or generation of excessive groundborne vibration or groundborne noise levels.	**Temporary Impact** Less than significant **Long-Term Impact** No impact	No mitigation is required.	
Impact 3.13-3: The project could result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	Less than significant	No mitigation is required.	
Impact 3.13-4: The project could result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	Less than significant	No mitigation is required.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Impact 3.13-5: The project could expose people residing or working in the study area to excessive noise levels because of having a project location within an airport land use plan, or where such a plan has not been adopted, being within 2 miles of a public airport or public use airport.	Less than significant	No mitigation is required.	
Impact 3.13-6: The project could expose people residing or working in the study area to excessive noise levels because it would be in the vicinity of a private airstrip.	No impact		
Population and Housing			
Impact 3.14-1: The project could 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		
Impact 3.14-2: The project could displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.	No impact		
Impact 3.14-3: The project could displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.	No impact		
Public Services			
Impact 3.15-1: The project could result in substantial adverse physical impacts associated with the provision of new or physically altered governmental	No impact		

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
facilities, 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.			
Recreation			
Impact 3.16-1: The project could 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.	Less than significant	No mitigation is required.	
Impact 3.16-2: The project could include recreational facilities or would require construction or expansion of recreational facilities that may have an adverse physical effect on the environment.	Less than significant	No mitigation is required.	
Transportation			
Impact 3.17-1: The project could conflict with an applicable plan, ordinance, or policy.	Less than significant	No mitigation is required.	
Impact 3.17-2: The project could conflict with an applicable congestion management program established by the county's congestion management agency for designated roads or highways.	Less than significant	No mitigation is required.	
Impact 3.17-3: The project could result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that would	No impact		

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
result in substantial safety risks.			
Impact 3.17-4: The project could substantially increase hazards because of a design feature or incompatible uses.	No impact		
Impact 3.17-5: The project could result in inadequate emergency access.	Less than significant	No mitigation is required.	
Impact 3.17-6: The project could conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities or otherwise could decrease the performance or safety of such facilities.	No impact		
Utilities and Service Systems			
Impact 3.18-1: The project could exceed wastewater treatment requirements of the applicable RWQCB.	No impact		
Impact 3.18-2: The project could require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.	No impact		
Impact 3.18-3: The project could require or result in construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	No impact		
Impact 3.18-4: The project could have insufficient water supplies available to serve the project from existing entitlements and resources, and thus new or expanded entitlements could be needed.	Less than significant	No mitigation is required.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Impact 3.18-5: The project could fail to result in a determination by the wastewater treatment provider that serves or may serve the project, stating it has adequate capacity to serve the project's projected demands in addition to the provider's existing commitments.	Less than significant	No mitigation is required.	
Impact 3.18-6: The project could be served by a landfill without sufficient permitted capacity to accommodate the project's solid waste disposal needs.	Less than significant	No mitigation is required.	
Impact 3.18-7: The project could fail to comply with federal, State, or local statutes or regulations related to solid waste.	No impact		
Cumulative Impacts			
Aesthetic and Visual Resources	Less than significant	No mitigation is required.	
Agriculture and Forestry Resources	No impact		
Air Quality	Less than significant	No mitigation is required.	
Biological Resources	Less than significant	No mitigation is required.	
Cultural Resources	Less than significant	No mitigation is required.	
Geology and Soils	Less than significant	No mitigation is required.	
Greenhouse Gas Emissions	Less than significant	No mitigation is required.	
Hazardous Materials	Less than significant	No mitigation is required.	
Hydrology and Water Quality	Less than significant	No mitigation is required.	
Land Use and Planning	Less than significant	No mitigation is required.	
Mineral Resources	No impact		
Noise	Less than significant	No mitigation is required.	
Population and Housing	No impact		
Public Services	No impact		
Recreation	Less than significant	No mitigation is required.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Transportation	Less than significant	No mitigation is required.	
Utilities and Service Systems	No impact		
Environmental Justice—Disadvantaged Communities			
Impact 4.2-1: Would the proposed project provide equal access to an outdoor natural recreational area along the San Joaquin River from the Fresno side of the River for residents of nearby disadvantaged communities, and more broadly, for residents of the city of Fresno and Madera County?	Unavoidable significant impact on a nearby disadvantaged community or census tract	No feasible mitigation measures are available to reduce this impact.	Unavoidable and significant
Growth-Inducing Impacts			
The proposed project would not be growth inducing.	No impact		
Energy			
The proposed project would not generate an increase in demand for electricity and natural gas relative to existing or future electrical and natural gas consumption, and would not cause the inefficient, wasteful, or unnecessary consumption of energy.	Less than significant	No mitigation is required.	

Notes: BMP = best management practice; CDFW = California Department of Fish and Wildlife; CEQA = California Environmental Quality Act; County = Fresno County; CRHR = California Register of Historical Resources; CVFPB = Central Valley Flood Protection Board; ESA = Endangered Species Act; Farmland = Prime Farmland, Unique Farmland, of Farmland of Statewide Importance; GHG = greenhouse gas; mph = miles per hour; NPDES = National Pollutant Discharge Elimination System; RWQCB = Regional Water Quality Control Board; SJKF = San Joaquin kit fox; SWPPP = storm water pollution prevention plan; USFWS = U.S. Fish and Wildlife Service; WDR = waste discharge requirement

1.8 Alternatives to the Project

The purpose of the alternatives analysis in an EIR is to describe a range of reasonable, potentially feasible alternatives to the project that can reasonably attain most of the identified project objectives, but reduce or avoid one or more of the project's significant impacts. In this DEIR, five potentially feasible alternatives are presented that analyze a range of trail alignments and access. Each alternative includes some elements of the proposed project as described in Section 2.4, "Project Description."

Alternative 1, "Added Parking," was developed to address the potential impacts on air quality and vehicle miles traveled associated with the project, to provide greater, more convenient vehicle access for Fresno metropolitan area residents, including providing equal access for disadvantaged communities or census tracts, and to provide more parking capacity.

Alternative 2, "Bluff Trail Alignment," was developed to reduce the circuitous proposed trail alignment and may reduce potential impacts on the riparian habitat.

Alternative 3, "River's Edge Trail Alignment," was developed to provide multiuse trail access close to the river and to possibly reduce the potential effects of wildland fires on residences located on the bluffs.

Alternative 4, "No Parking," was developed to address the potential significant effects of parking at the project site.

Alternative 5, "Palm and Nees Access," was developed to address the potential impacts on air quality and vehicle miles traveled associated with the project, to provide greater, more convenient vehicle access for Fresno metropolitan area residents, including providing equal access for disadvantaged communities, and to provide more parking capacity. In accordance with the State CEQA Guidelines (Section 15126.6[f][2]), Alternative 5 is an added, off-site alternative and includes the project as described in Section 2.4, "Project Description."

Alternative 6, the No Project Alternative, is included in accordance with Section 15126.6(e)(3)(B) of the State CEQA Guidelines. Analysis of this alternative considers the effects under which the project would not proceed, and no trail extension, parking, or recreational amenities would be constructed.

The impacts of Alternative 2, the Bluff Trail alignment, would be the same as the impacts of the proposed project. Alternatives 1, 3, 4, and 5 would each incorporate additional mitigation specific to that alternative, as summarized below. All mitigation measures associated with Alternatives 1, 4, and 5 would reduce the impacts to **less than significant** for the reasons stated. However, as explained below, one impact of Alternative 3 would be an **unavoidable significant** impact despite mitigation.

- **Alternative 1, Added Parking:** *Mitigation Measure Alt. 1–Traffic-1* would reduce the impact of Alternative 1 related to access to the West Riverview Drive entrance and potential for accidents at the Audubon Drive/Del Mar Avenue intersection to **less than significant**, because the Conservancy would share with the City on a proportionate basis the cost of installing either a traffic signal or other effective traffic control, such as a traffic roundabout.
- **Alternative 3, River's Edge Trail:** This alternative would incorporate the following mitigation measures:
    - *Mitigation Measure Alt. 3–Biological Resources-11* would reduce the impact of Alternative 3 related to wildlife corridors and riparian habitat to **less than significant** because riparian habitat would be avoided to the extent possible during construction, and trees that are removed would be replaced as required by regulatory permits.
    - *Mitigation Measure Alt. 3–Biological Resources-12* is proposed to reduce the impact of Alternative 3 related to a conflict with the policies of the Parkway Master Plan to protect the riparian corridor. However, the narrow berm around the O Pond makes infeasible the setback required by this mitigation measure, which is intended to meet the policies and buffer established in the Parkway Master Plan. Thus, the impact of Alternative 3 related to a conflict with policies and ordinances would be an **unavoidable significant** impact.
    - *Mitigation Measure Alt. 3–Hydrology and Water Quality-10* would reduce the temporary impact of Alternative 3 on water quality to **less than significant** because compliance with the NPDES program would ensure stormwater pollutants would not substantially degrade water quality.
- **Alternative 4, No Parking:** *Mitigation Measure Alt. 4–Recreation-1* would reduce the impact of Alternative 4 related to a lack of Americans with Disabilities Act (ADA)–compliant accessible parking to **less than significant** because the Conservancy would provide ADA-compliant accessible parking spaces and passenger loading spaces and would provide access to the trail and recreational amenities via the Perrin Avenue entrance.
- **Alternative 5, Palm Nees Access:** This alternative would incorporate the following mitigation measures:
    - *Mitigation Measures Alt. 5–Hazards and Hazardous Materials-7, Alt. 5–Hazards and Hazardous Materials-8,* and *Alt. 5–Hazards and Hazardous Materials-9* would reduce the impact of Alternative 5 related to human health and environmental hazards from construction at the former Kepco Pinedale Landfill to **less than significant**, because (1) any necessary remedial activities would occur before the start of earthmoving activities; (2) a worker health and safety plan would be implemented should contaminated soil or

groundwater be encountered; and (3) a postclosure land use plan approved by regulatory agencies would be implemented.

- *Mitigation Measure Alt. 5–Hydrology and Water Quality-3a* would reduce the temporary impact of Alternative 5 on water quality associated with the former Kepco Pinedale Landfill to **less than significant** because (1) any necessary remedial activities would occur before the start of earthmoving activities; (2) a worker health and safety plan would be implemented should any contaminated soil or groundwater be encountered; and (3) a postclosure land use plan approved by regulatory agencies would be implemented.

Chapter 2
Project Description

2.1 Overview

This chapter of the DEIR describes project objectives, location, proposed actions, and agency approvals that may be required.

In 1988, the San Joaquin River Parkway and Conservation Trust[4] began a formal planning process that produced the *San Joaquin River Parkway and Environs Conceptual Plan* (Conceptual Plan) (San Joaquin River Parkway and Conservation Trust 1989). Based on the findings in this plan, then-Assemblyman (now U.S. Representative) Jim Costa gained approval to form the San Joaquin River Parkway Task Force (Assembly Bill [AB] 3121). In 1992, the task force, composed of a group of 25 agencies and organizations, held numerous community workshops and crafted the *San Joaquin River Parkway Task Force Plan* (Task Force Plan). The Task Force Plan included the recommendation to form the San Joaquin River Conservancy.

In 1992, the California Legislature enacted the San Joaquin River Conservancy Act (Conservancy Act), PRC Section 32500 et seq. The Conservancy Act established the Conservancy as a State agency within the California Natural Resources Agency and granted it authority to acquire, develop, and manage public lands to create the San Joaquin River Parkway.[5] The Parkway is a planned 22-mile natural and recreational area that would provide a harmonious combination of low-impact recreational and educational uses and wildlife protection. The Parkway Master Plan was adopted by the Conservancy in 1997 following certification of the Final EIR. In July 2000, the San Joaquin River Conservancy approved and adopted the Recompiled San Joaquin River Master Plan. It was prepared to provide a more concise and understandable policy document for the benefit of affected local government agencies and the public. The preface of the Recompiled Master Plan states "…in preparing this recompilation, care has been taken to retain the specific wording from the above referenced source documents. No explicit or implied modifications to guiding goals, objectives, and policies or more specific measures are intended." In 2013,

[4] The San Joaquin River Parkway & Conservation Trust, Inc., is a 501(c)(3) nonprofit, public benefit corporation, created in 1988 to establish a continuous greenway along 33 miles of San Joaquin River in the rapidly urbanizing Fresno-Madera region.

[5] The planned Parkway consists of the River and approximately 5,900 acres of public land to be acquired on both sides of the River between Friant Dam and SR 99.

the Conservancy began preparing a Master Plan Update.[6] However, the planning process is not complete at this time. For the purpose of this analysis, this DEIR tiers to the Parkway Master Plan.

2.2 Project Objectives

The Parkway Master Plan presents goals, objectives, and policies and envisions future uses, improvements, features, facilities, and management measures for habitat conservation, enhancement, and restoration, and recreational and educational uses including: trails, bikeways, corridors, equestrian areas, and facilities for nonmotorized boating and fishing. In particular, a continuous, multipurpose trail of approximately 22 miles extending from Friant Dam to SR 99 would be established along both sides of the River, with an interconnected trail system and recreational and educational features. The Parkway Master Plan and 1997 Final EIR continue as the foundation for the phased implementation for future parkway projects. Appendix B summarizes the goals and policies of the Parkway Master Plan.

The key recreation objective, RO3, adopted by the Conservancy and presented in the Parkway Master Plan follows:

> *Link all recreational areas and natural reserves between Highway 99 and Friant Dam with a continuous, multipurpose trail on land with canoe put-in, take-out, and rest areas along the river to create a recreation system with a variety of recreational opportunities within the Parkway. Connect the multipurpose trail with other local and regional trails and bikeways, originating in surrounding areas.*

The project would accomplish an additional segment of the planned Parkway-wide multiuse trail.

2.3 Project Location

The study area is located along the San Joaquin River between SR 41 and Spano Park within the city limits of Fresno (Figure 2-1). The boundary extends from the River south to the San Joaquin River Bluffs and westward from SR 41 to Spano Park, located near the intersection of Palm Avenue and Nees Avenue. The project area is sited within Sections 21, 28, and 29 of Township 12S, Range 20E, Mount Diablo Baseline and Meridian, Fresno North 7.5-minute series USGS topographic quadrangle.

The study area analyzed in this DEIR is approximately 358 acres and is located on the south side of the River (Figure 2-2). A majority of the land is owned by the State of California under the management jurisdiction of the Conservancy (this land is hereinafter referred to as “Conservancy land”). Two parcels, owned by the City, are adjacent to Conservancy land. The project area also contains State sovereign

[6] The Conservancy is preparing a draft Master Plan Update and EIR. The NOP for the Master Plan Update EIR was issued on June 17, 2013.

lands riverward of the River's low-water mark, owned by the State of California and under the jurisdiction of the California State Lands Commission. Implementation of a portion of the project may occur on Fresno city parcels. Alternative 5, considered in Chapter 5 of this DEIR, also includes privately owned properties lying between the Conservancy land and the intersection of Palm Avenue and Nees Avenue.

Three other parcels in the study area are owned by others and would not be part of the project. One parcel, privately owned land located near the center of the project area, is occupied by two residences. Access to these residences is via a paved road within an access easement on Conservancy property from West Riverview Drive. The other two parcels, owned by FMFCD, contain stormwater detention basins. The proposed project would not affect these basins.

A residential subdivision is located on the bluffs adjacent to the southern project boundary (Figure 2-2). The subdivision is within the city limits of Fresno.

Conservancy land within the study area is currently closed to the public in accordance with PRC Section 32511.

2.4 Project Description

The Conservancy proposes to expand the Eaton Trail by constructing a multipurpose trail and providing ancillary recreation support features. The trail would be extended approximately 2.4 miles, from Perrin Avenue near SR 41 on the east to Spano Park on the west. The project would provide for low-impact recreational activities, such as hiking, bicycling, equestrian use, fishing, and nature observation consistent with the Parkway Master Plan.

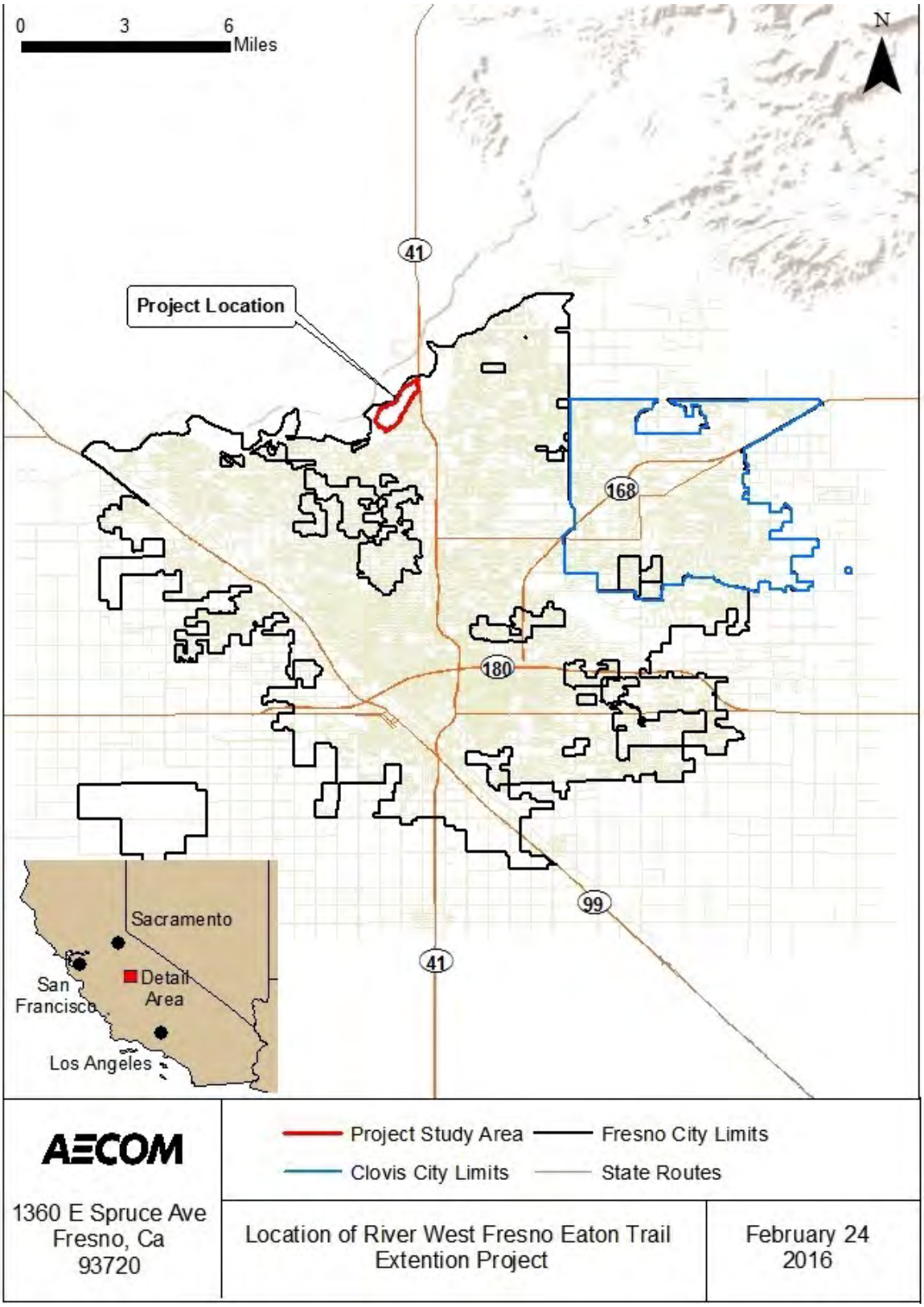

Figure 2-1 Location of River West Fresno, Eaton Trail Extension Project

Figure 2-2 River West Fresno, Eaton Trail Extension Study Area

2.4.1 Multipurpose Trail

The trail extension would be about 22 feet wide, with a 12-foot-wide paved surface, a parallel 8-foot-wide hard natural surface for equestrian use, and a 2-foot shoulder (opposite the natural surface area). The trail extension generally would follow the alignment as shown in the conceptual drawing in Figure 2-3, from SR 41 to Spano Park. The trail would provide accessibility in accordance with the Americans with Disabilities Act (ADA). Three fire hydrants would be added along the trail extension if feasible—at the Perrin Avenue parking lot, near the private property parcel, and near the toe of Spano Park (Figure 2-3).

2.4.2 Parking Lot

A parking lot for 50 vehicles with a controlled vehicle entrance would be constructed adjacent to SR 41 (Figure 2-4). Vehicle access to the parking lot would be from the Perrin Avenue undercrossing of SR 41. A gate and an unmanned parking pay station would be included to manage vehicle access. The parking lot would accommodate up to three horse trailer stalls and would have a fire hydrant (if feasible), a drinking fountain, a public information bulletin board, a small pet station, and a two-vault restroom. The restroom and parking lot would be ADA accessible. Smart lighting with LED light sets with rechargeable batteries and a solar panel would be mounted on light poles, providing sufficient illumination for security and maintenance. The area surrounding the parking lot would be landscaped with native vegetation. An emergency/service gate or removable bollards would provide access to the trail extension for emergency first responders and maintenance staff.

2.4.3 Recreation Access

Pedestrian and bicycle access would be provided at three locations: Perrin Avenue, Spano Park, and the West Riverview Drive and Churchill Avenue entrances to the Bluff Trail. The Bluff Trail is an existing neighborhood trail, located on a land owned by the City. A 12-foot-wide paved trail would be constructed to provide access from the Bluff Trail to the trail extension near West Riverview Drive. A wide staircase with bicycle guides may be constructed from Spano Park to the trail extension The Spano Park access and Bluff Trail access would be constructed on the steep slope of the bluffs. A pet station would be provided at each trailhead.

Figure 2-3 Conceptual Design of Proposed Project

Figure 2-4 Conceptual Design Proposed Perrin Avenue Parking Lot

2.4.4 Recreation Amenities and Landscaping

The proposed trail extension would be landscaped at intervals with native vegetation for habitat enhancement, visual screening, and shade. The landscaping would be irrigated until the vegetation is permanently established. Picnic areas, tables, benches, public safety and information signs, and wildlife observation areas would be provided along the trail at various locations. Unimproved hiking paths to the riverbank would be connected to the trail. These hiking paths may be widened up to 6 feet and overlaid with a permeable surface such as decomposed gravel. These paths would not be landscaped. On completion, the project would provide low-impact recreational activities along the River, such as hiking, bicycling, horse riding, fishing, and nature observation, consistent with the Parkway Master Plan.

In total, project components described above would cover approximately 7.5 miles of paved and unpaved trails or 10.4 acres. Table 2.4-1 summarizes project components by length and area.

Table 2.4-1 Summary of Project Components by Length and Area

Project Component	Proposed Project	
	Length (miles)	**Area (acres)**
Multiuse Trail (paved—12 feet wide)	2.4	3.5
Multiuse Trail (unpaved—10 feet wide)	3.1	3.6
Perrin Avenue Parking (paved) (unpaved)	0	 0.8 0.9
Bluff Trail (paved—12 feet wide)	0.3	0.4
Hiking Trails	1.8	1.3
Total	**7.6**	**10.5**

Note:

[a] Includes the 12-foot-wide paved trail from the Bluff Trail to the proposed trail extension near West Riverview Drive.

Source: Compiled by AECOM in 2016

2.5 Project Management, Operations, and Maintenance

Project management including operations, maintenance, and implementing best management practices (BMPs) may affect the physical environment and is important to consider the DEIR. Project management considerations include human use patterns and their potential for impacts on natural systems, maintenance of facilities to protect or restore natural systems, potential for harm to humans from natural conditions influenced by management activities, and potential for conflicts between user groups.

2.5.1 Project Management

The Conservancy manages its projects and lands under its jurisdiction in the Parkway through policies in the Parkway Master Plan. The Parkway Master Plan (Appendix B) contains goals, objectives, and policies that apply to land management in the Parkway.

Long-term management and maintenance is required to assure that project features continue to provide recreation benefits and protect natural resources. The Conservancy conducts outreach to educate visitors regarding the importance of resource protection and to discourage incompatible uses. The Conservancy's land management and recreation programs address stewardship responsibilities related to protection of natural and cultural resources.

Trails are managed to protect the public's investment in capital assets and to provide broad access to users to ensure that facilities meet safety needs of all age groups and abilities. The trail design incorporates features to keep through-travelers on the trail surfaces to reduce hazards and protect sensitive resources. Project management also recognizes the high desire for access to vistas and observation points, the River, and other recreational amenities, and provides ways to accommodate that desire.

Rules are developed for project operation, including prohibitions on camping, open fires, smoking, dogs off-leash, and other measures to protect public health and safety. In general, the trails are available for use from dusk until dawn; however, special evening uses may be permitted by the Conservancy on a case-by-case basis.

The Conservancy Act requires that the Conservancy close to the public any of its lands or facilities that it is unable to maintain in a clean and safe manner, and adequately protect wildlife and rights of adjacent property owners from the public (PRC Section 32511). The Conservancy must secure adequate long-term resources to operate and maintain the project.

Internal trails would be designed to provide for management and emergency vehicles. Authorized personnel in motorized vehicles, such as maintenance crews, would occasionally require access on trails and occasionally off-road. To minimize safety concerns caused by mixing nonmotorized and motorized users on the same trails, these vehicles would operate under heightened safety conditions. This could include slow speeds, temporary trail closures, flashing lights, or warning flags or signs. Emergency medical or police/fire personnel requiring vehicle access, and using emergency lights and/or sirens, would use the protected trail surface as the law allows.

The design of the trail system would incorporate BMPs as needed to reduce impacts through ongoing management practices.

Directional and interpretive signing would be provided, and physical barriers (i.e., fencing) would be placed in critical areas to more direct users onto trails and away from protected areas. Targeted plantings may also be used to discourage access.

Other actions include (but may not be limited to) posting of signs educating users regarding trail etiquette and trespass issues; monitoring to reduce litter, trespass, or other problems associated with trail access and parking; and increased use of fencing to better direct users to access points.

2.5.2 Best Management Practices

The following BMPs are drawn from State and local ordinances, Parkway Master Plan mitigation measures, and from other statutory authorities or guidelines. They are incorporated into the project description and would be implemented during project implementation, construction, and operation and maintenance.

2.5.2.1 Air Quality

BMP AIR-1. Construction plans and specifications will comply with the San Joaquin Valley Air Pollution Control District's (SJVAPCD's) current air quality plans, and with all SJVAPCD rules and regulations as deemed relevant through consultation with SJVAPCD. The following dust control practices will be followed during the construction phase of the project, to mitigate potential impacts from particulate matter (PM) and construction equipment**.**

Construction of the project will be consistent with the SJVAPCD *Guide for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2002).[7] Also, the Conservancy will implement the following measures, as required by Regulation VIII, Rule 4102, and Rule 4641 (SJVAPCD 2014):

- Prewater sites sufficiently to limit visible dust emissions to 20% opacity.
- Phase work to reduce the amount of disturbed area at any one time.
- During active operations, apply water or chemical/organic stabilizers/suppressants sufficient to limit visible dust emissions to 20% opacity.
- Construct and maintain wind barriers sufficient to limit visible dust emissions to 20% opacity.
- Apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit visible dust emissions to 20% opacity.
- During periods of inactivity, restrict vehicular access to the area.

[7] If any identified rule, regulation, or guidance referenced herein is updated, compliance with the current requirements will be achieved.

- Post 15 miles per hour (mph) speed limit signs at a minimum every 500 feet along unpaved access/haul roads.
- Materials used for chemical/organic stabilization of soils, including petroleum resins, asphaltic emulsions, acrylics, and adhesives will not violate State Water Resources Control Board (SWRCB) standard for use as a soil stabilizer. Materials accepted by the California Air Resources Board (ARB) and the U.S. Environmental Protection Agency (EPA), and which meet State water quality standards.
- Use of hygroscopic materials may be prohibited by the Air Pollution Control Officer (APCO) in areas in lacking sufficient atmospheric moisture of soils for such materials to efficiently reduce fugitive dust emissions. The atmospheric moisture of soils is considered to be sufficient if it meets the application specifications of the hygroscopic product manufacturer. Use of such materials may be approved in conjunction with sufficient wetting of the controlled area.
- Any use of dust suppressants or gravel pads, and paving materials such as asphalt or concrete for paving, will comply with other applicable District Rules.
- Water or cover stockpiles of debris, soil, sand, or other materials that can be blown by the wind.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard.
- Sweep daily (with water sweepers) any paved access roads, parking areas, and staging areas at the site.
- Sweep streets on construction routes (with water sweepers) if visible soil material is carried onto them.
- Use alternative-fueled construction equipment when feasible.
- Minimize idling time (e.g., 5-minute maximum).
- Maintain properly tuned equipment.
- Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use.
- Replant vegetation and/or hydroseed disturbed areas as quickly as possible.

BMP AIR-2. Construction plans and specifications will include measures to ensure compliance with SJVAPCD Rules and Regulations, including Rule 9510 and Regulation VIII (Fugitive PM10 Prohibitions). Rule 9510 requires that an air impact assessment be prepared and submitted to the District.

2.5.2.2 Biological Resources

BMP BIO-1. A qualified biologist will conduct preconstruction protocol surveys to determine the presence or absence of listed or special-status species before construction. If present, and in coordination with California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS), as needed additional appropriate development or construction-related restrictions to meet the requirements necessary to protect species found within the project area will be developed.

BMP BIO-2. If federally protected waters of the United States or wetlands as defined by Section 404 of the Clean Water Act (CWA) are present and the project may result in fill of those waters or wetlands:

- Coordination with the U.S. Army Corps of Engineers (USACE) will occur and a wetland delineation of the area will be prepared. USACE mitigation protocol will be followed regarding jurisdictional waters and wetlands affected by the project.
- Appropriate USACE permits will be obtained before implementation of the project.

Cumulatively, Parkway projects should result in beneficial management and protection of waters and wetlands.

BMP BIO-3. A qualified biologist will prepare a worker environmental awareness program to be presented to all construction personnel and employees before any ground-disturbing activities commence at a project site. Special-status species determined to be present will be explained to construction personnel and methods on how best to avoid the accidental take of those species during construction will be described. The program will include a description of special-status species potentially on the project site and their habitat needs; an explanation of the status of the species and their protection under the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act (MBTA), and the California Fish and Game Code; specific mitigation measures applicable to special-status species; and the penalties for take.

The biologist will explain to construction personnel how to avoid impacts on USACE and CDFW jurisdictional areas. The program will include a description of these respective jurisdictional areas on the site, specifically permitted impacts, avoidance measures to protect jurisdictional areas, and maps or field markers showing the location of jurisdictional areas and permitted impacts.

The worker environmental awareness program will be implemented before the start of ground disturbance and will continue through the construction phase for all construction personnel.

BMP BIO-4. A qualified biologist will determine the presence/absence of sensitive resources in areas where the use of herbicides for invasive species management or habitat restoration is planned. A certified pest control advisor will then prepare a written recommendation including site-specific control methods

(including the use of approved herbicides and surfactants), which will include but not be limited to the following:

- All applications of herbicides and adjuvants will occur in accordance with federal and State regulations.
- Herbicide application will not occur when wind conditions may result in drift.

BMP BIO-5. A habitat restoration and revegetation plan (HRRP) will be developed for the project. When feasible vegetation should be reestablished within one growing season of the impacts may be temporarily affected by the proposed project.

Areas over 0.5 acre in size where temporary, construction-related impacts have taken place will be restored in accordance with the HRRP. The plan will prescribe restoration actions needed to treat disturbed soils and vegetation. The HRRP will be developed by a qualified restoration ecologist, knowledgeable in in restoration of habitats dominated by herbaceous vegetation. The HRRP will detail the process or processes to be implemented to restore the target habitats and will include the following project-specific information, at a minimum:

- summary of habitat impacts and proposed habitat restoration actions;
- location of the restoration sites and existing site conditions;
- restoration design, including a proposed restoration site schedule and descriptions of existing and proposed soils and hydrology;
- site preparation requirements (including soil amendments, if required);
- invasive species eradication plan if applicable, planting plan, and maintenance plan;
- monitoring measures, with performance and success criteria;
- monitoring methods, duration, and schedule; and
- contingency measures and remedial actions.

2.5.2.3 Cultural Resources

BMP CULT-1. Construction specifications will include a stop-work order in the event that prehistoric or historic-period cultural materials are unearthed during ground-disturbing activities. All work within 100 feet of the find will be stopped until a qualified archaeologist and Native American representative can assess the significance of the find. Prehistoric materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks and artifacts; stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered-stone tools, such as hammerstones and pitted stones. Historic-period materials

might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If the prehistoric cultural material is determined to be potentially significant, the archaeologist, in consultation with the Native American representative, will develop a treatment plan that could include site avoidance, capping, or data recovery.

BMP CULT-2. PRC Section 5097.98, California Government Code Section 27491, and Health and Safety Code Section 7050.5 cover the accidental discovery of archaeological resources during construction. These regulations mandate the processes to follow in the event of an accidental discovery of any human remains in a project location other than a dedicated cemetery.

In the event of an accidental discovery or disturbance of the remains during ground-disturbing activities, there will be no further excavation or disturbance of the site within a 50-foot radius of the location of such discovery, or any nearby area reasonably suspected to overlie adjacent remains. The County of Fresno Coroner will be notified and will make a determination as to whether the remains are Native American. If the Coroner determines that the remains are not subject to his or her authority, he or she will notify the Native American Heritage Commission, which will attempt to identify descendants of the deceased Native American. If no satisfactory agreement can be reached as to the disposition of the remains pursuant to State law, then the human remains and items associated with Native American burials on the property will be reinterred in a location not subject to further subsurface disturbance.

2.5.2.4 Paleontological Resources

BMP PALEO-1. In the event that paleontological resources are discovered, the Conservancy will be notified. A qualified paleontologist will document the discovery. The paleontologist will evaluate the potential resource and assess the significance of the find under the criteria set forth in Section 21083.09 of CEQA. If fossil or fossil-bearing depositions are discovered during construction, evacuations within 50 feet of the find will be temporarily halted or diverted until the discovery is examined by a qualified paleontologist in accordance with the *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources* (SVP 2010). The paleontologist will notify the appropriate agencies to determine the procedures that will be followed before construction is allowed to resume. If the Conservancy determines that avoidance is not feasible, the paleontologist will prepare an excavation plan for mitigating the effects of the project. The plan will be submitted to the Conservancy for review and approval before implementation.

2.5.2.5 Geology and Soils

BMP GEO-1. Project construction will comply with all Phase II National Pollutant Discharge Elimination System (NPDES) Permit requirements for Storm Water Discharges Associated with Construction Activity. A notice of intent will be submitted to the SWRCB Division of Water Quality. The contractor will also be required to prepare and implement a site-specific storm water pollution prevention plan (SWPPP) for the

project. The SWPPP will identify the timing of construction activities, as well as preconstruction and postconstruction BMPs to limit the discharge of pollutants in stormwater runoff. BMPs will include scheduling excavation and earthmoving so that areas unprotected during construction activities will be as small as possible. The plan also will describe BMP inspection, monitoring, and maintenance procedures. These BMPs must consider erosion, sedimentation, and pollutant controls during and after construction. These BMPs will include but not be limited to the following:

- requiring standard erosion control and slope stabilization measures in any area where erosion could lead to sedimentation of a water body;
- controlling mud and gravel tracking on roadways;
- managing borrow material and stockpiles;
- reusing salvageable topsoil;
- performing major vehicle maintenance, repair jobs, and equipment washing at appropriate off-site locations;
- designating an area of the construction site, well away from streams, for auto and equipment parking and routine vehicle and equipment maintenance;
- regularly maintaining equipment to prevent fluid leaks, with any leaks captured in containers until the equipment is moved to a repair location:
- preparing a spill prevention and response plan before construction and implementing the plan immediately for cleanup of fluid or hazardous materials spills;
- cleaning up spilled dry materials immediately, and not “washing away” spills with water or burying them;
- using the minimum amount of water necessary for dust control;
- cleaning up liquid spills on paved or impermeable surfaces using “dry” cleanup methods (e.g., absorbent materials such as cat litter, and/or rags);
- cleaning up spills on dirt areas by removing and properly disposing of the contaminated soil;
- storing stockpiled materials, wastes, containers, and dumpsters under a temporary roof or secured plastic sheeting where they cannot enter into or be washed by rainfall or runoff into waters of the United States/State or aquatic habitat;
- properly storing containers of paints, chemicals, solvents, and other hazardous materials in garages or sheds with double containment during rainy periods;

- applying concrete, asphalt, and seal coat during dry weather, and keeping contaminants from fresh concrete and asphalt out of the storm drains and streams by scheduling paving jobs during periods of dry weather and allowing new pavement to cure before stormwater flows across it;
- covering catch basins and manholes when applying seal coat, slurry seal, and fog seal;
- operating no equipment in a live stream channel, unless unavoidable and proper approvals are obtained; and
- completing revegetation in accordance with the HRRP, described in BMP BIO-5.

After construction, runoff from new improvements will be retained on-site to the extent practicable. Engineered grading and drainage plans will be prepared to manage how stormwater through operations of the project. BMPs for treating, detaining, and percolating stormwater runoff, such as bioswales, bioretention areas, and seasonal wetlands, will be implemented.

The BMPs will be implemented in accordance with the Parkway Master Plan goals, objectives, and policies as described in Appendix B.

BMP GEO-2. Geotechnical investigations will be performed by qualified personnel before approval of final design for each feature to identify geologic or soil characteristics that could result in adverse effects on water quality, for example, highly erodible soils or slope conditions. Siting of project features will avoid areas where potential adverse impacts on water quality could occur through erosion. Control of slope instability will occur in accordance with the Parkway Master Plan goals, objectives, and policies as described in Appendix B.

For activities that last more than 1 day, materials or equipment left on the site overnight will be stored in a manner that avoids erosion, leaks, or other potential impacts on water quality.

All trash that is generated at the project site (e.g., plastic water bottles, plastic lunch bags, cigarettes) will be properly contained and disposed of.

2.5.2.6 Hazardous Materials

BMP Hazards-1. The worksite manager will maintain an inventory of all hazardous materials used (and/or expected to be used) at the worksite and the end products that are produced (and/or expected to be produced) after their use. In addition, the following measures will be implemented during construction:

- As appropriate, containers will be properly labeled with a “Hazardous Waste” label and hazardous waste will be properly recycled or disposed of off-site.
- Contact of chemicals with precipitation will be minimized by storing chemicals in watertight containers with appropriate secondary containment to prevent any spillage or leakage.

- Quantities of toxic materials, such as equipment fuels and lubricants, will be stored with secondary containment that is capable of containing 110% of the primary container(s).
- Petroleum products, chemicals, cement, fuels, lubricants, and non–storm drainage water or water contaminated with the aforementioned materials will not contact soil and will not be allowed to enter surface waters or a storm drainage system.
- All toxic materials, including waste disposal containers, will be covered when they are not in use, and will be located as far away as possible from a direct connection to the storm drainage system or surface water.
- Petroleum products, pesticides or hazardous chemicals will not be stored within the 100-year floodplain.
- Sanitation facilities (e.g., portable toilets) will be placed on stable ground at least 100 feet away from the bank of a river, water channel, or pond.
- Sanitation facilities will be regularly cleaned and/or replaced, and inspected daily for leaks and spills.

2.5.2.7 Hydrology/Water Quality

BMP HYDRO-1. Trails will be inspected periodically for erosion and damage to adjacent vegetation will be addressed through ongoing maintenance, as needed. A maintenance and repair plan will be implemented in accordance with the Parkway Master Plan policies described in Appendix B.

BMP HYDRO-2. During construction, dewatering will be completed in accordance with local and Central Valley Regional Water Quality Control Board (RWQCB) requirements, to minimize the potential for adverse water quality–related impacts on surface water and groundwater. Provisions may include preparing a dewatering plan that details procedures for removing groundwater, methods of temporary water treatment/retention, and water disposal procedures.

BMP HYDRO-3. Whenever feasible, any work within designated flood zones will conform to provisions established in local ordinances. Any development sited in a designated 100-year floodplain will comply with the regulatory requirements at a minimum and with the FMFCD Riverine Floodplain Policy criteria, where applicable.

BMP HYDRO-4. New water fixtures (e.g., for irrigation) will be designed for low flow and high efficiency. Parkway landscaped areas will be designed to minimize water demand by using native and/or climate-appropriate plants where possible; limiting turf areas to areas that will be used as multiple-use meadows; and installing smart irrigation systems to avoid excessive water use.

2.5.2.8 Noise

BMP NOISE-1. All construction equipment and vehicles used on-site will be maintained and equipped with mufflers and or sound-dampening apparatuses.

BMP NOISE-2. Construction activities potentially affecting noise-sensitive land uses will comply with the most stringent of the applicable provisions from the City of Fresno's noise ordinances. Specifically, any construction activities occurring outside of the hours between 7 a.m. and 9 p.m., Monday through Saturday, shall comply with the noise exposure limits for the most noise-sensitive land uses established in Fresno County's Noise Control Ordinance (see Table 5.8-3 [of the Final EIR for the Parkway Master Plan]), and with the exposure limits for other (commercial and industrial) land users established in the City of Fresno's Noise Regulations (see Table 5.8-4 [of the Final EIR for the Parkway Master Plan]).

BMP NOISE-3. The Conservancy shall develop and implement Parkway guidelines to include elements addressing public education regarding appropriate behavior while on Parkway property.

BMP NOISE-4. To the extent feasible, any new access roadways associated with specific projects under the Plan should be located to reduce disturbances from intermittent vehicle passbys at the nearest noise-sensitive land uses. (Master Plan Policy RPS2.)

BMP NOISE-5. Any use of recreational areas within the Planning Area, aside from camping, shall be limited to the hours between sunrise and sunset. Access to these areas shall be limited to these hours.

BMP NOISE-6. A minimum buffer of 300 feet shall be required between any existing, occupied residential property or residential structure and any turf area, picnic areas, dog play area, or permanent outdoor or education area where large groups of people and/or pets may gather.

BMP NOISE-7. At a minimum, the Conservancy will avoid sitting any recreational or educational facilities in any areas exposed to existing or projected future noise levels exceeding applicable noise guidelines (Master Plan Policy RPS3):

a) 75 dBA L_{dn}/CNEL [community noise equivalent level] for golf courses, equestrian facilities, canoe put-out and take-in facilities and swimming areas

b) 70 dBA L_{dn}/CNEL for picnic areas, turf and other play areas, and any other daytime gathering areas.

c) 60 dBA L_{dn}/CNEL for camping areas or indoor educational facilities, although noise exposure up to 70 dBA L_{dn} may be acceptable for the latter if adequate insulation can be demonstrated.

2.5.2.9 Other Best Management Practices

BMP OTHER-1. All work performed by outside contractors or consultants must possess the required licenses or permits to perform services including but not limited to solid waste disposal, General Construction Permit, and qualified SWPPP developer.

2.6 Background

This section of the DEIR presents a brief historical background of the formation of the Conservancy, CEQA scoping process, areas of controversy, and intended uses of this EIR.

The Conservancy oversees 2,575 acres of State-owned land within the San Joaquin River Parkway for habitat conservation and restoration, public access, recreation, and cultural and historical resource preservation. The Conservancy was established in 1992 to develop, operate, and maintain the Parkway, which is planned to encompass a total of 5,900 acres along both sides of the River from Friant Dam to SR 99 in Madera and Fresno counties.

In 1993, local citizens raised funds for the first mile of a trail, the Lewis S. Eaton Trail; the San Joaquin River Parkway and Conservation Trust[8] and the City secured additional funds to complete 3 more miles. Today, the Eaton Trail begins at the northwest corner of Woodward Park at SR 41 and runs parallel to Friant Road. The trail terminates on the north at the Hallowell River Center. The trail is 4 miles long and provides a convenient location for walking, running, cycling, horseback riding, wheelchair access (some segments), and nature viewing along the bluffs above the San Joaquin River (City of Fresno 2014a).

2.7 Scoping

As lead agency, the Conservancy has determined that an EIR must be prepared for the project in accordance with CEQA requirements. On June 9, 2014, pursuant to Section 15082 of the State CEQA Guidelines, the Conservancy circulated an NOP for the River West Fresno, Eaton Trail Extension Project EIR to local and State agencies and other interested parties. A public review period was set from June 9 to July 8, 2014. An open house public scoping meeting was held on June 17, 2014, at the Pinedale Community Center, located at 7170 N. San Pablo Avenue in Fresno, California. The purpose of the NOP and scoping meeting was to solicit guidance from agencies and the public to the scope and content of environmental information to be included in the EIR in accordance with the State CEQA Guidelines. The NOP provided a description of the project, location, and identified potential environmental effects. The NOP, agency, and public comments received during the scoping period are found in Appendix A.

[8] The San Joaquin River Parkway & Conservation Trust, Inc. (River Parkway Trust), a 501(c)(3) nonprofit, public benefit corporation, was created in 1988 to establish a continuous greenway along 33 miles of river in the rapidly urbanizing Fresno-Madera region.

The following two agencies provided comments:

- City of Fresno—City Manager
- County of Madera—Planning Department

2.8 Areas of Controversy and Issues to be Resolved

The State CEQA Guidelines require that each EIR provide a list of issues that are likely to raise controversy and are of particular interest to the public. The following issues are most likely to produce controversy in reviewing and considering the project:

- access to the study area from the Fresno side of the River;
- access to the study area via West Riverview Drive;
- access to the study area from the vicinity of Palm Avenue and Nees Avenue;
- public access and ADA compliance;
- trail access to the River;
- parking to support access to the project;
- location of the trail extension alignment;
- consistency with the *Fresno General Plan* (2014)[9];
- risk of wildland fire extending to the Bluff's residential area;
- public safety (e.g., public nuisances, crime);
- air quality effects associated with the Perrin Avenue vehicular access;
- recreational amenities;
- support for specific alternatives; and
- wildlife conservation and viewing.

2.9 Intended Uses of the EIR

The Conservancy is proposing to approve and carry out a discretionary project subject to Section 15378 of the State CEQA Guidelines. This EIR evaluates the potential impacts of implementing the project and proposes mitigation measures to reduce impacts to less than significant where possible. Public agencies

[9] During preparation of this EIR, the City of Fresno released the draft *Fresno General Plan* on July 2, 2014. The Fresno City Council approved the general plan on December 18, 2014 (City of Fresno 2014a).

other than the Conservancy, including responsible and trustee agencies (as defined under CEQA), may use this EIR during their review of various permits and other discretionary actions. The following agencies might use this EIR for such purposes:

- California Department of Conservation
- CDFW
- California Department of Parks and Recreation
- California Department of Water Resources (DWR)
- California Natural Resources Agency
- California State Lands Commission
- California Wildlife Conservation Board
- Central Valley Flood Protection Board (CVFPB)
- Central Valley RWQCB and SWRCB
- City of Fresno
- County of Fresno
- County of Madera
- FMFCD
- Native American Heritage Commission
- SJVAPCD

Discretionary approval may include applications for permit approvals, consultation requirements, or other required actions. Table 2.9-1 lists the regulatory agencies, permits, and purposes of the regulatory approvals that may apply to the project.

Table 2.9-1 Applicable Permit and Regulatory Requirements

Regulatory Agency	Law/Regulation	Purpose	Permit/Authorization Type
U.S. Army Corps of Engineers	Section 404 of the Clean Water Act	Regulates placement of dredged and fill materials into waters of the United States.	Section 404 Permit for Discharge of Dredged or Fill Materials into Waters of the United States
Central Valley Regional Water Quality Control Board	Section 401 of the Clean Water Act	Requires water quality certification for placement of dredged and fill materials into waters of the United States.	Section 401 Water Quality Certification
	Section 402 of the Clean Water Act	Regulates discharges and pollutants.	National Pollutant Discharge Elimination System General Construction Permit
	Porter-Cologne Water Quality Control Act	Regulates discharges of materials to land and protection of beneficial uses of waters of the State.	Waste Discharge Requirements
California Department of Fish and Wildlife	Section 1602 of the Fish and Game Code	Applies to activities that would substantially modify a river, stream, or lake. The agreement includes reasonable conditions necessary to protect those resources.	Lake and Streambed Alteration Agreement Application
California State Lands Commission	Public Trust Easement	Reviews projects that encroach or construct improvements on State Sovereign Lands.	Encroachment Easement Application or Lease
Central Valley Flood Protection Board	Article 3, Title 23 of the Water Code	Requires encroachment permit for any project that may encroach upon, improve, alter, or affect adopted plans of flood control (including federal/State flood control systems, regulated streams, and designated floodways under the board's jurisdiction).	Encroachment Permit Application
San Joaquin Valley Air Pollution Control District	Rules 2010 and 9510 of the Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District; Permit to Construct	Requires permit for construction that emits air pollutants. Requires permit for a project's emissions that may affect regional air quality.	2010 Permit to Construct 9510 Indirect Source Review

Source: Compiled by AECOM in 2016

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Chapter 3
Affected Environment, Environmental Consequences, and Mitigation Measures

3.1 Overview

The DEIR and the discussions in this chapter have been focused in accordance with the scoping process provided for in PRC Section 21080.4(a) and State CEQA Guidelines Section 15082, relying on the NOP circulated by the Conservancy and the responses to the NOP by the responsible and trustee agencies. Discussions of CEQA-required topics not identified by this process as requiring analysis in depth have not been eliminated, but have been appropriately reduced to those essential for environmental analysis. A public scoping meeting to assist in the determination was duly noticed and held by the Conservancy on June 17, 2014 (see Appendix A).

Each topical or technical section in Chapter 3 begins with an introduction that explains the issues to be evaluated; provides a general summary of comments received on the NOP, if any; and identifies the primary sources reviewed to prepare the analysis. The introduction is followed by a description of the project's environmental and regulatory settings as they pertain to a particular issue. The regulatory setting provides a summary of applicable federal, State, and local regulations, plans, policies, and laws that are relevant to each issue area. The regulatory setting description in each section is followed by a discussion of project-specific impacts. Compliance with applicable laws, policies, and regulations is assumed and is identified in the impact analysis. In many cases, compliance with applicable laws, policies, or regulations would reduce the significance of an impact.

3.1.1 Environmental Setting

According to Section 15125(a) of the State CEQA Guidelines, an EIR must include a description of the existing physical environmental conditions in the vicinity of the project as they exist at the time the NOP was published (on June 9, 2014).

The following discussion describes the regional physical setting of the project area. This setting, also known as the "environmental setting," normally constitutes the baseline condition against which project-related impacts are compared. Therefore, the baseline condition for this DEIR, unless noted otherwise, is based on conditions that existed when the NOP was published. The State CEQA Guidelines recognize that the date for establishing an environmental baseline cannot be rigid. Because physical environmental conditions may vary over a range of time, the use of environmental baselines that differ from the date of the NOP is reasonable and appropriate in certain circumstances when doing so results in a more accurate or conservative environmental analysis.

3.1.1.1 San Joaquin Valley

The project area is located within the low alluvial plains and fans of the central San Joaquin Valley between the Coast Ranges and the Sierra Nevada. The San Joaquin Valley is approximately 400 miles long and averages 50 miles in width, encompassing approximately 20,000 square miles. It resembles a large asymmetric trough that is bounded by the mostly granitic Sierra Nevada to the east and the metamorphic Coast Ranges to the west. This trough has been filled with as much as 30,000 feet of sediment in the San Joaquin Valley portion to the south, and as much as 60,000 feet of sediment in the Sacramento Valley portion to the north. The age of the sediments range from Jurassic to Holocene and include both marine and lacustrine deposits.

3.1.1.2 San Joaquin River

The San Joaquin River originates in the Sierra Nevada at an elevation of 12,000 feet above mean sea level (amsl). The 366-mile-long river flows through a rich agricultural region before reaching the Pacific Ocean through Suisun Bay and San Francisco Bay. The San Joaquin is among the most heavily dammed and diverted of California's rivers. Millerton Lake, formed by Friant Dam, is located about 11 miles upstream of the study area and is the largest reservoir on the River. Friant Dam impounds about 520,500 acre-feet and diverts most of the River for irrigation of the San Joaquin Valley. Its secondary uses include flood control and recreation. The River forms the county line that separates Madera and Fresno counties. Inflow to Millerton Lake consists primarily of upper San Joaquin River flows and is influenced by the operation of several upstream hydropower generation projects. Other inflows include local runoff. Millerton Lake typically fills during late spring and early summer, when River flows are high because of snowmelt in the upper watershed. Friant Dam diverts much of the water from the River to contractors within the Central Valley Project Friant Division water service area. Annual water allocations and release schedules are developed with the intent of drawing reservoir storage to minimum levels by the end of September. The operation of Friant Dam changes storage levels in Millerton Lake, which in turn influences River flows through the project area.

3.1.1.3 Project Site

The project site is located on an alluvial floodplain terrace along the south side of the River. The topography of the study area consists of a relatively flat floodplain with interspersed former gravel mining pits and ponds surrounded by relatively steep bluffs. The most prominent landforms within the study area include:

- the River channel running from east to west along the northern boundary of the project area,
- steep north- and south-facing bluffs identifying the approximate boundaries of the river floodplain, and

- numerous gravel mining pits and ponds interrupting the otherwise relatively flat topography of the floodplain.

Ground surface levels in the study area range from 249 feet at the River's low-water level to 330 feet at the top of the bluffs. The bluff slope ranges between 60% and 80% grade on both the north and south side of the River's floodplain. The highly erodible face of the bluff and a small area of expansive clay in the northeastern portion of the sphere of influence are the only unstable soil conditions known to exist in the city of Fresno.

Five biotic habitats are present in the study area: disturbed annual grassland, aquatic, riparian, developed landscape, and stormwater detention basins. Disturbed annual grassland habitat composes the majority of the vegetation of the study area. Most of this habitat has been disturbed by previous sand/gravel mining activities, past cattle grazing and agriculture use, and ongoing disturbance caused by unauthorized recreational use.

Four habitat restoration projects sponsored by the Conservancy are in progress at the site. These native plant revegetation projects are designed to complement the proposed project.

3.1.1.4 San Joaquin River Parkway

The regional setting for this DEIR includes the Parkway planning area. The San Joaquin River Conservancy Act sets forth the statutory mission and authorities of the Conservancy. The Conservancy Act's introductory sections states:

> *The Legislature hereby finds and declares that the San Joaquin River, its broad corridors, and its prominent bluffs constitute a unique and important environmental, cultural, scientific, agricultural, educational, recreational, scenic, flood water conveyance, and wildlife resource that should be preserved for the enjoyment of, and appreciation by, present and future generations.*

The Conservancy Act authorized the acquisition and management of public lands within the planned Parkway (PRC Section 32510). Accordingly, the Parkway planning area "consists of the San Joaquin River and approximately 5,900 acres on both sides of the river between Friant Dam and Highway 99 crossing. Approximately 1,900 acres of Parkway shall be located in Madera County and 4,000 acres shall be located in Fresno County."

This area is approximately 22 miles long, from river mile 267.6 at the face of Friant Dam to the SR 99 crossing at river mile 243.2, and includes portions of Fresno County, Madera County, and the city of Fresno. The Parkway planning area varies in width from a narrow wildlife corridor where the bluffs are steep and close to the River to extensive floodplains of several hundred acres.

As of the date of the NOP, June 9, 2014, the Conservancy owned 2,552 acres within the Parkway, including the project site. Other public lands within the Parkway planning area include the County of Fresno's Lost Lake Park, CDFW's San Joaquin Fish Hatchery and San Joaquin River Ecological Reserve, and State sovereign lands under the jurisdiction of the California State Lands Commission.

The study area analyzed in this DEIR is about 358 acres, or about 6.0% of the public land area of the planned Parkway.

3.1.1.5 Climate

The climate of the area is typical of inland valleys in California, with hot, dry summers and cool, mild winters. Average summer temperatures in Fresno are in the mid-90s Fahrenheit and can exceed 100 degrees Fahrenheit (°F). The city has an average annual high temperature of 79°F and an average annual low temperature of 53°F. On average, Fresno receives around 11 inches of precipitation per year, and snowfall occurs rarely (DWR 2006; WRCC 2016a). Most of the precipitation falls in January, which is also the coldest month of the year. The warmest month is July. The city of Fresno typically experiences about 39 days of heavy fog during the winter, with visibility of less than a quarter of a mile (WRCC 2016b). The highest temperature during summer 2014 occurred on June 9, with a high of 110°F. The lowest daytime high temperature during winter 2013 was 49°F on December 5 (AccuWeather.com 2014).

3.1.2 Local Jurisdictional Setting

The following discussion describes the local jurisdictional setting.

The California Legislature created the Conservancy as a State agency with broad powers to develop and manage State lands in the Parkway to accomplish the goals of the Conservancy Act. The Conservancy's uses on State lands are not subject to local land use ordinances based the well-established principle of sovereign immunity: the State and its agencies are not subject to local regulations when engaging in governmental activities, unless the California Constitution or the Legislature so mandates. Although the Conservancy is not subject to local land use regulation, it has maintained a policy of coordinating with local land use authorities. Lands that are not in State ownership may be involved in development of the project. All zoning and land use regulation over lands involved in the project not owned by the State remain the exclusive authority of the local land use agencies.

Although the State CEQA Guidelines do not require an EIR to describe the regulatory setting, Section 15125(d) states that the EIR shall discuss any inconsistencies between the project and applicable general plans, specific plans, and regional plans. The following section describes local jurisdictions that may have such plans.

3.1.2.1 City of Fresno

Fresno is the largest inland city in Central California. According to the Draft General Plan (City of Fresno 2014a), the city's current population is 545,000, making Fresno the fifth largest city in California and the 34th largest in the nation. The county seat of Fresno County, Fresno occupies an area of approximately 104.4 square miles.

The City owns 6.2 acres of land adjacent to the study area at Spano Park. All 358 acres of the study area are within the city limits of Fresno. The mayor or a designated city council member serves on the board of directors of the Conservancy (PRC Section 32515). The Parkway serves and the proposed project would serve Fresno residents, as well as the regional population of the Parkway's service area.

3.1.2.2 City of Madera

Just 25 miles north of the study area is the city of Madera. Madera is the largest city in Madera County, with a population of 62,624 as of 2012, and occupies an area of approximately 12.3 square miles. The city is located near the entrance to Yosemite National Park and the Sierra Nevada. Although the study area is not within the jurisdiction of Madera, the Parkway serves and the proposed project would serve Madera residents. The mayor or a designated city council member serves on the board of the Conservancy (PRC Section 32515).

3.1.2.3 City of Clovis

The city of Clovis is located in northeastern Fresno County, about 4 miles east of the study area. As of 2016, the city's population was 108, 039 (City of Clovis 2016). Clovis occupies an area of approximately 24 square miles. Although the study area is not within the jurisdiction of Clovis, the Parkway serves and the proposed project and would serve Clovis residents.

3.1.2.4 Fresno County

The planned Parkway is partially within Fresno County. The county is one of the largest, fastest growing, and most diverse counties in California. It is the state's 10th most populous county with an estimated 920,000 residents (County of Fresno 2014a). The Parkway serves and the proposed project would serve Fresno County residents. A member of the County of Fresno Board of Supervisors serves on the board of the Conservancy (PRC Section 32515).

3.1.2.5 Madera County

Madera County is located directly north of the study area. The county has an estimated population of 154,998 residents and occupies an area of 2,156 square miles (California-Demographics 2016). The Parkway serves and the proposed project would serve Madera County residents. A member of the County of Madera Board of Supervisors serves on the board of the Conservancy (PRC Section 32515).

3.1.3 Study Area

The study area encompasses the south side of the River to the bluffs and extends westward from SR 41 to Spano Park, located near the intersection of Palm Avenue and Nees Avenue. The study area analyzed in this DEIR encompasses approximately 358 acres on the south side of the river. Most of the land is owned by the State of California under the management jurisdiction of the Conservancy and the California State Lands Commission. Four parcels owned by the City of Fresno are adjacent to Conservancy land. Implementation of some portions of the project may occur on the city properties.

The area comprises 19 parcels, which are owned by the State of California under the management of the Conservancy, FMFCD, and the City of Fresno (Table 3.1-1). One privately owned parcel (40102127S) is within the project boundaries. A second privately owned parcel (40102138S) is located on the Perrin Canal bench of the bluffs near the east side of the study area. Although these parcels are not part of the project, this DEIR analyzes indirect impacts, if any, of the project on these areas. A residential subdivision is located south of the study area on the bluffs. The subdivision is not part of the project; however, this DEIR analyzes indirect impacts, if any, of the project. Parcels in the study area are designated as Open Space/Multiuse and zoned as AE-20 or AE-5 (Table 3.1-1).

Land ownership in the study area totals 357.8 acres, which includes the City of Fresno, 8.03 acres; FMFCD, 7.72 acres; private residence, 20.43 acres; and State of California, 332.9 acres. The project area also contains State sovereign lands lying riverward of the low-water mark under the jurisdiction of the California State Lands Commission.

3.1.4 Impact Analysis

This section of the DEIR addresses topics required by CEQA. Each topic (e.g., air quality, biological resources) describes the existing setting or regulatory conditions to help the reader understand the conditions that could be affected by the project. Each topic includes a description of the impact evaluation criteria and analysis procedures. The impact statement is prefaced by a number for ease of identification. An explanation of each potential impact and an analysis of its significance follow the impact analysis. All mitigation measures are identified immediately following the impact analysis. The degree to which identified mitigation measures would reduce the impact is also described.

When more than one mitigation measure is recommended for a specific impact, all the measures are required to reduce the impact to a level of insignificance unless the word “or” or “alternatively” appears in the list of mitigation measures. Although not specifically required by CEQA, less-than-significant impacts have also been discussed. No mitigation is mandated by CEQA for less-than-significant impacts.

Table 3.1-1 Existing Land Use, Zoning, and Ownership in the Study Area

Assessor's Parcel Number	Acres	Existing Land Use Description	Planned Land Use Description	Zoning	Owner
40102127S	19.48	N/A	N/A	N/A	Private
40102132ST	2.09	Vacant	Open Space/Multiuse	AE-20	State of California
40102133ST	8.90	Vacant	Open Space/Multiuse	AE-20	State of California
40102134ST	8.37	Vacant	Open Space/Multiuse	SPLIT: AE-20/AE-5	State of California
40102135ST	59.38	Vacant	Open Space/Multiuse	SPLIT: AE-20/AE-5	State of California
40102137S	3.80	Vacant	Open Space/Multiuse	SPLIT: AE-20/AE-5	State of California—Conservancy
40102138S	0.86	Vacant	Open Space/Multiuse	AE-20	Private
40203024ST	3.91	Open Space/Multiuse	Open Space/Multiuse		State of California—Conservancy
40203038ST	0.13	Open Space/Multiuse	Open Space/Multiuse	SPLIT: AE-20/AE-5	FMFCD
40203047ST	2.26	Open Space/Multiuse	Open Space/Multiuse	SPLIT: AE-20/AE-5	City of Fresno
40203048ST	4.21	Open Space/Multiuse	Open Space/Multiuse	SPLIT: AE-20/AE-5	City of Fresno
40203052ST	3.76	Ponding Basin	Open Space/Multiuse	AE-5	FMFCD
40203054ST	3.57	Ponding Basin	Open Space/Multiuse	AE-5	FMFCD
40203062ST	3.69	Open Space/Multiuse	N/A	N/A	State of California—Conservancy
40203068ST	25.70	Open Space/Multiuse	Open Space/Multiuse	AE-5	State of California
40203069ST	205.95	Open Space/Multiuse	Open Space/Multiuse	AE-5	State of California—Conservancy
40252025ST	0.62	Open Space/Multiuse	Open Space/Multiuse	R-1-C	City of Fresno
40253009ST	0.82	Open Space/Multiuse	N/A	N/A	State of California—Conservancy
40253011ST	0.33	Open Space/Multiuse	Open Space/Multiuse	R-1-C	City of Fresno
Total Acres	**357.8**				

Notes: Conservancy = San Joaquin River Conservancy; FMFCD = Fresno Metropolitan Flood Control District; N/A = not applicable

Source: Compiled by AECOM in 2016

As lead agency, the Conservancy must comply with the mitigation measures, including all reporting requirements, as a condition of approval of the project. Failure to fully comply with all required mitigation measures is potential cause for enforcement action. When monitoring of mitigation measures is required, the Conservancy shall maintain complete performance records on file for each such measure for trustee or responsible agency review.

Each impact is briefly described ("headed") and numbered in bold print. An impact discussion and analysis follows. At the end of the impact discussion, mitigation measures are listed and numbered to correspond to the numbered impact. The summary table for this DEIR, Table 1.6-1 in Chapter 1, "Executive Summary," includes the same text heading and the mitigation measures.

Cumulative impacts of the project are analyzed in Chapter 4 of this DEIR.

3.1.4.1 Determination of Significance

Under CEQA, a significant impact is defined as a substantial, or potentially substantial, adverse change in the environment (PRC Section 21068). The State CEQA Guidelines direct that this determination be based on substantial evidence in light of the whole record. The criteria for determining the significance of a particular impact are identified before the impact discussion in each topical section and are consistent with significance criteria set forth in the State CEQA Guidelines.

3.1.4.2 Terminology Used in the Impact Analysis

This DEIR uses the following terminology to describe the environmental effects of the project:

- **Thresholds of Significance.** A set of criteria used by the lead agency to determine at what level of "threshold" an impact would be considered significant. Standards of significance used in this DEIR include those derived from questions set forth in the State CEQA Guidelines, which are criteria based on regulatory standards of local, State, and federal agencies. In determining the level of significance, the analysis assumed that the project would comply with relevant federal, State, and local regulations and ordinances.
- **Less-than-Significant Impact**. A project impact is considered less than significant when it does not reach the standard of significance, indicating that there would be no substantial change in the environment. No mitigation is required for a less-than-significant impact.
- **Potentially Significant Impact**. A potentially significant impact is an environmental effect that could cause a substantial adverse change in the environment; however, additional information is needed regarding the extent of the impact to make the determination of significance. For CEQA purposes, a potentially significant impact is treated as if it were a significant impact.

- **Significant Impact**. A project impact is considered significant if it results in a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by the evaluation of project effects in the context of specified significance criteria. When available, potentially feasible mitigation measures and/or project alternatives are identified to reduce these effects on the environment.

3.2 Aesthetics and Visual Resources

3.2.1 Introduction

This section describes the existing environmental and regulatory setting of the project and analyzes the potential impacts of the project on aesthetics and visual resources. This section also describes the criteria used to determine the significance of impacts, the approach to assessing impacts, and possible mitigation measures.

As described in Chapter 2, a public scoping meeting was held on June 17, 2014, to invite comments regarding environmental issues that should be examined in the EIR. Several comments were made that the EIR should evaluate the impacts of the project on aesthetic resources.

3.2.2 Environmental Setting

The San Joaquin River, emerging from the Sierra Nevada foothills, has carved its channel into the landscape of a broad floodplain flanked by bluffs varying in steepness and elevation. The San Joaquin River serves as the boundary between Madera and Fresno counties and is the principal natural scenic feature of the Fresno metropolitan area.

3.2.2.1 Visual Character of the Study Area

Aesthetics and visual resources are the natural and cultural landscape features that people see and that contribute to the public's enjoyment and appreciation of the environment. Aesthetic and visual resource impacts are generally defined in terms of the extent to which the project's physical characteristics and visibility would change the perceived visual character and visual quality of the viewed landscape.

The context of the aesthetic/scenic vista of the project comprises a floodplain corridor, the San Joaquin River with year-round flows, riparian vegetation, trees, grassland, and remnants of several surface mining gravel ponds inundated with water. Although there are no designated scenic vistas in the study area, the City recognizes the River as a unique and scenic resource (City of Fresno 2014a). Audubon Drive, a nearby collector road about 1 mile south of the study area, is considered a scenic corridor from Blackstone Avenue to Herndon Avenue. Views of the study area from Audubon Drive are obstructed by a residential subdivision.

The scenic river vista can be viewed by traffic from SR 41, homeowners of private residences along the river floodplain corridor and on the bluffs, visitors at Spano Park, and pedestrians along the Bluff Trail (see Photographs 3-1, 3-2, and 3-3).

Photograph 3-1: Panoramic view of the San Joaquin River from Spano Park.

Photograph 3-2: Panoramic view of the San Joaquin River from the Bluff Trail.

Photograph 3-3: Panoramic view of the San Joaquin River from SR 41 looking north.

There are no historic buildings in the study area (see Section 3.6, "Cultural Resources," for a discussion of historic resources). Two private residences are located within the floodplain corridor in the project area. An asphalt road connects a gated entrance at West Riverview Drive with the private residences. Old farm

roads and gravel haul roads are present along the floodplain corridor. These roads are unimproved and not maintained. The Bluff Trail (a pedestrian trail) is located on the historic[10] Perrin Canal Bench just below the top of the bluffs.

There are four gravel ponds (mining pits) within the floodplain corridor (Photographs 3-1 and 3-2). These gravel ponds, remnants of past gravel mining operations, are a dominant visual feature of the floodplain corridor. Riparian vegetation present along the River and ruderal grassland are dominant vegetative visual features. Two fenced stormwater basins are present and can be seen from Spano Park or the Bluff Trail near the West Riverview Drive entrance.

3.2.2.2 Viewer Groups

Residents are individuals whose homes are near the study area. Viewer sensitivity is moderately high among residents because they are likely to value their local visual resources, appreciate the visual experience, and be more sensitive to changes in views. The project site is visible to residents whose homes are immediately adjacent to the bluffs and of the two private residences located near the center of the study area.

Recreational users engage in a variety of activities such as walking, jogging, biking, and wildlife viewing. Viewer sensitivity is moderately high among recreational users although the views are transient in nature. These viewers are more likely to value the natural environment highly, appreciate the visual experience, and be sensitive to changes in views. Spano Park offers viewers a bluff-top view of the study area. It offers the highest public vantage point in the vicinity of the study area from which to view the San Joaquin River.

Motorists use SR 41 at normal highway speeds. Single views of the study area for southbound motorists are typically of short duration. Motorists who frequently travel SR 41 generally possess low to moderate visual sensitivity to their surroundings. The passing landscape becomes familiar to these viewers, and their attention typically is not focused on the passing views but on the roadway, roadway signs, and the surrounding traffic.

3.2.2.3 Viewing Areas

Residential

The study area can be viewed from the private residences along the floodplain corridor and residences located on the bluffs (south of the study area). The river, riparian vegetation, trees, grassland, stormwater basins, and remnants of surface gravel mining ponds can be seen. Depending on air quality, distant views of the Sierra Nevada can be seen from some homes on the bluffs.

[10] A historic assessment of the Perrin Canal is provided in Section 3.6, “Cultural Resources.”

Spano Park

Spano Park, a mini park located at Palm and Park Avenues near Nees Avenue in northwest Fresno, overlooks the San Joaquin River. This mini park is a passive park with picnic tables, a grassy area, and a short walking trail that provides a view of the Sierra Nevada and the San Joaquin River. The view from Spano Park is similar to that described above and is illustrated in Photograph 3-1.

Bluff Trail

The Bluff Trail is a neighborhood trail located on a remnant of the Perrin Canal Bench south of the study area. The Bluff Trail is owned and managed by the City of Fresno. Access to the Bluff Trail is controlled by gates that are unlocked in the morning and locked in the evening. The view from the Bluff Trail is similar to that described above and is shown in Photograph 3-2.

3.2.3 Regulatory Setting

This section briefly describes federal, State, and local regulations, permits, and policies pertaining to aesthetics and visual resources, as they apply or may be relevant to the project.

3.2.3.1 Federal Laws, Regulations, and Policies

No federal laws, regulations, or policies related to aesthetics/visual resources apply to the project.

3.2.3.2 State Laws, Regulations, and Policies

California Scenic Highway System

The California Department of Transportation (Caltrans) administers the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to highways. Although there are eligible State Scenic Highways in Fresno and Madera counties, none are officially designated and none that are eligible for designation are present in or near the study area (Caltrans 2014a).

San Joaquin River Conservancy Act

As described in Chapter 2, the Conservancy Act (PRC Sections 32500–32520) declares that “the San Joaquin River, its broad corridors, and its prominent bluffs constitute a unique and important environmental, cultural, scientific, agricultural, educational, recreational, scenic, flood water conveyance, and wildlife resource that should be preserved for the enjoyment of, and appreciation by, present and future generations.” The Conservancy Act also establishes the Conservancy to acquire and manage public lands within the planned Parkway.

San Joaquin River Parkway Master Plan

The Conservancy develops and manages its projects and lands under its jurisdiction in the Parkway through policies in the Parkway Master Plan. The Parkway Master Plan (Appendix B) contains goals, objectives, and policies that apply to the project area, including the following policy relevant to aesthetics/ visual resources:

- **Policy BZ9:** Lighting associated with development in the riverbottom should be minimized, carefully planned, and regulated. Lighting should not be allowed in the vicinity of the wildlife corridor or a natural reserve, except where public safety necessitates it. The impacts of lighting can be further minimized by planting tall vegetation that acts as a screen between the light source and the corridor or reserve. ...assure that [lights] switch off when no longer needed.

These policies do not necessarily avoid impacts but may lessen them.

3.2.3.3 Local Laws, Regulations, and Policies

The City of Fresno updated its draft general plan and development code on July 2, 2014. The Draft Master EIR (*Master Environmental Impact Report, General Plan and Development Code Update*) was released for public review and comment on July 22, 2014 (State Clearinghouse No. 2012111015). The Final Master EIR was released on December 5, 2014; the City approved the updated *Fresno General Plan and Development Code 2035* on December 18, 2014.

The planning process for the updated *Fresno General Plan* (referred to in this DEIR as the General Plan Update 2035) began in 2011, before the NOP for this EIR was published. Although the General Plan Update 2035 was approved after the publication date of the NOP, it is reasonable and appropriate to consider the policies and objectives of that document as part of the baseline setting for this EIR. In addition, the policies and objectives of the *2025 Fresno General Plan* (General Plan 2025) were in effect at the time the NOP was published. Relevant policies of both the General Plan 2025 and the General Plan Update 2035 are presented throughout this DEIR to provide a more accurate environmental setting.

City of Fresno General Plan 2025

The City's General Plan 2025 established the following policy guiding the assessment of project impacts on aesthetic and visual resources:

- **Policy C-20-f:** … Exterior lighting shall not create glare for neighboring properties, but shall provide adequate on-site lighting for safety and security.

City of Fresno General Plan Update 2035

The City's General Plan Update 2035 establishes the following goal relevant to the assessment of project impacts on aesthetic and visual resources:

Goal MT-6-k: Path and Trail Buffers. Use landscaping with appropriate and adequate physical and visual barriers (e.g., masonry walls, chain link, wrought-iron, or square-tube fencing) to screen path and trail right-of-ways and separate paths and trails from mining operations, drainage facilities, and similar locations as warranted.

3.2.4 Impact Analysis

3.2.4.1 Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis of aesthetics and visual resources are based on the environmental checklist in the State CEQA Guidelines, as amended. The State CEQA Guidelines define a "significant effect" on the environment to mean a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including … objects of historic or aesthetic significance" (14 CCR Section 15382). The project would have a significant impact on aesthetics and visual resources if it would:

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

3.2.4.2 Methodology

The analysis of the project's potential impacts was based on an evaluation of the changes to the existing aesthetic/visual resources that would result from implementing the project. In determining the extent and implications of the aesthetic/visual changes, consideration was given to:

- specific changes in the affected aesthetic/visual environment's composition, character, and any specially valued qualities;
- the affected aesthetic/visual environment's context; and
- the extent to which the affected environment contains places or features that have been designed in plans and policies for protection or special consideration.

Visual analyses typically distinguish between three different impact durations: temporary impacts, typically lasting no more than 2 years; short-term impacts, generally lasting no longer than 5 years; and long-term impacts, which last longer than 5 years. In general, short-term impacts are not considered significant.

3.2.4.3 Impacts and Mitigation Measures

Impact 3.2-1: The project would have a substantial adverse effect on a scenic vista.

Temporary Impacts. Although there are no designated scenic vistas in the study area, the San Joaquin River is considered a scenic resource by the City (City of Fresno 2014a). Project construction activities such as site preparation, clearing, grading, installation of new hardscape, and landscaping, and heavy equipment present in the area would be visible to homeowners on the bluffs, the public at Spano Park, visitors along the Bluff Trail, and traffic traveling along SR 41. Such construction activities and equipment would contrast with the existing natural River bottom setting, a scenic resource. Construction would last about 1 year; construction equipment, activities, and personnel would be visible during this period. The temporary impact would be **less than significant**. No mitigation is required.

Long-Term Impacts. The riverine setting includes the presence of two private residences, fenced stormwater basins, legacy gravel-mining pits, and an asphalt/paved road, as well as grassland, ponds, and riparian woodland. The project footprint is small relative to the open space of the project area, but the trail extension, parking lot, recreation amenities, and people using the trail would be at least partially visible during the day after construction. Visitors would be seen from various viewing areas and by viewer groups. The project includes landscaping with trees in the parking area to screen the area; however, cars parked in the Perrin Avenue parking lot would be at least partially visible to homeowners on the bluffs, the public at Spano Park, visitors along the Bluff Trail, and traffic traveling along SR 41. All of these changes would alter the visual character of the study area. The presence of the trail extension, parking lot, and recreational amenities would alter the natural features of the San Joaquin River floodplain. The long-term presence and use of the trail extension could affect sensitive viewer groups and could be considered a conflict with the unique and scenic resource that is the River. The long-term impact would be **potentially significant.**

Mitigation Measure Aesthetics and Visual Resources-1

> The Conservancy shall use native plants for landscaping portions of the trail extension to allow for naturalization of these features. Landscaping and recreation facilities shall be designed to create visual buffers and in a manner complementary and/or compatible with the scenic nature of the area. Newly landscaped vegetation shall be irrigated until permanently established. The Conservancy shall select materials and colors for all facilities (e.g., vault toilet restrooms) that shall be compatible with the surrounding natural environment.

Effectiveness of Mitigation Measure

The use of native plants for landscaping portions of the trail extension and selection of naturalized materials and colors for recreation facilities would create visual buffers in a manner that is complementary and/or compatible with the scenic nature of the area. Implementation of Mitigation Measure Aesthetics and Visual Resources-1 would reduce the potential long-term impact on scenic vistas to **less than significant**. No additional mitigation is required.

Impact 3.2-2: The project could substantially damage scenic resources, including trees, rock outcroppings, and historic buildings within a State scenic highway.

The adjacent SR 41 is not a designated or eligible State scenic highway and no historic buildings or rock outcroppings are present in the study area. Trees located in the project area would be conserved to the extent feasible. The project would not substantially damage scenic resources such as trees, rock outcroppings, or historic buildings within a State scenic highway. The impact would be **less than significant**. No mitigation is required.

Impact 3.2-3: The project would substantially degrade the existing visual character or quality of the site and its surroundings.

Temporary Impacts. Construction could result in temporary visual disturbances associated with the presence of construction crews and heavy equipment. Construction activities would last about 1 year. The temporary impact would be **less than significant**. No mitigation is required.

Long-Term Impacts. The project would alter the view of the San Joaquin River from the viewing areas. The long-term presence and use of the trail extension could affect sensitive viewer groups and could be considered a conflict with the existing visual character of the River. The long-term impact would be **potentially significant.**

Mitigation Measure Aesthetics and Visual Resources-2

The Conservancy shall implement Mitigation Measure Aesthetics and Visual Resources-1.

Effectiveness of Mitigation Measure

The use of native plants for landscaping the trail extension and selection of naturalized materials and colors for recreation facilities, as described in Mitigation Measure Aesthetics and Visual Resources-1, would create visual buffers in a manner that is complementary and/or compatible with the scenic nature of the area. Implementation of Mitigation Measure Aesthetics and Visual Resources-1 would reduce the potential long-term impact on the visual character of the San Joaquin River to **less than significant.** No additional mitigation is required.

Impact 3.2-4: The project would create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Temporary Impacts. Construction and maintenance activities would take place during the day between 6 a.m. and 6 p.m.; therefore, in the short term, **no impact** would occur.

Long-Term Impacts. Access to the trail extension would be limited to daytime use or occasional evening special even use. The project would include low-level outdoor security lighting in the parking area and restroom facilities that would be fully shielded and would point down toward the ground. This would represent a new source of lighting. Therefore, the long-term impact would be **potentially significant**.

Mitigation Measure Aesthetics and Visual Resources-3

The Conservancy shall implement the following measures regarding lighting design features:

- All outdoor lights shall be fully shielded with full cutoff luminaires.
- All up-lighting for any purpose shall be avoided.
- Tree-mounted lights shall be avoided unless they are fully shielded and pointing downward toward the ground or shining into dense foliage.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Aesthetics and Visual Resources-3 would reduce the potential long-term impact to **less than significant** by using smart lighting and requiring lighting to be fully shielded, which would minimize lighting use and prevent glare and light trespass onto adjacent properties or into wildlife habitat. No additional mitigation is required.

3.3 Agriculture and Forestry Resources

3.3.1 Introduction

This section describes the existing environmental and regulatory setting of the project area and analyzes the potential impacts of the project on agriculture and forestry resources. This section also describes the criteria for determining the significance of impacts, approach to assessing impacts, and possible mitigation measures.

As described in Chapter 2, a public scoping meeting was held on June 17, 2014, to invite comments regarding environmental issues that should be examined in the DEIR. No comments were made related to impacts on agriculture and forestry.

3.3.2 Environmental Setting

3.3.2.1 Soils

According to the U.S. Natural Resources Conservation Service, the soils of the study area are composed primarily of Grangeville fine sandy loam, Hesperia sandy loam, Tujunga, and Riverwash (NRCS 2014). Grangeville is the dominant soil classification. Both Grangeville and Hesperia soils are classified as Prime Farmland if irrigated and drained (NRCS 2014). Table 3.3-1 presents the soil classifications of the study area by acres and percent. The Grangeville soil series (about 185 acres) consists of very deep, somewhat poorly drained soils that formed in moderate coarse-textured alluvium dominantly from granitic rock sources. Grangeville soils are found on alluvial fans and floodplains and have slopes ranging from 0 to 2%. Expansive soils are those that contain significant amounts of clays that expand when wetted and can cause damage to foundations if moisture collects beneath structures. Grangeville soils are not considered expansive soils.

Table 3.3-1 Soil Classifications in the Study Area

Class Name	Number of Acres	Percent
Grangeville fine sandy loam	131	52
Grangeville fine sandy loam, saline alkali	34	14
Grangeville soils, channeled	21	8
Hanford fine sandy loam	1	1
Hesperia, fine sandy loam	5	2
Hesperia, sandy loam	28	10
Pollasky fine sandy loam, 9 to 15% slopes	3	1
Riverwash	2	1
Terrace escarpments	17	7
Tujunga soils, channeled, 0 to 9% slopes	12	4
Total	**254***	**100%**

* Water as a class name is not included in this table. Gravel ponds represent 104 acres of open water. The total number of acres including the gravel ponds (water) is 358.

Sources: NRCS 2014; compiled by AECOM in 2016

3.3.2.2 Farmland Classification

Data from the California Department of Conservation's Farmland Mapping and Monitoring Program were reviewed to determine the classification and acres of farmland in the project area (DOC 2014). Parcel data were obtained from the County of Fresno on July 24, 2014[11] (County of Fresno 2014b).

[11] The County of Fresno updated its GIS parcel database on July 23, 2014.

Table 3.3-2 presents farmland classifications for the study area.

Table 3.3-2 Farmland Mapping and Monitoring Program Designation

Classification Name	Number of Acres	Percent
Farmland of Local Importance	174	48%
Nonagricultural and Natural Vegetation	172	49%
Urban and Built-Up Land	7	2%
Vacant or Disturbed Land	5	1%
Total	**358***	**100%**

* Total acres in Tables 3.3-1 and 3.3-2 are different because of the dissimilar databases of the County of Fresno and California Department of Conservation.

Sources: DOC 2014; County of Fresno 2014b

The following definitions of Farmland Mapping and Monitoring Program categories were taken from the California Department of Conservation (DOC 2014).

3.3.2.3 Farmland of Local Importance

Farmland of Local Importance is land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. In Fresno County, this means all farmable lands that do not meet the definitions of Prime, Statewide, or Unique are Farmland of Local Importance. This includes land that is or has been used for irrigated pasture, dryland farming, confined livestock and dairy, poultry facilities, aquaculture, and grazing land.

3.3.2.4 Nonagricultural or Natural Vegetation Land

Nonagricultural or Natural Vegetation Land is heavily wooded, rocky or barren areas, riparian and wetland areas, grassland areas that do not qualify for Grazing Land because of their size or land management restrictions, small water bodies, and recreational water ski lakes. Constructed wetlands are also included in this category.

3.3.2.5 Urban and Built-Up Land

Urban and Built-Up Land is land that is occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad, and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

3.3.2.6 Vacant or Disturbed Land

Vacant or Disturbed Land refers to open field areas that do not qualify for an agricultural category, mineral and oil extraction areas, off-road vehicle areas, electrical substations, channelized canals, and rural freeway interchanges.

In summary, there are four farmland classifications in the study area: Farmland of Local Importance (173.73 acres), Nonagriculture and Natural Vegetation (171.79 acres), Urban and Built-Up Land (7.26 acres), and Vacant or Disturbed Land (4.83 acres). No Prime Farmland, Unique Farmland, or Farmland of Statewide Importance is located in the study area. The land is not under a Williamson Act contract.

3.3.2.7 Forest and Timberland

Forest and timberland in Fresno County are located in the southern part of Sierra National Forest and the northern part of Sequoia National Forest. There are no forests or timberlands in or near the project area.

3.3.3 Regulatory Setting

3.3.3.1 Federal and State Laws, Regulations, and Policies

No federal or State laws, regulations, or policies related to agriculture and forestry resources apply to the project.

3.3.3.2 Local Laws, Regulations, and Policies

City of Fresno General Plan 2025

The City's General Plan 2025 dated February 1, 2002, presents the following policy relevant to agricultural use along the San Joaquin River.

- **Policy G-5-g:** In the San Joaquin River bottom, accommodate agriculture uses that do not stimulate unplanned growth or conversion of designated open space land to urban uses.

City of Fresno General Plan Update 2035

The City's General Plan Update 2035 does not present new agricultural policies that are relevant to the project. Farmland within the City's sphere of influence is not classified or considered a long-term strategic farmland because it is assumed that it will be urbanized in the future.

3.3.4 Impact Analysis

3.3.4.1 Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis of agriculture and forest and timberland resources are based on the environmental checklist in the State CEQA Guidelines, as amended. The project would have a significant impact on agriculture and forest and timberland resources if it would:

- 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 nonagricultural use;
- conflict with existing agricultural zoning or Williamson Act contracts;
- conflict with existing zoning for, or cause rezoning of, forestland (as defined in PRC Section 12220[g]), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g]);
- result in the loss of forestland or conversion of forestland to nonforest use; or
- involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or conversion of forestland to nonforest use.

3.3.4.2 Methodology

The analysis of the project's potential impacts was based on an evaluation of the effects of the project on existing agriculture and timberland resources. In determining the extent and implications of the impacts, consideration was given to:

- the existing agriculture/timberland setting;
- conflicts with farmland, timberland, and land use designations;
- conflicts with Williamson Act contracts; and
- the extent to which the affected environment contains existing or ongoing agricultural practices.

3.3.4.3 Impacts and Mitigation Measures

Impact 3.3-1: The project could convert Prime Farmland, Unique Farmland, of Farmland of Statewide Importance (Farmland) to nonagricultural use.

No Prime Farmland, Unique Farmland, or Farmland of Statewide Importance is located in the study area. The project site has 173.73 acres of Farmland of Local Importance. Because the project area is within the

San Joaquin River floodplain and the City's sphere of influence, it is not classified or considered long-term strategic farmland. The project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use. The impact would be **less than significant**. No mitigation is required.

Impact 3.3-2: The project could conflict with existing agricultural zoning or a Williamson Act contract.

The study area is zoned AE-5 and AE- 20. The project would not conflict with existing agricultural zoning. The project site is not under a Williamson Act contract. The impact would be **less than significant**. No mitigation is required.

Impact 3.3-3: The project could conflict with existing zoning or cause rezoning of forestland.

The study area is not zoned forestland or timberland as defined in PRC Section 12220(g), timberland as defined by PRC Section 4526, or timberland zoned Timberland Production as defined by Government Code Section 51104(g). **No impact** would occur.

Impact 3.3-4: The project could cause the loss or conversion of forestland to nonforest use.

The route of the trail extension and location of parking and recreation amenities would avoid the riparian woodland along the River. There are no forests or timberlands, as defined by PRC Section 4526 or Government Code Section 51104, in the project area. **No impact** would occur.

Impact 3.3-5: The project could involve other changes that could result in conversion of farmland to nonagricultural use or timberland to nonforest use.

The project would not convert agricultural land to nonagricultural use. The study area consists primarily of lands previously mined for gravel and ruderal grassland. In addition, no forests or timberlands are located in the project area. **No impact** would occur.

3.4 Air Quality

3.4.1 Introduction

This section considers the potential project effects on air quality from construction-related and operational emissions of air pollutants, and identifies opportunities to avoid, reduce, or otherwise mitigate potential significant impacts. This analysis includes a description of the existing environmental setting; an overview of the air quality regulatory framework that guides the decision-making process; a summary of the assessment methodology used to model air pollutant emissions; thresholds and other criteria for determining impact significance; an analysis of impacts; and mitigation measures as necessary.

As described in Chapter 2, a public scoping meeting was held on June 17, 2014, to invite comments regarding environmental issues that should be examined in the DEIR. Several comments were made that the DEIR should evaluate the impacts of the project on air quality.

3.4.2 Environmental Setting

San Joaquin Valley Air Basin

The project site is located in the San Joaquin Valley Air Basin (SJVAB), a continuous intermountain air basin. Because of the San Joaquin Valley's unique physical characteristics, its air pollution potential is very high. Surrounding elevated terrain, in conjunction with temperature inversions, frequently restricts the lateral and vertical dilution of pollutants. Abundant sunshine and warm temperatures in summer are ideal conditions for the formation of photochemical oxidants, and the valley frequently experiences photochemical pollution. Air pollution transported from the San Francisco Bay Area and Sacramento region is believed to partially account for measured ozone levels.

3.4.2.1 Climate and Meteorology of the San Joaquin Valley Air Basin

The project would be under the jurisdiction of SJVAPCD, which administers air quality regulations developed at the federal, State, and local levels. SJVAPCD regulates pollutants within SJVAB. The study area is located in the city of Fresno, within the SJVAB. Air pollution is directly related to a region's topographic features. The San Joaquin Valley, which is approximately 250 miles long and averages 35 miles wide, is considered a "bowl" that is open only to the north. Although marine air generally flows into the basin from the north, the region's topographic features restrict air movement through and out of the basin. These topographic features result in weak airflow, which becomes blocked vertically by high barometric pressure over the San Joaquin Valley. As a result, the SJVAB is highly susceptible to pollutant accumulation over time. Local climatological effects, including wind speed and direction, temperature, inversion layers, and precipitation and fog, can exacerbate air quality problems in the SJVAB. The climate of the SJVAB is characterized by warm, dry summers and mild winters.

Air quality is defined by the concentration of pollutants in relation to their impact on human health. Concentrations of air pollutants are determined by the rate and location of pollutant emissions released by pollution sources, and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, and sunlight. Therefore, ambient air quality conditions within the local air basin are influenced by such natural factors as topography, meteorology, and climate, in addition to the amount of air pollutant emissions released by existing air pollutant sources.

The local meteorology of the area is represented by measurements recorded at the Fresno Yosemite International Airport weather station (Station 043257) (WRCC 2016c). The monthly average temperatures recorded between 1948 and 2016 at this station range from 37.6°F in January to 96.4°F in August. The

annual average temperature for this station is 76.5°F. December, January, and February typically are the coldest months in this area. Annual rainfall in the project area occurs mostly between December and March, with an average of approximately 11 inches per year.

3.4.2.2 Criteria Pollutants

Individual air pollutants at certain concentrations may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. Six air pollutants have been identified by EPA and ARB as being of concern both on a nationwide and statewide level: ozone (O_3); carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); lead; and particulate matter (PM), which is subdivided into two classes based on particle size: PM equal to or less than 10 micrometers in diameter (PM_{10}) and PM equal to or less than 2.5 micrometers in diameter ($PM_{2.5}$). Because the air quality standards for these air pollutants are regulated using human and environmental health–based criteria, they are commonly referred to as "criteria air pollutants."

Ozone

Ozone is the principal component of smog and is formed in the atmosphere through a series of reactions involving reactive organic gases (ROG) and oxides of nitrogen (NO_X) in the presence of sunlight. ROG and NO_X are called precursors of ozone. NO_X includes various combinations of nitrogen and oxygen, including nitric oxide (NO), NO_2, and others. Ozone is a principal cause of lung and eye irritation in the urban environment. Significant O_3 concentrations are usually produced only in the summer, when atmospheric inversions are greatest and temperatures are high. ROG and NO_X emissions are both considered critical in formation of O_3.

Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible subgroups for ozone effects. Short-term exposure (lasting for a few hours) to O_3 can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient O_3 levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in communities with high O_3 levels.

Carbon Monoxide

CO is a colorless and odorless gas that, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Relatively high concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300–600 feet) of heavily traveled roadways. Vehicle traffic emissions can cause

localized CO impacts, and severe vehicle congestion at major signalized intersections can generate elevated CO levels, called “hot spots,” which can be hazardous to human receptors adjacent to the intersections. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can lead to headaches, aggravation of cardiovascular disease, and impairment of central nervous system functions.

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of decreased oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport. Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include fetuses, patients with diseases involving heart and blood vessels, and patients with chronic hypoxemia (oxygen deficiency) as seen at high altitudes.

Oxides of Nitrogen

NO_X emissions are generated primarily by the combustion of fuels. Oxides of nitrogen include NO and NO_2. NO_2 is formed when O_3 reacts with NO in the atmosphere, and is listed as a criteria pollutant because NO_2 is more toxic than NO. NO_2 is a product of combustion and is generated by vehicles and stationary sources, such as power plants and boilers. NO_2 is a principal contributor to O_3 and smog generation and can provoke lung irritation and lung damage.

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children, and an increase in resistance to airflow and airway contraction is observed after short- or long-term exposure to NO_2 in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these subgroups.

Sulfur Dioxide

SO_2 is a combustion product, with the primary source being power plants and heavy industries that use coal or oil as fuel. SO_2 is also a product of diesel engine combustion. SO_2 in the atmosphere contributes to the formation of acid rain.

In asthmatics, increased resistance to airflow and reduced breathing capacity leading to severe breathing difficulties are observed after acute exposure to SO_2. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO_2. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO_2 levels. In these studies, efforts to separate the effects of SO_2 from those of fine particles

have not been successful. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

Lead

Lead is a highly toxic metal that may cause a range of human health effects. Previously, the lead used in gasoline anti-knock additives represented a major source of lead emissions to the atmosphere. Soon after its inception, EPA began working to reduce lead emissions, issuing the first reduction standards in 1973. Lead emissions have decreased significantly as a result of the near-elimination of leaded gasoline use.

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotients. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death, although it appears that there are no direct effects of lead on the respiratory system.

Particulate Matter

Particulate matter is a complex mixture of extremely small particles and liquid droplets. PM is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Natural sources of PM include windblown dust and ocean spray. The size of PM is directly linked to the potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller, because these particles generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects and even death.

Individuals particularly sensitive to fine particle exposure include older adults, people with heart and lung disease, and children. The size of particles is directly linked to the potential for health problems. Small particles less than 10 micrometers in diameter (PM_{10}) pose a big problem, because they can get deep into lungs and the bloodstream. Being even smaller, $PM_{2.5}$ travels farther into the lungs. Exposure to such particles can affect both the lungs and the heart. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing. EPA groups particulate matter into two categories, which are described below.

PM with a diameter size equal to or less than 10 micrometers is referred to as PM_{10}. PM_{10} includes both fine and coarse dust particles; the fine particles are $PM_{2.5}$. Coarse particles, such as those found near roadways and dusty industries, are larger than 2.5 micrometers and smaller than 10 micrometers in

diameter. Sources of coarse particles include crushing or grinding operations and dust from paved or unpaved roads. Control of PM_{10} is achieved primarily by controlling dust at construction and industrial sites, cleaning paved roads, and wetting or paving frequently used unpaved roads.

Fine particulates, such as those found in smoke and haze, are $PM_{2.5}$. Sources of fine particles include all types of combustion activities (e.g., motor vehicles, power plants, wood burning) and certain industrial processes. $PM_{2.5}$ is also formed through reactions of gases, such as SO_2 and NO_X, in the atmosphere. $PM_{2.5}$ is the major cause of reduced visibility (haze) in California.

3.4.2.3 Air Quality Standards

Health-based air quality standards have been established for these criteria pollutants by EPA at the national level and by ARB at the State level. These standards were established to protect the public with a margin of safety from adverse health impacts caused by exposure to air pollution. California has also established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. Table 3.4-1 presents the national ambient air quality standards (NAAQS) and the California ambient air quality standards (CAAQS). These health-based pollutant standards are reviewed on a legally prescribed frequency and revised as new health and welfare effects data warrant. Each standard is based on a specific averaging time over which the concentration is measured. Different averaging times are based upon protection of short-term, high-dosage effects or longer-term, low-dosage effects. NAAQS may be exceeded no more than once per year; CAAQS are not to be exceeded.

3.4.2.4 Ambient Air Quality in the San Joaquin Valley Air Basin

Ambient air pollutant concentrations in the SJVAB are measured at air quality monitoring stations operated by ARB and SJVAPCD. Ambient air quality in Fresno County is monitored at six permanent air monitoring stations. The air quality monitoring station with the most extensive history of monitored data is the Fresno–1st Street monitoring station, located at 3425 N. 1st Street in Fresno. Table 3.4-2 presents the most recent data over the past 3 years from the Fresno–1st Street monitoring station as summaries of the exceedances of standards and the highest pollutant levels recorded for years 2010 through 2012. These concentrations represent the existing, or baseline, conditions for the project, based on the most recent information available.

Table 3.4-1 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [a]	National Standards [b]	
		Concentration [c]	Primary [c,d]	Secondary [c,e]
Ozone	1 hour	0.09 ppm (180 µg/m^3)	–	Same as primary standard
	8 hours	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	
Respirable particulate matter (PM_{10})[f]	24 hours	50 µg/m^3	150 µg/m^3	Same as primary standard
	Annual arithmetic mean	20 µg/m^3	–	
Fine particulate matter ($PM_{2.5}$) [f]	24 hours	–	35 µg/m^3	Same as primary standard
	Annual arithmetic mean	12 µg/m^3	12 µg/m^3	15 µg/m
Carbon monoxide (CO)	8 hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
	8 hours (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
Nitrogen dioxide (NO_2) [g]	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary standard
	1 hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	None
Sulfur dioxide (SO_2) [h]	Annual Arithmetic Mean	–	0.030 ppm (for certain areas) [h]	–
	24 hours	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas) [h]	–
	3 hours	–	–	0.5 ppm (1,300 µg/m^3)
	1 hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	–
Lead [i,j]	30-day average	1.5 µg/m^3	–	–
	Calendar quarter	–	1.5 µg/m^3 (for certain areas) [j]	Same as primary standard
	Rolling 3-month average	–	0.15 µg/m^3	
Visibility-reducing particles [k]	8 hours	See footnote j	No national standards	
Sulfates	24 hours	25 µg/m^3		
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m^3)		
Vinyl chloride [i]	24 hours	0.01 ppm (26 µg/m^3)		

Notes: mg/m^3 = milligrams per cubic meter; ppb = parts per billion; ppm = parts per million; µg/m^3 = micrograms per cubic meter

[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility-reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code

[h] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in

Pollutant	Averaging Time	California Standards [a]	National Standards [b]	
		Concentration [c]	Primary [c,d]	Secondary [c,e]

of Regulations.

[b] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standards.

[c] Concentration expressed first in the units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and reference pressure of 760 torr; (ppm) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[e] National Secondary Standards: The levels of air quality necessary to protect public welfare from any known or anticipated adverse effects of a pollutant.

[f] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[g] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. California standards are in units of ppm. To directly effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical of 0.075 ppm.

[i] ARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[j] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.

[k] In 1989, ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and the “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: ARB 2016a

As shown in Table 3.4-2, ambient air concentrations of CO at the Fresno–1st Street monitoring station have not exceeded the NAAQS or CAAQS in the past 3 years. The NO_2 concentration exceeded the CAAQS in 2010 and 2011 with no data available for 2012. The 1-hour NO_2 NAAQS was never exceeded. The 8-hour O_3 concentration was exceeded in 2010 and 2011 with no measurements recorded in 2012. The $PM_{2.5}$ concentration exceeded the 24-hour NAAQS each year and the PM_{10} concentration exceeded the CAAQS for each year, but not the NAAQS in the past 3 years.

Table 3.4-2 Ambient Air Quality Summary—Fresno–1st Street Air Monitoring Station

Pollutant Standards	2010	2011	2012
Carbon Monoxide (CO) [a]			
National maximum 8-hour concentration (ppm)	2.03	2.29	2.22
State maximum 8-hour concentration (ppm)	2.03	2.29	2.22
Number of Days Standard Exceeded			
NAAQS 8-hour (>9.0 ppm)	0	0	0
CAAQS 8-hour (>9.0 ppm)	0	0	0
Nitrogen Dioxide (NO_2)			
National maximum 1-hour concentration (ppb)	77.0	61.8	59.4
State maximum 1-hour concentration (ppb)	56	61	59
Number of Days Standard Exceeded			
NAAQS 1-hour	0	0	0
CAAQS 1-hour	13	12	*
Ozone (O_3)			
National maximum 8-hour concentration (ppm)	0.107	0.0.96	0.033
State max 1-hour concentration (ppm)	0.127	0.119	0.041
State max 8-hour concentration (ppm)	0.108	0.097	0.033
Number of Days Standard Exceeded			
CAAQS 1-hour (>0.09 ppm)	2	0	0
CAAQS 8- hour (>0.07 ppm)/NAAQS 8-hour (>0.07 ppm)	51/26	54/33	0/0
Particulate Matter (PM_{10}) [a]			
National maximum 24-hour concentration ($\mu g/m^3$)	88.6	94.3	*
State annual average concentration ($\mu g/m^3$)	25.8	29.2	*
State maximum 24-hour concentration ($\mu g/m^3$)	85.6	99.5	*
State annual average concentration ($\mu g/m^3$)	25.9	29.6	*
Measured Number of Days Standard Exceeded			
NAAQS 24-hour (>150 $\mu g/m^3$)	0	0	0
CAAQS 24-hour (>50 $\mu g/m^3$)	5	9	0
Particulate Matter ($PM_{2.5}$)			
National maximum 24-hour concentration ($\mu g/m^3$)	58.3	77.3	93.4
State maximum 24-hour concentration ($\mu g/m^3$)	62.0	78.5	93.4
National annual average concentration ($\mu g/m^3$)	13.0	15.4	*
State annual average concentration ($\mu g/m^3$)	16.5	15.9	*
Measured Number of Days Standard Exceeded			
NAAQS 24-hour (>35 $\mu g/m^3$)	21	39	20

Notes: $\mu g/m^3$ = micrograms per cubic meter; CAAQS = California ambient air quality standard; NAAQS = national ambient air quality standard; ppb = parts per billion; ppm = parts per million

*Insufficient data to determine the value. [a] Data from next closest monitoring station: Fresno—1st Street

Source: ARB 2016b

3.4.2.5 Attainment Status for the San Joaquin Valley Air Basin

Both EPA and ARB use ambient air quality monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. An "attainment" designation for an area signifies that pollutant concentrations did not exceed the established standard.

In contrast to attainment, a "nonattainment" designation indicates that a pollutant concentration has exceeded the established standard. Nonattainment may differ in severity. To identify the severity of the problem and the extent of planning and actions required to meet the standard, nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe, extreme). The criteria air pollutants emitted in air basins are assessed relative to the attainment of both the CAAQS and NAAQS.

Finally, an unclassified designation indicates that insufficient data exist to determine attainment or nonattainment. In addition, the California designations include a subcategory of nonattainment-transitional, which is given to nonattainment areas that are progressing and nearing attainment.

As shown in Table 3.4-3, the SJVAB is in a state of nonattainment for federal standards for O_3 and $PM_{2.5}$ but in attainment for PM_{10}. The area is also in nonattainment for the State standards for O_3, PM_{10}, and $PM_{2.5}$.

Table 3.4-3 San Joaquin Valley Air Basin Attainment Designations

Conformity	Federal	State
O_3 8-hour	Nonattainment—Extreme	Nonattainment
O_3 1-hour	N/A	Nonattainment—Severe
PM_{10}	Attainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead (Particulate)	N/A	Attainment
Hydrogen Sulfide	N/A	Unclassified
Sulfates	N/A	Attainment
Visibility-Reducing Particles	N/A	Unclassified
Vinyl Chloride	N/A	Attainment

Notes:

N/A = not applicable; no standard; O_3 = ozone; $PM_{2.5}$ = fine particulate matter; PM_{10} = suspended particulate matter

Sources: SJVAPCD 2016a, Appendix C

3.4.2.6 Toxic Air Contaminants

In addition to criteria pollutants, both federal and State air quality regulations focus on toxic air contaminants (TACs). TACs can be separated into carcinogens and noncarcinogens based on the nature of the effects associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur. Any exposure to a carcinogen poses some risk of contracting cancer. Noncarcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

TACs may be emitted by stationary, area, or mobile sources. Common stationary sources of TAC emissions include gasoline stations, dry cleaners, and diesel backup generators, which are subject to local air districts' permit requirements. The other, often more significant, sources of TAC emissions are motor vehicles on freeways, high-volume roadways, or other areas with high numbers of diesel vehicles, such as distribution centers. Off-road mobile sources are also major contributors of TAC emissions and include construction equipment, ships, and trains.

Particulate exhaust emissions from diesel-fueled engines, known as diesel PM, were identified as a TAC by ARB in 1998. Federal and State efforts to reduce diesel PM emissions have focused on using improved fuels, adding particulate filters to engines, and requiring the production of new-technology engines that emit fewer exhaust particulates.

Diesel engines tend to produce a much higher ratio of fine particulates than other types of internal combustion engines. The fine particles that make up diesel PM tend to penetrate deep into the lungs and the rough surfaces of these particles makes it easy for them to bind with other toxins within the exhaust, thus increasing the hazards of particle inhalation. Long-term exposure to diesel PM is known to lead to chronic, serious health problems including cardiovascular disease, cardiopulmonary disease, and lung cancer.

3.4.2.7 Odor

Odors are considered an air quality issue both at the local level (e.g., odor from wastewater treatment) and at the regional level (e.g., smoke from wildfires). Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

The ability to detect odors varies considerably among the population and is subjective. Some individuals have the ability to smell minute quantities of specific substances while others may not have the same sensitivity but may be sensitive to odors of other substances. In addition, people may have different

reactions to the same odor; an odor that is offensive to one person (e.g., from a fast-food restaurant or bakery) may be perfectly acceptable to another. Unfamiliar odors may be more easily detected and likely to cause complaints than familiar ones.

Several examples of common land use types that generate substantial odors are wastewater treatment plants, landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants.

Offensive odors can affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, the ROGs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

3.4.2.8 Sensitive Receptors

Some members of the population are especially sensitive to air pollutant emissions and should be given special consideration when evaluating air quality impacts from projects. These include children, the elderly, and people with preexisting respiratory or cardiovascular illness, and athletes and others who exercise frequently. Air quality regulators typically define sensitive receptors as schools, hospitals, resident care facilities, day care centers, or other facilities that may house individuals with health conditions that would be adversely affected by changes in air quality.

Residential areas are also considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution even though exposure periods during exercise are generally short. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent as the majority of the workers tend to stay indoors most of the time.

The nearest sensitive receptors to the project area are two single-family residences located on parcels in the study area. A residential subdivision is located on the bluffs adjacent to the southern project boundary, on a bluff approximately 60 feet above the project site. The subdivision is within the city limits of Fresno.

3.4.3 Regulatory Setting

3.4.3.1 Federal Laws, Regulations, and Policies

The primary legislation that governs federal air quality regulations is the Clean Air Act Amendments of 1990. The act delegates primary responsibility for clean air to EPA. EPA develops rules and regulations to preserve and improve air quality and delegates specific responsibilities to State and local agencies. Under the act, EPA has established the NAAQS for seven potential air pollutants: CO, O_3, NO_2, PM_{10} and $PM_{2.5}$, SO_2, and lead. The purpose of the NAAQS is two-tiered: primarily to protect public health, and secondarily to prevent degradation to the environment (i.e., impairment of visibility, damage to vegetation and property).

3.4.3.2 State Laws, Regulations, and Policies

California Clean Air Act and California Air Resources Board

ARB is the lead agency for developing the State Implementation Plan (SIP) in California. Local air districts and other agencies prepare air quality attainment plans or air quality management plans, and submit them to ARB for review, approval, and incorporation into the applicable SIP. ARB also maintains air quality monitoring stations throughout the state in conjunction with local air districts. Data collected at these stations are used by ARB to classify air basins as being in attainment or nonattainment with respect to each pollutant and to monitor progress in attaining air quality standards.

The California Clean Air Act (CCAA) requires that each area exceeding the CAAQS for O_3, CO, SO_2, and NO_2 develop a plan aimed at achieving those standards. Section 40914 of the California Health and Safety Code requires air districts to design a plan that achieves an annual reduction in districtwide emissions of 5% or more, averaged every consecutive 3-year period. To satisfy this requirement, the local air districts must develop and implement air pollution reduction measures, which are described in their air quality management plans, and outline strategies for achieving the CAAQS for any criteria pollutants for which the region is classified as nonattainment.

ARB has established emission standards for vehicles sold in California and for various types of equipment. California gasoline specifications are governed by both State and federal agencies. During the past decade, federal and State agencies have imposed numerous requirements on the production and sale of gasoline in California. ARB has also adopted control measures for diesel PM and more stringent emissions standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators).Certain cities in California consistently have had some of the worst levels of air pollution within the country and, as such, the State of California established its own CAAQS. ARB, which is part of the California Environmental Protection Agency (CalEPA), develops air quality regulations at the State level. The State regulations mirror federal regulations by establishing industry-

specific pollution controls for criteria, toxic, and nuisance pollutants. California also requires that plans and strategies for attaining State ambient air quality standards as set forth in the CCAA of 1988 be developed throughout the state. ARB is also responsible for developing motor emissions standards for California vehicles.

San Joaquin River Parkway Master Plan

The Parkway Master Plan (Appendix B) includes goals, objectives, and policies to guide development and management of the Parkway. Policies relevant to air quality include:

- [**Unnumbered policy]:** Strive to connect multiuse trails to increase pedestrian and bicycle travel, reduce residents' reliance on motorized vehicles, and allow for longer, contiguous sections of the Parkway trail.
- **Policy RDP4:** Unpaved parking areas and internal driveways for Parkway facilities will be treated to reduce dust generation.

These policies do not necessarily avoid impacts but may lessen them.

3.4.3.3 Local Laws, Regulations, and Policies

San Joaquin Valley Air Pollution Control District

The project would be under the jurisdiction of SJVAPCD, the local agency responsible for the administration of air quality regulations developed at the federal, State, and local levels. Included in SJVAPCD's responsibilities are monitoring of air pollution, preparation of the SIP for the SJVAB, and promulgation of rules and regulations. The SIP includes strategies to be used to attain the federal ozone standard. The rules and regulations include procedures and requirements to control the emissions of pollutants and to prevent adverse impacts (SJVAPCD 2016b).

SJVAPCD rules relevant to the project include but are not limited to the following:

- **Rule 4102—Nuisance.** The purpose of this rule is to protect the health and safety of the public, and applies to any source operation that emits or may emit air contaminants or other materials.
- **Rule 4641—Cutback, Slow Cure, and Emulsified Asphalt, Paving, and Maintenance Operations.** The purpose of this rule is to limit volatile organic compound emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then paving operations will be subject to Rule 4641.
- **Regulation VIII—Fugitive PM10 Prohibitions.** Rules 8011–8071 of Regulation VIII are designed to reduce PM_{10} emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and

unpaved roads, carryout and trackout, etc. Regulation VIII rules that are applicable to the project are as follows:

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

SJVAPCD published the *Guide for Assessing and Mitigating Air Quality Impacts*, which is intended as an advisory document for other agencies, consultants, and project proponents to use when preparing CEQA documents. This advisory document was updated in 2015. This document establishes thresholds of significance for criteria pollutants that SJVAPCD recommends using when evaluating air quality impacts in the San Joaquin Valley. Noncompliance with the threshold of significance means that the effect normally is determined to be significant. Compliance with a threshold of significance means the effect normally is determined to be less than significant.

Table 3.4-4 lists the SJVAPCD-adopted thresholds of significance for criteria pollutant emissions and their application.

Table 3.4-4 SJVAPCD-Adopted Thresholds of Significance for Criteria Pollutants

Pollutant/Precursor	Emissions (tons per year)	
	Short-Term Construction	Long-Term Operations
Carbon monoxide (CO)	100	100
Oxides of nitrogen (NO_X)	10	10
Reactive organic gases (ROG)	10	10
Oxides of sulfur (SO_X)	27	27
Suspended particulate matter (PM_{10})	15	15
Fine particulate matter ($PM_{2.5}$)	15	15

Note: SJVAPCD = San Joaquin Valley Air Pollution Control District

Source: Compiled by AECOM in 2016

City of Fresno General Plan Update 2035

The Fresno General Plan Update sets forth a guiding and implementing policy that is relevant to the proposed project and air quality. Policy UF-12-e supports the adoption and implementation of standards that support pedestrian activities and bicycle linkages from surrounding land uses and neighborhoods into Activity Centers and transit stops.

3.4.4 Impact Analysis

3.4.4.1 Thresholds of Significance

The general procedures to assess potential air quality impacts are described in the *Guide for Assessing and Mitigating Air Quality Impacts* published by SJVAPCD. The thresholds for determining the significance of impacts for this analysis of air quality are based on the environmental checklist in the State CEQA Guidelines, as amended. The project would have a significant impact on air quality if it would:

- conflict with or obstruct implementation of the applicable air quality plan;
- violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- expose sensitive receptors to substantial pollutant concentrations; or
- create objectionable odors affecting a substantial number of people.

3.4.4.2 Methodology

The analysis of the project's potential impacts was followed the guidance and methodologies recommended in SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts*. Under CEQA, the significance criteria established by the applicable air quality management or air pollution control district may be used to assess the impacts of a project on air quality. SJVAPCD has established thresholds of significance for regional air pollutant emissions for construction activities and project operation. In addition to the daily thresholds listed above, projects are subject to the NAAQS.

Construction-related emissions associated with typical construction activities, such as site grading and construction of the buildings and operational emissions associated with trips generated to the parking lots and recreational amenities were modeled using the California Emissions Estimator Model (CalEEMod), Version 2013.2.2. CalEEMod allows the user to enter project-specific information, such as types, number, and horsepower of construction equipment, and number and length of off-site motor vehicle trips. Construction-

related exhaust emissions for the project were estimated for construction worker commutes, haul trucks, and the use of off-road equipment. Operational emissions for the project were also estimated using CalEEMod, which accounted for estimated trips generated by the parking lot and recreational amenities.

The analysis of project impacts was based on the total construction-related and operational emissions generated by the project using the inputs described below.

The project would include trail construction and construction of the Perrin Avenue parking lot. The Perrin Avenue parking lot would cover 2.23 acres (97,055 square feet). With construction of the Perrin Avenue parking lot, an assumed 1,000 square feet of recreational amenities and a restroom would be constructed. 318 daily vehicle trips were used to calculate operational emissions.[12]

Details regarding CalEEMod calculations are outlined below.

- Construction was assumed to take place during 2019, with the trail and associated facilities operational by 2020.
- Annual construction-related and operational emissions were calculated.
- CalEEMod results for the design capacity of the Perrin Avenue parking lot represent emissions that would be generated by project construction and visitor use.

All calculations are detailed in Appendix C. Aside from assumptions noted in the model, CalEEMod defaults were used for all inputs. The resulting air pollutant emissions were then compared to the threshold criteria published by SJVAPCD.

3.4.4.3 Impacts and Mitigation Measures

Impact 3.4-1: The project could conflict with or obstruct implementation of the applicable air quality plan.

SJVAPCD has adopted air quality attainment plans to demonstrate how the district will attain and maintain the NAAQS consistent with the federal Clean Air Act (CAA). The New Source Review rule is a major component of SJVAPCD's attainment strategy. This rule ensures that there will be no net increase in emissions above specified thresholds from new and modified stationary sources for all nonattainment pollutants and their precursors. SJVAPCD's thresholds of significance for criteria pollutants, which are based on New Source Review levels, are applied to evaluate regional impacts of project-specific emissions of air pollutants and their impact on SJVAPCD's ability to reach attainment.

[12] The daily trip generation estimate is based on the proposed parking capacity of 53 spaces and assumption of 3 times parking turnover during the day for a.m. and p.m. (Table 4.1, "Project Alternatives Trip Generation Estimates," in Appendix H, "Traffic Report.")

As shown in Tables 3.4-5 and 3.4-6, the project is consistent with current air quality attainment plan because the emissions generated by construction and operation of this project would be below the thresholds of significance for criteria pollutants. Additionally, the project would comply with Regulation VIII for dust control measures, and the project would not result in additional emissions that would conflict with the applicable air quality plans. BMP AIR-1 in Section 2.5.1, "Best Management Practices," specifies that construction plans will comply with current SJVAPCD air plans. The project would not result in a significant increase in criteria pollutant emissions and would not conflict with or obstruct implementation of the applicable air quality plan. The impact would be **less than significant**. No mitigation is required.

Impact 3.4-2: The project could violate an air quality standard or could contribute substantially to an existing or projected air quality violation.

Although the exact construction dates for the project are speculative, emissions were modeled for construction to occur within 1 year. For the purposes of this emission calculation, 2019 was used for the construction year, with the project operational in 2020. Activities would include constructing recreation amenities, restrooms, and the parking lot. Grading and paving of the trail and the parking area is expected to last 1 month each. Trenching activities would last 1 month. Construction of buildings (e.g., vault toilet restrooms) and landscaping are expected to last 3 months. Application of architectural coatings for the recreational amenities would last 1 month.

Project construction would result in temporary emissions of criteria pollutants. Emissions would emanate from the exhaust of construction equipment and on-road vehicle traffic (worker commutes and delivery truck trips). In addition, grading, excavation, and travel on unpaved surfaces can generate fugitive dust. Construction emissions were calculated using CalEEMod. CalEEMod allows users to select the types of construction equipment that are most appropriate for individual projects. These and other inputs are included in Appendix C. The calculated emissions from construction activities are presented in Table 3.4-5.

Table 3.4-5 Estimated Unmitigated Annual Construction Emissions

	Criteria Pollutant Emissions (tons per year)					
	CO	**NO_X**	**ROG**	**SO_X**	**PM_{10}[1]**	**$PM_{2.5}$[1]**
Project	1.0	1.5	2.2	0.0	0.1	0.1
SJVAPCD Threshold	100	10	10	27	15	15
Exceed Threshold?	No	No	No	No	No	No

Notes:

CO = carbon monoxide; NO_X = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter; PM_{10} = suspended particulate matter; ROG = reactive organic gases; SJVAPCD = San Joaquin Valley Air Pollution Control District; SO_X = oxides of sulfur

[1] Particulate matter emissions shown include the sum of particulate matter with aerodynamic diameter 0 to 2.5 micrometers and particulate matter with aerodynamic diameter 2.5 to 10 micrometers.

Source: Estimated by AECOM in 2016

Operational emissions are the continued, ongoing emissions related to the day-to-day operation of the project. Operations for this project would be minimal and generated primarily by vehicle traffic to the Perrin Avenue parking lot for trail use. CalEEMod allows users to input project trips associated with the operation of the project. These and other inputs are included in Appendix C. The calculated emissions from operational activities are presented in Table 3.4-6.

Table 3.4-6 Estimated Unmitigated Annual Operational Emissions

	Criteria Pollutant Emissions (tons per year)					
	CO	**NO_X**	**ROG**	**SO_X**	**PM_{10}[1]**	**$PM_{2.5}$[1]**
Project	2.7	0.8	1.9	0.0	0.4	0.1
SJVAPCD Threshold	100	10	10	27	15	15
Exceed Threshold?	No	No	No	No	No	No

Notes:

CO = carbon monoxide; NO_X = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter; PM_{10} = suspended particulate matter; ROG = reactive organic gases; SJVAPCD = San Joaquin Valley Air Pollution Control District; SO_X = oxides of sulfur

[1] Particulate matter emissions shown include the sum of particulate matter with aerodynamic diameter 0 to 2.5 micrometers and particulate matter with aerodynamic diameter 2.5 to 10 micrometers.

Source: Estimated by AECOM in 2016

Short-term construction emissions from the project would not exceed the SJVAPCD thresholds, and new long-term emissions of criteria pollutants associated with the project would be minimal.
The project would extend a multiuse paved regional trail that could be used for bicycling and pedestrian use in lieu of vehicular travel to and from residences, workplaces, and retail centers. This potential benefit is not included in the vehicle emission projections.

Construction and operation of the project would not result in pollutant levels that would exceed the criteria pollutant thresholds established by SJVAPCD. The project would comply with all relevant SJVAPCD rules for the criteria pollutant emissions associated with project operations. The impact would be **less than significant**. No mitigation is required.

Impact 3.4-3: The project could result in a cumulatively considerable net increase of a criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).

A significant impact related to air quality would occur if implementing the project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard.

The cumulative analysis of construction-related and operational emissions focuses on whether a specific project would result in a cumulatively considerable increase in emissions. By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the SJVAB, and this regional impact is cumulative rather than attributable to any one source. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future projects. The thresholds of significance are relevant to whether a project's individual emissions would result in a cumulatively considerable incremental contribution to the existing cumulative air quality conditions. If a project's emissions would be less than those threshold levels, the project would not be expected to result in a considerable incremental contribution to the significant cumulative impact.

As discussed above, the total emissions would not result in the generation of criteria air pollutant emissions that would exceed any threshold for construction or operational activities. These thresholds are designed to identify those projects that would result in significant levels of air pollution and to assist the region in attaining the applicable CAAQS and NAAQS. Projects that would not exceed the thresholds of significance would not contribute a considerable amount of criteria air pollutant emissions to the region's emissions profile, and would not impede attainment and maintenance of ambient air quality standards.

As shown in Tables 3.4-5 and 3.4-6, the project would not exceed significance thresholds. Because the thresholds of significance for criteria pollutants would not be exceeded, the project's construction-related and operational emissions would not result in a cumulatively considerable net increase for any criteria pollutant for which SJVAPCD is in nonattainment under the applicable NAAQS or CAAQS. Therefore, the impact would be **less than significant**. No mitigation is required.

Impact 3.4-4: The project could expose sensitive receptors to substantial pollutant concentrations.

Sensitive receptors are facilities that house or attract children, the elderly, and people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, schools, convalescent facilities, and residential areas. Sensitive receptors that may be adversely affected by the project include the surrounding residential areas adjacent to the project site.

Project construction may create opportunities for fugitive dust generation to escape the project site and affect the surrounding residential areas. However; the project would implement BMPs and comply with dust control measures identified in Regulation VIII (Fugitive PM10 Prohibitions). Some of these measures include applying dust suppressants, limiting opacity, using water to reduce dust generation, and implementing speed limits around the construction site.

The California Office of Environmental Health and Hazard Assessment (OEHHA) published the *Air Toxics Hot Spots Program—Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments* in 2015 (OEHHA 2015). This guidance recommends that air districts determine whether a health risk assessment needs to be conducted. Because the emissions generated during the construction and operational phases of the project would be well below the thresholds adopted by SJVAPCD, a health risk assessment was not conducted.

With project compliance with SJVAPCD rules limiting dust generation, the project would not expose sensitive receptors to substantial pollutant concentrations. Thus, the impact would be **less than significant**. No mitigation is required.

Impact 3.4-5: The project could create objectionable odors affecting a substantial number of people.

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies. SJVAPCD does not have any rules or standards related to odor emissions, other than its nuisance rule.

Potential sources of odors during project construction would include exhaust from diesel construction equipment. Odors from off-road equipment and on-road vehicles would be typical of most construction sites and temporary in nature. The restroom facility may emit odors in the immediate area, but these would be avoided with routine maintenance. Thus, potential odor emissions would be short term and would not be considered harmful or a nuisance to a substantial number of people. The impact would be **less than significant**. No mitigation is required.

3.5 Biological Resources

3.5.1 Introduction

This section describes the existing environmental and regulatory setting of the project area and analyzes the potential impacts of the project on biological resources. This section also describes the criteria for

determining the significance of impacts, the approach to assessing impacts, and possible mitigation measures.

As described in Chapter 2, a public scoping meeting was held on June 17, 2014, to invite comments regarding environmental issues that should be examined in the EIR. Several comments were made that the EIR should evaluate the impacts of the project on biological resources.

3.5.2 Environmental Setting

The study area is located on an alluvial floodplain terrace along the east side of the San Joaquin River, approximately 10.5 miles downstream of Friant Dam. The following baseline discussion is taken from the 2011 Lewis Eaton Trail Biotic Study, 2014 Biological Resources Report Update, and the 2015 River West Eaton Trail Extension Project Biological Resources Report Update technical reports (see Appendix D).

3.5.2.1 Habitat

The habitat types described below occur in the project area. The San Joaquin River, a unique habitat of the Central Valley, represents the northern boundary and is not considered to be within the project site. However, impacts of the project on the River, if any, are discussed.

Annual Grassland

Approximately 65% of the study area consists of disturbed annual grassland habitat. Most of this habitat has been disturbed by previous sand/gravel mining activities and livestock grazing. The disturbed annual grassland habitat is dominated by nonnative upland grass species such as ripgut brome (*Bromus diandrus*), wild oat (*Avena fatua*), soft brome (*B. hordeaceus*), black mustard (*Brassica nigra*), and filaree (*Erodium cicutarium*).

Aquatic

Aquatic habitat is the second-most abundant habitat of the study area, composing approximately 24% of the project site. The majority of the aquatic habitat occurs within previously mined gravel pits, which are now ponds. Mosquito fern (*Azolla* sp.) is a common plant in slow-flow areas.

Riparian

Riparian habitat occupies a relatively small portion of the project site (6%). Historically, the project site likely consisted of riparian vegetation. However, disturbances including alteration of the hydrologic regime by Friant Dam and legacy mining have altered the landscape and reduced the extent of riparian vegetation. Riparian habitat is currently restricted to narrow margins around the gravel pond perimeters and river. Riparian vegetation consists of intergradations of the following three plant associations: willow riparian, exotic rattlebox (*Sesbania punicea*)–dominated habitat, and mixed riparian.

Developed/Landscaped

Approximately 3% of the project site is developed and consists of dirt roads and unimproved, informal trails, and two houses with associated landscaping. The houses are on private land and are not within areas where project activities would occur. The dirt roads and trails are sparsely vegetated with scattered ruderal species such as ripgut brome and filaree.

3.5.2.2 San Joaquin River

A description of the San Joaquin River is provided in Section 3.10, "Hydrology and Water Quality." Although the San Joaquin is the second largest river in California, only a small reach forms the northern boundary of the study area. The River's water quality is influenced by releases from Friant Dam, with very slight contributions from agricultural and urban return flows. Water is generally of high quality, and the temperature of the water is dependent on the cold-water releases from Millerton Lake.

Fish species composition is described below in Section 3.5.2.8, "Special-Status and Other Fish Species." One fish species (Central Valley spring-run Chinook salmon) is being reintroduced into the River. This species is federally listed as threatened and is discussed in Section 3.5.2.8.

3.5.2.3 Stormwater Detention Basins

Two stormwater detention basins, serving the adjacent residential developments on the bluffs, are present within the project site. The stormwater detention basins compose approximately 5 acres (1%) of the project site. These unlined basins are owned and maintained by FMFCD and support primarily nonnative, seasonal wetland vegetation. At the time of the site visit, the southern detention basin was inundated and colonized by Bermuda grass (*Cynodon dactylon*), mosquito fern (*Azolla caroliniana*), and curly dock (*Rumex crispus*). The northern detention basin was dry and dominated by Bermuda grass.

3.5.2.4 Habitat Restoration

The following Conservancy-sponsored habitat restoration projects have been completed or are ongoing at the project site:

- *California Waterfowl Association*—Planting and irrigation of native floodplain woodland trees and shrubs on 5 acres south of the H-shaped pond.
- *Ducks Unlimited*—Planting and irrigation of native floodplain woodland and riparian trees and shrubs on 5 acres on the western side of the H Pond.
- *San Joaquin River Parkway Trust*—Planting and irrigation of native floodplain woodland and riparian trees and shrubs on 34 acres northwest of the H Pond.

- *California Department of Water Resources*—Floodplain restoration and revegetation on 2.5 acres in the western portion of the project area.

These projects are designed to complement and not interfere with the proposed project.

3.5.2.5 Soils

As described in Section 3.3, "Agriculture and Forestry Resources," soils on the project site are composed primarily of the Grangeville series.

3.5.2.6 Special-Status Plant Species

Two biological investigations of the project site were performed, the first in 2011 and the second in 2014. Technical reports of those investigations are found in Appendix D. In addition, queries of special-status plant and animal species were performed in the California Natural Diversity Database (CNDDB) and the USFWS databases for the USGS Fresno North topographic quadrangle and the eight quadrangles surrounding the project site. A query of the California Native Plant Society (CNPS) Species Inventory and RareFind was performed for special-status plants and sensitive habitats of the same area. Table 3.5-1 summarizes the results of the 2011 and 2014 biological technical reports. Species occurrence is based on direct evidence such as sign observation, or database records.

California jewel-flower (*Caulanthus californicus*). Federal Listing Status: Endangered; State Listing Status: Endangered; CNPS List 1B.1. California jewel-flower is an annual herb belonging to the mustard family (Brassicaceae) that blooms from February to May. This plant occurs in chenopod scrub, valley and foothill grassland, and pinyon and juniper woodland on sandy soils, at elevations between 200 and 3,281 feet. This species is found in Fresno, Kern, Santa Barbara, and San Luis Obispo counties. More than 35 historical occurrences are extirpated, including those in Kings and Tulare counties. Experimental reintroductions have occurred in Kern, Santa Barbara, and Tulare counties, but all have failed (CNPS 2015). A historic CNDDB record documents the species in the Fresno area; this species may be present.

Table 3.5-1 Potential Occurrence of Special-Status Plant Species

Scientific Name	Common Name	Federal Status State Status	CA Rare Plant Rank	Habitat Utilized	Potential For Occurrence On-site
Castilleja campestris var. *succulenta*	Succulent owl's-clover	FT SE	1B.2	Vernal pools.	Absent. Vernal pools not observed on-site. Substrate not conducive to vernal pool formation. There are records of the species within 5 miles of the site, but this plant was last observed in 1938, and the area was completely disked in 1981.
Caulanthus californicus	California jewel-flower	FE SE	1B.1	Sandy soils. Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland.	Possible. Habitat includes nonnative grassland, upper Sonoran subshrub scrub, and cismontane juniper woodland chenopod scrub.
Downingia pusilla	Dwarf downingia	None	2B.2	Vernal pools.	Absent. Vernal pools not observed on-site. Substrate not conducive to vernal pool formation.
Eryngium spinosepalum	Spiny-sepaled button-celery	None	1B.2	Vernal pools.	Absent. Vernal pools not observed on-site. Substrate not conducive to vernal pool formation.
Imperata brevifolia	California satintail	None	2B.1	Chaparral, coastal sage scrub, creosote bush scrub, wetland-riparian.	Possible. Habitat includes chaparral, coastal scrub, meadows and seeps, and riparian scrub. Habitat suitable but poor; last record from 1893.
Leptosiphon serrulatus	Madera leptosiphon	None	1B.2	Foothill woodland, yellow pine forest.	Absent. Habitat not present, presumed extant.
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	FT SE	1B.1	Vernal pools.	Absent. Vernal pools not observed on-site. Substrate not conducive to vernal pool formation.
Orcuttia pilosa	Hairy Orcutt grass	FE SE	1B.1	Vernal pools, valley and foothill grassland.	Absent. Vernal pools not observed on-site. Substrate not conducive to vernal pool formation.
Pseudobahia bahiifolia	Hartweg's golden sunburst	FE SE	1B.1	Valley and foothill grassland, cismontane woodland and clay soils.	Absent. Habitat not present, presumed extant.
Sagittaria sanfordii	Sanford's arrowhead	None	1B.2	Freshwater wetlands, wetland-riparian.	Possible. Requires shallow water and small riparian areas to occur at this site. There are records of the species within 5 miles of the site, but it was last observed in 1953. Survey in 1980 found no plants.

Scientific Name	Common Name	Federal Status State Status	CA Rare Plant Rank	Habitat Utilized	Potential For Occurrence On-site
Tropidocarpum capparideum	Caper-fruited tropidocarpum	None	1B.1	Valley grassland.	Absent. Habitat not present, presumed extant.
Tuctoria greenei	Greene's tuctoria	FE SR	1B.1	Dry bottoms of vernal pools in open grasslands.	Absent. Vernal pools not observed on-site. Substrate not conducive to vernal pool formation.

SPECIAL-STATUS SPECIES CODE DESIGNATIONS

FE = Federally listed as endangered

FT = Federally listed as threatened

SE = State listed as endangered

SR = State listed as rare

California Native Plant Society (CNPS) California Rare Plant Ranks:

1B = Plants considered by CNPS to be rare, threatened, or endangered in California and elsewhere

2B = Plants considered by CNPS to be rare, threatened, or endangered in California, but more common elsewhere

CNPS Threat Code Extensions: 0.1 = seriously threatened in California; 0.2 = moderately threatened in California; 0.3 = not very threatened in California.

Source: Compiled by AECOM in 2016

DEFINITIONS REGARDING POTENTIAL OCCURRENCE

Present: Species or sign of their presence observed on the site

Likely: Species or sign not observed on the site, but reasonably certain to occur on the site

Possible: Species or sign not observed on the site, but conditions suitable for occurrence

Unlikely: Species or sign not observed on the site, conditions marginal for occurrence

Absent: Species or sign not observed on the site, conditions unsuitable for occurrence

California satintail (*Imperata brevifolia*). Federal Listing Status: None; State Listing Status: None; CNPS List 2.1. California satintail is a rhizomatous herb belonging to the grass family (Poaceae) that blooms from September to May. This plant occurs in coastal scrub, chaparral, riparian scrub, mojavean scrub, and meadows and seeps on mesic, alkaline soils, at elevations between 0 and 3,986 feet. This species is found in Butte, Fresno, Imperial, Inyo, Kern, Lake, Los Angeles, Orange, Riverside, San Bernardino, Tehama, Tulare, and Ventura counties, and ranges into Arizona, Baja California, New Mexico (where it is possibly extirpated), Nevada, Texas, and Utah. The records from Butte, Tehama, and Lake counties may represent escaped ornamentals. This species is threatened by development and agriculture, and was mistakenly classified as a noxious weed in California from 1960 to 2004 (CNPS 2015). A historic CNDDB record (1893) documents the species in the vicinity of "Fresno," and suitable habitat occurs on the project site. This species may be present on the project site.

Sanford's arrowhead (*Sagittaria sanfordii*). Federal Listing Status: None; State Listing Status: None; CNPS List 1B.2. Sanford's arrowhead is an emergent rhizomatous herb belonging to the water plantain family (Alismataceae) that blooms from May to November. This plant occurs in standing or slow-moving freshwater ponds, marshes, and ditches at elevations between 0 and 2,133 feet. This species has been reported from Butte, Del Norte, El Dorado, Fresno, Merced, Mariposa, Orange, Placer, Sacramento, San Bernardino, Shasta, San Joaquin, Solano, Tehama, Ventura, and Yuba counties. Sanford's arrowhead is presumed extirpated from Southern California (Orange and Ventura counties) and is mostly extirpated from its historical range in the Central Valley. The species is threatened by grazing, development, recreational activities, nonnative plants, road widening, and channel alteration (CNPS 2015). The nearest CNDDB record (1958) documents the species less than 1.5 miles south of the project site and suitable habitat occurs on the project site. There are records of the species within 5 miles of the site; however, the nearest was last observed in 1953, and a survey in 1980 found no plants. This species may occur on the project site.

3.5.2.7 Special-Status Wildlife Species

Special-Status Wildlife Species Present within 5 Miles of the Project Site

Special-status wildlife species present within 5 miles of the project site are listed in Table 3.5-2. Table 3.5-2 summarizes the results of the 2011 and 2014 biological technical reports. Species occurrence is based on direct evidence such as sign observation or database records. Species with the potential to occur on-site are discussed below.

Table 3.5-2 Potential Occurrence of Special-Status Wildlife Species

Scientific Name	Common Name	Federal Status State Status	CDFW	Habitat Utilized	Potential For Occurrence On-site
Agelaius tricolor	Tricolored blackbird	None	SSC	Freshwater emergent wetland, annual grassland, agriculture, and valley foothill riparian.	Likely. Suitable foraging habitat is present on-site.
Ambystoma californiense	California tiger salamander	FT ST	SSC	Vernal or temporary pools in annual grasslands or open woodlands with upland aestivation habitat (e.g., California ground squirrel burrows).	Absent. Pooled areas temporally present on-site provide less than optimal breeding habitat.
Ammospermophilus nelson	San Joaquin antelope ground squirrel	None ST		Saltbush and saltscrub habitats and grasslands.	Absent. Appropriate habitat not present on project site.
Anniella pulchra pulchra	Silvery legless lizard (California legless lizard)	None	SSC	Sandy areas that contain leaf litter and/or fairly high moisture.	Possible. Appropriate habitat occurs near the river.
Antrozous pallidus	Pallid bat	None	SSC	Forages over many habitats; roosts in buildings, rocky outcrops, and rocky crevices in mines and caves.	Unlikely. Potentially may forage over site; no suitable roosting sites.
Aquila chrysaetos	Golden eagle	None	FP; WL	Woodlands, grasslands.	Likely. Suitable foraging habitat is present on-site.
Athene cunicularia	Burrowing owl	None	SSC	Flat grasslands and ruderal habitats. Requires California ground squirrel burrows for nesting and cover.	Possible. Suitable nesting and foraging habitat is present on-site. Many burrows of appropriate size and shape occur on the site, but evidence of owl use or occupation not observed.
Branchinecta conservatio	Conservancy fairy shrimp	FE		Annual grassland (requires vernal pools).	Absent. Vernal pools not observed on-site. Substrate not conducive to vernal pool formation.
Branchinecta lynchi	Vernal pool fairy shrimp	FT		Annual grassland (requires vernal pools).	Absent. Vernal pools not observed on-site. Substrate not conducive to vernal pool formation.

Scientific Name	Common Name	Federal Status State Status	CDFW	Habitat Utilized	Potential For Occurrence On-site
Buteo swainsoni	Swainson's hawk	ST	SSC	Open grasslands with large trees for nesting.	Likely. Large complex of burrowing small mammals is present, suitable foraging habitat. Also, large cottonwood and oak trees provide potential nesting habitat.
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	FT SE		Densely foliaged, deciduous trees and shrubs, especially willows, required for roosting sites.	Absent. Species has not been recorded with 5-mile radius since 1883; presumed extirpated.
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	FT		Valley foothill riparian and valley oak woodland. Range does not extend into Fresno County.	Absent. Project site is not within species' range.
Dipodomys nitratoides exilis	Fresno kangaroo rat	FE SE		Clayish soils in saltbush and saltscrub habitats.	Absent. Appropriate habitat not present on project site.
Elanus leucurus	White-tailed kite	None	FP	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats.	Present. Known to occur at adjacent project site.
Empidonax traillii	Willow flycatcher	SE	S	Breeds locally in riparian habitats in mountains and southern deserts.	Absent. Riparian habitat on the site not of sufficient quality for nesting by this species. Not known to nest along project reaches of San Joaquin River.
Emys marmorata	Western pond turtle	None	SSC	Permanent or nearly permanent water in a variety of habitats.	Likely. Present on adjacent project site.
Eremophila alpestris actia	California horned lark	None	WL	Open country with very short or no vegetation.	Unlikely. Habitat present on-site not conductive to nesting; potential for some foraging.
Euderma maculatum	Spotted bat	None	SSC	Rock crevices, cliffs provide optimal roosting habitat.	Unlikely. Roosting habitat is not present at site.
Eumops perotis californicus	Western mastiff bat	None	SSC	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland. Roosts in crevices, trees, and tunnels.	Unlikely. May forage or disperse through site but roosting habitat is not present at site.

Scientific Name	Common Name	Federal Status State Status	CDFW	Habitat Utilized	Potential For Occurrence On-site
Haliaeetus leucocephalus	Bald eagle	FD SE	FP	Riverine, lacustrine, valley foothill riparian, and annual grasslands.	Likely. Known to occur on adjacent project site during winter. Most commonly uses river corridor as flyway, but also may forage along margins and within river bottom.
Lanius ludovicianus	Loggerhead shrike	None	SSC	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats.	Likely. Occurs and nests on the adjacent project site.
Lepidurus packardi	Vernal pool tadpole shrimp	FE		Annual grassland (requires vernal pools).	Absent. Vernal pools not observed on-site. Substrate not conducive to vernal pool formation.
Pandion haliaetus	Osprey	None	WL	Large trees. Requires open, clear waters for foraging. Uses rivers, lakes, reservoirs, bays, estuaries, and surf zones.	Present. Known to forage at the site; observed during 2015 survey.
Phalacrocorax auritus	Double-crested cormorant	None	WL	Rests in daytime and roosts overnight beside water on offshore rocks, islands, steep cliffs, dead branches of trees, wharfs, jetties, or even transmission lines.	Likely. Suitable foraging habitat is present on the site.
Rana draytonii	California red-legged frog	FT	SSC	Quiet pools of streams, marshes, and occasionally ponds.	Unlikely. Habitat is present is poor for this species and area in unconnected to known populations.
Riparia riparia	Bank swallow	ST		Steep sandy and stabilized banks devoid of vegetation along large rivers.	Absent. Riverbanks of appropriate soils, size, and shape are not present at this site.
Taxidea taxus	American badger	None	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	Unlikely. Habitat is present; however, area is disturbed, no suitable burrow observed during survey.

Scientific Name	Common Name	Federal Status State Status	CDFW	Habitat Utilized	Potential For Occurrence On-site
Thamnophis gigas	Giant garter snake	FT ST		Marsh and swamp. Prefers freshwater marsh and low-gradient streams.	Absent. Habitat is present but is poor for this species and area is unconnected to known populations.
Vireo bellii pusillus	Least Bell's vireo	FE SE		Dense, low, shrubby vegetation, scrub oak, coastal chaparral, and mesquite brushlands, often near water in arid regions.	Absent. Habitat on the site not of sufficient quality for nesting by this species.
Vulpes macrotis mutica	San Joaquin kit fox	FE ST		Arid-land-adapted and typically occur in desert-like habitats.	Absent. Lack of appropriate salt bush/scrub habitats and isolation of the project site from known populations.
Xanthocephalus xanthocephalus	Yellow-headed blackbird	None	SSC	Nests in fresh emergent wetland with dense vegetation and deep water. Forages in emergent wetland.	Likely. Suitable foraging habitat is present on the site.

SPECIAL-STATUS CODE DESIGNATIONS

FE = Federally listed as endangered
FT = Federally listed as threatened
FD = Federally delisted
SE = State listed as endangered
ST = State listed as threatened
SSC = California Species of Special Concern
FP = State Fully Protected Species
WL = Watch List

DEFINITIONS REGARDING POTENTIAL OCCURRENCE

Present: Species or sign of their presence observed on the site
Likely: Species or sign not observed on the site, but reasonably certain to occur on the site
Possible: Species or sign not observed on the site, but conditions suitable for occurrence
Unlikely: Species or sign not observed on the site, conditions marginal for occurrence
Absent: Species or sign not observed on the site, conditions unsuitable for occurrence

Source: Compiled by AECOM in 2016

Tricolored Blackbird (*Agelaius tricolor*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting Colony).[13] Tricolored blackbirds are found primarily in the Central Valley and southern coastal areas of California. This species is considered a California species of special concern (at its nesting colonies) because of concerns about the loss of wetland habitats in the state. The tricolored blackbird is highly colonial in its nesting habits, and forms dense breeding colonies that have a minimum of 50 pairs. This species typically nests in tall, dense, stands of cattails or tules, but also nests in willow thickets, blackberry, wild rose, and tall herbs. Nesting colonies are usually located near freshwater. Although suitable foraging habitat is present in the study area, there is no habitat for a nesting colony.

Silvery Legless Lizard (*Anniella pulchra pulchra*). Federal Listing Status: None; State Listing Status: Species of Special Concern. This lizard is found in sandy or loose soils under sparse vegetation, often hiding in leaf litter or under rocks. It forages for insects and spiders, and little is known about its water needs. The breeding season begins in late spring to early summer, and live young are born in the fall. No records exist for silvery legless lizard in the project area, but they may persist in the upland portions of River and vicinity streambeds, in the habitat present in the survey area. Therefore, the silvery legless lizard possibly could occur in the study area.

Golden Eagle (*Aquila chrysaetos*). Federal Listing Status: None; State Listing Status: State Fully Protected Species and on the Watch List. A permanent resident and migrant found throughout California, the golden eagle is found in rolling foothills, mountain areas, sage-juniper flats, and desert. It requires open terrain for hunting, and often soars above ground but occasionally hunts from perches. The golden eagle preys on small mammals and can capture prey up to the size of a calf. It nests on cliffs and large trees in open areas, reusing nests from past years. It prefers rugged open habitats with canyons and escarpments for nesting. Although nesting habitat is poor, suitable foraging habitat is present on-site.

Burrowing Owl (*Athene cunicularia*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The burrowing owl is a small, terrestrial owl of open grassland and desert country that prefers annual and perennial grasslands, with perches and burrows. This species nests in old mammal burrows and commonly uses California ground squirrel burrows. The nesting season as recognized by CDFW (DFG 2012) runs from February 1 through August. The project site provides suitable annual grassland habitat for the burrowing owl, and California ground squirrels are widespread and common on the project site. No evidence of habitation by burrowing owls was noted during the reconnaissance survey conducted on September 17, 2015. Therefore, the burrowing owl could possibly occur on the project site.

[13] On December 10, 2015, the California Fish and Game Commission approved advancing the tricolored blackbird to candidacy for listing under the California Endangered Species Act.

Swainson's Hawk (*Buteo swainsoni*). Federal Listing Status: None; State Listing Status: Threatened. Swainson's hawks are both migrants and residents to California's Central Valley. This species forages in grasslands for small mammals, large arthropods, amphibians, reptiles, birds, and occasionally fish if water is nearby. This hawk nests in small tree stands or on human-made structures, often in riparian areas. Swainson's hawks have been observed foraging near the project site and evidence of prey species is abundant. Although there are no records of nesting by this species in the vicinity, the site does feature trees that could be used for nesting. Presence is likely.

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*). Federal Listing Status: Threatened; State Listing Status: None. The valley elderberry longhorn beetle (VELB) is an insect endemic to the Central Valley of California that inhabits riparian and associated upland habitats where elderberry, its host plant, grows. Specifically, its range includes the upper Sacramento Valley to the central San Joaquin Valley. The range of VELB has been contracted by USFWS. The southernmost range of VELB is now considered to end north of Madera County and the species no longer considered present in the project area.

White-Tailed Kite (*Elanus leucurus*). Federal Listing Status: None; State Listing Status: Fully Protected. In California white-tailed kites can be found year round in coastal and valley lowlands, mostly commonly near agricultural areas. This species prefers to forage in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands, often hovering roughly 100 feet in the air before descending onto its prey. Individuals nest in dense tree stands near foraging areas. The presence of white-tailed kites is closely tied to the presence of prey species, particularly voles, and prey base may be the most important factor in determining habitat quality for white-tailed kites. California vole, a prey species for white-tailed kite, is abundant on the project site have been observed foraging throughout the year. It is likely that the white-tailed kite nests in the study area.

Western Pond Turtle (*Actinemys marmorata*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The western pond turtle occurs in permanent or nearly permeant ponds, streams, and other wetland habitats throughout California west of the Sierra-Cascade crest. In addition to water, this species requires basking sites, partially submerged logs, and rocks, from which individuals can slip into water when approached by potential predators. The species is omnivorous; their diet includes aquatic plant material and invertebrates as well as fishes, frogs, and carrion. In colder areas they hibernate in the mud at the bottom of their aquatic habitat. Eggs are laid in nests 4 inches deep anywhere from riverbanks to 325 feet away from the water. Western pond turtles are common and widespread through the San Joaquin River system and are likely present in the study area.

Bald Eagle (*Haliaeetus leucocephalus*). Federal Listing Status: None; State Listing Status: Endangered, Fully Protected. The bald eagle is a permanent resident and uncommon winter migrant of California. It requires a large body of water with a healthy population of fish as well as perches from which

to hunt. Bald eagles also may hunt mammals in flooded fields. Nest sites are chosen in large trees where a stick platform nest is built, often near a large body of water. Bald eagles are commonly observed in the San Joaquin River bottomlands and nesting is known to occur at Millerton Lake. The species is likely present in the study area.

Loggerhead Shrike (*Lanius ludovicianus*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting). The loggerhead shrike is a common resident throughout California, found mainly in the lowlands and foothills. Its preferred environment is open areas with scattered shrubs and trees or human-made structures such as fences for perching. It is less common in urban areas. The loggerhead shrike preys mostly on large insects but also on small birds, mammals, fish, reptiles, and amphibians. It is noted for skewering its prey on sharp objects such as thorns or barbed wire and caching it to eat later. Individuals nest in dense trees or shrubs. This species is fairly widespread and common in the area; therefore, its presence in the study area is likely.

Osprey (*Pandion haliaetus*). Federal Listing Status: None; State Listing Status: Watch List. Associated with fish-bearing waters, the osprey preys primarily on fish but also takes mammals, birds, amphibians, and invertebrates. Its preferred habitat is ponderosa pine and mixed conifer habitats. This species migrates in October to Central and South America, returning to breeding ground in California mid-March to early April. Ospreys use large trees, snags, human-made structures, and dead topped trees as nesting platforms. Nests may be more than 5–6 miles from large bodies of water. The 2014 survey observed a nesting osprey within a mile of the project site; therefore, the species is known to be present.

Double-Crested Cormorant (*Phalacrocorax auritus*). Federal Listing Status: None; State Listing Status: Watch List. This species is a yearlong California resident that can be found along the coast and lakes, and is rare to fairly common in lacustrine and riverine habitats of the Central Valley and coastal slope lowlands. Double-crested cormorants feed mainly on fish, crustaceans, and amphibians. They prefer water less than 30 feet deep and may feed cooperatively in flocks. Individuals nest beside water in undisturbed areas with cliff, rugged slopes, and in trees. This species is likely to forage on the site, although optimal nesting habitat is not present.

American Badger (*Taxidea taxus*). Federal Listing Status: None; State Listing Status: Species of Special Concern. American badger is an uncommon resident of California, found throughout all but the northern North Coast area of the state. This is a carnivorous species whose diet consists mainly of mammals, but badgers also eat reptiles, insects, earthworms, eggs, birds, and carrion depending on what is seasonally available. They dig burrows in friable soil, often reusing old burrows. When breeding, burrows are usually in areas with a sparse overstory cover. Although it is unlikely this species is present, the potential exists for its occurrence.

Yellow-Headed Blackbird (*Xanthocephalus xanthocephalus*). Federal Listing Status: None; State Listing Status: Species of Special Concern. This species is generally found at selected locations in the Coast Ranges west of the Central Valley and east of the Sierra Nevada and the Cascade Range; however, its range may extend to the project area. Yellow-headed blackbirds nest in large wetlands with dense vegetation and deep water, often along borders of lakes or ponds. They forage for seeds, grains, and insects in emergent wetland and moist open areas. Because of their preference for large wetlands, optimal nesting habitat is not present, but suitable foraging habitat can be found in the study area; therefore, this species is likely present in the study area.

3.5.2.8 Migratory Bird Species Observed On-Site

In addition to the special-status wildlife species identified in Table 3.5-2, a variety of migratory bird species have been observed on-site. Native species observed include western scrub jay (*Aphelocoma californica*), Anna's hummingbird (*Calypte anna*), house finch (*Haemorhous mexicanus*), northern mockingbird (*Mimus polyglottos*), great-tailed grackle (*Quiscalus mexicanus*), tree swallow (*Tachycineta bicolor*), cliff swallow (*Petrochelidon pyrrhonota*), red-winged blackbird (*Agelaius phoeniceus*), red-tailed hawk (*Buteo jamaicensis*), California quail (*Callipepla californica*), yellow-rumped warbler (*Setophaga coronata*), great egret (*Ardea alba*), killdeer (*Charadrius vociferus*), European starling (*Sturnus vulgaris*), cedar waxwing (*Bombycilla cedrorum*), Bewick's wren (*Thryomanes bewickii*), Canada goose (*Branta canadensis*), great egret (*Ardea alba*), mallard (*Anus platyrhynchos*), cinnamon teal (*Anus cyanoptera*), American kestrel (*Falco sparverius*), and northern harrier (*Circus cyaneus*). All native bird species are protected under the federal MBTA and are considered special-status species for the purpose of this assessment.

3.5.2.9 Mammal Species Observed On-Site

Two mammal species were observed on-site: desert cottontail (*Sylvilagus audubonii*) and California ground squirrel (*Otospermophilus beecheyi*). California mule deer (*Odocoileus hemionus*) have been observed near the project area (D. Young, pers. observation 2014, 2015).

3.5.2.10 Special-Status Fish Species

Chinook Salmon (*Oncorhynchus mykiss).* Federal Listing Status: Threatened; State Listing Status: Threatened. On January 3, 2014, the National Marine Fisheries Service (NMFS) issued a final rule that designated an experimental population of Central Valley Spring-Run Chinook Salmon (*Oncorhynchus tshawytscha*) and established take exceptions relating to the reintroduction of this threatened species to the San Joaquin River. The reintroduction of Central Valley Spring-Run Chinook Salmon into the San Joaquin River Basin is part of the San Joaquin River Restoration Program (SJRRP), a restoration program that is being implemented as part of a legal settlement.

The San Joaquin River Restoration Settlement Act (Settlement Act) requires that spring-run Chinook salmon be reintroduced to the River as an experimental population through Section 10(j) of the federal ESA, and with special exceptions using ESA Section 4(d). In the lower San Joaquin River and its tributaries, including the Merced River downstream of its confluence with the Merced River to Mossdale County Park in San Joaquin County, take of spring-run Chinook salmon is allowed in certain cases that may be incidentally caused by water supply reductions, additional storage releases, or otherwise lawful actions. This applies to wild spring-run Chinook salmon that may occur in the lower San Joaquin River and its tributaries and is not specifically limited to the reintroduced Central Valley Spring-Run Chinook Salmon.

The SJRRP began the reintroduction process in 2010 with a pilot captive broodstock study using fall-run Chinook salmon. The SJRRP also released juvenile fall-run Chinook salmon into the Restoration Area for studies in 2011, and adults were released below Friant Dam in fall 2012 and 2013. Similar studies will continue into the future.

Small numbers of spring-run Chinook salmon will be released initially to help the SJRRP better understand its needs in the River. Currently, little information is available about how these fish will behave in a river that has been dry for 60 years. Later releases will take this information into account and allow for better success of the reintroduction.

The experimental population includes both hatchery-produced and wild fish. The use of a conservation hatchery facility permits the development of conservation broodstock that will minimize take of additional wild spring-run stocks, allow for careful genetic management of fish released for reintroduction, and increase the number of juveniles available for release.

Other than the experimental population of captive broodstook, spring-run Chinook salmon would not be expected to occur for some time in the project reach, because the SJRRP NMFS permit requires releasing the salmon downstream of the most downstream fish passage barrier, which at this time is downstream of SR 165.

3.5.2.11 Other Fish Species Occurring in the Study Area

During 2014, CDFW conducted an inventory of fish species in various gravel-mining ponds along the San Joaquin River. Table 3.5-3 lists the fish species that occur in the four gravel ponds in the study area. Many are nonnative warm-water fish. Water from the River flows into the gravel ponds during high flows or through breaches in the surrounding berms. Water also infiltrates into the gravel ponds through subsurface infiltration.

Table 3.5-3 Occurrence of Fish Species in Gravel Mining Ponds within Study Area

Common Name	Scientific Name
Bigscale Logperch	*Percina macrolepida*
Black Crappie	*Pomoxis nigromaculatus*
Bluegill	*Lepomis macrochirus*
Brown Bullhead	*Ameiurus nebulosus*
Carp	*Cyprinus carpio*
Channel Catfish	*Ictalurus punctatus*
Chinook Salmon	*Oncorhynchus tshawytscha*
Goldfish	*Carassius auratus*
Golden Shiner	*Notemigonus crysoleucas*
Green Sunfish	*Lepomis cyanellus*
Kern Brook Lamprey	*Entosphenus hubbsi*
Largemouth Bass	*Micropterus salmoides*
Pacific Lamprey	*Entosphenus tridentatus*
Prickly Sculpin	*Cottus asper*
Pumpkinseed	*Lepomis gibbosus*
Rainbow Trout	*Oncorhynchus mykiss*
Redear Sunfish	*Lepomis microlophus*
Sacramento Pikeminnow	*Ptychocheilus grandis*
Sacramento Sucker	*Catostomus occidentalis*
Spotted Bass	*Micropterus punctulatus*
Striped Bass	*Morone saxatilis*
Threadfin Shad	*Dorosoma petenense*
Threespine Stickleback	*Gasterosteus aculeatus*
Warmouth	*Lepomis gulosus*
White Catfish	*Ictalurus catus*

Source: Guzman, pers. comm., 2014

3.5.3 Regulatory Setting

3.5.3.1 Federal Laws, Regulations, and Policies

Federal Endangered Species Act

The primary focus of the federal ESA of 1973 is for all federal agencies to seek to conserve threatened and endangered species through their actions. The ESA has been amended several times to correct perceived and real shortcomings. The ESA contains four key sections:

- Section 4 (Title 16, Section 1533 of the United States Code [USC] [16 USC 1533]) outlines the procedure for listing endangered plants and wildlife.
- Section 7 (16 USC 1536) imposes limits on the actions of federal agencies that might affect listed species.
- Section 9 (16 USC 1538) prohibits the unauthorized "taking" of a listed species by anyone, including private individuals and State and local agencies.

- Section 10 (16 USC 1539) provides a process allowing for the legal take of threatened and endangered species by nonfederal parties.

The ESA is enforced by USFWS and NMFS. ESA Section 9, as amended, prohibits the unauthorized take of any fish or wildlife species listed under the ESA as endangered. Under federal regulation, take of fish or wildlife species listed as threatened is prohibited to the extent specifically declared by regulation. "Take," as defined by ESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Recent court cases have found that "harm" includes not only the direct taking of a species itself, but the destruction or modification of the species' habitat, resulting in actual injury of the species. As such, "harm" is further defined to mean "an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (Code of Federal Regulations [CFR] Title 50, Section 17.3 [50 CFR 17.3]).

Migratory Bird Treaty Act

The MBTA of 1918 (16 USC 703–712, July 3, 1918, as amended in 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989) makes it unlawful to take (e.g., kill, harm, harass, shoot) any migratory bird listed in 50 CFR 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (e.g., warblers, flycatchers, swallows).

Section 404 of the Clean Water Act

Pursuant to CWA Section 404 (33 USC 1344), USACE regulates the discharge of dredged or fill material into waters of the United States. This program requires project applicants to obtain authorization from USACE before discharging dredged or fill materials into any water of the United States. "Waters of the United States" is defined as "all interstate waters including interstate wetlands, intrastate lakes, rivers, streams (including intermittent streams), wetlands, [and] natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce."

Section 401 of the Clean Water Act

The SWRCB and RWQCBs regulate activities in waters of the State (which include wetlands) through CWA Section 401. Although USACE administers permitting programs that authorize impacts on waters of the United States, including wetlands and other waters, any USACE permit authorized for a project must obtain certification from the RWQCB to ensure protection of beneficial uses of the waters of the State.

National Pollutant Discharge Elimination System

In 1972, the CWA was amended to provide that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with an NPDES permit. The 1987

amendments to the CWA added Section 402(p), which establishes a framework for regulating municipal and industrial stormwater discharges under the NPDES Program. On November 16, 1990, EPA published final regulations that establish stormwater permit application requirements for specified categories of industries. The regulations provided that discharges of stormwater to waters of the United States from construction sites encompassing 5 or more acres of soil disturbance would be effectively prohibited unless the discharge is in compliance with an NPDES Permit. Regulations (Phase II Rule) became final on December 8, 1999, expanded the existing NPDES program to address stormwater discharges from construction sites that disturb land equal to or greater than 1 acre.

3.5.3.2 State Laws, Regulations, and Policies

CDFW is a trustee agency with responsibility under CEQA for commenting on projects that could affect plant and wildlife resources. Pursuant to Section 1802 of the California Fish and Game Code, CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species.

California Endangered Species Act

In 1984, the California Legislature enacted the CESA, which is administered by CDFW under Section 2050 of the California Fish and Game Code. The basic policy of the CESA is to conserve and enhance endangered species and their habitats. State agencies do not approve private or public projects under their jurisdiction that would jeopardize threatened or endangered species if reasonable and prudent alternatives are available.

If a project would result in impacts on a State-listed species, take authorization originating under Section 2081 or 2081.1 of the California Fish and Game Code would be necessary. CDFW provides take authorization only if:

- the authorized take is incidental to an otherwise lawful activity;
- the impacts of the authorized take are minimized and fully mitigated;
- the measures required to minimize and fully mitigate the impacts of the authorized take:
    - are roughly proportional in extent to the impact of the taking on the species;
    - maintain the project applicant's objectives to the greatest extent possible; and
    - are capable of successful implementation; and
- adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with, and the effectiveness of, the measures.

CDFW cannot issue authorization for the take of a species for which the California Legislature has imposed strict prohibitions on all forms of take. These species are listed in several statutes (California Fish and Game Code Sections 3505, 3511, 4700, 5050, 5515, and 5517) that identify "fully protected" species and "specified birds." If a project is planned in an area where a "fully protected" species or a "specified bird" occurs, an applicant must design the project to avoid all take, as defined in the California Fish and Game Code.

California Fish and Game Code

Sections 3503, 3503.5, 3511, and 3513 of the California Fish and Game Code prohibit the "take, possession, or destruction of birds, their nests or eggs." Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a "take." Such a take would also violate federal law protecting migratory birds (the MBTA). All raptors (hawks, eagles, owls) their nests, eggs, and young are protected under the California Fish and Game Code (Section 3503.5). Additionally, "fully protected" birds, such as the white-tailed kite (*Elanus leucurus*) and golden eagle (*Aquila chrysaetos*), are protected under the California Fish and Game Code (Section 3511). "Fully protected" birds may not be taken or possessed (that is, kept in captivity) at any time.

Title 14 of the California Code of Regulations

Under CCR Title 14, Division 1, Subdivision 1, Chapter 5, Section 40, protected amphibians may be intentionally killed or injured only with authorization by a special permit from CDFW issued pursuant to Sections 650 and 670.7 of these regulations. However, these regulations do not prohibit death or injury that may occur incidental to an otherwise lawful activity, such as construction of a development project consistent with local land use regulations.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act), Water Code Section 13260, requires that "any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the State to file a report of discharge" with RWQCB. The term "waters of the State" is defined as any surface water or groundwater, including saline waters, within the boundaries of the State (Water Code Section 13050[e]). Pursuant to the Porter-Cologne Act, the RWQCB may also regulate "isolated wetlands," or those wetlands considered to be outside of USACE's jurisdiction. The RWQCB's litmus test for determining whether a project should be regulated pursuant to the Porter-Cologne Act is whether the action could result in any "threat" to water quality.

Section 1602 of the California Fish and Game Code

Pursuant to Section 1602 of the California Fish and Game Code, CDFW regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream that CDFW

typically considers to include its riparian vegetation. Any proposed activity in a natural stream channel that would substantially adversely affect existing fish, wildlife, or vegetative resources, would require entering into a streambed alteration agreement with CDFW before commencing with work in the stream. Before authorizing such permits, CDFW typically reviews an analysis of the expected biological impacts, any proposed mitigation plans that would be implemented to offset biological impacts, and engineering and erosion control plans.

San Joaquin River Parkway Master Plan

The Conservancy develops and manages its projects and lands under its jurisdiction in the Parkway through policies in the Parkway Master Plan. The Parkway Master Plan (Appendix B) contains goals, objectives, and policies that apply to the project area, including the policies in relation to biological resources listed in Table 3.5-4. These policies do not necessarily avoid impacts but may lessen them.

Table 3.5-4 Summary of San Joaquin River Parkway Master Plan Goals, Objectives, and Policies Relating to Biological Resources in the Project Area

Natural Resources Goals	
NRG1	Promote the long-term preservation, enhancement, and public enjoyment of the aquatic, plant, and wildlife resources of the San Joaquin River and riverbottom.
NRG2	Preserve existing habitat and maintain, enhance, or restore native vegetation to provide essentially continuous riparian and upland habitat for wildlife along the river form Friant Dam to SR 99.
Natural Resources Objectives	
NRO1	Protect the river as aquatic habitat and a water source. Enhance and protect fisheries in the river and lakes [ponds] in the Parkway.
NRO2	Protect and manage publicly owned lands with suitable habitat as natural reserves and segments of the wildlife corridor.
NRO4	Control and remove exotic plant species from the Parkway.
NRO5	Revegetate with native plant species to close gaps in the wildlife corridor or enhance the effectiveness of buffer zones.
Natural Resources Policies	
NP1	Provide a minimum width for the wildlife corridor of 200 feet on both sides of the river. Acquire a wider corridor wherever possible. Provide a buffer width wider than 150 feet whenever more intensive uses on adjacent lands exist or are planned.
NP3	Mitigate any unavoidable removal of native vegetation through acquisition of habitat, restoration, or a combination of both.
NP9	Prevent and control undesirable activities and unlawful conduct in natural reserves and along the wildlife corridor as the first priority of rangers and other Parkway personnel.
NP10	Facilitate a habitat preservation and restoration strategy for public lands among wildlife agencies and resource managers within the Parkway planning area.

Natural Resources Design Policies	
NRD1.1	Site new facilities in restored or previously developed areas. Visitor overlooks and viewing areas shall be located to avoid intrusion into sensitive habitat and to avoid habitat fragmentation.
NRD1.2	Whenever feasible, route trails on the outside edges of habitat areas, rather than through the center of mature riparian stands.
NRD1.3	Areas suitable for habitat restoration shall be restored by replanting or habitat management…Areas damaged by facilities placement shall be mitigated to a no-net-loss basis by restoring habitat in the immediate or adjacent vicinity.
NRD1.4	Seek to re-establish cottonwoods. Sycamore, and valley oaks in areas where there is evidence that they were previously present…
NRD1.5	Seek to re-establish a continuous corridor of riparian vegetation on both sides of the river, for wildlife movement, as well as restoration and improvement of instream shaded habitat.
NRD10	Develop and maintain a continuous strip of riparian vegetation (no gaps greater than 200 feet or the minimum necessary to allow infrastructure) with an average width of 200 feet throughout the Parkway.
NRD12	Whenever construction of project features is proposed within 100 feet of the riparian corridor, construction supervisors shall be made aware of the biological value of elderberry shrubs and shall implement mitigation measures to avoid adversely affecting this species.
NRD13	Restore a continuous distribution of elderberry shrubs (not greater than 0.25 miles between shrubs).

Note: SR = State Route
Source: Conservancy 1997a

3.5.3.3 Local Laws, Regulations, and Policies

City general plans contain goals, objectives, and policies that provide quality open space, park and recreational facilities, and programs to support population growth associated with projects. Although general plan policies do not directly avoid impacts, they may contribute to the avoidance or lessening of impacts.

The City of Fresno's General Plan Update 2035 establishes goals for the City to achieve a healthy and prosperous Fresno. The following objectives in General Plan Update 2035 support these goals and guide the assessment of impacts on biological resources from the project:

- Objective POSS-5 contains implementing policies for the long-term preservation, enhancement, and enjoyment of plant, wildlife, and aquatic habitat.
- Objective POSS-6 contains implementing policies for maintaining and restoring, where feasible, the ecological values of the San Joaquin River corridor.
- Objective POSS-7 supports the Conservancy in its efforts to develop a river parkway including creating a wildlife corridor.

3.5.4 Impact Analysis

3.5.4.1 Thresholds of Significance

PRC Section 21001(c) finds and declares that it is the policy of the State to prevent the elimination of fish or wildlife species due to human activities, ensure that fish and wildlife populations do not drop below self-sustaining levels, and preserve for future generations representations of all plant and wildlife communities and examples of the major periods of California history. In addition, Section 15065(a) of the State CEQA Guidelines states that a project may have a significant effect on the environment if it has the potential to substantially reduce the habitat of a fish or wildlife species or 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. Therefore, the project would have a significant impact on biological resources if it would:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS;
- have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.

3.5.4.2 Methodology

Analysis of the project's potential impacts was based on evaluation of the changes to biological resources that could result from implementing the project. Two biological investigations and habitat analyses of the project area were performed. The CNDDB, USFWS databases, and CNPS Species Inventory and RareFind were reviewed. In determining the extent and implications of the impacts, consideration was given to special-status species. Special-status species are plants and animals that are legally protected under the federal ESA of 1973, the CESA, the California Native Plant Protection Act, and/or other

regulations, such as those species that meet the definition of rare, threatened, or endangered under State CEQA Guidelines Sections 15380 and 15125. The special-status species designation does not extend to bird species protected under the MBTA (16 USC 703–712); however, impacts on those species are discussed under the "special-status species" sections of this DEIR.

3.5.4.3 Impacts and Mitigation Measures

Impact 3.5-1: The project would have a substantial adverse effect on a species identified as a candidate, sensitive, or special-status species.

The proposed alignment for the trail extension and the Perrin Avenue parking lot would affect about 2.4 miles and 3 acres of disturbed annual grassland habitat. As stated above, most of this disturbed annual grassland is dominated by nonnative upland grass species such as ripgut brome (*Bromus diandrus*), wild oat (*Avena fatua*), soft brome (*B. hordeaceus*), black mustard (*Brassica nigra*), and filaree (*Erodium cicutarium*). The proposed alignment for the Bluff Trail access to the trail extension and the Spano Park staircase would affect about 100 feet of the disturbed annual grasses present on the bluffs. The proposed wildlife viewing areas, picnic areas, and their associated paths would be located adjacent to the H and O ponds (Figure 2-3) and on nonnative annual grassland. Riparian vegetation, mature trees, and wetlands would not be directly affected because the alignment of the project would avoid these habitats.

Construction of the trail extension, parking lot, vault toilets, wildlife viewing areas, and recreation amenities would include site preparation, clearing, grading, installation of new hardscape, and landscaping. These activities would involve the presence and operation of heavy equipment (graders, trucks, and pavers), materials such as gravel, asphalt, and a construction work force. Impacts from construction would include noise, ground disturbance, dust, and removal of nonnative grassland.

Special-Status Plant Species. The presence of California satintail and Sanford's arrowhead in or near the gravel ponds in the study area has not been documented but cannot be ruled out. The impact of construction activities, such as grading and vegetation removal, on California satintail and Sanford's arrowhead would be **potentially significant**.

Mitigation Measure Biological Resources-1 (Special-Status Plant Species)

> Before any ground-disturbing activities, a qualified botanist shall conduct a botanical survey for California satintail and Sanford's arrowhead during their respective floristic periods (September to May and November to May). If it is determined that suitable habitat for special-status plants is present, the botanist shall conduct a focused survey for special-status plants during the appropriate time of the year to adequately identify special-status plants that could occur in the study area. The surveys will be performed according to the *Protocols for Surveying and Evaluating Impacts to*

*Special-Status Native Plant Populations and Natural Communitie*s (DFG 2009). Surveys shall be performed before the final alignment has been established to avoid special-status plants, and if the species are present before the start of construction as well.

One or more of the following measures shall be implemented to avoid and/or minimize impacts on sensitive natural communities and special-status plants as appropriate, per the botanist's recommendation:

- Flag or otherwise delineate in the field the special-status plant populations and/or sensitive natural communities to be protected. Clearly mark all such areas to be avoided on construction plans and designate these areas as "no construction" zones.
- Allow adequate buffers around plants or habitat; show the location of the buffer zone on the maintenance design drawings. Mark this exclusion zone in the field with stakes and/or flagging so that it is visible to maintenance personnel, without causing excessive disturbance of the sensitive habitat or population itself (e.g., from installation of fencing).
- Time construction or other activities during dormant and/or noncritical life cycle period.
- Limit the operation of construction equipment to established roads wherever possible.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Biological Resources-1 (Special-Status Plant Species) would reduce the potential impact to **less than significant** because the presence and location(s) of special-status plants would be identified and avoided before surface-disturbing activities. No additional mitigation is required.

Special-Status Wildlife Species—San Joaquin Kit Fox. The nearest CNDDB record of San Joaquin kit fox (SJKF) is for an area of fallow agricultural land near SR 99, approximately 7 miles southwest of the project area. Another record is for an area 12.5 miles away near the foothills in the vicinity of Friant Dam. Both sightings were recorded in the early 1990s. The area near SR 99 was dominated by agriculture at the time the record was made. Because of habitat conditions, it is unlikely that SJKF individuals reside in the study area; however, construction activities could potentially affect SJKF if they enter the construction area. The impact would be **potentially significant**.

Mitigation Measure Biological Resources-2 (San Joaquin Kit Fox)

The following measures are summarized from the USFWS *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS

2011). These measures shall be implemented to reduce impacts on SJKF entering the area during construction:

- An employee education program shall be conducted. The program shall consist of a brief presentation by a qualified wildlife biologist. The program shall include a description of the SJKF and its habitat needs; a report of SJKF occurrence in the project area; an explanation of the status of the species and its protection under the ESA; and a list of measures being taken to reduce impacts on the species during project construction. A fact sheet conveying this information shall be prepared for distribution to construction personnel.

- A representative shall be appointed to be the contact for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured, or entrapped kit fox. The representative shall be identified during the employee education program and his or her name and telephone number shall be provided to USFWS and CDFW.

- Project-related vehicles shall observe a daytime speed limit of 15 mph throughout the project site, except on State and federal highways; after dark, the speed limit shall be reduced to 10 mph. Off-road traffic outside of designated areas shall be prohibited.

- Work at night shall not be allowed.

- To prevent inadvertent entrapment of kit foxes or other animals during construction, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered with plywood or similar materials at the end of each work day. If the trenches cannot be closed, one or more escape ramps constructed of earthen fill or wooden planks shall be installed. Before such holes or trenches are filled, they shall be inspected for trapped animals.

- All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until USFWS or CDFW has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

- Holes or trenches more than 8 feet deep shall be covered or fenced at the end of the day.

- All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from the project site.

- Firearms shall not be allowed on the project site.

- To prevent harassment, mortality of kit foxes, or destruction of dens, no pets shall be permitted on the project site.

- Rodenticides and herbicides shall not be used on the project site except to control invasive plant species.

- Upon completion of the project, all areas subject to temporary ground disturbance, including staging areas, temporary roads, and borrow sites, shall be recontoured if necessary and revegetated to promote restoration of the area to preproject conditions.

- Any death, injury, or entrapment of SJKF shall be reported to USFWS and CDFW staff immediately. Written reports shall be submitted within 3 working days of the event.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Biological Resources-2 (San Joaquin Kit Fox) would reduce the potential impact to **less than significant** because the USFWS *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 2011) would be implemented. No additional mitigation is required.

Special-Status Wildlife Species—American Badger. The open space and disturbed grassland on the floodplain provide suitable habitat for the American badger. This species has been observed in nearby areas and dens were noted during the 2011 biological resources survey. Construction activities could directly harm badgers by burying or excavating dens. The impact would be **potentially significant**.

Mitigation Measure Biological Resources-3 (American Badger)

The Conservancy shall conduct a preconstruction survey no less than 14 days and no more than 30 days before the beginning of ground-disturbing activities. If active American badger den sites are present, the Conservancy shall consult with CDFW and implement the following measures:

- The entrances to dens shall be blocked for 3–5 days to discourage use.

- After the 3- to 5-day period, the dens shall be hand-excavated with a shovel to prevent reuse during construction.

- No disturbance of active dens shall take place when cubs may be present and dependent on parent care.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Biological Resources-3 (American Badger) would reduce the potential impact to **less than significant** because the presence and location(s) of badger deans would be identified and avoided before surface-disturbing activities begin. No additional mitigation is required.

Special-Status Wildlife Species—Avian Species. Avian species such as the bald eagle, Swainson's hawk, tricolored blackbird, red-tailed hawk, burrowing owl, and migratory birds would be affected by noise, the visual presence of construction equipment, workers, and people recreating. Waterfowl species such as great blue heron would also be affected by the project. Nesting and roosting habitat for these species would not be affected. Although these species are mobile, their presence during construction would be disturbed, and they would avoid using the area. The impact would be **potentially significant**.

Mitigation Measure Biological Resources-4 (Avian Species)

If project-related construction must occur during the breeding season (February through mid-September), the Conservancy shall have surveys performed for active nests no more than 30 days before commencing project-related activities. The surveys shall be conducted by a qualified biologist. A minimum no-disturbance buffer of 250 feet shall be delineated around active nests until the breeding season has ended, a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, or the biologist determines that the nest is no longer active. The results of the preconstruction survey and any subsequent monitoring shall be provided to CDFW.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Biological Resources-4 (Avian Species) would reduce the potential impact to **less than significant** because location(s) of active nests would be identified and avoided with a minimum no-disturbance buffer of 250 feet before surface-disturbing activities. No additional mitigation is required.

Mitigation Measure Biological Resources-5 (Bald Eagle)

Before initiating ground-disturbing activities, the Conservancy shall have preconstruction surveys performed for bald eagle nesting habitat and roost sites and foraging areas along the River within 2 miles of the project. Surveys shall be conducted in accordance with the CDFW *Bald Eagle Breeding Survey Instructions* (DFG 2010) or current guidance. If an active eagle's nest is found within 0.5 mile

of the project, construction shall not occur during the breeding season, typically January through July or August.

If project-related construction must occur during the breeding season, the Conservancy shall have surveys performed for active nests no more than 30 days before commencing project-related activities. The surveys shall be conducted by a qualified biologist. A minimum no-disturbance buffer of 250 feet shall be delineated around active nests until the breeding season has ended, a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, or the biologist determines that the nest is no longer active. The results of the preconstruction survey and any subsequent monitoring shall be provided to CDFW.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Biological Resources-5 (Bald Eagle) would reduce the potential impact to **less than significant** because construction would be avoided within a 0.5-mile buffer area around active eagle's nests during breeding season (typically January through August) or, if project-related construction must occur during the breeding season, because a 250-foot buffer area would be provided around active nests. No additional mitigation is required.

Mitigation Measure Biological Resources-6 (Burrowing Owl)

The Conservancy shall implement the following measures before initiating ground-disturbing activities:

- Focused surveys shall be conducted following the survey methodology developed by the California Department of Fish and Game (now CDFW) *Staff Report on Burrowing Owl Mitigation* (DFG 2012).

- If burrowing owls are found within the project footprint as a result of the required surveys, the recommendations of the *Staff Report on Burrowing Owl Mitigation* (DFG 2012) are mandatory; avoiding nesting sites must include implementation of no-disturbance buffer zones, unless a qualified biologist approved by CDFW verifies through noninvasive methods that either (1) the birds have not begun egg laying and incubation, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival.

- If burrowing owls must be removed, passive relocation is required during the nonbreeding season. A burrowing owl relocation plan to be approved by CDFW shall be developed and implemented, including passive measures such as installing one-way doors in active burrows for up to 4 days, carefully excavating all active burrows after 4 days to ensure that no owls remain underground, and filling all burrows in the construction area to prevent owls from

using them. Replacement of burrows with artificial burrows at a ratio of one burrow collapsed to one artificial burrow constructed (1:1) is required.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Biological Resources-6 (Burrowing Owl) would reduce the potential impact to **less than significant** because the recommendations in the CDFW *Staff Report on Burrowing Owl Mitigation* (DFG 2012) would be implemented. No additional mitigation is required.

Mitigation Measure Biological Resources-7 (Swainson's Hawk)

The Conservancy shall implement the following measure before construction starts:

- To avoid impacts on Swainson's hawks, no construction project shall occur between March 1 and August 31 unless a qualified biologist has performed nesting surveys following the survey methodology developed by the Swainson's Hawk Technical Advisory Committee (DFG 2000) before the start of project activities. Additional preproject surveys for active nests within a 0.5-mile radius of the project site shall be conducted by a qualified biologist no more than 10 days before the start of project activities and during the appropriate time of day to maximize detectability. A minimum no-disturbance buffer of 0.5 mile shall be delineated around active nests until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Biological Resources-7 (Swainson's Hawk) would reduce the potential impact to **less than significant** because CDFW survey protocols and avoidance measures would be implemented. No additional mitigation is required.

Mitigation Measure Biological Resources-8 (Raptors/Migratory Birds)

If construction begins between February 1 and August 31, the Conservancy shall conduct surveys for nesting raptors and migratory birds within 1,000 feet of the trail extension, parking lot, and other construction areas. If active nests are found, a buffer of 250 feet shall be established. A smaller buffer area may be sufficient if, in consultation with CDFW, it is determined sufficient to avoid impacts. Buffers shall be maintained until the young have fledged or the nests become inactive.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Biological Resources-8 (Raptors/Migratory Birds) would reduce the potential impact to **less than significant** because nest sites of raptors and /or nesting birds would be located and those areas would be avoided before surface-disturbing activities begin. No additional mitigation is required.

Special-Status Wildlife Species—Silvery Legless Lizard. Silvery legless lizards occur primarily in areas with sandy or loose loamy soils, such as under sparse vegetation of beaches, chaparral, or pine-oak woodland; or near sycamores, cottonwoods, or oaks that grow on stream terraces. The species is often found under or close to logs, rocks, boards, and the compacted debris of woodrat nests. Rocky soils or areas disturbed by agriculture, sand/gravel mining, or other human uses are not suitable for legless lizards. Two important components of silvery legless lizard habitat are found along the riparian habitat along the San Joaquin River: moist sandy soils and a layer of plant (leaf) litter. Widening the unimproved hiking paths and or placing decomposed gravel overlay could affect the silvery legless lizard. The impact would be **potentially significant.**

Mitigation Measure Biological Resources-9 (Silvery Legless Lizard)

> The Conservancy shall perform a survey for legless lizard presence and shall evaluate and map specific habitat areas within the riparian habitat along the unimproved hiking paths before construction. The survey shall use standard coverboard techniques for herpetofauna. If silvery legless lizard or specific habitat areas are found, the area shall be avoided.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Biological Resources-9 (Silvery Legless Lizard) would reduce the potential impact to **less than significant** because surveys for legless lizard and habitat would be performed in the study area and the species' locations would be avoided. No additional mitigation is required.

Special-Status Fish Species—Chinook Salmon. The alignment of the trail extension, parking lot, and amenities would avoid the River and riparian habitat. No effects on to Central Valley Chinook Salmon would be associated with the construction of the trail extension, parking lot, and amenities. **No impact** would occur.

Impact 3.5-2: The project could have a substantial adverse effect on riparian habitat or other sensitive natural communities.

As described in Section 3.5.2, "Environmental Setting," the dominant habitat community is disturbed annual grassland. The multiuse trail alignment and parking lot would be located in this habitat. The

riparian habitat along the river would be avoided. Widening the unimproved hiking trails or placing decomposed granite overlay would not affect the riparian habitat. The impact would be **less than significant.** No mitigation is required.

Impact 3.5-3: The project could have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means.

The riparian and wetland habitat along the River and gravel ponds would be avoided by the alignment and the location of the multiuse trail and parking lot. The existing unimproved hiking paths along the riparian corridor may be widened up to 6 feet and overlaid with decomposed gravel surface, while avoiding and preventing impacts on wetlands and jurisdictional waters. The impact would be **less than significant.** No mitigation is required.

Impact 3.5-4: The project would interfere substantially with the movement of native resident or migratory fish or wildlife, or with established corridors.

Rivers and riparian riverbanks are considered corridors for fish and wildlife movement or for expanding their range into new territories. Construction activities and use of the trail extension and recreation amenities would not affect fish species in the River. However, they could temporarily interfere with movement of terrestrial wildlife species or affect nursery sites such as bird nesting, roosting, or natal dens. The trail extension would provide access to the hiking paths along the riparian corridor, thereby increasing the level of human activity and wildlife/human encounters. Recreation use may generate noise, disturb vegetation, and create visual distractions for wildlife. The impact would be **potentially significant**.

Mitigation Measure Biological Resources-10 (Wildlife Movement)

The Conservancy shall implement the following measures:

- The multiuse trail shall be located outside the riparian corridor in conformance to the buffers established in the Parkway Master Plan.
- All ground-disturbing work, including construction and routine maintenance, and routine recreational operating hours shall occur during daylight hours.
- At a minimum, dogs shall be required to be leashed at all times.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Biological Resources-10 (Wildlife Movement) would reduce the potential impact to **less than significant** because ground-disturbing work and visitor use would occur

during daylight hours, and the multiuse trail would be located away from the riparian corridor to the extent possible. No additional mitigation is required.

Impact 3.5-5: The project could conflict with a local policy or ordinance protecting biological resources, such as a tree preservation policy or ordinance.

The project would be consistent with local policies and ordinances protecting biological resources. **No impact** would occur.

Impact 3.5-6: The project could conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.

Implementation of the project would not conflict with an adopted habitat conservation plan, natural community conservation plan, or any other approved local, regional, or State conservation plan. **No impact** would occur.

3.6 Cultural Resources

3.6.1 Introduction

This section describes the existing environmental and regulatory setting of the project area and analyzes the potential impacts of the project on cultural resources. This section also describes the criteria for determining the significance of impacts, approach to assessing impacts, and possible mitigation measures.

As described in Chapter 2, a public scoping meeting was held on June 17, 2014, to invite comments regarding environmental issues that should be examined in the DEIR. No comments were made related to impacts on cultural resources.

3.6.2 Environmental Setting

Cultural resources are defined as prehistoric and historic archaeological sites, architectural properties (e.g., buildings, bridges, and structures), and traditional properties with significance to Native Americans. This definition includes historic properties as defined by the National Historic Preservation Act. The following discussion is taken from the Phase I Archaeological Survey Report (Appendix E).

3.6.2.1 Prehistory

The Yokuts occupied virtually all of the San Joaquin Valley and the surrounding foothills. Kroeber classified the Yokuts into 12 groups and two divisions—Foothill and Valley (Appendix E). Their homeland included the entire San Joaquin Valley from the mouth of the San Joaquin River to the foot of Tehachapi

Pass. In addition, they occupied adjacent lower slopes or foothills of the Sierra Nevada up to an altitude of a few thousand feet, from the Fresno River south, but nowhere to the north of that stream.

During the prehistoric period, a number of Yokuts groups occupied the floodplains south of the San Joaquin River from Little Dry Creek to Herndon Avenue. These groups included the Pitkachi and Wakichi Yokuts. The Hoyima and Dumna inhabited the north side of the River opposite the study area. The project area was occupied principally by the Pitkachi. The Pitkachi occupied villages at Kohuou, near Herndon Avenue, at Weshiu, on a slough, and at Gewachiu downstream of Herndon Avenue. No occupation sites are mentioned in the immediate vicinity of the project area.

3.6.2.2 Early History

F. M. Lane Ranch

The earliest private ownership of property within the project area was by Frank M. Lane. According to one author in 1919, Frank M. Lane owned 90 acres, of which the project area was part. Professionally, Mr. Lane was a teacher and later a principal at Washington Grammar School. He was interested in raising grain and alfalfa, which he presumably practiced on his farm in the project area, as well as a 240-acre parcel approximately 1 mile east of the study area. Mr. Lane retained ownership of his 90-acre farm through 1935 (Appendix E).

Spano River Ranch

In the 1960s, the Lane property was purchased by Mr. Oscar Spano. About 90% of the ranch was located on the Fresno side of the San Joaquin River. According to a 2003 *Fresno Bee* article, the ranch was dedicated to cattle and cotton. In 2003, Mr. Stan Spano (Oscar's son) sold the ranch to the Conservancy and quitclaimed state sovereign lands to the California State Lands Commission. The family retained ownership of a 20-acre parcel in the middle of the former ranch. The 20-acre parcel is currently dedicated to pasture land and a residence and ancillary buildings are located in the southwest corner of the property.

Sand and Gravel Extraction

Stewart and Nuss (a concrete, paving, and general construction firm) was founded in 1918. The firm opened an excavation and processing plant in 1936, near the intersection of the San Joaquin River and SR 99 where gravel, sand, and rock was plentiful. In 1957 the business was sold to Rice Brothers Inc. of Marysville and Lodi, another concrete and gravel enterprise. By 1961, the old deposits downstream had been mined out and the company began to work the areas west of the San Joaquin River/SR 41 intersection, on the Fresno County side, within the study area.

Perrin Canal

In 1882, E. B. Perrin, a land developer, organized and built the San Joaquin River Canal or Perrin Ditch. The canal was designed to be about 16 miles long, extending from the massive headgates below what is now Millerton Lake along the bluffs on the south side of the River, ending somewhere in the vicinity of Herndon Avenue, probably near the modern Riverside Country Club. The canal was never put into service. The canal bench lies midway on the slope of the bluff in the study area.

3.6.2.3 Field Study

Between June 25 and 27, 2014, a pedestrian survey of the study area was conducted to determine whether cultural resources were present (Appendix E). The natural landscape has been heavily modified. Over the last 100-plus years, the land has been graded, plowed, excavated, and leveled as a result of farming and gravel and sand mining. Large human-made ponds and seasonally dry pits are scattered throughout the study area.

The archaeological investigation identified two previously recorded cultural resources—the historic Perrin Ditch and a prehistoric habitation site (CA-FRE-980). Both cultural resources were identified by the archival records search. The Perrin Ditch was previously evaluated and determined to be ineligible for the National Register of Historic Places (NRHP).

Prehistoric site CA-FRE-980, consisting of fire-cracked rock, obsidian flakes, shell, and carbon flecks, was previously recorded, but because of dense grass cover and prior agricultural disturbance, the 2014 pedestrian survey failed to relocate the site.

Aside from a few small fragments of historic ceramic and metal that lacked association or context, no cultural resources were found in the course of the pedestrian survey. More recent evidence of farming was observed including an abandoned grader, a wooden livestock chute, and irrigation system most likely associated with the 1960s Spano Ranch.

3.6.3 Regulatory Setting

3.6.3.1 Federal Laws, Regulations, and Policies

No federal laws, regulations, or policies related to cultural resources apply to the project.

3.6.3.2 State Laws, Regulations, and Policies

State Historic Resources Commission and Office of Historic Preservation

In accordance with State law (PRC Section 5020.4), the primary responsibility of the State Historical Resources Commission is to review applications for listing historic and archaeological resources in the

NRHP, the California Register of Historical Resources (CRHR), and the California Historical Landmarks and California Points of Historical Interest registration programs.

The Office of Historic Preservation is the governmental agency primarily responsible for the statewide administration of the historic preservation program in California. The chief administrative officer for the Office of Historic Preservation is the State Historic Preservation Officer. The State Historic Preservation Officer is also the executive secretary of the State Historical Resources Commission. The mission of the Office of Historic Preservation and the State Historical Resources Commission, in partnership with the people of California and governmental agencies, is to preserve and enhance California's irreplaceable historic heritage as a matter of public interest so that its vital legacy of cultural, educational, and recreational resources can be preserved.

San Joaquin River Parkway Master Plan

The Conservancy develops and manages its projects and lands under its jurisdiction in the Parkway through policies in the Parkway Master Plan. The Parkway Master Plan (Appendix B) contains goals, objectives, and policies that apply to the project area in relation to cultural resources, including the following goals:

Goal FG4: Protect irreplaceable natural and cultural resources in a way that will also meet recreational and educational needs.

Goal RA1: Preserve and manage natural and cultural resources in the Parkway, including archaeological and Native American sites, to meet current and future recreational and educational needs.

These goals, objectives, and policies do not necessarily avoid impacts but may lessen them.

3.6.3.3 Local Laws, Regulations, and Policies

City of Fresno General Plan 2025

The City's General Plan 2025, dated February 1, 2002, contains goals, objectives, and policies that protect prehistoric resources. In general, the policies are intended to foster community pride, attract visitors, and enhance educational opportunities. The following policy is relevant to the project:

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

City of Fresno Draft General Plan Update 2035

The General Plan Update 2035 establishes goals for the City to protect, preserve, and enhance natural, historic, and cultural resources. The following implementing policies of the General Plan Update 2035 support these goals and guide the assessment of project impacts on cultural resources:

- **Policy HCR-2-d.: Native American Sites.** Work with local Native American tribes to protect recorded and unrecorded cultural and sacred sites….
- **Policy HCR-2-f.: Archaeological Resources.** Consider State Office of Historic Preservation guidelines when establishing CEQA mitigation measures for archaeological resources.

3.6.4 Impact Analysis

3.6.4.1 Thresholds of Significance

Section 15064.5 of CEQA requires that lead agencies determine whether projects may have a significant effect on archaeological and historical resources. This determination applies to those resources that meet significance criteria qualifying them as “unique” or “important” in the CRHR, or as eligible for listing in the CRHR. For the purpose of this section, a resource shall be considered to be historically significant if it meets the criteria for listing in the CRHR (PRC Section 5024.1, 14 CCR Section 4852). If the agency determines that a project may have a significant effect on a significant resource, the project is determined to have a significant effect on the environment, and these effects must be addressed. If a cultural resource is found not to be significant under the qualifying criteria, it need not be considered further in the planning process.

Under CEQA Section 21084.1, the fact that a resource is not listed or determined to be eligible for listing in the CRHR, is not included in a local register, or is not deemed significant pursuant to criteria set forth in PRC Section 5024.1(g) shall not preclude a lead agency from determining whether the resource may be a historical resource. A property must meet at least one of the following criteria to be eligible for inclusion in the CRHR:

- It is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.
- It is associated with the lives of persons important in our past.
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- It has yielded, or may be likely to yield, information important in prehistory or history.

Based on the State CEQA Guidelines, the project would have a significant impact on cultural resources if it would:

- cause a substantial adverse change in the significance of a historical resource as defined in CEQA Section 15064.5;
- cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Section 15064.5;
- directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- disturb any human remains, including those interred outside of formal cemeteries.

CEQA does not establish criteria for determining the significance of paleontological resources. The environmental checklist form in the State CEQA Guidelines and the standard guidelines for assessment and mitigation of adverse impacts on paleontological resources set forth by the Society of Vertebrate Paleontology were used to establish three categories of sensitivities: high, low, and undetermined. Areas that consist of rock not of sedimentary origin and that have not been known to produce fossils are considered low-sensitivity areas.

3.6.4.2 Methodology

A record search covering a half-mile radius surrounding the project area was conducted at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System, located at California State University, Bakersfield. A pedestrian survey of the study area was conducted to determine whether cultural resources were present. The results of the record search and field survey are found in Appendix E of this DEIR.

3.6.4.3 Impacts and Mitigation Measures

Impact 3.6-1: The project could cause a substantial adverse change in the significance of a historical resource as defined in CEQA Section 15064.5.

The archaeological investigation identified a previously recorded historical resource, the Perrin Ditch. The historic Perrin Ditch was recorded along the eastern edge of the study area by historian Stephen Mikesell in 1995 (Appendix E). The Perrin Ditch was built in the 1880s to bring water for irrigation and development from the San Joaquin River below Millerton to the community of Herndon. Portions of the ditch are still visible on the bluff on the east side of the study area. Mr. Mikesell evaluated the ditch for listing in the NRHP under the most applicable criteria, B and C, but found that the ditch no longer retains sufficient integrity to warrant NRHP listing. NRHP Criteria B and C correspond with two criteria for the CRHR: “is associated with the lives of persons important in our past” and “embodies the distinctive

characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values." Although the contours of the ditch bed can be seen at several locations, the ditch has lost its integrity of design and setting. The Perrin Ditch does not qualify as a historical resource and requires no further treatment before project approval.

Recent evidence of farming was noted, consisting of an abandoned grader, a wooden livestock chute, and an irrigation system pipeline. These resources are not historic (Appendix E).

Therefore, the impact would be **less than significant.** No mitigation is required.

Impact 3.6-2: The project would cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Section 15064.5.

The archaeological investigation identified a previously recorded archaeological resource (CA-FRE-980). The site is a prehistoric habitation site (a probable permanent village) that was described in the original 1979 site record (Appendix E) as consisting of fire-cracked rock, obsidian flakes, shell, and carbon flecks. The site record also noted dense vegetation, disturbance of the upper 40 centimeters of soil, and the likelihood of buried cultural deposits based on soils and topography. The site lies within 185 meters south of the San Joaquin River. However, during the 2014 survey, the site could not be relocated. The site location map shows the site very close to the area of direct impact of the project alignment.

Construction activities such as vegetation removal, grading, and excavation could potentially uncover and disturb site CA-FRE-980 and other buried and unrecorded archaeological deposits. The project would cause a substantial adverse change to an archaeological resource. The impact would be **potentially significant**.

Mitigation Measure Cultural Resources-1

The Conservancy shall perform Extended Phase I subsurface testing along the alignment of the trail extension to determine the boundary of site CA-FRE-980 and identify the presence of additional archaeological deposits. The testing shall be performed before the start of any construction.

The Conservancy shall ensure that all cultural resources identified shall be evaluated for eligibility for inclusion in the CRHR. All additional testing shall be performed by individuals who meet the United States Secretary of the Interior's professional standards in archaeological history. If archaeological resources are determined to be eligible for the CRHR, and if the impacts of project construction and visitor use of the alignment render these resources as ineligible for the CRHR, the alignment shall be moved a minimum of 100 feet.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Cultural Resources-1 would reduce the potential impact on archaeological resources to **less than significant** because the Extended Phase I surface testing for site CA-FRE-980 and or other archaeological deposits would identify and avoid impacts before surface-disturbing activities begin.

Impact 3.6-3: The project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

The project site is composed of alluvial fill material (see Section 3.7, "Geology and Soils"). The dominant soil (Grangeville) is derived from moderately coarse-textured alluvium, primarily from granitic sources on alluvial fans and floodplains. The underlying alluvial terrace is deep. A search of known paleontological sites in California did not identify any known sites in the study area. Paleontological resources are highly unlikely to exist in the project area. The impact would be **less than significant**. No mitigation is required.

Impact 3.6-4: The project has the potential to disturb human remains, including those interred outside formal cemeteries.

Human remains are not known to exist within the project site. The soils consist of alluvial terrace deposits of Grangeville soil classification. The project site has been subject to inundation and scouring flood events, and sand and gravel mining. Buried human remains may be present. Construction of the trail extension could disturb human remains. The impact would be **potentially significant.**

Mitigation Measure Cultural Resources-2

> If human remains or bones of unknown origin are found during any future project construction, all work shall stop in the vicinity of the find and the County Coroner shall be contacted immediately. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission. The Native American Heritage Commission shall notify the person considered to be the most likely descendant. The most likely descendant shall work with the Conservancy to develop a program for the reinternment of the human remains and any associated artifacts. No additional work shall take place within the immediate vicinity of the find until the identified appropriate actions have been completed.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Cultural Resources-2 would reduce the potential impact on the disturbance of human remains to **less than significant**. The County Coroner is the proper government official who would oversee the investigation and certification of death of human remains within the jurisdiction of the County.

3.7 Geology and Soils

3.7.1 Introduction

This section describes the existing environmental and regulatory setting of the project area and analyzes the potential impacts of the project on geology and soil resources. This section also describes the criteria for determining the significance of impacts, approach to assessing impacts, and possible mitigation measures.

As described in Chapter 2, a public scoping meeting was held on June 17, 2014, to invite comments regarding environmental issues that should be examined in the DEIR. No comments were made related to impacts on geology and soils.

3.7.2 Environmental Setting

3.7.2.1 San Joaquin River Bluffs

The project area is located in the San Joaquin Valley, a flat expense between the Sierra Nevada and the Coast Ranges consisting of various sediments that have been deposited over millions of years. On the east side of the valley, the soil is composed predominantly of soils derived from a granitic parent material originating from the Sierra Nevada. Over its geological history, the river has meandered, depositing sediment worn from the mountains above, fanning out into large alluvial floodplains. This process contributed to the flat topography and the rich agricultural soil found in the region today. The project area, located on the eastern edge of the valley, is unique in that flat topography has been cut by the River as it emerges from the foothills. As a result, tall, steep bluffs mark the limits of the general river floodplain in the area. The River has incised the floodplain from ancient sediment. The only rocks existing in the study area are gravel washed down by the River.

3.7.2.2 Soils

The project site is underlain by the following soil types: Grangeville fine sandy loam; Grangeville fine sandy loam, saline alkali; Grangeville soils, channeled; Hanford fine sandy loam; Hesperia fine sandy loam; Hesperia sandy loam; Pollasky fine sandy loam, 9 to 15% slopes; Riverwash; Terrace escarpments; and Tujunga soils, channeled, 0 to 9% slopes (NRCS 2011). Grangeville soils consist of very deep, somewhat poorly drained soils derived from moderately coarse-textured alluvium, primarily from granitic sources on alluvial fans and floodplains. Hanford soils are very deep, well-drained soils formed in moderately coarse-textured granitic alluvium on stream bottoms, floodplains, and alluvial fans. Hesperia soils are very deep, well-drained soils that formed in alluvium derived primarily from granite and related rocks on alluvial fans, valley plains, and stream terraces. Pollasky soils are moderately deep, well-drained, and moderately coarse-textured soils that occur on dissected terraces under annual grasses and forbs. Riverwash is excessively drained coarse sand with some cobbles formed on floodplains. Terrace

escarpments consist of well-drained silty and sandy stratified material located along small streams and where terraces meet the bottom lands and floodplains along major streams and rivers. Tujunga soils are very deep, somewhat excessively drained soils formed in granitic alluvium and occur on alluvial fans and floodplains.

Soil liquefaction describes a phenomenon in which a saturated or partially saturated soil substantially loses strength response to an applied stressful event, such as an earthquake, causing it to behave like a liquid. The phenomenon is most often observed in saturated, loose, sandy soils.

3.7.2.3 Slope Stability

The highly erodible face of the San Joaquin River bluffs and a small area of expansive clay in the northeastern portion of the City's sphere of influence are the location of the only unstable soil conditions known to exist in the city of Fresno. The bluffs located along the project's southern boundary can be considered a unique geological feature in the region. Rilling (an erosion process that forms a rill or a shallow channel) and gullying (an erosion process that forms a gully, an incised landform) are currently in evidence along the bluff face.

3.7.2.4 Landslides

Collapsible soils undergo a volume of reduction when the pore spaces become saturated, causing loss of grain-to-grain contact and possibly dissolving the interstitial cement holding the grains apart. The weight of overlying structures can cause uniform or differential settlement. Likely locations for collapsible soils in the study area are along the bluff slopes. Former landslide activity, including rock falls, topples, debris flows, earth flows, mudflows, or creep have been evidenced in the project vicinity at the base of the bluff.

3.7.2.5 Faults

A fault is defined as "a planar or gently curving fracture in the earth's crust across which there has been relative displacement." Movement within the fault causes an earthquake. Generally, earthquakes are associated with faults exposed at the earth's surface. An "active fault" is defined as one that has had surface displacement within the Holocene time (about the last 11,000 years) (CGS 2007). This does not mean, however, that faults having no evidence of surface displacement within the last 11,000 years are necessarily inactive. Potentially active faults are those that have shown displacement within the last 1.6 million years. An "inactive fault" shows no evidence of movement in historic or recent geologic time, suggesting that these faults are dormant.

Fresno is one of the more geologically stable areas of California (City of Fresno 2014b). However, a number of active and potentially active faults are present in and adjacent to Fresno County (County of

Fresno 2000a). Faults in Fresno County and major active and potentially active faults in the region are described in Table 3.7-1.

Table 3.7-1 Fresno County and Regional Faults

Fault Name	Description
Clovis Fault	The northwest-trending Clovis Fault is believed to be located approximately 10 miles east of the study area, extending from an area just south of the San Joaquin River to a few miles south of Fancher Creek. The Clovis Fault is considered a pre-Quaternary fault or fault without recognized Quaternary displacement. This fault is not necessarily inactive.
Hartley Springs Fault, Silver Lake Fault (Parker Lake Fault), Unnamed Faults	Holocene and Quaternary faults are present in the northeastern part of Fresno County, a few miles south of Mammoth Lakes, about 70 miles east of the project area.
Unnamed Inferred Fault(s)	Relative or apparent upward and downward displacement interpreted as inferred faults occurs in an area located a few miles south of Helm, extending southeast to approximately Lanare (between Fresno Slough and Crescent Ditch), about 25 miles from the project area. As with the Clovis Fault, there is no apparent Quaternary displacement; however, the possibility for fault movement in this area cannot be completely eliminated.
Nunez Fault	The Nunez Fault is located northwest of Coalinga about 50 miles from the project area. The Nunez Fault experienced surface rupture during the 1983 Coalinga earthquake and is designated an Earthquake Hazard under the Alquist-Priolo Earthquake Fault Zoning Act of 1994 (formerly known as the Alquist-Priolo Earthquake Act of 1972).
Ortigalita Fault	The Ortigalita Fault zone is approximately 50 miles long, originating near Crow Creek in western Stanislaus County and extending southeast to a few miles north of Panoche in western Fresno County (about 60 miles west of the project area). Most of the fault is considered active because of displacement during Holocene time, and is designated an Earthquake Hazard under the Alquist-Priolo Earthquake Fault Zoning Act of 1994.
San Andreas Fault	The San Andreas Fault lies to the west and southwest of Fresno County, about 70 miles from the project area. In the southwestern part of the county, the fault is roughly parallel to and a few miles west of the county line. This fault is considered active and is of primary concern in evaluating seismic hazards throughout western Fresno County, although effects of earthquakes along the San Andreas Fault could occur farther east as well.
Sierra Nevada Fault Zone (Owens Valley Fault Zone)	Approximately 80–90 miles east of the project area lies the Owens Valley Fault Zone. This northwest-trending fault zone is a lengthy and complex system containing active and potentially active faults. Historically, this fault has been the source of seismic activity in Madera County.
Foothills Fault System	The southern part of the Foothills Fault System, located approximately 70–80 miles north of the project area, includes the Bear Mountains Fault and the Melones Fault Zone, as well as numerous smaller, but related faults. According to CDMG data, these faults have not shown any activity during the last 1.6 million years; however, geologic investigations of the seismic safety of the Auburn Dam site suggest these faults are potentially active. Therefore, the possibility exists that earthquakes could occur on these faults.
White Wolf Fault	The White Wolf Fault is located approximately 100 miles south of the project area. The fault was not considered active until 1952, when movement along it generated a series of damaging earthquakes in the Bakersfield area.

Note: CDMG = California Division of Mines and Geology (now California Geological Survey)

Sources: County of Fresno 2000a; data adapted by AECOM in 2016

3.7.3 Regulatory Setting

3.7.3.1 Federal Laws, Regulations, and Policies

In October 1977, the U.S. Congress enacted the Earthquake Hazards Reduction Act to reduce the risk to life and property from future earthquakes through the establishment and maintenance of an effective earthquake hazards reduction program. This program was significantly amended in November 1990 when the National Earthquake Hazards Reduction Program refined agency responsibilities, program goals, and objectives. The Federal Emergency Management Agency (FEMA) was designated as the lead agency for the National Earthquake Hazards Reduction Program.

3.7.3.2 State Laws, Regulations, and Policies

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act, signed into law in 1972 (then known simply as the Alquist-Priolo Earthquake Act), requires the delineation of zones along active, potentially active, and well-defined faults. The purpose of the Alquist-Priolo Earthquake Fault Zoning Act is to identify the hazard of surface faulting so that appropriate action can be taken under the act to mitigate these hazards. The act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. This State law was a direct result of the 1971 San Fernando earthquake, which was associated with extensive surface fault ruptures.

California Seismic Hazards Mapping Act

The California Seismic Hazards Mapping Act of 1990 (PRC Sections 2690 through 2699.6) addresses seismic hazards other than surface rupture, such as liquefaction and seismically induced landslides. The purpose of the California Seismic Hazards Mapping Act is to minimize the loss of life and property through the identification, evaluation, and mitigation of seismic hazards. It specifies that the lead agency for a project may withhold development permits until geologic or soil investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards of seismicity and unstable soils.

California Building Standards Commission

The California Building Standards Commission is authorized by the California Building Standards Law to administer the many processes related to the development, adoption, approval, publication, and implementation of California's building codes. Title 24 of the California Building Standards Code serves as the basis for the design and construction of buildings, associated facilities, and equipment in California. Where no other building codes apply, it regulates excavation, foundations, and grading activities, including drainage and erosion control.

San Joaquin River Parkway Master Plan

The Conservancy develops and manages its projects and lands under its jurisdiction in the Parkway through policies in the Parkway Master Plan. The Parkway Master Plan (Appendix B) contains goals, objectives, and policies that apply to the project area in relating to geology and soils, including the following policies:

- **Policy RFP3:** Best Management Practices, as identified by the responsible jurisdiction through an adopted ordinance or standard, shall be implemented to minimize potential effects from grading and construction-related erosion. The BMPs shall include site-specific erosion and sedimentation control plans to be prepared for each site to be developed prior to construction.
- **Policy RFP7:** Geotechnical investigations shall be performed by qualified personnel prior to approval of final design for each feature to identify geologic or soil characteristics that could result in adverse effects on water quality, for example, highly erodible soils or slope conditions.

These goals, objectives, and policies do not necessarily avoid impacts but may lessen them.

3.7.3.3 Local Laws, Regulations, and Policies

City of Fresno General Plan 2025

The City's General Plan 2025, dated February 1, 2002, contains the following objective and policy that are relevant to the project area:

- **Objective I-4:** Minimize the loss of life and property on the San Joaquin River bluffs that could occur due to geological hazards.
  - **Policy I-4-a:** Maintain and enforce the city's Bluff Preservation (BP) Overlay Zone District. Development within 300 feet of the toe of the San Joaquin River bluffs shall require an engineering soils investigation and evaluation report that demonstrates that the site is, or methods by which the site could be made, sufficiently stable to support the proposed development.

City of Fresno Draft General Plan Update 2035

In the General Plan Update 2035, the policy is restated as follows:

- **Policy NS-2-d: Bluff Preservation Overlay Zone**. Maintain the requirements of the Bluff Preservation Overlay Zone District, which include provisions to:

- Require proposed development within 300 feet of the toe of the San Joaquin River bluffs to undertake an engineering soils investigation and evaluation report that demonstrates that the site is sufficiently stable to support the proposed development, or provide mitigations to provide sufficient stability.
- Establish a minimum setback of 30 feet from the San Joaquin River bluff edge for all future structures and rear yards.

3.7.4 Impact Analysis

3.7.4.1 Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis of geology and soils are based on the environmental checklist in the State CEQA Guidelines, as amended. The project would have a significant impact on geology and soils if it would:

- expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
    - rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Fault Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
    - strong seismic ground shaking;
    - seismic-related ground failure, including liquefaction; or
    - landslides;
- result in substantial soil erosion or the loss of topsoil;
- 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;
- be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property; or
- have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

3.7.4.2 Methodology

The analysis of potential impacts was based on an evaluation of the effects of the project on the geological setting and on-site soils. Information in technical reports, the relevant USGS topographic map (Fresno North), and the *Fresno County General Plan Revised Public Review Background Report* (County

Background Report) (County of Fresno 2000a) were reviewed. In determining the extent and implications of the impacts, consideration was given to soil type and composition, and slope stability.

3.7.4.3 Impacts and Mitigation Measures

Impact 3.7-1: The project could expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides.

The project area is located in an area of low seismic rupture or fault-related surface disturbance and is not associated with a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Fault Map. Implementing the project would not expose people or structures to potential substantial adverse effects. The impact would be **less than significant**. No mitigation is required.

The potential for strong seismic ground shaking is low. Implementing the project would not expose people or structures to potential substantial adverse effects. The impact would be **less than significant**. No mitigation is required.

The soil composition in the project area is a sandy loam and could be subject to liquefaction in response to an event such as an earthquake. However, the potential for an earthquake occurring in or near the project area is low. The impact would be **less than significant**. No mitigation is required.

The topography of the project area is essentially level except in the bluff area. The proposed trail extension and parking lot would be constructed on level topography and would not encroach within 300 feet of the toe of the bluffs. Furthermore, BMP GEO-2 would be implemented as part of the project. Potential exposure of people using the trail extension to landslides would be minimal. The impact would be **less than significant**. No mitigation is required.

The proposed staircase from Spano Park to the trail extension and proposed access from the Bluff Trail and West Riverview Drive would be constructed on the steep slope of the San Joaquin River bluffs. The Conservancy conducts engineering soils investigations and studies as part of the design process in accordance with State law as described in BMP GEO-2. Plans for the project, and in particular the Spano Park staircase and Bluff Trail/West Riverview Drive access, must be approved by the Division of the State Architect. Plans are also reviewed by the Seismic Peer Review Board. These investigations, designs, and reviews would ensure that the improvements would protect slope stability and structural integrity. The impact would be **less than significant**. No mitigation is required.

Impact 3.7-2: The project would result in substantial soil erosion or loss of topsoil.

The trail extension, parking lot, and recreational amenities would be constructed on generally level terrain. Approximately 11.3 acres of level terrain would be disturbed by construction activities such as grading, excavation, and paving. Soil erosion or loss of topsoil would be minimal with the implementation topsoil stockpiling as described in BMPs GEO-1 and GEO-2 (see Section 2.5.5, "Geology and Soils"). BMPs such as the placement of wattles, silt fencing, and stabilization of construction entrances with gravel mats to minimize trackout would minimize impacts on topsoil and erosion. The impact would be **less than significant**. No mitigation is required.

However, construction of the Spano Park staircase and Bluff Trail/West Riverview Drive access trail would occur on the steep slope of the River bluff. Soil erosion and loss of topsoil would be expected during construction. Employees may be exposed to unstable areas immediately upslope or downslope of the construction site. After construction, unvegetated bare ground on the slope would be exposed to rain and wind erosion, increasing scouring and rills. Rills begin to form when the runoff shear stress, the ability of surface runoff to detach soil particles, overcomes the soil's shear strength, the ability of soil to resist force working parallel to the soil's surface. This begins the erosion process as water breaks soil particles free and carries them down the slope.

The California Building Standards Code sets forth the rules and regulations to control excavation, grading, and earthwork construction, including fills and embankments. It establishes basic policies to safeguard life, limb, property, and public welfare by regulation of grading, cuts, drainage, trenching, terracing, and erosion control.

The City of Fresno Bluff Preservation Overlay Zone District and Policy POSS-7-f establish the following standards for property located within the Bluff Preservation zone:

- Require proposed development within 300 feet of the toe of the San Joaquin River bluffs to undertake an engineering soils investigation and evaluation report that demonstrates that the site is sufficiently stable to support the proposed development, or provide mitigations to provide sufficient stability; and
- Establish a minimum setback of 30 feet from the San Joaquin River bluff edge for all buildings, structures, decks, pools and spas (which may be above or below grade), fencing, lighting, steps, etc.
    - An applicant may request to reduce the minimum setback to 20 feet from the bluff edge if it can be demonstrated, to the satisfaction of the City's Building Official and the Planning Director, that the proposed building, structure, deck, pool and/or spas (which may be above or below grade), fencing, steps, etc., will meet the objectives of the Bluff

Preservation Overlay Ordinance. In no case shall the setback be reduced to less than 20 feet.

Appendix F of the California Stormwater Quality Association's *Stormwater BMP Construction Handbook* (CASQA 2009) provides a range of BMPs for slope stabilization techniques such as long-lived plant-based soil binders, straw or jute blankets, erosion control products, matting, and mulching. Because of the steep slope, the impact related to erosion and loss of topsoil would be **potentially significant**.

Mitigation Measure Geology and Soils-1

The Conservancy shall implement the following measures:

- Grading plans and design shall be signed by a professional engineer and submitted for approval within a reasonable time frame before the start of construction.
- Construction slopes and grading shall be designed to limit the potential for slope instability and minimize the potential for erosion during and after construction.
- In developing grading and construction procedures, the stability of both temporary and permanent cut, fill, and otherwise affected slopes shall be analyzed and properly addressed.
- Development of the project site shall comply with the then-most-recent California Building Standards Code design standards and performance thresholds for construction on steep slopes to avoid or minimize potential damage from erosion.
- Where soft or loose soils are encountered during investigations, design, or project construction, appropriate measures shall be implemented to avoid, accommodate, replace, or improve such soils. Depending on site-specific conditions and permit requirements, these measures may include:
    - locating construction facilities and operations away from areas of soft and loose soil;
    - overexcavating soft or loose soils and replacing them with engineered backfill materials;
    - increasing the density and strength of soft or loose soils through mechanical vibration and/or compaction;
    - installing material over construction access roads such as aggregate rock, steel plates, or timber mats; and
    - treating soft or loose soils in place with binding or cementing agents.

- At the beginning of each construction day, the proposed staircase and trail along the bluff slope shall be evaluated for slope stability by qualified construction staff.
- Fiber rolls shall be placed along the perimeter of the site to prevent sediment and construction-related debris and sediment from leaving the site.
- Silt fences shall be placed downgradient of disturbed areas to slow runoff and sediment.
- During construction, slopes affected by construction activities shall be monitored by qualified construction staff and maintained in a stable condition.
- Construction activities likely to result in slope instability shall be stabilized and suspended, as necessary, during and immediately after periods of heavy precipitation when unstable slopes are more susceptible to failure.

Effectiveness of Mitigation Measure

Implementing Mitigation Measure Geology and Soils-1 would reduce the impact to **less than significant** because compliance with California Building Standards Code design standards and monitoring and maintenance of controls during construction would minimize potential effects related to erosion and topsoil loss. No additional mitigation is required.

Impact 3.7-3: The project could be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially could result in on or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

As described above, the proposed staircase from Spano Park to the trail extension and access from the Bluff Trail and West Riverview Drive would be constructed on the steep slope of the bluff. The Conservancy conducts engineering soils investigations and studies as part of the design process in accordance with State law as described in BMP GEO-2. Plans for the project, and in particular the Spano Park staircase and Bluff Trail/West Riverview Drive access, must be approved by the Division of the State Architect. Plans are also reviewed by the Seismic Peer Review Board. The impact would be **less than significant**. No mitigation is required.

Impact 3.7-4: The project could be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

The near-surface soils that underlie the project site consist of a mix of Hanford Series, Grangeville Series, Cajon Series, Tujunga Series, Visalia Series, and Riverwash. These soils do not have a significant

amount of clay and are not expansive soils. The impact would be **less than significant**. No mitigation is required.

Impact 3.7-5: The project site could have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

Although the soils are characterized as having good drainage, self-contained vault toilet restrooms are proposed to be provided at the parking lot and along the trail extension near Spano Park. These facilities would be regularly maintained such that wastewater would be hauled off-site and not be discharged on-site. The impact would be **less than significant**. No mitigation is required.

3.8 Greenhouse Gas Emissions

3.8.1 Introduction

This section considers the potential for construction-related and operational greenhouse gas (GHG) emissions associated with the project to affect climate change, and identifies opportunities to avoid, reduce, or otherwise mitigate potential significant impacts. This analysis includes a description of the existing environmental setting; an overview of the GHG regulatory framework that guides the decision-making process; a summary of the assessment methodology used to model GHG emissions; thresholds and other criteria for determining impact significance; an analysis of impacts; and mitigation measures as necessary.

The project area is located within the San Joaquin Valley Air Basin, which is regulated by SJVAPCD. The project consists of the construction of a 3.5-mile multipurpose recreational trail adjacent to the San Joaquin River and a parking lot off Perrin Avenue. Although construction dates have not yet been set, the following calculations assume construction during summer months, which provides for a more conservative estimate of emissions.

As described in Chapter 2, a public scoping meeting was held on June 17, 2014, to invite comments regarding environmental issues that should be examined in the EIR. Several comments were made that the EIR should evaluate the impacts of the project on GHG emissions.

3.8.2 Environmental Setting

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. A portion of the solar radiation that enters the earth's atmosphere is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. Infrared radiation is absorbed by GHGs; as a result, infrared radiation released from the earth that otherwise

would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on Earth. GHGs are present in the atmosphere naturally, are released by natural and anthropogenic sources, and are formed from secondary reactions taking place in the atmosphere.

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to carbon dioxide (CO_2). The GWP of a GHG is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time (i.e., lifetime) that the gas remains in the atmosphere ("atmospheric lifetime"). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main GHGs that have been attributed to human activity include methane (CH_4), which has a GWP of 28, and nitrous oxide (N_2O), which has a GWP of 265 (IPCC 2013). For example, 1 ton of CH_4 has the same contribution to the greenhouse effect as approximately 28 tons of CO_2. GHGs with lower emissions rates than CO_2 may still contribute to climate change, because they are more effective at absorbing outgoing infrared radiation than CO_2 (i.e., high GWP). The concept of CO_2 equivalents (CO_2e) is used to account for the different GWP potentials of GHGs to absorb infrared radiation. GHG emissions are typically measured in terms of pounds or tons of CO_2e, and are often expressed in metric tons of CO_2 equivalent ($MTCO_2e$).

3.8.2.1 Principal Greenhouse Gas Contributors

The following are the principal GHG pollutants that contribute to climate change and their emission sources:

- *Carbon Dioxide:* CO_2 enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees, and wood products, and as a result of other chemical reactions.
- *Methane:* CH_4 is emitted during the production and transport of coal, natural gas, and oil. Emissions of CH_4 also result from livestock and other agricultural practices and the decay of organic waste in municipal solid waste landfills.
- *Nitrous Oxide:* N_2O is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests.
- *Fluorinated Gases:* These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes called high-GWP gases. These high-GWP gases include:
    - chlorofluorocarbons, which are used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants;

- perfluorocarbons, which are emitted as byproducts of industrial processes and are also used in manufacturing;
- sulfur hexafluoride, a strong GHG that is used primarily as an insulator in electrical transmission and distribution systems;
- hydrochlorofluorocarbons, which have been introduced as temporary replacements for chlorofluorocarbons and are also GHGs; and
- hydrofluorocarbons, which were introduced as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. Hydrofluorocarbons are GHGs emitted as byproducts of industrial processes and are also used in manufacturing.

These GHGs are not monitored at local air pollution monitoring stations and do not represent a direct impact on human health. Rather, GHGs generated at local levels contribute to global concentrations of GHGs, which are considered by scientists to result in changes to the climate and environment.

3.8.2.2 Statewide Greenhouse Gas Emissions Inventory

The Intergovernmental Panel on Climate Change concluded that variations in natural phenomena, such as solar radiation and volcanoes, produced most of the warming of the earth from preindustrial times to 1950. These variations in natural phenomena also had a small cooling effect. From 1950 to the present, increasing GHG concentrations resulting from human activity, such as fossil fuel burning and deforestation, have been responsible for most of the observed temperature increase.

Global surface temperature has increased by approximately 1.53°F over the last 140 years (IPCC 2013); however, the rate of increase in global average surface temperature has not been consistent. The last three decades have warmed at a much faster rate per decade (IPCC 2013).

During the same period as the increase in global warming, other natural systems have changed in many ways. Sea levels have risen; precipitation patterns throughout the world have shifted, with some areas becoming wetter and others drier; snowline elevations have increased, resulting in changes to snowpack, runoff, and water storage; and numerous other conditions have been observed. Although it is difficult to prove a definitive cause-and-effect relationship between global warming and other observed changes to natural systems, the scientific community is highly confident that these changes are a direct result of increased global temperatures caused by the increased presence of GHGs in the atmosphere (IPCC 2013).

ARB performs an annual GHG inventory for emissions produced in the state. California produced 459 million $MTCO_2e$ in 2012 (Figure 3-1). Combustion of fossil fuels in the transportation category was the single largest source of California's GHG emissions in 2013, accounting for 37% of total GHG emissions

in the state. The transportation category was followed by the industrial category, which accounts for 23% of the state's total GHG emissions, and by the electric power category (including in-state and out-of-state sources), which accounts for 20% of total GHG emissions in California (ARB 2016b).

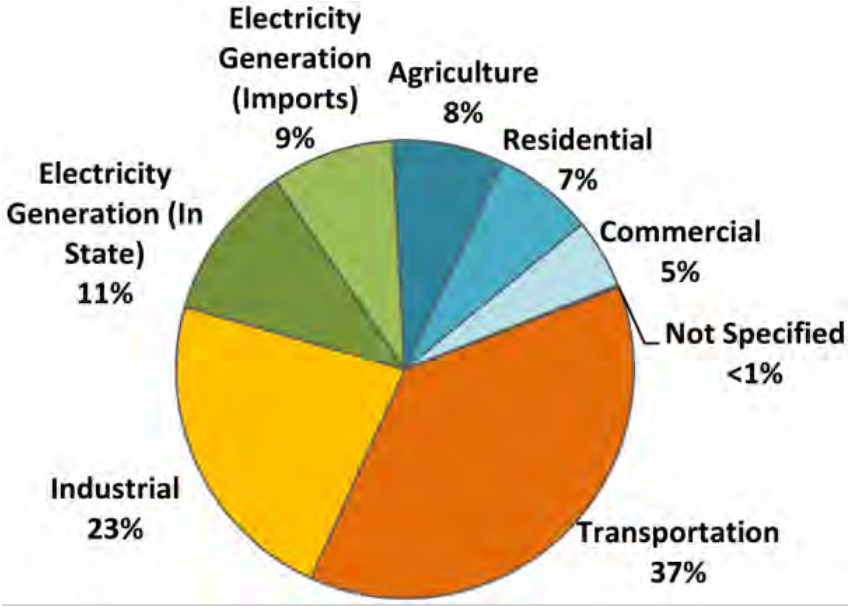

Figure 3-1 2013 California Greenhouse Gas Emissions by Sector

3.8.3 Regulatory Setting

3.8.3.1 Federal Laws, Regulations, and Policies

Climate change and GHG reduction is also a concern at the federal level. In December 2009, EPA's administrator signed a final action under Section 202(a) of the CAA, which identifies six GHGs that constitute a threat to public health and welfare. In light of this action, EPA developed standards and regulations limiting emissions of GHGs from new motor vehicles and specific stationary sources and established a renewable-fuel-standard program.

The Interagency Climate Change Adaptation Task Force published the *National Action Plan—Priorities for Managing Freshwater Resources in a Changing Climate* in October 2011. This plan (Interagency Climate Change Adaptation Task Force 2011) discusses the effects of climate change on freshwater resources and the adaptation measures that address water supplies; protection of human life, health, and property; and protection of water quality and aquatic ecosystems.

On September 22, 2009, EPA published the Final Mandatory Greenhouse Gas Reporting Rule (Reporting Rule) in the *Federal Register*. The Reporting Rule requires reporting of GHG data and other relevant information from fossil fuel and industrial GHG suppliers, vehicle and engine manufacturers, and all facilities that would emit 25,000 $MTCO_2e$ or more per year. Facility owners are required to submit an

annual report with detailed calculations of facility GHG emissions on March 31 for emissions from the previous calendar year. The Reporting Rule also mandates recordkeeping and administrative requirements to enable EPA to verify the annual GHG emissions reports.

On December 18, 2014, the Council on Environmental Quality (CEQ) released revised draft guidance that supersedes the draft GHG and climate change guidance released by CEQ in February 2010. The revised draft guidance applies to all proposed federal agency actions, including land and resource management actions. This guidance explains that agencies should consider both the potential effects of a proposed action on climate change, as indicated by its estimated GHG emissions, and the implications of climate change for the environmental effects of a proposed action (CEQ 2014). The guidance encourages agencies to draw from their experience and expertise to determine the appropriate level (broad, programmatic, or project- or site-specific) and type (quantitative or qualitative) of analysis required to comply with the National Environmental Policy Act. The guidance recommends that agencies consider 25,000 $MTCO_2e$ on an annual basis as a reference point below which a quantitative analysis of GHG emissions is not recommended unless it is easily accomplished based on available tools and data (CEQ 2014).

3.8.3.2 State Laws, Regulations, and Policies

California has launched major initiatives for reducing GHG emissions. ARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the CCAA.

Assembly Bill 1493

AB 1493 requires ARB to develop and implement regulations to reduce GHG emissions from automobiles and light trucks. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with model year 2009. In June 2009, EPA's administrator granted a CAA waiver of preemption to California. This waiver allowed California to implement its own GHG emissions standards for motor vehicles beginning with model year 2009. California agencies worked with federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger car model years 2017 to 2025.

Executive Order S-3-05

Executive Order (EO) S-3-05, issued in June 2005, proclaimed that California is vulnerable to the impacts of climate change. EO S-3-05 declared that increased temperatures could reduce the Sierra Nevada's snowpack, exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the executive order established total GHG emissions targets. Specifically, emissions were to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80% below the 1990 level by 2050.

Assembly Bill 32

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Section 38500 et seq.). AB 32 further details and puts into law the midterm GHG reduction target established in EO S-3-05: reduce GHG emissions to 1990 levels by 2020. AB 32 also identifies ARB as the State agency responsible for the design and implementation of emissions limits, regulations, and other measures to meet the target.

In December 2008, ARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which contains the main strategies for California to implement to achieve the required GHG reductions required by AB 32 (ARB 2008). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of California's GHG inventory. ARB further acknowledges that decisions about how land is used have large impacts on the GHG emissions that result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors.

ARB is required to update the Scoping Plan at least once every 5 years to evaluate progress and develop future inventories that may guide this process. ARB approved the *First Update to the Climate Change Scoping Plan: Building on the Framework* in June 2014 (ARB 2014). The Scoping Plan update includes a status of the 2008 Scoping Plan measures and other federal, State, and local efforts to reduce GHG emissions in California, and potential actions to further reduce GHG emissions by 2020.

Executive Order S-1-07

EO S-1-07, issued in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, at more than 40% of statewide emissions. EO S-1-07 establishes a goal that the carbon intensity of transportation fuels sold in California should be reduced by a minimum of 10% by 2020. This regulation was readopted in 2015 and went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon-fuel adoption necessary to achieve the Governor's 2030 and 2050 GHG emissions goals.

Senate Bill 97

Senate Bill (SB) 97 required the Governor's Office of Planning and Research to develop recommended amendments to the State CEQA Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Senate Bill 375

SB 375, signed in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a sustainable communities strategy (SCS), which prescribes land use

allocation in that MPO's regional transportation plan (RTP). ARB adopted regional GHG targets for passenger vehicles and light trucks for 2020 and 2035 for the 18 MPOs in California. If the combination of measures in the SCS would not meet the regional targets, the MPO must prepare a separate "alternative planning strategy" to meet the targets.

Executive Order B-30-15

In April 2015, Governor Edmund G. Brown Jr. issued EO B-30-15, which established a statewide GHG reduction goal of 40% below 1990 levels by 2030. The emission reduction target acts as an interim goal between the AB 32 goal (i.e., achieve 1990 emission levels by 2020) and Governor Brown's EO S-03-05 goal of reducing statewide emissions 80% below 1990 levels by 2050. In addition, the executive order aligns California's 2030 GHG reduction goal with the European Union's reduction target (40% below 1990 levels by 2030) that was adopted in October 2014. ARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the CAA.

2009 California Climate Adaptation Strategy

The State of California published the 2009 *California Climate Adaptation Strategy* (California Natural Resources Agency 2009), which summarizes climate change impacts and recommends strategies to adapt to its effects. The strategies cover seven sectors: public health, biodiversity and habitat, oceans and coastal resources, water, agriculture, forestry, and transportation and energy. In 2014, the California Natural Resources Agency published an update to this plan called *Safeguarding California: Reducing Climate Risk* (California Natural Resources Agency 2014). This document provides policy guidance on the preparation, prevention, and response to the effects of climate change in California.

San Joaquin River Parkway Master Plan

The Conservancy manages its projects and lands under its jurisdiction in the Parkway through policies in the Parkway Master Plan. The Parkway Master Plan contains goals, objectives, and policies that apply to the project area. Appendix B of this DEIR provides the plan's goals, objectives, and policies regarding GHG emissions. These goals, objectives, and policies do not necessarily avoid impacts but may lessen them.

3.8.3.3 Local Laws, Regulations, and Policies

ARB also acknowledges that local governments have broad influence and, in some cases, exclusive jurisdiction over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations.

SJVAPCD is responsible for protecting public health and welfare through its administration of federal and State air quality laws and policies. In 2009, SJVAPCD adopted comprehensive regional policy and guidance on addressing and mitigating GHG emission impacts caused by industrial, commercial, and residential development in the San Joaquin Valley. These guidance documents were designed to assist lead agencies, project proponents, permit applicants, and interested parties in addressing and reducing GHG emissions impacts. SJVAPCD has not adopted a threshold for GHG emissions.

Fresno Green

The City of Fresno adopted *Fresno Green: The City of Fresno's Strategy for Achieving Sustainability* (City of Fresno 2008). Through this plan, the City committed to being a sustainable city by 2025 by encouraging visions of New City Beautiful, Sierra View 2025, Solar Valley, Green Enterprises and Economic Development, and City as a Good Steward. This plan commits to reducing GHG emissions consistent with AB 32, but does not present specific thresholds for GHG emissions.

2010 Air Quality Element of the County of Madera General Plan

This element (County of Madera 2010) does not contain any specific policies, including thresholds for GHG emissions. Additionally, the County of Madera has not adopted a climate action plan. The County of Madera differs to the SJVAPCD thresholds for evaluating projects.

Go Green Fresno County

In 2008, the County of Fresno adopted a package of environmental practices called Go Green Fresno County (County of Fresno 2008). Components of this policy include power green, build green, commute green, purchase green, work green, and share green. Although these policies are intended to promote sustainability, no specific GHG thresholds apply to this project.

3.8.4 Impact Analysis

3.8.4.1 Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis of GHG emissions are based on the environmental checklist in the State CEQA Guidelines, as amended. The project would have a significant impact on GHG emissions if it would:

- generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

3.8.4.2 Methodology

Construction-related emissions from typical construction activities, such as site grading and building construction and operational emissions from trips to the parking lots and recreational amenities, were modeled using CalEEMod, Version 2013.2.2. CalEEMod allows the user to enter project-specific information, such as types, number, and horsepower of construction equipment, and the number and length of off-site motor vehicle trips. Construction-related exhaust emissions for the project were estimated for construction worker commutes, haul trucks, and the use of off-road equipment. The project's operational emissions were also estimated using CalEEMod, which accounted for estimated trips generated by the parking lot and recreational amenities.

The analysis of the project's potential impacts was based on the total construction-related and operational emissions generated by the project using the following inputs:

- The project would include trail construction and construction of the Perrin Avenue parking lot. The parking lot is calculated to be 2.23 acres (97,055 square feet).
- With the construction of the Perrin Avenue parking lot, an assumed 1,000 square feet of recreational amenities and a restroom would be constructed.
- A total of 318 daily trips was used to calculate operational emissions.

Details regarding CalEEMod calculations were as follows:

- Construction was assumed to take place during 2019, with the trail and associated facilities operational by 2020.
- Annual construction-related and operational emissions were calculated.
- CalEEMod results for the Perrin Avenue parking lot represent emissions generated by the project.
- Construction emissions were incorporated into annual operations. The total was divided by the estimated project life of 30 years, and this amortized amount was added to each year of operation.

All calculations are detailed in Appendix C. Aside from assumptions noted in the model, CalEEMod defaults were used for all inputs. Resulting GHG emissions were then compared to the threshold criteria published by SJVAPCD.

3.8.4.3 Impacts and Mitigation Measures

Impact 3.8-1: The project could generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

The proposed alignment for the trail extension and the Perrin Avenue parking lot would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

The impacts of the GHG emissions generated by the project are related to the emissions from short-term construction and long-term operations. Off-road equipment, materials transport, and worker commutes during project construction would generate GHG emissions. Operational emissions generated by the project would result from both direct and indirect sources. Direct emissions are typically produced from on-site energy use in the parking lot area and fuel combustion from mobile sources visiting the parking lot. Indirect emissions are typically emissions produced from off-site energy production and water conveyance for a project's energy use.

The estimated emissions through the entire construction period and operational emissions are shown in Table 3.8-1.

Table 3.8-1 Total Greenhouse Gas Emissions Associated with the Project

	GHG Emissions ($MTCO_2e$)		
	Construction (Total)	**Construction (Amortized)**	**Operational (Total)**
Project	192	6	501

Note: GHG = greenhouse gas; $MTCO_2e$ = metric tons of carbon dioxide equivalent

Source: Estimated by AECOM in 2016

Although GHG emissions generated by the project's short-term construction activities may be considered new, they would be temporary and would not be considered substantial, given the small size of the project. As shown in Table 3.8-1, total project emissions would be approximately 192 $MTCO_2e$. When this total is amortized over a 30-year project lifetime, annual construction emissions would be approximately 501 $MTCO_2e$/year.

With construction of a parking lot and recreation amenities, the project would result in some operational emissions from the operation of the parking lot and trips generated. Applying the City Park and Parking Lot land uses in addition to the trail construction, operational emissions are estimated to be 366 $MTCO_2e$ annually.

The project's long-term operational GHG emissions would be minimal. Air districts and some lead agencies in California have developed numeric significance thresholds that allow a clear assessment of

the degree to which projects would have cumulatively considerable contributions to the significant cumulative impact of climate change. Approaches to developing significance thresholds vary:

- Some approaches compare an unmitigated project to a mitigated project, seeking a certain minimum percentage reduction that is consistent with statewide mandates.
- Other approaches assess emissions on a normalized basis and compare per-capita or per-service-population emissions to what the state as a whole would need to achieve on a normalized basis to accomplish statewide reduction mandates.
- In "bright-line" approaches, the significance threshold is a single number and projects may simply compare their emissions to this bright-line threshold.

The Bay Area Air Quality Management District developed a bright-line threshold of 1,100 $MTCO_2e$ annually; this threshold was subsequently used by the Sacramento Metropolitan Air Quality Management District in its guidance documentation. San Diego County developed a bright-line threshold of 2,500 $MTCO_2e$ annually, based on the different mix and scale of forecast development projects in this region compared to the Bay Area. The California Air Pollution Control Officers Association developed a bright-line threshold of 900 $MTCO_2e$ annually, which was designed to "capture" approximately 90% of future stationary emission sources, so that feasible mitigation could be imposed on most projects. These significance thresholds were developed using somewhat different approaches, but all with the intent of allowing projects to assess their consistency with the statewide framework for reducing GHG emissions.

The project's emissions would not approach any of these bright-line thresholds. The amortized emissions or the total GHG emissions for the project would not exceed any of the adopted or recommended thresholds of significance. Therefore, the project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The impact would be **less than significant**. No mitigation is required.

Impact 3.8-2: The project could conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

The project would not conflict with an applicable plan, policies, or regulations for the purpose of reducing GHG emissions.

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32) (California Health and Safety Code Section 38500 et seq.). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. It requires that statewide GHG emissions be reduced to 1990 levels by 2020. In December 2008, ARB adopted its Scoping Plan, which contains the main strategies for California to implement to achieve the required GHG reductions required by AB 32 (ARB 2008).

The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of California's GHG inventory. ARB further acknowledges that decisions about how land is used have large impacts on the GHG emissions that result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors. ARB is required to update the Scoping Plan at least once every 5 years to evaluate progress and develop future inventories that may guide this process. ARB approved the *First Update to the Climate Change Scoping Plan: Building on the Framework* in June 2014 (ARB 2014). The Scoping Plan update includes a status of the 2008 Scoping Plan measures and other federal, State, and local efforts to reduce GHG emissions in California, and potential actions to further reduce GHG emissions by 2020.

None of the measures listed in ARB's Scoping Plan relate directly to construction activity. The Scoping Plan includes some measures that would indirectly address GHG emissions levels associated with construction activity, including the phasing-in of cleaner technology for diesel engine fleets (including construction equipment) and the development of a low carbon fuel standard. However, successful implementation of these measures depends primarily on the development of future laws and policies at the State level, rather than on separate actions by individual agencies or local governments. Thus, it is assumed that policies formulated under the AB 32 mandate that apply directly or indirectly to construction activity would be implemented during project construction if the policies are developed before construction begins. Therefore, project construction would not conflict with the Scoping Plan.

SJVAPCD established guidelines and policies in its climate action plan to reduce GHG emissions. If the project complies with an approved GHG emission reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the geographic area in which the project is located, the project would have less-than-significant individual and cumulative impacts on GHG emissions. The *San Joaquin River Conservancy Master Plan* includes goals and policies pertaining to air resources. The project is planned to be consistent with the goals and actions identified in the Master Plan. The project is intended to serve as a multipurpose trail extension that would encourage walking and biking, thus supporting GHG emission reductions.

The project complies with the adopted *Fresno Green: The City of Fresno's Strategy for Achieving Sustainability*, is consistent with the AB 32 target to reduce GHG emissions to 1990 levels by 2020, and does not conflict with the visions identified in the strategy. The total GHG emissions generated by this project would be minimal. Thus, the project would not conflict with any applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. The impact would be **less than significant**. No mitigation is required.

The project would not conflict with the AB 32 Scoping Plan, Parkway Master Plan, *Fresno Green: The City of Fresno's Strategy for Achieving Sustainability*, or other plans, policies, or regulations adopted to reduce GHG emissions. Neither the County of Fresno nor any other agency with jurisdiction over this

project has adopted climate change or GHG reduction measures with which the project would conflict. The impact would be **less than significant**. No mitigation is required.

3.9 Hazards and Hazardous Materials

3.9.1 Introduction

This section addresses potential sources of hazards and risks associated with hazardous materials that may occur with project implementation. This section also addresses potential hazards to human health and the environment from the use of hazardous materials and the potential for accidental spills of such materials during construction activities; the potential for construction on known hazardous materials sites; the handling of hazardous materials close to schools; and exposure to wildfires.

Additional public comments were received after the close of the scoping period. Several commenters indicated that the EIR should evaluate the impacts of exposing the public to known hazardous materials during construction.

3.9.2 Environmental Setting

A Phase I Environmental Site Assessment of the study area was conducted by Twining Laboratories in 1999. A subsurface investigation was conducted by Kleinfelder in 2004 on the parcel west of the study area, which was confirmed to have been the site of construction debris disposal (Spano River Ranch Disposal), as discussed further in this analysis and Appendix F.

Another Phase I Environmental Site Assessment was conducted by AECOM in 2016, on 10 parcels located northwest of North Palm Avenue and West Nees Avenue, and south of the River (adjacent to the study area). Portions of the former Spano River Ranch Landfill and the former Kepco Pinedale Landfill are located close to, but west of, the western end of the trail extension. During the Phase I Environmental Site Assessment, the Environmental Data Resources database (Appendix F) was used to review regulatory agencies' lists of known and potential hazardous waste sites, properties, or facilities being investigated for potential environmental violations, and lists of sites storing or using hazardous materials.

Forty-one adjacent or nearby sites are listed in the County of Fresno's Certified Unified Program Agency (CUPA) Database. Of these 41 sites, 33 are listed under "Solid Waste—Postclosure Land Use" or "Solid Waste Facility—Closed Site." A review of these database listings and associated public information from State websites (e.g., GeoTracker [SWRCB 2014] and EnviroStor) determined that none of these sites is expected to present a recognized environmental condition that would affect the project. The following factors were considered: distance from the project site, regulatory status (e.g., closed, no violations found), media affected (e.g., soil only), and topographical position from the project site (e.g., downgradient or cross-gradient).

The local area has been investigated extensively and additional assessments of properties neighboring the project site were reviewed for this DEIR and are summarized in Appendix F.

3.9.2.1 Schools

No kindergarten through 12th grade (K–12) school is located within 0.25 mile of the project site. The nearest school is Nelson Elementary School, approximately 0.8 mile southwest of the western end of the trail extension. Pinedale Elementary School is located 1.5 miles southeast of the study area.

3.9.2.2 Airports, Airstrips, and Heliports

No public airport is located within 2 miles of the project site. Fresno Yosemite International Airport is approximately 6.5 miles southeast of the study area. Sierra Sky Park, a private airport that is open for public use, is located approximately 2.4 miles southwest of the study area.

Valley Children's Hospital is located north of the project site in Madera County, at 9300 Valley Children's Place. The hospital's 50-acre campus has a private emergency heliport. The hospital provides air transport service in its 45,000-square-mile service area, handling more than 500 helicopter transfers annually. The heliport is located approximately 1.2 miles north of the eastern end of the trail extension.

3.9.2.3 Wildland Fire Hazards

Most of the vegetation on the project site consists of annual grasses, interspersed with shrubs and scattered trees. Approximately 35% of the project site consists of water: the River flows through the northern portion of the project site and the west-central portion of the project site contains several large ponds from past mining activities. In addition, two stormwater detention basins are along the southern property perimeter. According to the California Department of Forestry and Fire Protection (CAL FIRE), the project site is located entirely within a local responsibility area. The eastern half of the project site has been zoned as a moderate fire hazard, and the western half of the project site is unzoned (CAL FIRE 2007).

3.9.3 Regulatory Setting

3.9.3.1 Federal Laws, Regulations, and Policies

Hazardous Materials Handling

At the federal level, the principal agency regulating the generation, transport, and disposal of hazardous substances is EPA, under the authority of the Resource Conservation and Recovery Act (RCRA). The RCRA established an all-encompassing federal regulatory program for hazardous substances that is administered by EPA. Under the RCRA, EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. The RCRA was amended in 1984 by the Hazardous and Solid

Waste Amendments of 1984, which specifically prohibits the use of certain techniques for the disposal of various hazardous substances. The Federal Emergency Planning and Community Right-to-Know Act of 1986 imposes hazardous materials planning requirements to help protect local communities in the event of accidental release.

Superfund Amendments and Reauthorization Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) created the Superfund hazardous substance cleanup program (Public Law 96-510, enacted December 11, 1980). The program was enlarged and reauthorized by the Superfund Amendments and Reauthorization Act of 1986 (SARA) (Public Law 99-499). As part of CERCLA and SARA, EPA compiles a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories, known as the National Priorities List. These locations are commonly referred to as Superfund sites. CERCLA also entailed the creation of a trust fund and provides broad federal authority for releases or threatened release of hazardous substance that could endanger public health or the environment.

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act regulates the safe transportation of hazardous materials by motor vehicles, marine vessels, and aircraft. The U.S. Department of Transportation is the primary federal agency with regulatory responsibility for safe transportation of hazardous materials.

3.9.3.2 State Laws, Regulations, and Policies

Hazards Materials in the Vicinity of School Sites

Sensitive receptors are people who are considered to have a substantially increased sensitivity or rate of exposure to contaminants. Because of this increased sensitivity, special consideration must be given to projects located near sensitive receptors. CEQA specifically establishes that special consideration must be given to projects located near schools (i.e., within 0.25 mile) when considering hazards and hazardous materials (PRC Section 21151.4). This consideration allows for careful examination and disclosure of potential health effects on children associated with exposure to hazardous materials, wastes, and substances.

Hazardous Materials Handling

Several State agencies regulate the transportation and use of hazardous materials to minimize potential risks to public health and safety. CalEPA and the Governor's Office of Emergency Services (OES) establish rules governing the use of hazardous substances in California. Within CalEPA, the California Department of Toxic Substances Control (DTSC) has primary responsibility, with delegation of

enforcement to local jurisdictions, for regulating the generation, transport, and disposal of hazardous substances under the authority of the Hazardous Waste Control Law (HWCL). Regulations implementing the HWCL list hazardous chemicals and common substances that may be hazardous; establish criteria for identifying, packaging, and labeling hazardous substances; prescribe management of hazardous substances; establish permit requirements for hazardous substances treatment, storage, disposal, and transportation; and identify hazardous substances prohibited from landfills.

Government Code Section 65962.5 (CalEPA Cortese List)

The provisions of Government Code Section 65962.5 are commonly referred to as the "Cortese List" (after the legislator who authored the legislation that enacted it). The Cortese List is a planning document used by State and local agencies to comply with CEQA requirements in providing information about the location of hazardous-materials release sites (CalEPA 2014). Government Code Section 65962.5 requires CalEPA to develop an updated Cortese List annually, at minimum. DTSC and the SWRCB are responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List.

Fire Hazard Severity Zones

PRC Sections 4201–4204 and Government Code Sections 51175–51189 require identification of fire hazard severity zones in California. Fire hazard severity zones are measured qualitatively, based on vegetation, topography, weather, crown fire potential (a fire's tendency to burn upward into trees and tall brush), and ember production and movement within the area of question. Fire prevention areas considered to be under State jurisdiction are referred to as "state responsibility areas." In these areas, CAL FIRE is required to delineate three hazard ranges: moderate, high, and very high. CAL FIRE is also required to delineate "local responsibility areas," which are under the jurisdiction of local entities (e.g., cities and counties). In local responsibility areas, only very high fire hazard severity zones are delineated.

Construction Requirements Related to Fire Hazards

The Office of the State Fire Marshal and CAL FIRE administer State policies regarding wildland fire safety. Construction contractors are required to comply with the following requirements of the PRC during construction activities at any site with forest, brush, or grass-covered land:

- earthmoving and portable equipment with internal combustion engines must be equipped with a spark arrester to reduce the potential for guiding a wildland fire (PRC Section 4442);
- appropriate fire suppression equipment must be maintained from April 1 to December 1, the period of highest danger for fires (PRC Section 4428);

- on days when a burning permit is required, flammable materials must be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor must maintain the appropriate fire suppression equipment (PRC Section 4427); and
- on days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines must not be used within 25 feet of any flammable materials (PRC Section 4431).

San Joaquin River Parkway Master Plan

The Conservancy develops and manages its projects and lands under its jurisdiction in the Parkway through policies in the Parkway Master Plan. The Parkway Master Plan (Appendix B) contains goals, objectives, and policies that relate to hazards and hazardous materials, including the following policies:

- **Policy RP9:** Make the multipurpose trail sufficiently wide to permit the passage of patrol, rescue, and maintenance vehicles.
- **Policy RFMP3:** Flood warning alert and evacuation procedures shall be developed and implemented with the counties of Madera and Fresno, the City of Fresno, and Fresno Metropolitan Flood Control District to ensure evacuation of visitors from the Parkway during events with high flow risks, and to prevent public access into the Parkway during such events.

These goals, objectives, and policies do not necessarily avoid impacts but may lessen them.

3.9.3.3 Local Laws, Regulations, and Policies

Unified Program Agencies

The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. CalEPA and other State agencies set the standards for their programs and local governments implement the standards. These local implementing agencies are CUPAs. For each county, the CUPA regulates and oversees:

- hazardous-materials business plans;
- California accidental release prevention plans or federal risk management plans;
- the operation of underground storage tanks and aboveground storage tanks;
- universal wastes and the generators and handlers of hazardous waste;
- inspections, permitting, and enforcement;

- Proposition 65 reporting; and
- emergency response.

Compliance is achieved through routine inspections of regulated facilities, and by investigation of citizen-based complaints and inquiries regarding improper handling and/or disposal of hazardous materials and/or hazardous wastes. Reducing sources of hazardous waste is a primary goal of the CUPA. In addition, the CUPA oversees the remediation of certain types of contaminated sites. The County of Fresno Department of Public Health, Environmental Health Division, is the CUPA with jurisdiction over the project site.

City of Fresno General Plan 2025

The following objective and policies from the City's General Plan 2025 regarding hazards and hazardous materials are relevant to the project:

- **Objective I-6:** Reduce and control the adverse effects of hazardous materials on the public's health, safety, and welfare so as to promote the public health and welfare of local residents.
    - **Policy I-6-a.:** Hazardous materials will be defined as those that, because of their quantity, concentration, physical or chemical characteristics, pose a significant potential hazard to human health, safety, or the environment. Specific federal, State, and local definitions and listings of hazardous materials will be used by the City of Fresno.
    - **Policy I-6-b.:** The city will coordinate and cooperate with other local, State, and federal agencies with expertise and responsibility for hazardous materials.
    - **Policy I-6-e.:** Through the environmental process for land use plans and other development projects, the city will continue to identify and assess the health-and-safety-related implications of storage use, and disposal of hazardous materials.
    - **Policy I-6-f.:** All commercial and industrial special permits will be conditioned upon proper containment, use, safeguarding, and disposal of hazardous materials.
    - **Policy I-6-g.:** The city will continue to prevent, assess, and seek remediation for, any hazardous material contamination within, and affecting, its planning area.

City of Fresno Draft General Plan Update 2035

The following objective and policies from the City's General Plan Update 2035 are relevant to hazards and hazardous materials:

- **Objective NS-4:** Minimize the risk of loss of life, injury, serious illness, and damage to property resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous wastes.
    - **Policy NS-4-a:** Processing and Storage. Require safe processing and storage of hazardous materials, consistent with the California Building Code and the Uniform Fire Code, as adopted by the City.
    - **Policy NS-4-c:** Soil and Groundwater Contamination Reports. Require an investigation of potential soil or groundwater contamination whenever justified by past site uses. Require appropriate mitigation as a condition of project approval in the event soil or groundwater contamination is identified or could be encountered during site development.
    - **Policy NS-4-e:** Require that the production, use, storage, disposal, and transport of hazardous materials conform to the standards and procedures established by the County Division of Environmental Health. Require compliance with the County's Hazardous Waste Generator Program, including the submittal and implementation of a Hazardous Materials Business Plan, when applicable.

3.9.4 Impact Analysis

3.9.4.1 Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis of hazards and hazardous materials are based on the environmental checklist in the State CEQA Guidelines, as amended. The project would have a significant impact on hazards and hazardous materials if it would:

- create a significant hazard to the public of the environment through routine transportation, use, or disposal of hazardous materials;
- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;
- for a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people residing or working in the study area;

- for a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the study area;
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- 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.

3.9.4.2 Methodology

The analysis of the project's potential impacts was based on evaluation of the potential sources of hazards and risks associated with hazards. Data from the Cortese List and historical Phase I Environmental Site Assessments of adjacent properties were reviewed.

3.9.4.3 Impacts and Mitigation Measures

Impact 3.9-1: The project could create a significant hazard to the public or the environment through routine transportation, use or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Construction for the trail extension would involve the routine transport and handling of a minimal amount of hazardous substances, such as diesel fuels and lubricants for construction equipment. Handling and transport of these materials during project construction could expose workers to hazardous substances. However, transportation of hazardous materials on area roadways is regulated by the California Highway Patrol and Caltrans, and use of these materials is regulated by DTSC, as outlined in CCR Title 22.

The Conservancy or the designated agent is required to use, store, and transport hazardous materials in compliance with federal, State, and local regulations during project construction. Other than small quantities of chemicals (i.e., herbicides that may be used to control weeds immediately adjacent to the trail), no hazardous materials would be used or stored at the project site during project operation.

Furthermore, the Conservancy or the designated agent would be required legally to conform to all applicable regulations and permit requirements of the Central Valley RWQCB pertaining to construction discharges and water quality standards, as discussed in Section 3.10, "Hydrology and Water Quality." These requirements would include preparing a SWPPP and implementing BMPs, including accidental spill prevention and cleanup measures.

In addition, Section 2.5.1, "Best Management Practices," discusses BMP Hazards-1, pertaining to construction site hazardous materials and wastewater management," and BMP BIO-4, pertaining to herbicide use for invasive species management or habitat restoration. These BMPs would be implemented to avoid or substantially lessen adverse environmental impacts. Therefore, the impact would be **less than significant**. No mitigation is required.

Impact 3.9-2: The project could emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

No K–12 schools are located within 0.25 mile of the project site. The nearest school is Nelson Elementary School, located approximately 0.8 mile southwest of the western end of the trail extension. Thus, **no impact** would occur.

Impact 3.9-3: The project could be located on a site which is included on a list of hazardous materials sites compiled pursuant to the Government Code Section 65962.5, and therefore would create a significant hazard to the public or the environment.

The project would not be located on a hazardous materials site that is part of the Cortese List (i.e., Government Code Section 65962.5). Thus, potential exposure of construction workers and the public to known hazardous materials would be minor. The impact would be **less than significant**. No mitigation is required.

Impact 3.9-4: The project could be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, and the project could result in a safety hazard for people residing or working in the study area.

No airports are located within 2 miles of the study area. The closest airports are Sierra Sky Park, a privately owned public-use airport approximately 3.5 miles to the southwest, and Fresno Yosemite International Airport, approximately 6.5 miles to the southeast. Thus, **no impact** would occur.

Impact 3.9-5: The project could be in the vicinity of a private airstrip, and thus, project implementation could result in a safety hazard for people residing or working in the study area.

The emergency heliport at Valley Children's Hospital is located approximately 1.2 miles north of the project site. However, the project would not entail construction of tall buildings or the use of tall construction equipment, such as large cranes. Thus, the project would not result in a safety hazard for helicopter pilots, workers, or employees at or near the project site. **No impact** would occur.

Impact 3.9-6: The project could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

All construction activities would occur within the boundaries of the project site. The project would provide access for emergency vehicles (fire, police, and ambulance) at the Perrin Avenue and West Riverview Drive entrances. Public agencies and emergency responders would also have access to the site through a private paved/gravel road located near Palm Avenue and Nees Avenue. The trail extension and parking lot would be connected to the Perrin Avenue entrance. In addition, the trail would be connected to West Riverview Drive via the paved access road and to Palm Avenue and Nees Avenue via a gravel road, for emergency access. The Perrin Avenue entrance gate would be located along SR 41 at the Caltrans right-of-way. The entrance gate would provide entry to the site from Blackstone Avenue, a north-south thoroughfare, for emergency service vehicles. All emergency access gates would include locks for emergency responder access. Therefore, the project's construction-related and operational activities would not interfere with emergency access to the project site or emergency response vehicles traveling in the City, and would adequately allow emergency response in the project area. **No impact** would occur.

Impact 3.9-7: The project would 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.

Approximately 65% of the project site consists of disturbed annual grassland habitat (see Section 3.5, "Biological Resources"), dominated by nonnative, upland grass species such as ripgut brome, wild oat, soft brome, black mustard, and filaree. Approximately 35% of the project site consists of water: the River flows through the northern portion of the site; several large ponds (from previous mining activities) in the west-central portion of the site hold water year-round; and two stormwater detention basins are along the site's southern perimeter. The project site is located entirely within a local responsibility area. The eastern half of the project site has been zoned as a moderate fire hazard, and the western half is unzoned (CAL FIRE 2007).

Since June 2006, 102 grassland wildfires have occurred between SR 99 and Willow Avenue/Friant Road. During the same period, 12 grassland wildfires have occurred between SR 41 and Palm and Nees Avenues. Fire Stations Nos. 2 and 13 are the nearest stations to the project site. Average response time is about 7 minutes. In the event of a wildfire, these fire stations could provide two fire engines, two (4x4) fire engines, one water tender, and one battalion chief. A total of 15 personnel could be initially involved (Noel, pers. comm., 2014).

The trail extension would be installed in an area of natural vegetation along the River. Because the project area is adjacent to urban-level development, the Conservancy disks firebreaks annually to comply with the City of Fresno weed abatement/fire prevention ordinance. Equipment used for trail construction

and ongoing maintenance at the project site could emit sparks, which could increase the wildland fire hazard. The presence of recreational visitors could also increase risks. Therefore, the impact would be **potentially significant**.

Mitigation Measure Hazards and Hazardous Materials-1

Safe access for emergency and wildland fire suppression equipment and civilian evacuation shall be provided at three entrance points and throughout the site on the paved trail system. Response agency–approved emergency responder access locks shall be maintained on all gates.

Mitigation Measure Hazards and Hazardous Materials-2

Signs shall be posted that clearly indicate entrances and egresses for the multiuse trail (e.g., Perrin Avenue entrance, West Riverview Drive entrance), to minimize delay in response times to any wildfires that may occur.

Mitigation Measure Hazards and Hazardous Materials-3

Any internal combustion engine that uses hydrocarbon fuels shall not be used on any grass- or brush-covered lands unless the engine is equipped with a spark arrester. All vehicles and construction equipment shall be equipped with an improved muffler.

Mitigation Measure Hazards and Hazardous Materials-4

Signage containing the following or equally effective language shall be placed at all trail access points:

Wildland fires destroy habitat and can threaten lives and structures—be fire safe! The following prohibitions apply throughout the trail area:

(a) No open fires, campfires, or fireworks.

(b) No burning of any trash, vegetation, brush, stumps, logs, fallen timber, or any other flammable material.

(c) Portable barbecues or grills may not be used.

(d) No smoking.

Mitigation Measure Hazards and Hazardous Materials-5

The Conservancy shall maintain a fire-defensible firebreak or comply with the standards in the City of Fresno's weed abatement/fire prevention ordinance by annually disking or mowing at the site. The

shoulders of developed trails shall also be mowed or disked no less often than annually. Ladder fuels and fuel loads shall be evaluated periodically and management measures such as trimming and fuel reduction activities shall be implemented in public use areas.

Mitigation Measure Hazards and Hazardous Materials-6

Before the start of construction, a fire prevention plan for construction activities shall be prepared and implemented in coordination with the appropriate emergency service and/or fire suppression agencies of the applicable local or State jurisdictions. The plan shall describe fire prevention and response methods, including fire precaution, requirements for spark arrestors on equipment, and suppression measures that are consistent with the policies and standards of the affected jurisdictions. If heavy equipment is used for construction during the dry season, a water truck shall be maintained on the construction site. Materials and equipment required to implement the fire prevention plan shall be available on-site. Before construction begins, all construction personnel shall be trained in fire safety and informed of the contents of the fire prevention plan.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measures Hazards and Hazardous Materials-1 through Hazards and Hazardous Materials-6 would reduce the potential impact to **less than significant** because the Conservancy would provide appropriate emergency access and signage; would prohibit open burning and the use of barbeque grills; would perform annual and periodic fire prevention activities; would require all construction and maintenance equipment to be properly equipped with spark arrestors; and would prepare and implement a fire prevention plan for construction activities. No additional mitigation is required.

3.10 Hydrology and Water Quality

3.10.1 Introduction

This section describes the existing environmental and regulatory setting of the project area and analyzes the potential impacts of the project on hydrology and water quality. This section also describes the criteria for determining the significance of impacts, approach to assessing impacts, and possible mitigation measures.

As described in Chapter 2, a public scoping meeting was held on June 17, 2014, to invite comments regarding environmental issues that should be examined in the DEIR. No comments were made related to impacts on hydrology and water quality.

3.10.2 Environmental Setting

The project area is located within the low alluvial plains and fans of the central San Joaquin Valley, between the Coast Ranges and the Sierra Nevada. It is situated on an alluvial floodplain terrace along the south side of the River, approximately 11 miles downstream of Friant Dam. The following description is taken from the water quality technical report, provided in Appendix G of this DEIR.

3.10.2.1 Climate and Precipitation

The climate in the project area is typical of inland valleys in California, with hot, dry summers and cool, rainy winters, characterized by dense tule fog. The average annual temperature in Fresno is 64ºF, with an annual high temperature of 79ºF and an annual average low temperature of 53ºF. Average annual precipitation is approximately 11 inches in Fresno and increases eastward toward the Sierra Nevada (WRCC 2016). Most of Fresno's precipitation falls in January, on average the coolest month of the year; the warmest month is July. During summer, temperatures can exceed 100ºF for up to 44 days. During winter, the city experiences an average of 39 days of dense fog, with visibility less than 0.25 mile (WRCC 2016).

3.10.2.2 Topography and Land Cover

The project site is located within Sections 21, 28, and 29 of Township 12S, Range 20E, Mount Diablo Baseline and Meridian, Fresno North 7.5-minute series USGS topographic quadrangle.

The topography has been altered by past mining activities and consists of several relatively flat floodplain terraces, interspersed with gravel mining pits and ponds, and surrounded by relatively steep river bluffs. The most prominent landforms in the study area are:

- the River channel running from east to west adjacent to the project site,
- steep north- and south-facing bluffs that identify the approximate boundaries of the river floodplain, and
- numerous gravel mining pits and ponds that interrupt the otherwise relatively flat topography of the floodplain.

Ground surface elevations range from 249 feet amsl at the River's low-water mark to 330 feet amsl at the top of the bluff just south of SR 41. The bluff slope ranges between 60% and 80% grade on both the north and south sides of the floodplain.

3.10.2.3 Drainage

Two municipal stormwater detention basins located next to the project site provide service to the adjacent residential and commercial developments. The unlined stormwater detention basins cover approximately

5 acres and are situated near the toe of the bluffs. One is immediately north of the proposed staircase near Spano Park and the other is immediately west of the proposed paved management access road from West Riverview Drive. Municipal stormwater runoff, when present, drains from the developed drainage areas above the bluff to the detention basins. After being detained to allow sediments to settle, excess flows are released through pipes to the on-site gravel ponds.

Variable incised drainages are visible along the bluffs. Several natural drainages and swales traverse the site. On-site stormwater flows in the direction of the natural topography, from the bluffs toward the River and on-site gravel mining pits and ponds. A portion of the runoff likely directly enters the River.

3.10.2.4 Surface Water

The project site is located within the San Joaquin River watershed, which encompasses 31,800 square miles. The River extends for 366 miles from its headwaters, at an elevation of approximately 7,500 feet on the western slope of the Sierra Nevada to its mouth at Suisun Bay.

The portion of the River located within the planned Parkway extends from Friant Dam to SR 99. The project site is situated within the Parkway planning area, north of Fresno. The River emerges from the foothills and has cut through the topography, creating tall, steep bluffs that confine the riparian zone and floodplain in this reach. River flows are controlled by releases from Millerton Lake via Friant Dam, with some contributions from agricultural and urban return flows, and from two seasonal tributary streams. Water released from the dam generally is controlled to a maximum River flow of 8,000 cubic feet per second (cfs). River flows adjacent to the project site fluctuate from season to season, but generally range from 350 cfs to 8,000 cfs. Typically, flows are low during the summer and fall and high in the spring.

The project site is in an area along the River that is proposed for reestablishment of an anadromous salmonid fishery through the SJRRP. The program's Stipulation of Settlement sets forth agreed-on restoration releases from Friant Dam. Maximum SJRRP flows are 4,000 cfs for approximately 2 weeks in wet and normal years. These releases are estimated to occur on average every other year (50% probability in any given year). Project improvements would not be located in areas inundated as frequently as once every 2 years. Fall SJRRP releases are 400–700 cfs for 10 days, and spring releases are 500–2,000 cfs for 8–16 weeks in all but the driest years, varying by water year. These lower flows generally are within the recognized bed and banks of the river.

The water generally is high quality, and water temperature depends on the cold water released from Millerton Lake. The River is considered Essential Fish Habitat for Pacific Coast Salmon, and water quality is an essential component of maintaining this function of the River. The River is sampled annually by the U.S. Bureau of Reclamation in support of the SJRRP. Water quality constituents include total suspended solids, nutrients, total and dissolved solids, organic carbon, bacteria, cations, anions, and trace metals. Data from Appendix C of the SJRRP 2012 Mid-Year Technical Report (currently available) indicate that

few contaminants of concern exist in the River in the vicinity of Friant Dam (SJRRP 2012), about 11 miles upstream of the project area.

Receiving waters can assimilate a limited quantity of various constituent elements before they reach the maximum contaminant level set by EPA and the SWRCB; however, additional thresholds exist beyond which the pollutant may have toxic effects. Millerton Lake and the portion of the River from Friant Dam to Mendota Pool, which includes the portion of the river adjacent to the project site, are listed on the SWRCB's 2008–2010 list of impaired waters under CWA Section 303(d). Millerton Lake was listed for mercury; the SWRCB plans to establish a total maximum daily load (TMDL) (SWRCB 2016).

The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (Basin Plan), fourth edition (Central Valley RWQCB 2011), provides the project's turbidity limits. The Basin Plan states that waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Turbidity increases attributable to controllable water quality factors shall not exceed the following limits:

- where natural turbidity is less than 1 nephelometric turbidity unit (NTU), controllable factors shall not cause downstream turbidity to exceed 2 NTUs;
- where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU;
- where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20%;
- where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs; and
- where natural turbidity is greater than 100 NTUs, increases shall not exceed 10%.

Background turbidity levels are collected by the Central Valley RWQCB from two sites in the project area as part of the Surface Water Ambient Monitoring Program. The Wildwood Native Park sampling location is approximately 1 mile upstream and the Palm and Nees Avenues sampling location is approximately 1 mile downstream of the project site. Average turbidity is 0.74 NTU at Wildwood Native Park and 1.03 NTUs at Palm and Nees Avenues (Conservancy 2015).

3.10.2.5 100-Year Floodplain

A portion of the study area is within a 100-year flood zone; the probability of inundation in the zone is 1% in any year (FEMA 2009). According to the FEMA Flood Insurance Study (FEMA 2009), the project area's base flood elevation (peak flood elevation during a 100-year flood) varies from 268 to 274 feet North American Vertical Datum of 1988. Figure 3-2 shows the project boundary and 100-year FEMA floodplain. Base flood elevations were determined based on uncontrolled flows from Friant Dam of 71,000 cfs.

Past mining operations have left behind an extensively modified channel and have affected the historical flow paths in this part of the River. Furthermore, reclaimed gravel ponds and excavated portions of the river channel have slowed river flows and increased water temperatures.

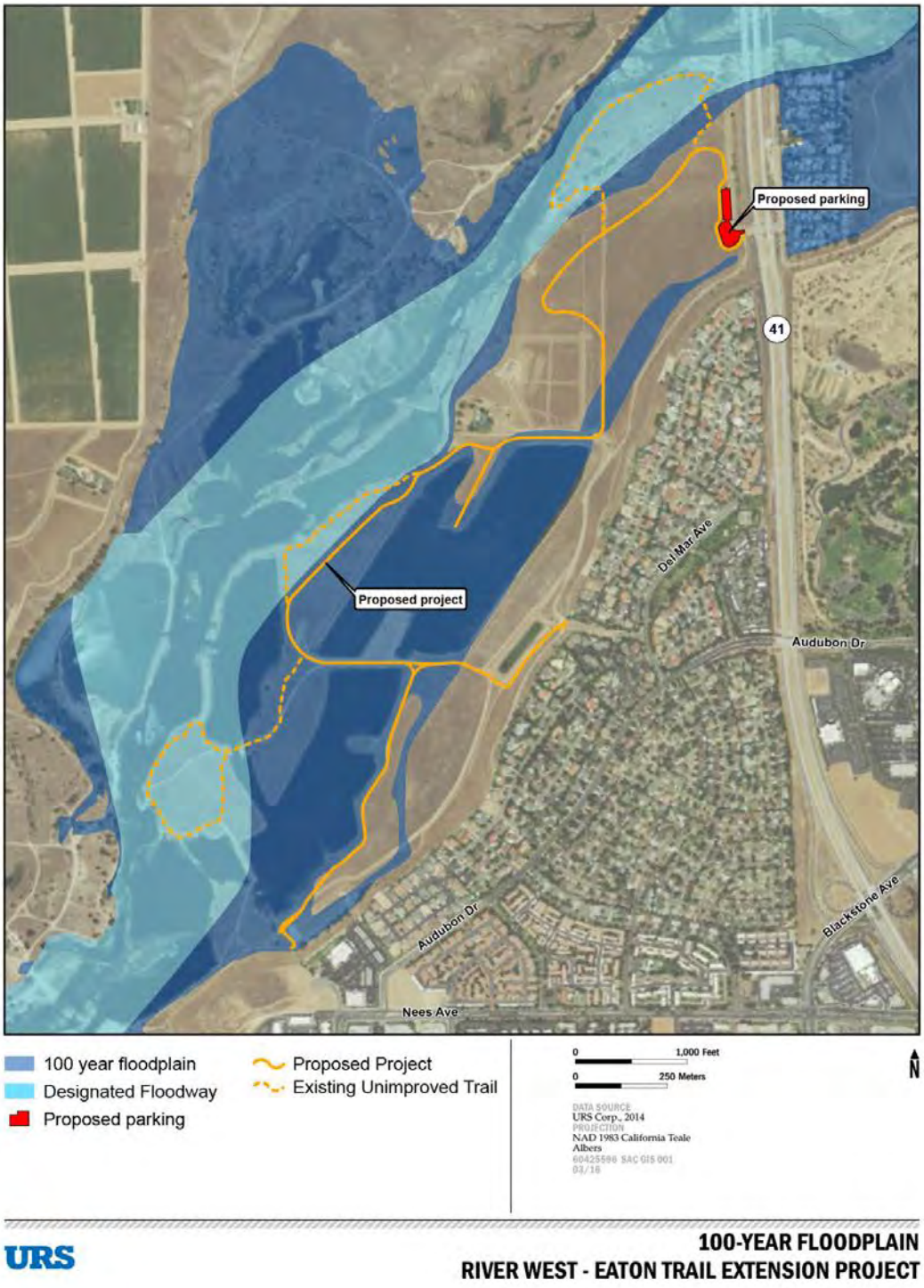

Figure 3-2 Designated Floodway and 100-year Floodplain in the Project Area

Table 3.10-1 summarizes portions of project components within the 100-year floodplain and the designated floodway. About 2.4 miles (paved and unpaved) of the multiuse trail would be constructed within the 100-year floodplain. About 1.8 miles of the existing unimproved hiking trails would be widened and overlaid with a permeable surface, such as decomposed gravel.

Table 3.10-1 Project Components within the 100-year Floodplain and Designated Floodway

Project Components	100-year Floodplain		Designated Floodway	
	Length (miles)	Area (acres)	Length (miles)	Area (acres)
Multiuse Trail (paved, 12 feet wide)	1.1	1.6	0	0
Multiuse Trail (unpaved, 10 feet wide)	1.3	1.7	0	0
Perrin Avenue Parking (paved) (unpaved)	 0 0	 0.1 0	 0 0	 0 0
Bluff Trail (paved)	0	0	0	0
Existing Unimproved Hiking Trails	1.8	1.3	1.4	1.0
Total	**4.2**	**4.7**	**1.4**	**1.0**

Source: Compiled by AECOM in 2016

Many of the ponds in the study area are separated from each other and from the river by earthen berms that were left in place between areas excavated for mining sand and gravel from 1961 through 1976. The earthen berms generally are about 20 feet wide on top, many with large breaches (breaks) and some vegetation. The berms are not levees that were constructed to flood control standards, and they tend to fail during high-flow events. As of 2011, five breaks had occurred in several of the berms separating the on-site ponds from the River (Conservancy 2015). The Conservancy is repairing a berm breach that occurred in 2005, north and across the River from the project area, to isolate the gravel pond, restore a vehicle access road, and restore habitat. The improvements are expected to raise the berm crown elevation to at least 3 feet above the predicted 8,000-cfs water surface elevation and widen the berm to about 20 feet. An equalization saddle would allow water surface elevations between the pond and the River to equalize during higher flows, to stabilize the berm. The improved berm has been designed to overtop when flow exceeds approximately 13,000 cfs (Conservancy 2015). The improvements are to be completed before implementation of the project.

3.10.2.6 Designated Floodway

A designated floodway is the channel of a river or stream and the overbank areas that must remain open to carry the deeper, faster moving water during a flood without cumulatively increasing the water surface

elevation more than a designated height. A State-designated floodway is either (1) the channel of the stream and that portion of the adjoining floodplain that is reasonably required to provide passage of a base flood, or (2) the floodway between existing levees as adopted by the California State Reclamation Board (now reorganized as the CVFPB) or the California Legislature. The State-designated floodway in the project area is shown in Figure 3-2.

3.10.2.7 Dams

Friant Dam, a concrete dam that impounds Millerton Lake, is located on the San Joaquin River approximately 11 miles upstream of the study area. Completed in 1942 as part of the Central Valley Project, Millerton Lake provides 520,500 acre-feet of storage capacity for authorized flood control and water supply. The U.S. Bureau of Reclamation owns and operates the dam and controls downstream releases on the River. Both the dam and lake are located in the River's upper watershed, with a drainage area of 1,650 square miles. The maximum surface water elevation in Millerton Lake is 595.6 feet. Water released from the dam generally is controlled to a maximum of 8,000 cfs in the River.

Friant Dam played a key role during central California's unprecedented 1997 floods. An emergency release of flood water from Friant Dam was required, peaking at 77,200 cfs. The dam did not fail, but the high-flow release caused levee failure and contributed to flooding downstream.

According to the *Fresno County General Plan Update* (County of Fresno 2000b), the entire study area is located within a Dam Failure Flood Inundation Area.

3.10.2.8 Groundwater

The project area is located within the Kings subbasin of the San Joaquin Valley Groundwater Basin in the Tulare Lake hydrologic region. The San Joaquin Valley Groundwater Basin makes up the southern two-thirds of the 400-mile-long, northwest-trending asymmetric trough of the Central Valley regional aquifer system, in the southern extent of the Great Valley Geomorphic Province. The San Joaquin Valley is in the southern part of the Central Valley and is bounded on the west by the Coast Ranges, to the south by the San Emigdio and Tehachapi mountains, to the east by the Sierra Nevada, and to the north by the Sacramento–San Joaquin Delta and Sacramento Valley (DWR 2003).The San Joaquin Valley Groundwater Basin includes all surface water basins draining into the San Joaquin River system. The region relies heavily on groundwater, with recovered groundwater making up approximately 30% of the annual supply for agricultural and urban uses. Consequently, the Kings subbasin has been identified as critically overdrafted (DWR 2006). Aquifers in the basin are thick and typically extend to a depth of up to 800 feet (DWR 2003).

The elevation of the water table in the project vicinity increases northward to the River, where the water table coincides with land surface at an elevation of approximately 250 feet amsl (DWR 2015).

Groundwater beneath the study area generally flows away from the River. Groundwater recharge beneath the site likely occurs year-round because water is percolating through the River and several on-site ponds into the aquifer. A nonpotable well is located in the study area, east of the H Pond and north of the stormwater detention basin. The well has a pumping capacity of 55 gallons per minute and is providing temporary irrigation for a habitat restoration program.

In general, groundwater quality is suitable for most urban and agricultural uses (DWR 2003). Municipal, industrial, and domestic water supply and supply for irrigation are defined as beneficial uses in the Basin Plan. Water quality objectives for chemical constituents require that groundwater designated as supply water shall, at a minimum, not contain concentrations of chemical constituents exceeding the maximum contaminant level specified under the provisions of CCR Title 22 (Central Valley RWQCB 2011).

3.10.3 Regulatory Setting

3.10.3.1 Federal Laws, Regulations, and Policies

Clean Water Act

The CWA is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The key sections pertaining to water quality regulation are Sections 303(d), 401, 402, and 404. Under the CWA, Congress recognized the primary responsibility and rights of states to prevent, reduce, and eliminate pollution, and to plan the development and use (including restoration, preservation, and enhancement) of land and water resources. The SWRCB and its nine RWQCBs implement Sections 303(d), 401, and 402 at the State level.

Clean Water Act Section 303(d)

Under Section 303(d), the State is required to identify "impaired water bodies" (those not meeting established water quality standards), identify the pollutants causing the impairment, establish priority rankings for waters on the list, and develop a schedule for development of control plans to improve water quality. EPA then approves the State's recommended list of impaired waters, or adds to and/or removes water bodies from the list. Each RWQCB must update the Section 303(d) list every 2 years. Water bodies on the list have no further assimilative capacity for the identified pollutant, and the Section 303(d) list identifies priorities for development of pollution control plans for each listed water body and pollutant.

The pollution control plans triggered by the CWA Section 303(d) list are called TMDLs. The TMDL is a "pollution budget" designed to restore the health of a polluted body of water and ensure the protection of beneficial uses. The TMDL also contains the target reductions needed to meet water quality standards and allocates those reductions among the pollutant sources in the watershed (point sources, nonpoint sources, and natural sources) (40 CFR 130.2).

Clean Water Act Section 401

CWA Section 401 requires that water quality be evaluated when a proposed activity needing a federal license or permit can result in a discharge to waters of the United States. In California, the SWRCB and its nine RWQCBs issue water quality certifications. Each RWQCB is responsible for implementing Section 401, in compliance with the CWA and its water quality control plan (also known as a basin plan). Applicants for a federal license or those wanting to conduct activities that may result in the discharge to waters of the United States (including wetlands) also must obtain a Section 401 water quality certification, so that any such discharge complies with the applicable provisions of the CWA. Compliance with Section 401 is required for all projects that have a federal component and may affect State water quality.

Clean Water Act Section 402

CWA Section 402 regulates point-source discharges to surface waters (other than dredged or fill material) through the NPDES Permit program, administered by EPA. The program provides for both general permits (those that cover several similar or related activities) and individual permits for discharges to waters of the United States. This regulation is implemented at the State level and is described further below.

Clean Water Act Section 404

CWA Section 404 regulates the discharge of dredged and fill materials into waters of the United States, which include all navigable waters, their tributaries, and some isolated waters, as well as some wetlands adjacent to the aforementioned waters (33 CFR 328.3).

Areas typically not considered to be jurisdictional waters include nontidal drainage and irrigation ditches excavated on dry land, artificially irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial water bodies such as swimming pools, and water-filled depressions (33 CFR 328). Areas meeting the regulatory definition of waters of the United States are subject to the jurisdiction of USACE under provisions of CWA Section 404. Construction activities involving placement of fill into jurisdictional waters of the United States are regulated by USACE through permit requirements. No USACE permit is effective in the absence of State water quality certification, pursuant to CWA Section 401.

National Pollutant Discharge Elimination System Permit Program

The NPDES permit program was established under the CWA to regulate municipal and industrial discharges to surface waters of the United States. In California, EPA delegates much of the implementation of the CWA to the SWRCB. Although the SWRCB has issued a few NPDES permits, the vast majority of NPDES permits are issued by the nine RWQCBs. The discharge of wastewater to surface waters is prohibited unless an NPDES permit issued by the applicable RWQCB allows that discharge.

NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. An NPDES permit generally identifies limits applicable to effluent (post-treated flows) and receiving waters that restrict the allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities. Typically, an NPDES permit is issued for a 5-year term.

Federal Emergency Management Agency

FEMA administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations, limiting development in floodplains. Under this program, if a community adopts and enforces a floodplain management ordinance to reduce future flood risks to new construction in Special Flood Hazard Areas, flood insurance is made available in the community. Floodplain management ordinances are designed to prevent new development from increasing the flood threat, and to protect new and existing buildings from anticipated flooding. FEMA also issues flood insurance rate maps that identify land areas subject to flooding. These maps provide flood information and identify flood hazard zones in communities. The design standard for flood protection is established by FEMA; the minimum level of flood protection for new development is the 1-in-100 annual exceedance probability event (i.e., the 100-year flood event).

Executive Order 11988: Floodplain Management

EO 11988 (Floodplain Management), issued in 1977, addresses floodplain issues related to public safety, conservation, and economics. This EO generally requires federal agencies that are constructing, permitting, or funding a project in a floodplain to:

- avoid incompatible floodplain development,
- be consistent with the standards and criteria of the National Flood Insurance Program, and
- restore and preserve natural and beneficial floodplain values.

San Joaquin River Restoration Settlement Act

The Settlement Act of 2009 was passed by Congress to authorize implementation of the 2006 Settlement Agreement of *Natural Resources Defense Council et al. v. Kirk Rodgers et al.* The settlement and foundation of the SJRRP are based on two goals:

- *Restoration:* To restore and maintain fish populations in “good condition” in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish.

- *Water Management:* To reduce or avoid adverse water supply impacts on all of the Friant Division long-term contractors that may result from the Interim Flows and Restoration Flows provided in the Settlement.

The Settlement Act specifies modifications in Friant Dam operations, to restore flows to the River to meet the Restoration Goal. Interim Flows in the river began in 2009. On February 1, 2014, flows released from Friant Dam were decreased to 360 cfs because of a critical low-water year, beginning on March 1, 2014. Reductions of 50 cfs were applied daily until the flows reached 200 cfs, and then incrementally were adjusted until all restoration flows stopped.

3.10.3.2 State Laws, Regulations, and Policies

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act was enacted in 1969. Together with the federal CWA, this law provides regulatory guidance to protect water quality and water resources. The Porter-Cologne Act established the SWRCB and divided California into nine regions, each overseen by an RWQCB. The Porter-Cologne Act established regulatory authority over waters of the State, which are defined as “any surface water or groundwater, including saline waters, within the boundaries of the State” (Water Code Section 13050). More specifically, the SWRCB and its nine RWQCBs have jurisdiction over any surface or groundwater to which a beneficial use may be assigned. The Porter-Cologne Act also assigned responsibility for implementing CWA Sections 303(d), 401, and 402 to the SWRCB and RWQCBs.

The Porter-Cologne Act requires development and periodic review of basin plans for the protection of water quality in each of California’s nine regions. The Porter-Cologne Act requires each RWQCB to formulate and adopt a basin plan for all areas in the region (Water Code Section 13240). A basin plan is unique to each region and must identify beneficial uses, establish water quality objectives for the reasonable protection of the beneficial uses, and establish a program of implementation for achieving the water quality objectives. The project area is in the San Joaquin River Basin, under the jurisdiction of the Central Valley RWQCB.

NPDES Permit

The SWRCB and Central Valley RWQCB have adopted specific NPDES permits and/or waste discharge requirements (WDRs) for a variety of activities that may discharge wastes to waters of the State or to land. Dischargers must eliminate or reduce nonstormwater discharges to storm sewer systems and other waters.

The SWRCB has adopted a statewide NPDES general permit for discharges associated with construction activities that disturb 1 acre or more (Construction General Permit; SWRCB Order 2009-0009-DWQ, as

amended by 2010-0014-DWQ). Construction activities such as clearing, grading, stockpiling, and excavation are subject to the statewide NPDES permit for general construction activity. The NPDES regulations also require implementation of appropriate hazardous-materials management practices, to reduce the possibility of chemical spills or release of contaminants, including any nonstormwater discharge to drainage channels.

An NPDES permit requires filing a notice of intent with the RWQCB to discharge stormwater, and preparing and implementing a SWPPP to control contaminated runoff from temporary construction activities. Erosion and sediment BMPs must be designed and operated to reduce the level of contaminant runoff during construction. The permit also requires dischargers to consider using permanent postconstruction BMPs that remain in service to protect water quality throughout the life of the project. Types of BMPs include source controls, treatment controls, and site planning measures. All NPDES permits also have inspection, monitoring, and reporting requirements.

Central Valley Flood Protection Board

In accordance with CCR Title 23, Division 1, the CVFPB (previously known as the State Reclamation Board) enforces appropriate standards to construct, maintain, and protect flood control facilities in the Central Valley. The board must review and approve any activity that may affect "project works" or physically change the "designated floodway," so that the activity would maintain the integrity and safety of flood control project levees and floodways and would be consistent with the flood control plans adopted by the board and the California Legislature. An encroachment permit from the CVFPB is required for any project or work plan that would occur within federal flood control project levees and within a board easement, may affect flood control functions of project levees, or would occur within a board-designated floodway or within any of the regulated Central Valley streams listed in Table 8.1 of CCR Title 23. A portion of the study area is located within a designated floodway of the River, as defined by the CVFPB.

Water Quality Control Plan for the Sacramento–San Joaquin River Basins

State and federal laws mandate the protection of designated beneficial uses of water bodies. State law defines beneficial uses as "domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (Water Code Section 13050[f]).

The Central Valley RWQCB, under the authority of the Porter-Cologne Act and in accordance with the CWA, is responsible for authorizing activities that may discharge wastes to surface water or groundwater resources. The Basin Plan, adopted by the Central Valley RWQCB in 1998 and updated in 2011 (Central Valley RWQCB 2011), identifies the beneficial uses of water bodies and provides water quality objectives and standards for waters of the Sacramento River and San Joaquin River basins.

The Basin Plan identifies specific narrative and numeric water quality objectives for physical properties such as temperature, turbidity, and suspended solids; biological constituents such as coliform bacteria; and chemical constituents of concern such as inorganic parameters, trace metals, and organic compounds. Water quality objectives for toxic priority pollutants (select trace metals and synthetic organic compounds) are also identified in the Basin Plan.

Lake and Streambed Alteration Agreements

CDFW is the responsible agency for issuing lake and streambed alteration permits for projects, as appropriate, pursuant to Section 1602 of the California Fish and Game Code. CDFW works in coordination with federal and State agencies to mitigate the impacts of projects on fish and wildlife resources, and is responsible for enforcing the CESA. CDFW often helps establish instream flows (minimum releases below a dam or diversion structure) to maintain habitat. Such release schedules may be included in water rights permits and can affect the yield of a water project.

Section 1602 of the California Fish and Game Code requires any person, government agency, or public utility proposing an activity that would divert or obstruct the natural flow or change the bed, channel, or bank of any river, stream, or lake, or proposing to use material from a streambed, to first notify CDFW of such proposed activity. This notification requirement generally applies to work undertaken within the bed and/or banks of a stream, wash, or lake. Usually these features support fish, wildlife, and riparian vegetation, or did in the past. On notification, CDFW may require the project sponsor to enter a streambed alteration agreement that delineates the measures required to protect fish and wildlife.

State Regulations to Regulate Dredged or Fill Discharge Requirements for Wetlands Outside Federal Jurisdiction

On May 4, 2004, the SWRCB adopted State Water Board Order No. 2004-0004-DWQ, “Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by USACE to be Outside Federal Jurisdiction” (General WDRs). The General WDRs are intended to cover small-scale projects (those with small acreage or linear feet or involving a small volume of dredged material) with few or no permanent impacts for which USACE “disclaims” federal jurisdiction.

General WDRs for Dredged or Fill Discharges, State Water Board Order No. 2003-0017-DWQ, are for projects that have received State water quality certification. These General WDRs are restricted to dredged or fill discharges of not more than 0.2 acre and 400 linear feet for fill and excavation discharges, and of not more than 50 cubic yards for dredging discharges. For larger projects, the RWQCBs issue Individual WDRs. Certifications and issuances of WDRs are overlapping regulatory processes that are administered by both the SWRCB and RWQCBs.

Dam Inundation Maps

Dam inundation mapping procedures (19 CCR Section 2575) are required by OES for all dams where human life may be endangered by dam-related flooding. Dam owners must obtain recent hydrologic, meteorological, and topological data as well as land surveys denoting the floodplain, to be used for preparation of a dam inundation map.

Canal and levee inundation mapping procedures (19 CCR Section 2585) are similar to dam inundation mapping procedures and are required by OES for all canals and levees where human life may be endangered by canal or levee flooding inundation. Canal and levee owners must obtain recent hydrologic, meteorological, and topological data as well as land surveys denoting the floodplain, to be used for preparation of a canal or levee inundation map.

San Joaquin River Parkway Master Plan

The Conservancy develops and manages its projects and lands under its jurisdiction in the Parkway through policies in the Parkway Master Plan. The Parkway Master Plan (Appendix B) contains goals, objectives, and policies that apply to the project area in relation to hydrology and water resources, summarized in Table 3.10-2. These goals, objectives, and policies do not necessarily avoid impacts but may lessen them.

Table 3.10-2 Summary of San Joaquin River Parkway Master Plan Goals, Objectives, and Policies Relating to Hydrology and Water Resources in the Project Area

Natural Resources	
Objectives	
NRO1	Protect the river as aquatic habitat and a water source. Enhance and protect fisheries in the river and lakes [ponds] in the Parkway.
Policies	
NP6	Obtain updated floodplain maps… to guide siting of Parkway facilities. Do not construct Parkway facilities that would sustain anything more than slight damage from inundation in any area where there is a potential flood risk. Engineer service roads, trails, and bridges to avoid/minimize significant flood damage.
FP1	The Parkway plan explicitly recognizes that use of the river and floodway to transport floodwater is a beneficial use which must be protected.
FP2	The Parkway will be managed to maintain the combined existing flow capacity in the river channel and the designated floodway.
FP3	The Parkway will be designed and managed to maintain the river stage required to pass any given design flood flow. The Parkway shall not cause an increase in areas subject to flooding nor cause an increase in the designated floodway unless the resulting loss in private land is first compensated.
FP4	The Parkway will be managed to allow for the restoration by other parties of channel and floodwater flow capacity to the stage/flow relationship that existed at the time Friant Dam was completed.
FP5	Parkway lands will be managed to control and reduce erosion in the floodway.

Natural Resources	
RFP3	BMPs as identified by the responsible jurisdiction through an adopted ordinance or standard, shall be implemented to minimize potential effects from grading and construction-related erosion. The BMPs shall include site-specific erosion and sedimentation control plans to be prepared for each site to be developed prior to construction.
RFP4	A spill prevention and cleanup policy shall be prepared. Staging areas for heavy equipment and construction materials shall be established so that inadvertent spills of oil, grease, asphalt, other petroleum by-products, or other hazardous materials shall not be discharged into the stream course. All machinery shall be properly maintained and cleaned to prevent spills and leaks
RFMP1	Any development sited in the 100-year floodplain or designated floodway shall comply, at a minimum, with regulatory requirements...
RFMP2	Structures and amenities associated with anticipated uses within the Parkway shall be designed and sited to ensure that such features do not obstruct flood flows, do not create a public safety hazard, or result in a substantial increase in off-site water surface elevations. For permanent structures, such as bridge overcrossings, the minimum level of design flood protection shall be the 100-year event to ensure flood flows are not dammed and to prevent flooding on surrounding properties. Amenities such as picnic tables, litter containers, interpretive displays, and vault toilets shall be designed, placed, and securely fastened to allow for water to easily flow through or around them and so that they do not become dislodged during flood events. Fences, if any, shall be sized, placed, and securely anchored to minimize the potential to impact the flow, location or depth of floodwaters.
RFMP3	Flood warning alert and evacuation procedures for Parkway visitors shall be developed and implemented with the counties of Madera and Fresno, the City of Fresno, and FMFCD to ensure evacuation of visitors from the Parkway during events with high flow risks, and to prevent public access into the Parkway during such events.
RDP11	Equestrian facilities and connections to the multiple purpose trail system shall be sited, graded, and constructed of suitable materials resistant to the effects of wind and water erosion to minimize the potential for sediments to be carried into adjacent waterways. A program to monitor the effectiveness of such controls shall be established, including implementation of a maintenance and repair plan.
RDP12	For buildings that do not use a gutter system, landscape planting around the base shall provide increased opportunities for stormwater infiltration and protect the soil from erosion caused by concentrated runoff volumes.
ROP1	Reduce impervious land coverage associated with parking areas and boat ramps…
ROP2	Parkway projects, recreational amenities and resource restoration shall be developed consistent with the responsible jurisdiction's standards for Stormwater Pollution Prevention Plans (SWPPP) and maintenance program. The Conservancy shall include as part of final project design appropriate BMPs, consistent with recommendations of the Stormwater Quality Task Force's California Stormwater Best Management Practices Handbook…
ROP3	Install signage at regular intervals at and near river access points to educate users of the importance of protecting water quality…

Notes: BMP = best management practice; Conservancy = San Joaquin River Conservancy; FMFCD = Fresno Metropolitan Flood Control District; Parkway = San Joaquin River Parkway
Source: Conservancy 1997a

3.10.3.3 Local Laws, Regulations, and Policies

City of Fresno General Plan 2025

The City's General Plan 2025, dated February 1, 2002, contains the following objective and policies relevant to hydrology and water resources in the project area:

- **Objective I-4**: Minimize the loss of life and property on the San Joaquin River bluffs that could occur due to geologic hazards.
    - **Policy I-4-a:** Maintain and enforce the requirements of the City's Bluff Preservation (BP) Overlay Zone District. Development within 300 feet of the toe of the San Joaquin River bluffs shall require an engineering soils investigation and evaluation report that demonstrates that the site is, or methods by which the site could be made, sufficiently stable to support the proposed development.
- **Objective I-5**: Protect the lives and property of current and future residents of the Fresno Clovis Metropolitan Area (FCMA) from the hazards of periodic floods. Recognize and institute adequate safeguards for the particular flooding hazards of areas on the San Joaquin river bottom and bluffs.
    - **Policy I-5-f.:** The minimum level of design flood protection shall be the 100-year (one percent) event, as established by the best and most current available data from the U.S. Army Corps of Engineers and the California Department of Water Resources, pursuant to Federal Emergency Management Agency (FEMA) direction.
    - **Policy I-5-g.:** Establish special building standards for private structures, public structures, and infrastructure elements in the San Joaquin river bottom which would protect:
        - Construction in this area from being damaged by the intensity of flooding in the river bottom.
        - Water quality in the San Joaquin River watershed from flood damage-related nuisances and hazards (e.g., the release of raw sewage).
        - Public health, safety, and general welfare from the effects of the flood events.
    - **Policy I-5-h.:** Complete studies, addressing the limitations of the area's geological and hydrological status and all the relevant features of the proposed project, will be required prior to the approval of any construction or development project in the San Joaquin river bottom or below the top of the San Joaquin River bluffs.
    - **Policy I-5-i.:** The city of Fresno shall preserve flood-prone areas within the City of Fresno and its Sphere of Influence, particularly the San Joaquin river bottom, for uses which will not have permanent improvements that would be adversely affected by periodic floods.

- **Policy I-5-m.:** A valid beneficial use of the San Joaquin River corridor is to transport floodwater, and this use must be protected. River bottom land uses will be managed with the following objectives:
  - To control and reduce erosion in the floodway.
  - To maintain the combined existing flow capacity in the river channel and the designated floodway by establishing ordinances and policies to prevent nuisance blocking of flood flow.
  - To maintain the river stage required to pass any given flow, so as not to increase the extent of flooded area (no increase in the designated floodway), unless any resulting loss in private land value is first purchased from willing sellers.
  - To coordinate any snagging and clearing activities for river channel enhancement with resource agencies to minimize conflict with natural habitat preservation and mineral extraction activities (including reclamation).

City of Fresno Draft General Plan Update 2035

On July 2, 2014, the City released the draft *Fresno General Plan*, known as the General Plan Update 2035, which includes the following applicable policy:

- **Policy NS-2-d:** Bluff Preservation Overlay Zone. Maintain the requirements of the Bluff Preservation Overlay Zone District, which include provisions to:
  - Require proposed development within 300 feet of the toe of the San Joaquin River bluffs to undertake an engineering soils investigation and evaluation report that demonstrates that the site is sufficiently stable to support the proposed development, or provide mitigations to provide sufficient stability.
  - Establish a minimum setback of 30 feet from the San Joaquin River bluff edge for all future structures and rear yards.

3.10.4 Impact Analysis

3.10.4.1 Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis of hydrology and water quality are based on the environmental checklist in the State CEQA Guidelines, as amended. The project would have a significant impact on hydrology or water quality if it would:

- violate any water quality standards or WDRs;
- substantially deplete groundwater supplies or interfere substantially with groundwater recharge so that there would be a net deficit in aquifer volume or a lowering of the local groundwater table;

- substantially alter existing drainage patterns, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- 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 that would result in flooding on-site or off-site;
- create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- otherwise substantially degrade water quality;
- place housing within a 100-year floodplain hazard area as mapped on flood hazard delineation maps;
- place structures within a 100-year flood hazard area that would impede or redirect flood flows;
- 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, or inundation by seiche, tsunami, or mudflow.

3.10.4.2 Methodology

The analysis of potential hydrology and water quality impacts was performed qualitatively, based on a review of documents pertaining to the study area, including the *Fresno County General Plan and Background Report* (County of Fresno 2000a, 2000b); *California Water Bulletin 118* (DWR 2003); FEMA's flood insurance rate map (FEMA 2009); and specific study area conditions.

The analysis of impacts on hydrology and water quality is based on the assumption that the project would include standard procedures and BMPs related to water quality, grading, erosion control, stormwater runoff, and floodplain alteration, including compliance with regulatory requirements and ordinances and design standards. These BMPs are described further in Section 2.5.1, "Best Management Practices."

3.10.4.3 Impacts and Mitigation Measures

Impact 3.10-1: The project would violate water quality standards or WDRs.

Temporary Impacts. Soil disturbed during construction-related activities, such as vegetation removal, grading, trenching, and soil stockpiling, may be dispersed by wind, rain, and surface flow (winter rainfall and stormwater runoff) and carried into drainage conveyances and, ultimately, the River. Similarly, water used during construction for dust suppression or irrigation, if improperly managed, could enter drainage systems and be carried into the River. Contaminants such as petroleum hydrocarbons (e.g., fuels, oils) could be accidentally spilled during construction, thus contaminating surface soils. Areas of exposed or

stockpiled soils could be subject to sheet erosion during short periods of peak stormwater runoff, allowing temporary discharges of soil, sediment, and construction-related contaminants to on-site drainages that are hydrologically connected to the River. Dewatering of surface water and/or groundwater may be necessary during construction because of the project site's proximity to the River and several surface water features, and could adversely affect water quality if not managed properly.

As discussed in Section 2.5.1, "Best Management Practices," the Conservancy would implement a variety of BMPs as part of the project to reduce or avoid potential construction impacts. Among these BMPs are BMP GEO-1, which requires preparing a site-specific SWPPP and erosion and sediment control plan and BMP HYDRO-2, which requires completing dewatering in accordance with local and Central Valley RWQCB requirements. The project SWPPP would be consistent with all SWRCB and Central Valley RWQCB requirements included in the Construction General Permit. Preconstruction and postconstruction BMPs would be implemented for all project phases to limit the discharge of pollutants into stormwater runoff.

However, some project construction activities would occur within a designated floodway and the FEMA 100-year floodplain. Construction staging areas have not been identified yet. Temporary stockpiles and hazardous materials, such as fuels, paints, and oils, may be stored in construction staging areas and could be subject to flooding should a 100-year flood event occur during construction. Discharges of these construction materials and contaminants to receiving waters during storms would degrade water quality and could lead to short-term impacts on fish and other aquatic life in the River. The impact would be **potentially significant.**

Long-Term Impacts. Implementing the project would create new impervious and hard-packed surfaces, structures, and landscape features, which could increase runoff volumes. This increased runoff, in turn, could cause or contribute to long-term discharges of urban contaminants (e.g., sediment, oil and grease, fuel, trash, pesticides, fertilizer) into stormwater runoff and receiving waters, including on-site ponds and the River. Table 3.10-1 summarizes the area of the project including the impervious (paved) and semi-impervious (unpaved) surface areas associated with the project. The area of impervious and semi-impervious area is minor relative to the undisturbed, pervious, portion of the project site.

In addition, the project would include multiuse trail facilities, accessible by pets and equestrians, which could cause animal wastes to be discharged into stormwater runoff and receiving waters. Trampling by horses could physically break down streambanks and destroy vegetative cover along the River, which could increase sedimentation. However, the Conservancy's project management approach would address this issue through prohibitions, monitoring, and maintenance activities and methods such as potential fencing, signage, and BMPs.

Contaminants in runoff from bathroom facilities, stormwater, or landscaping irrigation could degrade water quality if the runoff were to enter drainages to the river or ponds. Stormwater may encounter oil, grease, or fuel nutrients, and sediments and bacteria found in animal or human wastes. Water used to irrigate landscaped areas may encounter pesticides, herbicides, and fertilizer. Runoff water that has encountered these chemicals, but that has not been directed to treatment swales to be absorbed by plants and soil, could be conveyed to receiving waters. Potential discharges of contaminated urban runoff from paved and landscaped areas would increase and could cause or contribute to adverse effects on aquatic organisms in receiving waters.

The River is listed under CWA Section 303(d) as impaired for invasive species. Under this impairment, the River cannot assimilate or accommodate additional invasive species, and any increases in such species would contribute to the impairment.

Stormwater discharges into surface waters, including the River, could cause long-term degradation of water quality and adverse effects on aquatic species. Prolonged exposure to high levels of suspended sediment would reduce tolerance to disease and toxicants. Especially in shallow quiet pools, increased turbidity could increase water temperature, which in turn could affect dissolved oxygen (DO) levels; both effects would increase respiration stress. Also, high levels of suspended sediment could cause movement and redistribution of fish populations. The loss of streamside vegetation caused by trampling may result in excessive solar heating of the water, which could harm cold-water fish such as Chinook salmon. For additional discussion of impacts on native fish habitat, see Section 4.4, “Biological Resources.” These long-term effects could diminish the character and quality of the physical habitat important to the survival of native fish, and could impair the River further by adversely affecting native fish species or promoting an increase in invasive aquatic species. In addition, excessive nutrient loading into surface waters, including the River, could lead to algal blooms and weed problems.

To assist with animal waste management, the project would include several pet stations, placed along the multiuse trail and in parking areas, and would implement Parkway Master Plan Policies ROP5, RDP13, and RDP14 related to litter and waste management. In addition, in compliance with Policies RFP5 and RFP6 of the Parkway Master Plan, a landscaping program would be implemented to eliminate, reduce, or minimize the use of pesticides and herbicides, or pesticide and herbicide application would occur in accordance with all applicable requirements of the Agricultural Commissioner’s Office and manufacturer’s recommendations. BMP HYDRO-1 and Parkway Master Plan Policy RDP11 would require that connections to the multipurpose trail system and equestrian facilities be constructed to minimize erosion and the potential for sediment transport into adjacent waterways. The Conservancy would establish a program to inspect and monitor the effectiveness of such controls and would conduct maintenance and repair activities.

Implementing project design features and Parkway Master Plan policies would reduce long-term impacts on water quality, but impacts of urban contaminants from parking lot runoff and waste products from equestrian use and vault toilets would remain. The impact would be **potentially significant.**

Mitigation Measure Hydrology and Water Quality-1

Construction staging areas, including hazardous-material storage areas and temporary stockpiles, shall be located outside the 100-year floodplain and designated floodway and away from drainages. Appropriate BMPs shall be implemented to ensure that runoff from these areas does not directly flow to surface waters. Before construction begins, locations for storage of hazardous materials, temporary stockpiles, and demolition debris piles within staging areas shall be designated outside the 100-year floodplain and designated floodway and away from drainages. Major storage and stockpile areas shall be designated in the SWPPP, as required for NPDES General Permit coverage for construction. Stockpile areas shall be identified in the SWPPP and appropriate BMPs shall be installed accordingly. The mitigation shall be implemented before any ground disturbance and shall continue throughout construction, as conditions require.

Mitigation Measure Hydrology and Water Quality-2

The project design shall include structural BMPs for project operation to reduce and treat postconstruction stormwater runoff from the proposed parking lot and other impervious features. The runoff shall be treated through the use of detention basins or other means before it reaches on-site surface waters, wetlands, and the River. The selected BMPs shall minimize the velocity of stormwater flows and disperse the flows to the extent practicable. The selected BMPs also shall serve to infiltrate, filter, store, evaporate, and detain runoff close to its source, and shall enhance on-site recharge of groundwater. The structural BMPs shall be designed in accordance with applicable local and State regulations. BMPs such as bioswales, surface sand, other media filters, vegetated filter strips, and detention basins may be implemented to treat, detain, and percolate stormwater runoff. The mitigation shall be implemented before project designs are finalized.

Mitigation Measure Hydrology and Water Quality-3

The proposed equestrian trails shall be sited, graded, and constructed consistent with Policy RDP11 of the Parkway Master Plan. The equestrian trail and staging area shall drain to detention swales, with no direct discharges to on-site waters or the River. Signage shall be posted, animal waste containers shall be provided, animal waste removal procedures shall be implemented, and the site shall be inspected periodically to determine the effectiveness of the measures. Vault toilets shall be cleaned daily and waste periodically trucked off-site for treatment.

Effectiveness of Mitigation Measure

Implementation of BMPs as described in BMPs GEO-1, GEO-2, and HYDRO-2 and required by the NPDES permit, together with implementation of applicable policies of the Parkway Master Plan, other regulatory requirements, and Mitigation Measures Hydrology and Water Quality-1 through Hydrology and Water Quality-3, would reduce the potential impact to **less than significant**. No additional mitigation is required.

Impact 3.10-2: The project could substantially deplete groundwater supplies or could interfere substantially with groundwater recharge so that a net deficit in aquifer volume or a lowering of the local groundwater table could occur.

Temporary Impacts. Project construction would require a water supply for dust control and irrigation of the landscape plantings until they are self-sustaining (up to 5 years). Dewatering of surface water and/or perched groundwater may also be necessary in certain parts of the study area during construction because of the proximity to the River and several surface water features. The existing nonpotable water well on-site could be used for dust control and irrigation. The construction contractor would bring in additional water for dust control and irrigation, if needed. Project construction would not increase groundwater demands substantially, and thus, would not cause a considerable lowering of the groundwater table. Implementation of BMP HYDRO-4 would minimize water demand because drought-tolerant plants would be used and low-flow and smart irrigation systems would be installed. After the temporary use of groundwater for project construction, groundwater levels would return to preproject levels over time. The impact would be **less than significant**. No mitigation is required.

Long-Term Impacts. The construction of restrooms, a paved trail, and a parking lot would create additional impervious/paved surface areas that could reduce infiltration of precipitation into the groundwater. However, the amount of impervious/paved surface would be very small relative to the total project site and stormwater would be managed to infiltrate on-site through vegetated areas. The increase in impervious surface areas would not measurably affect recharge to the local groundwater basin. Runoff from improvements on-site would drain to pervious swales. A permanent water supply would be needed primarily for fire suppression and drinking fountains. Project operation would not increase groundwater demands substantially, and existing supplies that may be provided by the City of Fresno for fire suppression and drinking water are expected to be adequate to serve the project without lowering groundwater levels (see Section 3.18, “Utilities and Service Systems”). The impact would be **less than significant**. No mitigation is required.

Impact 3.10-3: The project would substantially alter existing drainage patterns, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

Temporary Impacts. Variable incised drainages are visible along the bluffs, and several natural drainages and swales traverse the project site. The project would require grading and movement of soil for placement of the trail extension, parking lot, and other new structures. The staircase from Spano Park to the trail extension and possible staircase access from the Bluff Trail to the trail extension would be constructed on the steep slope of the bluff. Project construction would include activities within a designated floodway and the FEMA 100-year floodplain. Grading and soil movement on the steep slopes and within flood zones could alter drainage courses and runoff patterns from existing conditions.

As described further above, the Conservancy would implement BMPs as part of the project (Section 2.5.1, "Best Management Practices"). Implementing water quality BMPs, including preparation of a SWPPP, associated BMPs, and an erosion and sediment control plan (BMP GEO-1), would reduce or avoid potential construction-related impacts. Preconstruction, construction, and postconstruction BMPs would be implemented during all project phases to limit discharge of pollutants in stormwater runoff. The impact would be **less than significant**. No mitigation is required.

Long-Term Impacts. Hydromodification is generally defined as changes in channel form associated with alterations in flow and sediment due to past or proposed future land-use alteration. Changes to a watershed's hydrologic and geomorphic processes resulting from the development of impervious/paved surfaces and associated drainage modifications are referred to as "hydromodification." Hydromodification intensifies erosion and the transport of sediments and can cause changes to river channel geometry and the properties of the river bank and floodplain. On the project site, hydromodification could also change pond or bluff features. These changes could result in erosion, sedimentation, and degraded riparian habitat. Table 3.10-1 shows the total surface area of the project and the portion of the project site located within the designated floodway and floodplain. Most of the project improvements would occur at grade, and would not change or displace flows. Substantial structures (e.g., vault toilet restrooms) would be built outside the designated floodway and 100-year flood zone.

Implementation of project design features, BMPs GEO-1 and HYDRO-3, and Parkway Master Plan policies would reduce potential impacts related to hydromodification. However, impervious/paved surfaces would be added and other project components would be placed adjacent to or within the designated floodway and 100-year floodplain. Therefore, the impact would be **potentially significant**.

Mitigation Measure Hydrology and Water Quality-4

For improvements that require an encroachment permit and approval from the CVFPB, drainage and hydromodification studies shall be performed to evaluate and avoid modifications that would increase flooding in upstream or downstream areas, or that would cause obstructions during flood events. A professional civil engineer shall:

- conduct a drainage and hydromodification study evaluating the location of all existing and proposed drainage features;
- perform stormwater calculations for surface drainage flows occurring before and after project construction;
- evaluate the potential for drainage and floodplain modifications to increase erosion on adjacent properties; and
- determine the base flood elevation before and after construction, so that no net displacement of floodwaters shall occur.

As necessary, the filling of floodplain or floodway areas below the base flood elevation shall be compensated for and balanced by excavation of a hydraulically equivalent area, taken from below the base flood elevation, to achieve no net increase in the base flood elevation greater than 0.10 foot, as measured at the property lines of the parcels being developed. The Conservancy shall perform hydraulic studies in accordance with applicable floodplain management regulations, prepare an encroachment permit application, and obtain an encroachment permit before construction begins.

Mitigation Measure Hydrology and Water Quality-5

Mitigation Measure Hydrology and Water Quality-2 shall be implemented as described above, to prevent and reduce potential alterations to drainage patterns that can result in erosion or siltation.

Effectiveness of Mitigation Measure

Implementation of BMPs as described in BMP GEO-1 and required by the NPDES permit, together with implementation of applicable policies of the Parkway Master Plan, other regulatory requirements, and Mitigation Measures Hydrology and Water Quality-4 and Hydrology and Water Quality-5, would reduce the potential impact to **less than significant**. No additional mitigation is required.

Impact 3.10-4: The project would substantially alter the 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 flooding on- or off-site.

See Impact 3.10-3 for a discussion of temporary and long-term impacts associated with alteration of drainage patterns. For the same reasons as described above, the temporary impact related to increases in surface runoff would be **less than significant.** However, because of alteration of the drainage pattern that could result in changes in flooding, the long-term impact of the project would be **potentially significant**.

Mitigation Measure Hydrology and Water Quality-6

Mitigation Measures Hydrology and Water Quality-2, Hydrology and Water Quality-4, and Hydrology and Water Quality-5 shall be implemented as described above.

Effectiveness of Mitigation Measure

Implementation of BMPs as described in BMP GEO-1 and required by the NPDES permit, together with implementation of applicable policies of the Parkway Master Plan, other regulatory requirements, and Mitigation Measure Hydrology and Water Quality-6, would reduce the potential impact to **less than significant.** No additional mitigation is required.

Impact 3.10-5: The project would create or contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems or would provide substantial additional sources of polluted runoff.

Temporary Impacts. See Impact 3.10-1 for a discussion of effects on water quality from polluted runoff generated during project construction. No existing stormwater drainage system is associated with the study area; therefore, none would be affected during construction. However, the temporary impact would be **potentially significant**.

Long-Term Impacts. See Impact 3.10-1 for a discussion of water quality effects from polluted runoff during project operation. No new municipal stormwater drainage facilities or expansion of existing facilities is planned as part of the project. No drainage system serves the study area. The project would include planned drainage swales to detain and treat stormwater runoff from impervious surfaces for the trail, parking lot, and structures. However, the runoff generated by the impervious surfaces could generate additional sources of polluted runoff, and thus, the impact would be **potentially significant.**

Mitigation Measure Hydrology and Water Quality-7

Mitigation Measures Hydrology and Water Quality-1, Hydrology and Water Quality-2, and Hydrology and Water Quality-3 shall be implemented to reduce pollutants in runoff from project construction and postconstruction activities.

Effectiveness of Mitigation Measure

Implementation of BMPs as described in BMP GEO-1 and required by the NPDES permit, together with implementation of applicable policies of the Parkway Master Plan, other regulatory requirements, and Mitigation Measure Hydrology and Water Quality-7, would reduce the potential impact to **less than significant.** No additional mitigation is required.

Impact 3.10-6: The project would otherwise substantially degrade water quality.

Temporary and long-term water quality effects would be the same as described in Impact 3.10-1. The project would not degrade water quality beyond what is described in Impact 3.10-1. However, the impact would be **potentially significant.**

Mitigation Measure Hydrology and Water Quality-8

Mitigation Measures Hydrology and Water Quality-1, Hydrology and Water Quality-2, and Hydrology and Water Quality-3 shall be implemented to reduce project-related degradation of water quality.

Effectiveness of Mitigation Measure

Implementation of BMPs as described in BMP GEO-1 and required by the NPDES permit, together with implementation of applicable policies of the Parkway Master Plan, other regulatory requirements, and Mitigation Measure Hydrology and Water Quality-8, would reduce the potential impact to **less than significant**. No additional mitigation is required.

Impact 3.10-7: The project could place housing within a 100-year floodplain hazard area as mapped on flood hazard delineation maps.

The project would not involve construction of housing. **No impact** would occur.

Impact 3.10-8: The project would place structures within a 100-year flood hazard area that would impede or redirect flood flows.

Temporary Impacts. During construction, no temporary structures would be installed as part of the project. The trail extension would be constructed immediately adjacent to residential properties. If construction equipment, stockpiles, and other building materials were staged on the floodplain in the vicinity of the

residences and a 100-year flood event were to occur during construction, flood flows could be redirected onto these properties. Because of the potential for a 100-year flood event to occur during project construction, the impact would be **potentially significant**.

Long-Term Impacts. As described previously, the placement of impervious surfaces for the multipurpose trail, parking lot, and recreation amenities could alter hydrologic and floodplain functions. Table 3.10-1 shows the amount of surface area that would be located within the designated floodway and 100-year flood zone. The restroom, parking lot, and connections to the Bluff Trail would be located outside the 100-year flood zone. Unpaved trails would be located in the designated floodway. The paved trail would be located partially within the 100-year flood zone. Grading cuts and fills would be minimal, to assure ADA-compliant grades and proper drainage for the trails, parking lot, and restrooms. In accordance with Parkway Master Plan policies and regulatory requirements, new structures and other project components would be designed to avoid net displacement of floodwaters, obstructions to flood flows, or placement within the floodplain of improvements that may come loose and become obstructions or pose a safety hazard. However, the impact would be **potentially significant**.

Mitigation Measure Hydrology and Water Quality-9

> Mitigation Measure Hydrology and Water Quality-4 shall be implemented to reduce potential impacts from flood hazards.

Effectiveness of Mitigation Measure

Implementation of BMPs, applicable policies of the Parkway Master Plan, other regulatory requirements, and Mitigation Measure Hydrology and Water Quality-9 would reduce the potential impact to **less than significant**. No additional mitigation is required.

Impact 3.10-9: The project could expose people or structures to a significant risk of loss, injury, or death involving flooding because of the failure of a levee or dam.

Temporary Impacts. Project construction would occur within the River's designated floodway and 100-year floodplain. In accordance with Parkway Master Plan Policy RFMP3, the Conservancy would require contractors to develop and implement flood warning alert and evacuation procedures, to safely evacuate the area during events with high-flow risks. Implementing these measures would reduce potential risks of flood exposure during construction.

According to the Friant Dam Failure Flood Area Map prepared by the County of Fresno, the project area would be inundated if Friant Dam were to fail. Such a failure would expose people or structures to flooding, but the likelihood of such an occurrence is remote. The Governor's Office of Emergency Services provides information for local governments about responding to critical hazards, including

potential flooding or inundation from failure of a levee or dam. There are no levees in the project area that are designated to provide flood protection. The project would follow established regulatory requirements, Parkway Master Plan policies, and related implementation programs, and the probability of dam failure is would be extremely low and such an event is not considered reasonably foreseeable. The impact would be **less than significant**. No mitigation is required.

Long-Term Impacts. In the long term, the project could expose visitors to potential loss, injury, or death from flooding caused by or dam failure. However, the project would follow established regulatory requirements, Parkway Master Plan policies, and related implementation programs. In addition, the probability of dam failure would be extremely low and such an event is not considered reasonably foreseeable. The Conservancy would develop site closure, flood warning, and evacuation procedures in accordance with Parkway Master Plan Policy RFMP3, and warning and evacuation information would be posted on-site. The impact would be **less than significant**. No mitigation is required.

Because the project would comply with established regulatory requirements, Parkway Master Plan policies, and related implementation programs, and because the probability of dam failure would be extremely low probability and such an event is not considered reasonably foreseeable, the impact would be **less than significant.** No mitigation is required.

Impact 3.10-10: The project could cause inundation by seiche, tsunami, or mudflow.

Temporary and Long-Term Impacts. The potential temporary and long-term impacts of the project related to inundation by seiche and tsunami are similar. Earthquakes can cause hazards on open water bodies by creating seismic sea waves (tsunamis) and seiches. The project's potential to cause a tsunami is negligible because the study area is located at a considerable distance from water bodies that could generate seismically induced tidal phenomena (the Pacific Ocean is located approximately 115 miles west of the study area). Seiches are earthquake-induced oscillations of water that can occur for a few minutes or several hours in an enclosed or restricted water body, such as a basin, river, or lake. The study area consists of a network of ponds interconnected with the River and floodplain. As described in Section 3.7, "Geology and Soils," the potential for a seismic event in the project area is low. In the unlikely event of an earthquake, any waves generated in one of these water bodies by an earthquake likely would be damped down and would not develop the substantial "back-and-forth" motion associated with a seiche. Therefore, **no impact** would occur related to potential inundation by seiche or tsunami.

A potentially significant impact may occur if a project is located adjacent to a hillside area with soil characteristics that indicate potential susceptibility to mudslides or mudflows. As described in Section 3.7, "Geology and Soils," evidence exists of past natural landslide activity—rock falls, topples, debris flows, earth flows, mudflows, and creep—in the project vicinity at the base of the bluff escarpment. Most of the project would be located more than 300 feet from the toe of the bluffs; however, the staircase from Spano

Park to the trail and/or staircase access from the Bluff Trail to the trail would be constructed on the steep slope of the bluff. If the proper engineering controls and BMPs to protect against slope instability and erodibility were not implemented, placing structures on or otherwise disturbing the steep bluff slope at the Bluff Trail and the slope to Spano Park could increase the area's susceptibility to mudflows.

In addition, Section 15-1404 (Site Design Development Standards) of the City of Fresno Municipal Code requires that development within the San Joaquin River corridor be limited or provide a buffer consistent with the General Plan. Policy NS-2-d of General Plan Update 2035 requires projects proposing construction within 300 feet of the San Joaquin River bluff to perform an engineering soils investigation and evaluation report to demonstrate that the site is sufficiently stable to support the development, or provide mitigation to provide sufficient stability. In accordance with these requirements and with Parkway Master Plan Policy RFP7 and BMP GEO-2, qualified personnel would perform geotechnical investigations before approval of the final design for each feature, to identify geologic or soil characteristics of the project site that could result in unstable soils (e.g., highly erodible soils or slope conditions). Project features would be sited away from areas where slopes could be unstable. Meeting these investigation requirements would further identify slope stability issues and design controls would be implemented to minimize the potential for landslides and any associated inundation. Therefore, the impact related to potential inundation by mudflow would be **less than significant**. No mitigation is required.

3.11 Land Use and Planning

3.11.1 Introduction

This section describes the existing environmental and regulatory setting of the project area and analyzes potential project impacts related to land use. This section also describes the criteria for determining the significance of impacts, approach to assessing impacts, and possible mitigation measures.

As described in Chapter 2, a public scoping meeting was held on June 17, 2014, to invite comments regarding environmental issues that should be examined in the EIR. Several comments were made that the EIR should evaluate the impacts of the project on land use consistency with the Fresno Municipal Code relating to protection of the San Joaquin River Bluffs and consistency with the City of Fresno General Plan's objectives and implementing policies for public access to the project area.

3.11.2 Environmental Setting

The study area occupies approximately 358 acres and 19 parcels. The parcels are located within the floodplain of the San Joaquin River and are owned by the State under the management jurisdiction of the Conservancy, FMFCD, and the City of Fresno (see Table 3.1-1, "Existing Land Use, Zoning, and Ownership"). One parcel within the project boundaries (40102127ST) is privately owned. Although this parcel is not part of the proposed project, the DEIR analyzes the potential for indirect project impacts. A

residential subdivision is located south of the study area on the bluffs; however, no project elements are proposed within the subdivision.

3.11.3 Regulatory Setting

3.11.3.1 Federal Laws, Regulations, and Policies

No federal laws, regulations, or policies related to land use and planning apply to the project.

3.11.3.2 State Laws, Regulations, and Policies

The State has sovereign authority over its lands to carry out governmental activities. Uses on State lands are not subject to local land use controls. The California Legislature created the Conservancy as a State agency with broad, independent powers to manage State lands in the Parkway, to accomplish the goals of the Conservancy Act. The Conservancy's uses on State lands under its jurisdiction are not subject to local land use regulations or ordinances, including local zoning ordinances. The Conservancy has no authority related to land uses on other lands; that authority is exclusive to local land use agencies.

California State Lands Commission

The California State Lands Commission has jurisdiction and management authority over all ungranted, submerged lands owned by the State; over the beds of navigable rivers, streams, lakes, bays, estuaries, inlets, and straits including tidelands and submerged lands; and over the beds of navigable rivers (PRC Section 6301). The lands along the River between the ordinary high-water marks are subject to the jurisdiction of the California State Lands Commission. Lands riverward of the low-water mark are in State fee title ownership, and lands between the low- and high-water marks are in a public trust easement.

San Joaquin River Parkway Master Plan

The Conservancy develops and manages its projects and lands under its jurisdiction in the Parkway through policies included in the Parkway Master Plan. The following goals and policies of the Parkway Master Plan (Appendix B) related to land use and planning are applicable to the project area:

Goal FG5: Protect existing undeveloped areas of the riverbottom, which should remain non-urbanized and be retained in open space or agriculture if possible.

Goal FG6: Provide land use and management policies for the San Joaquin River and areas of the riverbottom included in the Parkway that shall enhance the attractiveness of the Fresno-Madera metropolitan area and enhance the quality of life for its residents.

- **Policy NP1:** Provide a minimum width for the wildlife corridor of 200 feet on both sides of the river. Acquire a wider corridor whenever possible. Provide a buffer width wider than 150 feet whenever more intensive uses on adjacent lands exist or are planned.
- **Policy NP8.1:** Provide a buffer zone of a width appropriate to the intensity of the planned land use.
- **Policy NRD1.1:** Site new facilities in restored or previously developed areas. Visitor overlooks and viewing areas shall be located to avoid intrusion into sensitive habitat and to avoid habitat fragmentation.
- **Policy NRD1.2:** Whenever feasible, route trails on the outside edges of habitat areas, rather than through the center of mature riparian stands.
- **Policy NRD10:** Develop and maintain a continuous strip of riparian vegetation (no gaps greater than 200 feet or the minimum necessary to allow infrastructure) with an average width of 200 feet throughout the Parkway.

Goal RO1: Locate intensive recreational activity sites way from sensitive natural resources and private residences.

- **Policy RPS1:** The Parkway shall consider proposed Parkway facility sites to avoid areas that were formerly riparian forest or have a high potential for restoration for this threatened habitat type.
- **Policy RP7:** Separate recreational areas from residences by a buffer at least 150 feet wide, and if possible, screening vegetation as well.
- **Policy BZ1:** Establish and maintain 250 meters [820 feet] of buffer zone for sensitive wildlife where possible.
- **Policy BZ3:** Incorporate the following recommendations for buffer zones for the protection of wildlife habitat (Natural Reserves and wildlife corridors) into Parkway guidelines:

Buffer Zone Width (ft)	Adjacent Land Use						
	Passive Recreation (Hiking, biking, equestrian, golf)	Intensive Recreation (camping, fishing areas, picnicking, boat launches)	Agriculture/ pastureland	Sand and Gravel Mining	Low Density Housing <1/20 acres	High Density Housing >1/acre	Business and Industry
100			X				
150	X				X		
300		X		X			
600						X	X

- **Policy BZ8:** Where low density residential uses or passive recreational activities in the Parkway adjoin wildlife habitat, there should be a minimum 100-foot wide buffer zone and an additional zone or area without structures that is not less than 50 feet wide, The setback zone could be used for compatible landscaping, patio or parking uses but not for a building. Where the 100 foot buffer plus 50 foot setback approach is not feasible, an offsetting expansion of the corridor width on the opposite shore should be a priority.

These goals and policies do not necessarily avoid impacts but may lessen them.

3.11.3.3 Local Laws, Regulations, and Policies

City of Fresno General Plan 2025

The City's General Plan is a long-range planning document that governs growth and development in Fresno. The project site is located within the Fresno city limits. The City's General Plan 2025 provides a policy that enforces the requirements of the Bluff Preservation (BP) Overlay Zone District. The following policy from the General Plan 2025 is relevant to the project.

- **Objective I-4**: Minimize the loss of life and property on the San Joaquin River bluffs that could occur due to geologic hazards.
  - **Policy I-4-a:** Maintain and enforce the requirements of the City's Bluff Preservation (BP) Overlay Zone District. Development within 300 feet of the toe of the San Joaquin River bluffs shall require an engineering soils investigation and evaluation report that demonstrates that the site is, or methods by which the site could be made, sufficiently stable to support the proposed development.

City of Fresno Draft General Plan Update 2035

The City's General Plan Update 2035 provides the following land use-related objective and implementing policies that support the Conservancy in its efforts to develop a river parkway.

- **Objective POSS-7:** Support the San Joaquin River Conservancy in its efforts to develop a river parkway.
  - **Policy POSS-7-d:** Buffer Zones near Intensive Uses. Protect natural reserve areas and wildlife corridor areas in the San Joaquin River corridor whenever more intensive human uses exist or are proposed on adjacent lands. Use buffer zones to allow multiple uses on parts of the parkway while still protecting wildlife and native plants.
    - Require studies of appropriate buffer widths to be approved by State and federal wildlife agencies before variances from standard buffer zone widths are granted.

- Maintain natural riparian buffer zones with appropriate native plants (see material and cuttings locally derived).
- Incorporate open space uses such as pasture, low-intensity agriculture activities, and the "rough" or marginal areas of golf courses into buffer zones when they constitute an improvement in habitat over a previous use or degraded area. Evaluate and address the potential impacts of construction, cultural, and operational practices (such as grading, number of livestock per acre, lighting, and use of pesticides, herbicides, and fertilizers) before these uses are approved for buffering.
- For nearby areas of the San Joaquin River corridor outside of the exclusive jurisdiction of the City, support efforts to work with other jurisdictions to achieve this policy.

o **Policy POSS-7-e:** Natural Habitats and Historic Resources. Continue to protect and enhance the San Joaquin River Parkway environs' unique and irreplaceable natural habitats and historic resources (including archaeological sites). Continue to maintain standards to protect public health and provide for development of substantial recreational opportunities for all segments of the community by preserving open space on the bluffs and river bottom while allowing appropriate recreational development respectful of private property rights.

o **Policy POSS-7-f:** River Bluff. Preserve the river bluffs as a unique geological feature in the San Joaquin Valley by maintaining and enforcing the requirements of the "BP" Bluff Preservation Overlay Zone District.

o **Policy POSS-7-g:** Support the trail extension of the Lewis Eaton Trail into the River West Fresno Project Area consistent with the San Joaquin River Parkway Master Plan and the following criteria:

- Public access into the River View Drive area/neighborhoods should be limited to cyclists and pedestrians with the exception of public safety, circulation, and/or other government/support service provider vehicles.
- Proposed public parking facilities should be designed in order to accommodate as many vehicles as possible.
- Additional public parking should be located under and/or adjacent to the old San Joaquin Bridge and State Route 41 corridor.
- The feasibility of additional public parking and equestrian trailer parking near Spano Park should be considered and fully evaluated.

- The location of public parking should not conflict with other recommendations in this policy.
- The trail alignment should, at the greatest extent possible, be located along and/or near the river for maximum public enjoyment, view, and access to the river by all users, and to allow for the best possible fire and public safety buffer for adjacent property owners while also taking into consideration environmental impacts, design and maintenance costs, historical and required water flows and flooding, and/or other events that result in increases to water levels.
- Full development or public access should be avoided until adequate and sustainable funding needed to support annual operations and maintenance has been identified.
- The San Joaquin River Bluff and Protection Ordinance should be implemented prior to the completion of the project.

3.11.4 Impact Analysis

3.11.4.1 Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis of land use are based on the environmental checklist in the State CEQA Guidelines, as amended. The project would have a significant impact related to land use if it would:

- physically divide an established community;
- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect; or
- conflict with any applicable habitat conservation plan or natural community conservation plan.

3.11.4.2 Methodology

The Parkway Master Plan and City General Plan 2025 and General Plan Update 2035 were reviewed for this analysis. The City of Fresno updated its draft General Plan and Development Code on July 2, 2014. The Draft Master EIR for the General Plan and Development Code Update 2035 was released for public review and comment on July 22, 2014. The Final Master EIR was released on December 5, 2015; the City approved the General Plan and Development Code 2035 on December 18, 2014.

The General Plan Update planning process began in 2011, before the NOP for this EIR was published. Although the General Plan Update was approved after the publication date of the NOP, it is reasonable and appropriate to consider the policies and objectives of that document as part of the baseline setting for

this EIR. In addition, the policies and objectives of the General Plan 2025 were in effect at the time the NOP was published.

3.11.4.3 Impacts and Mitigation Measures

Impact 3.11-1: The project could physically divide an established community.

The project site is located on an alluvial floodplain terrace along the south side of the San Joaquin River. The River forms the boundary between Fresno and Madera counties, and the study area is within the Fresno city limits. The land use is open space/multiple use. The project site surrounds a private rural residential parcel of 20 acres, with two residences. The nearest urban development is located south of the project site, on the bluff that overlooks the area. Development of the trail extension, parking lot, and associated recreation amenities would not physically divide an established community. **No impact** would occur.

Impact 3.11-2: The project could conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.

The project encompasses approximately 358 acres on the south side of the River. A majority of the land is owned by the State, under the management of the Conservancy (typically referred to herein as "Conservancy land"). Two parcels that are owned by the City of Fresno are adjacent to Conservancy land; two stormwater detention basins that are owned by FMFCD are in the study area. Upper and lower access to the proposed stairway at Spano Park would occur on property owned by the City (Parcel No. 40203052ST). The Bluff Trail is also located on City-owned property. Construction of the stairway near Spano Park and the Bluff Trail access would occur on the steep slope of the bluff face. Fresno's Bluff Preservation (BP) Overlay Zone District would require an engineering soils investigation and evaluation report to demonstrate that the site is, or methods exist for the site to be made, sufficiently stable to support the proposed development within 300 feet of the toe of the bluffs (Policy I-4-a of the General Plan 2025 and Policy POSS-7-f of the General Plan Update 2035). These proposed improvements involving City property would require a permit or agreement from the City of Fresno.

The project would include public pedestrian and bicycle access to the project site via an existing entrance to the Bluff Trail at River View Drive. The existing access road into the study area at West Riverview Drive is on Conservancy property, with a private easement, allowing access to the two rural residences. With project implementation, this road would be used by public agencies for vehicle access for operations, maintenance, management, patrols, and emergency response. Therefore, the project would be consistent with Policies POSS-7-g and POSS-7-i of the General Plan Update 2035.

Furthermore, the project would locate recreational activities away from sensitive natural resources and residential uses, and would locate new facilities in previously disturbed areas to the extent feasible, consistent with Policies NRD1.1 and RO1 of the Parkway Master Plan. Appropriate buffer zones between the trail and wildlife habitat would be provided between recreation facilities, consistent with Policies NP1, NP8, NRD1.1, RP7, BZ3, and BZ8 of the Parkway Master Plan and Policies POSS-7-d and POSS-7-e of the General Plan Update 2035.

The project would not conflict with Parkway Master Plan or City land use policies or regulations. The impact would be **less than significant.** No mitigation is required.

Impact 3.11-3: The project could conflict with an applicable habitat conservation plan or natural community conservation plan.

No habitat conservation plans or natural community conservation plans are applicable to the project site, although the Parkway Master Plan contains some elements typical of such plans. The project would not conflict with any applicable habitat conservation plan or natural community conservation plan. **No impact** would occur.

3.12 Mineral Resources

3.12.1 Introduction

This section describes the existing environmental and regulatory setting of the project area and analyzes the potential impacts of the project on mineral resources. This section also describes the criteria for determining the significance of impacts, approach to assessing impacts, and possible mitigation measures.

As described in Chapter 2, a public scoping meeting was held on June 17, 2014, to invite comments regarding environmental issues that should be examined in the DEIR. No comments were made related to impacts on mineral resources.

3.12.2 Environmental Setting

Fresno County has been a leading producer of minerals. As early as 1936, gravel, sand, and rock excavation and processing was occurring along the River near SR 99. Sand and gravel mining began in the study area in 1961 and continued until 1976. The San Joaquin River Parkway and Conservation Trust acquired the sand and gravel rights on August 25, 2003. The land (surface rights) was acquired by the State in 2003. The study area is classified as MRZ-1, areas where adequate information exists that no significant mineral deposits are present or where it is judged that little likelihood exists of their presence. Figure 7-12 in the County Background Report (County of Fresno 2000a) labels the study area as

Aggregate Resource Depleted. Four ponds created by past sand and gravel excavation are present on the project site.

3.12.3 Regulatory Setting

3.12.3.1 Federal Laws, Regulations, and Policies

No federal laws, regulations, or policies related to mineral resources apply to the project.

3.12.3.2 State Laws, Regulations, and Policies

Surface Mining and Reclamation Act

Sections 2761(a), 2761(b), and 2790 of the Surface Mining and Reclamation Act (SMARA) provide a mineral lands inventory process. The California Geological Survey and the State Mining and Geology Board are the State agencies responsible for inventorying mineral lands. The primary objective of the process is to provide local agencies with information about the locations, need, and importance of minerals within their respective jurisdictions. SMARA also regulates the closure and reclamation of sand and gravel mines. However, mining at the project site generally preceded SMARA's enactment in 1975, and reclamation of the property was not as aggressive as it would have been at a later time.

The study area is classified as MRZ-1 and as Aggregate Resources Depleted.

San Joaquin River Parkway Master Plan

The Conservancy develops and manages its projects and lands under its jurisdiction in the Parkway through policies included in the Parkway Master Plan. The Parkway Master Plan (Appendix B) contains goals, objectives, and policies designed to prevent conflict between Parkway uses and sand and gravel mining in the vicinity of those uses. These policies do not necessarily avoid impacts but may lessen them.

3.12.3.3 Local Laws, Regulations, and Policies

The study area is classified as MRZ-1 and as Aggregate Resources Depleted. No local laws, regulations, or policies relate to these classifications or the mineral resources of the study area.

3.12.4 Impact Analysis

3.12.4.1 Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis on mineral resources are based on the environmental checklist in the State CEQA Guidelines, as amended. The project would have a significant impact related to mineral resources if it would:

- result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
- result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

3.12.4.2 Methodology

The analysis of the project's potential impacts on mineral resources was based on an assessment of effects on existing resources. In determining the extent and implications of the impacts, consideration was given to the presence of mineral deposits, including aggregate resources as described in the General Plan Update 2035 and the County Background Report (County of Fresno 2000a).

3.12.4.3 Impacts and Mitigation Measures

Impact 3.12-1: The project could 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.

As stated above, the County Background Report (County of Fresno 2000a) classifies the study area as MRZ-1 and Aggregate Resources Depleted. Most of the study area was previously surface mined for sand and gravel. Project implementation would not cause the loss of mineral resources valuable to the region and the State. **No impact** would occur.

Impact 3.12-2: The project could 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.

Between 1961 and 1976, sand and gravel mining took place in the study area. An estimated 4 million tons of mineral reserve are still present (Marks, pers. comm., 2016). In 2003, the land was acquired by the Conservancy and the mineral rights were acquired by the San Joaquin River Parkway and Conservation Trust. The study area is shown as being zoned MRZ-1, an area where no significant mineral deposits are present. In addition, the General Plan 2025 states that the study area was redesignated as MRZ-1 because the area was determined not to have regionally significant aggregate mineral resources (City of Fresno 2002). **No impact** would occur.

3.13 Noise

3.13.1 Introduction

This section describes the existing environmental and regulatory setting of the project area and analyzes the potential impacts of the project related to noise. This section also describes the criteria for

determining the significance of impacts, approach to assessing impacts, and possible mitigation measures.

3.13.2 Environmental Setting

3.13.2.1 Noise

Generally, noise is considered unwanted sound. Sound levels are measured in decibels (dB). Unless otherwise stated, all sound levels reported in this section are A-weighted sound pressure levels in dB. A-weighting deemphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards use A-weighted sound levels, as they correlate well with public reaction to noise. The noise descriptor "day-night average level," which is commonly used in this section, is abbreviated as "L_{dn}" or "DNL." Table 3.13-1 defines dB and other technical terms.

Table 3.13-1 Acoustical Terminology

Term	Definition
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter deemphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of 10 decibels to sound levels in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn} (DNL)	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted noise levels during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location
Intrusive	That noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or information content as well as the prevailing ambient noise level.

Source: Data compiled by AECOM in 2016

3.13.2.2 Groundborne Vibration

Vibration is sound radiated through the ground. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. The ground motion caused by vibration is measured as particle velocity in inches per second and is referenced as vibration decibels (VdB).

The background vibration velocity level in residential areas is usually 50 VdB or lower, well below the threshold of perception for humans, which is around 65 VdB (FRA 2005). Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 5–10 decibels. Most perceptible indoor vibration is caused by sources within buildings such as operation of mechanical equipment, movement of people, or the slamming of doors. The primary outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. The vibration level that may result in damage threshold to normal buildings is approximately 100 VdB (FRA 2005). Table 3.13-2 describes the general human response to different levels of groundborne vibration velocity levels.

Table 3.13-2 Human Response to Different Levels of Groundborne Vibration

Vibration Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception for many people.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

Note: VdB = vibration decibels

Source: FRA 2005

3.13.2.3 Sensitive Receivers

Land uses generally regarded as being sensitive to elevated noise levels include facilities such as residences, hospitals, schools, guest lodging, and classrooms. The study area is located on an alluvial floodplain terrace along the San Joaquin River about 60 feet below the river bluffs. The existing ambient sound or noise environment in the immediate project vicinity is consistent with that of open space or riverine settings and is defined primarily by natural sounds (e.g., wind, birds, and insects). Roadway noise is generated by traffic along SR 41, which crosses the River on the northeast border of the project area. The off-site noise-sensitive receptors closest to the project site are the residences located on the bluff adjacent to the southern project site boundary.

3.13.3 Regulatory Setting

3.13.3.1 Federal Laws, Regulations, and Policies

No federal laws, regulations, or policies related to noise apply to the project.

3.13.3.2 State Laws, Regulations, and Policies

California Department of Public Health

The California Department of Public Health has evaluated community noise and studied the correlation between noise levels and effects on various land uses. Based on this analysis, guidelines have been established to evaluate the compatibility of various land uses as a function of community noise exposure. Section 65302(f) of the California Government Code requires each community to prepare and adopt a comprehensive long-range general plan for development. These plans consist of seven mandatory elements, including a noise element. Based on State of California guidance, the noise element must identify and appraise noise problems in the community, recognize the guidelines from the State's Office of Noise Control, and analyze and quantify current and projected noise levels.

Table 3.13-3 presents general guidelines for environmental noise levels and land use compatibility. Many agencies, environmental planners, and acoustical specialists use these guidelines as a starting point to evaluate the potential for noise impacts on and by the project. The guidelines are designed to achieve noise compatibility with respect to nearby existing uses.

San Joaquin River Parkway Master Plan

The Conservancy develops manages its projects and lands under its jurisdiction in the Parkway through policies included in the Parkway Master Plan. The Parkway Master Plan (Appendix B) contains goals, objectives, and policies that apply to the project area. The Parkway Master Plan EIR contained mitigation measures related to noise that have been incorporated into the BMPs presented in Section 2.5.1. These measures do not necessarily avoid impacts but may lessen them.

3.13.3.3 Local Laws, Regulations, and Policies

City of Fresno General Plan 2025

The City's General Plan 2025 maintains the same indoor and outdoor ambient noise limits as the *Fresno County General Plan*, but refines noise quantification and control procedures to reflect current planning and sound engineering practices.

Table 3.13-3 State of California Noise Exposure Levels and Land Use Compatibilities

Land Use Category	Community Noise Exposure DNL or CNEL, dB 55 60 65 70 75 80
Residential—Low Density Single Family, Duplex, Mobile Homes	
Residential—Multifamily	
Transient Lodging—Motels, Hotels	
Schools, Libraries, Churches, Hospitals, Nursing Homes	
Auditoriums, Concert Halls, Amphitheaters	
Sports Arena, Outdoor Spectator Sports	
Playgrounds, Neighborhood Parks	
Golf Courses, Riding Stables, Water Recreation, Cemeteries	
Office Buildings, Business Commercial and Professional	
Industrial, Manufacturing, Utilities, Agriculture	

Interpretation:

Normally Acceptable
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements

Conditionally Acceptable
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice

Normally Unacceptable
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable
New construction or development should generally not be undertaken

Source: California Department of Health Services 1990

Fresno Municipal Code

The City of Fresno Municipal Code has adopted standards and guidelines for specific noise levels associated with various land uses. “Ambient noise” is the all-encompassing noise associated with a given environment, being usually a composite of sounds from many sources near and far. “Ambient noise level” is the level obtained when the noise level is averaged over a period of 15 minutes, without inclusion of the offending noise, at the location and time of day at which a comparison with the offending noise is to be made. The City of Fresno noise level guidelines (Table 3.13-4) lists the desired maximum noise value along with the acceptable maximum noise value for each land use category. All ambient noise measurements begin at the base ambient noise levels in dBA listed for the respective times and zones shown in Table 3.13-4.

Table 3.13-4 City of Fresno Noise Ordinance—Ambient Noise Levels

Noise Level	Time Period	Zone Use
50 dBA	10:00 p.m.–7:00 a.m.	Residential
55 dBA	7:00 a.m.–10:00 p.m.	Residential
60 dBA	7:00 a.m.–7:00 p.m.	Residential
60 dBA	10:00 p.m.–7:00 a.m.	Commercial
65 dBA	7:00 a.m.–10:00 p.m.	Commercial
70 dBA	Anytime	Industrial and commercial

Note: dBA = A-weighted decibels

Source: City of Fresno 2015

Section 10-103 of the City of Fresno Municipal Code establishes ambient noise criteria by zone use and time and standard for the base ambient noise level. Section 10-106 states that a 5 dB exceedance above the ambient base noise level constitutes a violation of Section 8-305. However, Section 10-109 exempts construction activities from the noise article of the City of Fresno Municipal Code.

3.13.4 Impact Analysis

3.13.4.1 Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis of noise are based on the environmental checklist in the State CEQA Guidelines, as amended. The project would have a significant noise impact if it would:

- result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- result in exposure of persons or generation of excessive groundborne vibration or groundborne noise levels;

- result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- for a project location within an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the study area to excessive noise levels; or
- for a project within the vicinity of a private airstrip, expose people residing or working in the study area to excessive noise levels.

3.13.4.2 Methodology

The analysis of the project's potential impacts was based on a comparison of project noise levels to ambient noise levels. In determining the extent and implications of the impacts, consideration was given to the type and noise generated by construction equipment, operating hours, and duration of construction and to the anticipated noise level from the proposed recreational use of the project site.

3.13.4.3 Impacts and Mitigation Measures

Impact 3.13-1: The project would result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Temporary Impacts. Various activities would occur on the project site throughout the construction period; however, the potential for noise impacts is likely to be greatest during site preparation and grading, when several pieces of equipment may operate simultaneously. For the project, the site grading phase would include soil grading and excavation for the trail extension and parking lot, foundations of buildings (restrooms), and underground utilities. The proposed structures would use spread footings or concrete mat foundations; therefore, no pile driving would be required. Table 3.13-5 and Table 3.13-6 depict the typical noise levels associated with heavy construction equipment. Maximum noise levels from the use of heavy equipment can range from about 74 to 85 dBA at 50 feet from the source.

Table 3.13-5 Construction Equipment Noise Levels

Equipment	Acoustical Usage Factor (%)[1]	Measured L_{max} (dB at 50 feet)
Backhoe	40	78
Compactor (ground)	20	83
Dozer	40	82
Dump Truck	40	76
Excavator	40	81
Flat Bed Truck	40	74
Front-End Loader	40	79
Generator	50	81
Grader	40	83
Pickup Truck	40	75
Pneumatic Tools	50	85
Roller	20	80
Scraper	40	84

Notes: dB = decibels; L_{max} = maximum noise level

[1] The fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.

Source: FHWA 2006

Noise attenuation is generally described as a reduction in decibel level per doubling of distance from the source. Depending on the nature of the noise source, noise propagates at different rates. Topography, vegetation, and atmospheric factors can also affect the rate of noise attenuation.

Project construction activities would result in a short-term, temporary increase in ambient noise levels. The operation of construction equipment would generate noise. The increased noise level would be experienced primarily close to the noise source (in the vicinity of the project site, e.g., residences). The magnitude of the impact would depend on the type of construction activity, the noise level generated by various pieces of construction equipment, the duration of the construction phase, and the distance between the noise source and receiver. The construction phase of the project would involve site preparation, construction of the trail extension foundation; a restroom building, and parking lot; and site cleanup.

Table 3.13-6 Maximum Construction Noise Levels at Various Distances from Project

Distance from Construction	Maximum Exterior Noise Level (dBA)
25 feet	91
50 feet	85
100 feet	79
250 feet	71
500 feet	65
1,000 feet	59

Note: dBA = A-weighted decibels

Source: FHWA 2006

The temporary impact from construction noise, although exempt from the City's Noise Ordinance, would be **potentially significant**.

Long-Term Impacts. Operation of the project for recreational use would not expose visitors or receptors to noise levels in excess of standards. Noise would be generated by people, horses, and vehicles entering the site and by occasional vehicles and equipment for operations, maintenance, and management. The resulting noise levels would meet standards for the area and adjacent uses. The operational impact would be **less than significant**. No mitigation is required.

Mitigation Measure Noise-1

The plans, specifications, and bid documents for each construction project shall include noise control measures to reduce noise impacts to the extent feasible. The measures shall include the following:

- The project shall be designed to meet the City of Fresno's standards for nonscheduled, intermittent, short-term operations of mobile construction equipment (e.g., backhoes, bulldozers, motor graders, and scrapers), and the noise standards for repetitively scheduled and relatively long-term construction operation of stationary equipment (e.g., compressors and generators).

- Muffled construction equipment shall be used whenever possible.

- Impact noise associated with construction shall be minimized by using noise control techniques, procedures, and acoustically treated equipment. For example, when practical, bins used to transport excavated material, including rocks and debris, could be constructed of nonmetallic liner to reduce impact noise; similarly, dump trucks could have resilient bed liners installed to minimize impact noise.

- Construction hours shall be restricted to meet City of Fresno standards, which restrict hours of construction to between 7 a.m. and 9 p.m., Monday through Saturday, and prohibit activity on Sundays and federal holidays.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Noise-1 would reduce the potential temporary impact to **less than significant** because the Conservancy and its contractor would use muffled construction equipment and construction would occur between 7 a.m. and 9 p.m., Monday through Saturday. No additional mitigation is required.

Impact 3.13-2: The project could result in exposure of persons or generation of excessive groundborne vibration or groundborne noise levels.

Temporary Impacts. Construction activities produce ground vibrations that can affect nearby structures and improvements by affecting the soil that supports the structure and/or by vibrating the structure. Construction activities such as pile driving and blasting can produce strong levels of vibration and are commonly cited as the cause of damage to nearby structures and annoyance to people. No aspect of the project is expected to produce excessive groundborne vibration or groundborne noise levels. No pile driving or surface blasting is proposed. Groundborne vibrations during construction would be temporary and would be caused primarily by excavation or compaction. The construction impact would be **less than significant.** No mitigation is required.

Long-Term Impacts. Groundborne vibration is an oscillatory motion through a solid medium and is typically generated by human activities. Operation of the project for recreational use would not generate groundborne vibration. **No impact** would occur during project operation.

Impact 3.13-3: The project could result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Noise associated with visitor use such as talking, occasional shouting, and music (e.g., radios, guitars) would occur during the day when the trail extension is open to public use. Visitor noise exposure to homeowners on the bluff would be attenuated by the distance and elevation height of the bluff. The impact would be **less than significant**. No mitigation is required.

Impact 3.13-4: The project could result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The temporary or periodic impact related to ambient noise levels in the project vicinity would be the same as the long-term impact described under Impact 3.13-3. The impact would be **less than significant**. No mitigation is required.

Impact 3.13-5: The project could expose people residing or working in the study area to excessive noise levels because of having a project location within an airport land use plan, or where such a plan has not been adopted, being within 2 miles of a public airport or public use airport.

The study area is not located within 2 miles of an airport. The closest airport is the Sierra Sky Park Airport, 4.5 miles to the west. Valley Children's Hospital, located across the River in Madera County, maintains an emergency transport helicopter service. The hospital helipad is about 0.5 mile from the study area. Because noise from helicopter emergency service is intermittent and temporary, the impact would be **less than significant**. No mitigation is required.

Impact 3.13-6: The project could expose people residing or working in the study area to excessive noise levels because it would be in the vicinity of a private airstrip.

The nearest private airport to the study area is the Sierra Sky Park Airport, 4.5 miles to the west. **No impact** would occur.

3.14 Population and Housing

3.14.1 Introduction

This section describes the existing setting of the project area with regard to population, employment, and housing and analyzes the potential impacts of the project on population and housing.

As described in Chapter 2, a public scoping meeting was held on June 17, 2014, to invite comments regarding environmental issues that should be examined in the DEIR. No comments were made regarding impacts on population and housing.

3.14.2 Environmental Setting

The study area is located in the northern part of the city of Fresno, near the San Joaquin River. The River serves as a border between Fresno and Madera counties. Fresno is the largest city in the San Joaquin Valley and the fifth largest city in the state. Fresno was incorporated in 1885; by 1890, the city's population had grown to 10,000. As of 2010, Fresno's population exceeded 500,000. Fresno County has a current population of 930,000. The city of Fresno's population is predicted to grow up to 970,000 by 2056, while the county's population will grow to 1.6 million by 2056 (City of Fresno 2014a).

The median household income for the city of Fresno was $45,563, about 8% higher than the county median of $42,015 (City of Fresno 2014a). There are no unincorporated disadvantaged communities in the vicinity of the project area. However, several disadvantaged community census tracts exist nearby. To facilitate the identification of low-income and highly polluted areas, OEHHA and CalEPA have adopted the California Communities Environmental Health Screening Tool, more commonly known as "CalEnviroScreen," which identifies disadvantaged communities or census tracts (OEHHA 2016). The main goal is to accurately locate areas/neighborhoods using pollution "scores." CalEnviroScreen is a science-based tool that measures environmental, socioeconomic, and health indicators. A more detailed discussion of disadvantaged communities or census tracts is found in Section 4.2, "Environmental Justice—Disadvantaged Communities."

3.14.3 Regulatory Setting

No federal, State, or local laws, regulations, or policies related to population and housing apply to the project, other than demographic and economic issues discussed in Section 4.2, "Environmental Justice—Disadvantaged Communities."

3.14.4 Impact Analysis

3.14.4.1 Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis of population and housing are based on the environmental checklist in the State CEQA Guidelines, as amended. The project would have a significant impact on population and housing if it would:

- 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);
- displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

3.14.4.2 Methodology

The analysis of the project's potential impacts was based on an assessment of the project's effects on population and housing in the vicinity of the project area. In determining the extent and implications of the impacts, the City's General Plan 2025 and General Plan Update 2035 were reviewed and established the basis for this analysis.

3.14.4.3 Impacts and Mitigation Measures

Impact 3.14-1: The project could 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).

Project construction would not induce substantial population growth, either by extending roads or infrastructure or by proposing new businesses and homes. The project would be an extension of the Eaton Trail near the San Joaquin River. **No impact** would occur.

Impact 3.14-2: The project could displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

The project would be an extension of a multiuse trail in an open space area and would not displace substantial numbers of existing housing. **No impact** would occur.

Impact 3.14-3: The project could displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

As stated above, the project would extend a trail in an open space area. It would not displace substantial numbers of people. **No impact** would occur.

3.15 Public Services

3.15.1 Introduction

This section describes the existing environmental and regulatory setting of the project area and analyzes the potential impacts of the project on public services. This section also describes the criteria for determining the significance of impacts, approach to assessing impacts, and possible mitigation measures.

As described in Chapter 2, a public scoping meeting was held on June 17, 2014, to invite comments regarding environmental issues that should be examined in the DEIR. No comments were made related to impacts on public services.

3.15.2 Environmental Setting

The Fresno Fire Department provides fire protection and emergency services to the city of Fresno. The department has 24 fire stations, including one aircraft rescue and firefighting station located at Fresno Yosemite International Airport. The two closest fire stations are located 2.5 miles from the project area: Fire Station #2, located at 7114 N. West, and Fire Station #13, located at 815 E. Nees.

The City of Fresno has five police stations. The headquarters are located near the intersection of Mariposa Street and O Street. The closest police station is the Northeast Policing District Station, located at 1450 E. Teague Avenue.

Bluff View Private Preschool and Kindergarten is located at 7805 North Palm Avenue, about 0.5 mile southwest of the project site. Other public facilities near the project site include the Woodward Park Regional Library, Valley Children's Hospital, and Fresno Heart and Surgical Hospital. The regional library is located 3 miles from the site, while Valley Children's Hospital is about 0.5 mile north of the project area. The Fresno Heart and Surgical Hospital is about 1 mile from the site.

The project area is west of and adjacent to the City's Woodward Park, a large regional park, and Jensen River Ranch/Tom MacMichael Sr. Loop Trail, a Parkway open space area adjacent north of Woodward Park and operated by the City. The City's multiple-use Eaton Trail currently leads from Woodward Park and terminates at the eastern boundary of the project area. Spano Park, a City pocket park, lies adjacent south of the project area; the Bluff Trail, a public trail operated by the City, also lies adjacent to the south. The project would connect all of these public park facilities through a system of on-site trails. Tables 5.13-4 and 5.13-5 of the Draft Master EIR for the City's General Plan and Development Code Update 2035 (City of Fresno 2014b) show the types of parks and facilities located in the city.

3.15.3 Regulatory Setting

3.15.3.1 Federal Laws, Regulations, and Policies

No federal laws, regulations, or policies related to public services apply to the project.

3.15.3.2 State Laws, Regulations, and Policies

No State regulations regarding public services are applicable to the project.

The Conservancy Act and Parkway Master Plan (Appendix B) contain policies related to providing Parkway recreation facilities and services and are discussed in Section 3.16, "Recreation."

3.15.3.3 Local Laws, Regulations, and Policies

The City's General Plan 2025 includes the following objectives and policy related to fire protection:

- **Objective E-25:** Ensure that fire protection, emergency medical and all emergency services are provided in an adequate, efficient and cost-effective manner.
- **Objective E-26:** Ensure that the Fire Department's staffing and equipment services are sufficient to implement all requests for fire and emergency service from the citizens of Fresno.
    - **Policy E-26-b.:** Provide an average response time of not more than five minutes for all emergency requests for services within the metropolitan area.

3.15.4 Impact Analysis

3.15.4.1 Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis of public services are based on the environmental checklist in the State CEQA Guidelines, as amended. The project would have a significant impact on public services if it would:

- result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: fire protection, police protection, schools, parks, or other public facilities.

3.15.4.2 Methodology

The City's General Plan 2025 and General Plan Update 2035 were reviewed and established the baseline setting for this analysis.

3.15.4.3 Impacts and Mitigation Measures

Impact 3.15-1: The project could result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any of the public services.

The closest fire stations are Fire Station #2, located at 7114 N. West, and Fire Station #13, located at 815 E. Nees. The project would not require construction or alteration of existing fire facilities, and would not affect response times. **No impact** related to fire protection would occur.

The closest police station is located at 1450 E. Teague Avenue (near the intersection of Cedar and Teague Avenues), which is 3 miles away from the project site. The project would not affect policing the response times. **No impact** related to police protection would occur.

The closest school to the project area is the Bluff View Private Preschool and Kindergarten, located at 7805 N. Palm Avenue, about 0.5 mile away. The project would not physically alter the school or affect student education performances. **No impact** on schools would occur.

Woodward Park is a public park located in Fresno, abutting the San Joaquin River, and is the largest of the three major public parks in the Fresno area. The project would not physically alter Woodward Park facilities. A discussion of recreation-related impacts of the project on Woodward Park and other recreation facilities is discussed in Section 3.16, "Recreation." **No impact** on park facilities would occur.

Other public facilities near the project site include the Woodward Park Regional Library, Valley Children's Hospital, and Fresno Heart and Surgical Hospital. The regional library is located 3 miles from the site, while Valley Children's Hospital is about 0.5 mile north of the project area. The Fresno Heart and Surgical Hospital is about 1 mile from the site. The project would not physically alter these facilities. **No impact** on other public facilities would occur.

3.16 Recreation

3.16.1 Introduction

This section describes the existing environmental and regulatory setting of the project area and analyzes the potential impacts of the project on recreation. This section also describes the criteria for determining the significance of impacts, approach to assessing impacts, and possible mitigation measures.

As described in Chapter 2, a public scoping meeting was held on June 17, 2014, to invite comments regarding environmental issues that should be examined in the DEIR, including recreation.

3.16.2 Environmental Setting

The physical environmental setting has been described in previous sections of this DEIR, such as the Aesthetics and Biological Resources sections. The environmental setting also includes recreation activities and exercise, fundamentals of a healthy life. The benefits include greater productivity, less disease, and a brighter future. According to the California Outdoor Recreation Planning Program (State Parks 2005), recreation and exercise result in:

- more energy and capacity for work and leisure activities;
- greater resistance to stress, disease, anxiety, fatigue, and a better outlook on life;
- increased stamina, strength, and flexibility;
- improved efficiency of the heart and lungs;
- loss of extra pounds or body fat;
- help in remaining at a desirable weight; and
- reduced risk of heart attack.

Recreational opportunities have become an integral part of establishing and sustaining a higher quality of life. Recreational opportunities can positively affect all members of a community. Benefits include improving social, economic, and educational factors in the following ways (State Parks 2005):

- connecting people within the community regardless of income, background, and ability;
- improving the quality of life in the community and helping to attract businesses and visitors to the area;
- protecting the environment by establishing greenways, natural areas, and open spaces;
- providing new and enhanced recreation opportunities; and

- providing benefits to individuals and the community by through physical fitness and self-improvement.

The Trust for Public Land has consistently ranked Fresno near the bottom of an annual survey of the amount of parks and open space for residents in cities across the U.S. (Trust for Public Land 2014). As the population of Fresno continues to grow, there will be a greater need for the City of Fresno and other government service providers to deliver additional recreation space and programs for the community.

3.16.2.1 Parks

Woodward Park is located east of and nearly adjacent to the project area. This park is named for Ralph Woodward, a longtime Fresno resident. Woodward bequeathed the major portion of his estate to the City in 1968 to provide a regional park and bird sanctuary in northeast Fresno on the south bank of the River, between SR 41 and Friant Road. He bequeathed 235 acres and the City later acquired additional acres, increasing the park's size to 300 acres. Woodward Park is the only regional park of its size in the Central Valley. The southeast corner of the park harbors numerous bird species, offering bird enthusiasts an excellent opportunity for viewing. The park has a multiuse amphitheater that seats up to 2,500 people, an authentic Shinzen Japanese garden, a fenced dog park, an exercise par course, three children's playgrounds, an artificial lake and three smaller ponds, and seven picnic areas (with barbeques, electricity, and water fountains). The park's nine parking lots provide 2,500 parking spaces. Table 3.16-1 presents average weekly visitor use of Woodward Park for the years 2013 to 2015. Table 3.16-2 presents visitor use of Woodward Park on two national holidays in the summer of 2014 and 2015.

Table 3.16-1 Weekly Visitor Use by Car, Woodward Park

Year	Average No. Cars Per Week
2013	2,613
2014	2,781
2015	2,887

Source: Data compiled by AECOM in 2016

The City's multiple-use Eaton Trail (a completed segment of the planned Parkway-wide multiple-use trail) currently leads from Woodward Park and terminates at the eastern boundary of the project area near the Perrin Avenue undercrossing of SR 41.

Table 3.16-2 Holiday Visitor Use of Woodward Park, 2014

Date	Day of Week	No. of Cars
Memorial Day		
May 27, 2013	Monday	1,138
May 26, 2014	Monday	798
May 25, 2015	Monday	1,352
May 30, 2015	Monday	733
5-Year Average Memorial Day Holiday		**1,005**
Independence Day		
July 4, 2013	Thursday	139
July 4, 2014	Friday	280
July 4, 2015	Saturday	493
July 4, 2016	Monday	205
5-Year Average Independence Day		**1,024**

Source: Data compiled by AECOM in 2016

Spano Park**,** a City pocket park, lies adjacent and south of the project area; the Bluff Trail, a public trail operated by the City, lies adjacent and south as well. The project would connect all of these public park facilities through a system of on-site trails. There are 17 parking spaces at Spano Park. Table 3.16-3 shows visitor use by parked car during the 2014 Memorial Day weekend.

Table 3.16-3 Visitor Use of Spano Park by Car, Memorial Day Weekend 2014[1]

Date	7:00 A.M. to 9:00 A.M.	10:00 A.M. to 12:00 Noon	4:00 P.M. to 6:00 P.M.
May 24, 2014	5	3	9
May 25, 2014	2	4	15
May 26, 2014	5	6	19
Daily Total	12	13	43

[1] Parking survey conducted by AECOM.

Source: Data compiled by AECOM in 2016

3.16.2.2 Trails

The Bluff Trail is an existing neighborhood trail located on land owned by the City of Fresno. The trail follows the alignment of the Perrin Canal just below the bluff crest. Public access is provided by two gated entrances, one at Churchill Avenue and the other at West Riverview Drive. The gates are opened and closed daily by City employees.

The City has a total of 134 miles of Class I, II, and III bike paths. A Class I bike path is usually located away from vehicles, such as in parks or along creeks, and used exclusively by pedestrians and cyclists. Class II bike paths are striped lanes set aside on city streets with painted lines on streets, and Class III

bike paths are signed shared roadways and are located on streets shared by bicyclists and vehicles. Of the 134 miles of bike paths in Fresno, 14 are Class I, 113 are Class II, and seven are Class III bike paths. The existing Eaton Trail is a Class I bike path that currently ends near the Perrin Avenue undercrossing of SR 41. The project would extend the existing Eaton Trail by approximately 2.4 miles.

3.16.3 Regulatory Setting

3.16.3.1 Federal Laws, Regulations, and Policies

No federal laws, regulations, or policies related to recreation apply to the project.

3.16.3.2 State Laws, Regulations, and Policies

San Joaquin River Conservancy Act

The Conservancy Act states, "The conservancy shall be responsible for operation and maintenance of the parkway. The conservancy shall close to the public any lands or facilities which it is unable to maintain in a clean and safe manner and to adequately protect the wildlife and rights of adjacent property owners from the public, including areas downstream from the Highway 99 crossing affected by the use of the parkway" (PRC Section 32511).

San Joaquin River Parkway Master Plan

The Conservancy develops and manages its projects and lands under its jurisdiction in the Parkway through policies included in the Parkway Master Plan. The Parkway Master Plan (Appendix B) contains goals, objectives, and policies that apply to the project area in relation to recreation, including the following goal and policies:

Goal RA3: Manage recreational uses to reduce or eliminate indiscriminate activities trespass on private land, and human impacts on sensitive habitat areas.

- **Policy RO2:** Prevent and control undesirable activities and unlawful conduct in the Parkway.
- **Policy RP8:** Have rangers and other Parkway personnel prevent and control undesirable activities and unlawful conduct as their most important responsibility.

These goals, objectives, and policies do not necessarily avoid impacts but may lessen them.

3.16.3.3 Local Laws, Regulations, and Policies

City of Fresno Bicycle, Pedestrian, & Trails Master Plan

The *City of Fresno Bicycle, Pedestrian, & Trails Master Plan* (City of Fresno 2010) includes the following applicable policies:

- **Policy E-15-d:** Ensure that potential trail corridors will generally be accessible to all members of the community, including young children, the physically impaired, and the elderly. Exceptions may be made where existing physical features or conditions warrant maintaining more natural grades, alignments, and unpaved surfaces.
- **Policy F-1-d:** Provide for the continuing development of a public system to meet the community's needs for both active and passive recreation with an adequate supply of recreational space, an appropriate mix of park types, and an equitable distribution of these facilities.

Figure 2-2 on page 28 of the master plan shows the locations of bike trails, including the existing Eaton Trail, categorized as a Class I bike path. The trail has features that other Class I paths in the area lack. Among the trail's features are restrooms, drinking fountains, and parking areas.

County of Fresno

The County of Fresno's *Regional Bicycle & Recreational Trails Master Plan* (County of Fresno 2013) was created through the coordinated efforts of the County of Fresno Department of Public Works and Planning, the Fresno Council of Governments (COG), the Fresno Cycling Club, the City of Fresno Bicycle Pedestrian Advisory Committee, various government and nonprofit agencies, and citizens interested in improving the bicycling environment of Fresno County. The plan provides a comprehensive long-range view for the development of an extensive regional bikeway and recreational trails network that connects cities and unincorporated areas countywide, and includes the planned Parkway multiuse trail.

3.16.4 Impact Analysis

3.16.4.1 Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis of recreation resources are based on the environmental checklist in the State CEQA Guidelines, as amended. The project would have a significant impact on recreation resources if it would:

- 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; or
- include recreational facilities or require the construction or expansion of recreational facilities that may have an adverse physical effect on the environment.

3.16.4.2 Methodology

The analysis of the project's potential impacts was based on an assessment of the project's effects on recreation in and near the project area. In determining the extent and implications of the impacts, consideration was given to the Parkway Master Plan, the City's General Plan 2025 and General Plan Update 2035, and the *City of Fresno Bicycle, Pedestrian, & Trails Master Plan* (City of Fresno 2010).

3.16.4.3 Impacts and Mitigation Measures

Impact 3.16-1: The project could 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.

The project could increase the use of existing neighborhood and regional parks or other recreational facilities, such as the existing Eaton Trail and Woodward Park, and trail corridors planned in the *City of Fresno Bicycle, Pedestrian, & Trails Master Plan* (City of Fresno 2010), because by design, these facilities would be connected to the proposed trail extension. However, the increased use would not result in substantial physical deterioration of a recreation facility. The impact would be **less than significant**. No mitigation is required.

Impact 3.16-2: The project could include recreational facilities or could require construction or expansion of recreational facilities that may have an adverse physical effect on the environment.

The project would extend the existing Eaton Trail by about 3.5 miles, add parking and a variety of recreation amenities, and provide a new trail segment that meets ADA grade and access requirements (lacking along other segments of the Eaton Trail). The project has been designed to provide additional recreational opportunities in a local and regional area with documented recreational needs. The project was evaluated in this DEIR relative to specific resource areas to determine whether implementation would result in significant adverse impacts. The potential environmental impacts of the project are summarized in Table 1.6-1 in Chapter 1, "Executive Summary," of this DEIR. Some of the impacts identified would be less than significant. In other instances, incorporation of the mitigation measures proposed in this DEIR would reduce the impacts to **less than significant.** No additional mitigation is required.

3.17 Transportation

3.17.1 Introduction

This section describes the existing environmental and regulatory setting of the project area and analyzes the potential impacts related to transportation. This section also describes the criteria for determining the significance of impacts, approach to assessing impacts, and possible mitigation measures. As described

in Chapter 2, a public scoping meeting was held on June 17, 2014, to invite comments regarding environmental issues that should be examined in the DEIR, including comments on transportation.

3.17.2 Environmental Setting

The City of Fresno has four major State routes:

- SR 41 heads north and south, connecting downtown Fresno with North Fresno.
- SR 99 also heads north and south but links two other cities in the San Joaquin Valley, Sacramento and Bakersfield.
- SR 168 connects the city of Clovis with downtown Fresno and is a route to the Sierra Nevada.
- SR 180 runs east and west, but also connects with downtown Fresno. This State route heads east to Kings Canyon and Sequoia National Park and west to the cities of Mendota and Kerman.

The project would be constructed along the River immediately downstream of the SR 41 bridge, which links Madera and Fresno counties (see Figure 2-3).

Roads are classified according to the road's purpose and level of service (LOS). The LOS describes the flow of traffic during particular times of use and varies depending on the type of road (Table 3.17-1). The LOS can change because of increases or decreases in traffic levels, and can increase in severity during roadway blockages and maintenance projects. In general, traffic on a major roadway segment needs to increase by approximately 400 vehicles per hour to increase the severity of the LOS.

Table 3.17-1 Capacity per Hour per Lane for Various Highway Facilities

Level of Service	Freeways	Two-Lane Rural Hwy.	Multi-lane Rural Hwy.	Expressway	Arterial	Collector
LOS A	700	120	470	720	450	300
LOS B	1,100	240	945	840	525	350
LOS C	1,550	395	1,285	960	600	400
LOS D	1,850	675	1,585	1,080	675	450
LOS E	2,000	1,145	1,800	1,200	750	500

Notes: Hwy. = highway; LOS = level of service

Source: Madera County Resource Agency 2010

3.17.2.1 Roadways Used during Project Construction

Roadways that could be used during project construction are identified in Table 3.17-2.

Table 3.17-2 Roadways that May Be Used during Project Construction

Road Name	Classification	Jurisdiction
SR 41	Freeway	Caltrans
SR 99	Freeway	Caltrans
Avenue 9	Expressway	Madera County
Children's Boulevard	Arterial	Madera County
Cobb Ranch Road	Local	City of Fresno
Friant Road	Arterial	Fresno County
Audubon Drive	Local	Fresno County
North Del Mar Avenue	Local	Fresno County
West Riverview Drive	Local	Fresno County

Notes: Caltrans = California Department of Transportation; SR = state route

All roadways that could be used during project construction are classified LOS C or better (Table 3.17-3). The intersections that could be used during project construction are also classified LOS C or better, even during the worst peak hours (Table 3.17-4).

Table 3.17-3 Existing Levels of Service, Potential Construction Roadway Segments

Road Name	Segment	Worst Peak-Hour Level of Service
SR 41	Friant Road to Children's Boulevard	C
SR 99	Road 35 to Avenue 9	B
Avenue 9	SR 99 to Road 40½	C
Children's Boulevard	Road 40½ to SR 41	B
Nees Road	Audubon Drive to Palm Avenue	B
Cobb Ranch Road	Avenue 9 to Perrin Avenue	C
Audubon Drive	Friant Road to North Del Mar Avenue	C
North Del Mar Avenue	Audubon Drive to West Riverview Drive	C
West Riverview Drive	From North Del Mar Avenue	A

SR = state route

Sources: Madera County Transportation Commission 2010; Gormley, pers. comm., 2014

Table 3.17-4 Existing Levels of Service, Project Construction Intersections

Intersection Name	Worst Peak-Hour Level of Service
Children's Boulevard/SR 41	C
Friant Road/Blackstone (SR 41 off-ramp)	C
Audubon Drive/North Del Mar Avenue	C
North Del Mar Avenue/West Riverview Drive	C
Palm Avenue and Nees Avenue	B

Note: SR = State route

Sources: Madera County Transportation Commission 2010; Gormley, pers. comm., 2014

3.17.2.2 Roadways Used during Project Operation

A traffic analysis was prepared for the project in accordance with the *City of Fresno Traffic Impact Study Report Guidelines* for use in CEQA project review (Appendix H). The traffic analysis focused on evaluation of operating conditions on the study roadway segments with and without the project. The assessment of roadway segment LOS was based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast average daily traffic (ADT) volumes. The generalized peak-hour roadway segment volumes were subsequently adjusted to reflect traffic volumes on segments of signalized non-State roadways, reflecting the *City of Fresno Traffic Impact Study Report Guidelines*. Appendix H provides a detailed description of the analysis methodologies, standards, and thresholds.

Table 3.17-5 shows the roadway segments in the study area that are the most likely to be used to access the project site, and that were therefore included in the traffic analysis.

Table 3.17-5 Study Roadway Segments

Segment Number	Roadway Segment
1	SR 41 between the Fresno–Madera County Line and Avenue 12
2	SR 41 East Frontage Road (Cobb Ranch Road) north of Vin Rose Lane
3	Audubon Drive between SR 41 and Palm Avenue
4	Audubon Drive just east of SR 41
5	Del Mar Avenue between Audubon Drive and West Riverview Drive

Note: SR = state route

Source: Data compiled by AECOM in 2016

Roadway segment traffic counts were collected on Saturday through Monday, May 24 to 26, during the 2014 Memorial Day weekend, to capture a worst-case-scenario traffic count sampling of roadway traffic demand on the study roadway segments. The traffic count worksheets are provided in Appendix H.

Table 3.17-6 summarizes the results of the analysis of LOS on the study roadway segments under existing conditions. As shown, all study roadway segments currently operate at acceptable LOS C or better under existing conditions.

Table 3.17-6 Roadway Segment Analysis—Existing Conditions

Roadway Segment[1]	Number of Lanes[2]	Direction	ADT 24-Hour Volume	Existing Condition			
				A.M. Peak Hour		P.M. Peak Hour	
				Vol	LOS	Vol	LOS
1 SR 41 between Fresno–Madera County Line and Avenue 12	2/D	NB	24,777	514	B	772	B
		SB		408	B	925	B
2 SR 41 East Frontage Road (Cobb Ranch Road) north of Vin Rose Lane	1/U	NB	158	8	C	6	C
		SB		2	C	6	C
3 Audubon Drive between SR 41 and Palm Avenue	1/U	EB	10,886	293	C	346	C
		WB		330	C	447	C
4 Audubon Drive just east of SR 41	2/D	EB	11,078	294	C	345	C
		WB		338	C	466	C
5 Del Mar Avenue between Audubon Drive and West Riverview Drive	1/U	NB	1,604	25	C	50	C
		SB		67	C	71	C

Notes:

ADT = average daily traffic; D = divided; EB = eastbound; LOS = level of service; NB = northbound; SB = southbound; SR = State Route; U = undivided; Vol = volume; WB = westbound

[1] Evaluated using Table 7 Florida Tables.

[2] Number of lanes in each direction.

Source: Data compiled by AECOM in 2016

3.17.3 Regulatory Setting

3.17.3.1 Federal Laws and Regulations

No federal laws, regulations, or policies related to transportation apply to the project.

3.17.3.2 State Laws, Regulations, and Policies

California Department of Transportation

Caltrans is one of several departments within the Business, Transportation and Housing Agency. Among the department's programs is the Right-of-Way and Asset Management Program. This program, administered by Caltrans district offices, is primarily responsible for acquisition and management of property required for State transportation purposes. Transportation purposes may include roads, mass-transit guideways and related facilities, airports, shops, maintenance stations, storage yards, material sites, and other purposes necessary for Caltrans operations (Caltrans 2015). The responsibilities of the

Right-of-Way and Asset Management Program include managing Caltrans's real property for transportation purposes, reducing operational costs, disposing of property no longer needed, and monitoring right-of-way activities on federally assisted local facilities. An encroachment, as defined by Section 660 of the Streets and Highways Code, can be any tower, pole, pole line, pipe, pipe line, fence, billboard, stand, or building, or any structure or object of any kind or character that is within the right-of-way but not a part of the Caltrans facility. Authority for Caltrans to control encroachments within a State roadway is included in the Streets and Highways Code, starting with Section 660.

Encroachments allow utilities, a public entities, or private parties to use roadway right-of-way temporarily or permanently. Encroachments include all public and private utilities within State rights-of-way, such as communication, electric power, water, gas, oil, petroleum products, steam, sewer, drainage, irrigation, and similar facilities. Encroachments also include temporary or permanent breaks in access or use of the roadway rights-of-way, for grading, excavating, or filling or removal of materials by public agencies, developers, or private individuals (Caltrans 2015).

Caltrans issues encroachment permits to other agencies or parties that perform construction activities within its right-of-way. Typical projects performed by other agencies or parties that require encroachment permits include construction of roadway improvements and utility work. Under an encroachment permit, Caltrans requires the agency or party to implement an appropriate storm water pollution prevention program. Caltrans retains ultimate responsibility for ensuring that the portion of the project within the Caltrans right-of-way is in compliance with federal, State, and local stormwater pollution prevention regulations.

Caltrans has specific interest in projects that may structurally modify roadways, deck slabs (not including raised sidewalks or utility attachments), girders (not including utility attachments), bottom slabs of superstructures, columns and supporting foundations, and abutments and supporting foundations.

California Vehicle Code

Sections 13369, 15275, and 15278. These sections of the Vehicle Code address the licensing of drivers and the classification of licenses required to operate particular types of vehicles. The code sections require a commercial driver's license to operate commercial vehicles and an endorsement issued by the California Department of Motor Vehicles (DMV) to drive any commercial vehicle identified in Section 15278. DMV is the administering agency for these statutes. The project would comply by requiring contractors and employees to be properly licensed and endorsed when operating such vehicles.

Sections 35550 and 35551. Vehicle Code Section 3550 imposes weight guidelines and restrictions on vehicles traveling on freeways and highways. The section holds that "a single axle load shall not exceed 20,000 pounds. The load on any one wheel or wheels supporting one end of an axle is limited to 10,500 pounds. The front steering axle load is limited to 12,500 pounds." Furthermore, Vehicle Code Section

35551 defines the maximum overall gross weight as 80,000 pounds and adds that "the gross weight of each set of tandem axles shall not exceed 34,000 pounds." Caltrans is the administering agency for this statute. The project would comply by requiring compliance with weight restrictions and by requiring heavy haulers to obtain permits, if required, before delivering any heavy haul load.

Section 35780. Vehicle Code Section 35780 requires a Single-Trip Transportation Permit to transport oversized or excessive loads over State highways. The permit can be acquired from Caltrans. The project would comply by requiring that heavy haulers obtain a Single-Trip Transportation Permit for oversized loads for each vehicle before delivering any oversized load.

California Streets and Highways Code

Section 117. Unless otherwise specifically provided, when Caltrans acquires right-of-way over real property for State highway purposes, the agency also obtains the right to issue permits for the right-of-way location for structures or fixtures related to telegraph, telephone, or electric power lines, or for ditches, pipes, drains, sewers, or underground structures. Caltrans is the administering agency for this statute. If applicable, the project would comply by acquiring the necessary permits and approval from Caltrans for use of public rights-of-way.

Sections 660, 670, 672, 1450, 1460, 1470, and 1480 et seq. These sections of the Streets and Highways Code define highways and encroachments and require encroachment permits for projects involving excavation in State highways and county/city streets. This law is generally enforced at the local level. Caltrans and the City of Fresno are the administering agencies for this statute. Before the start of construction, the project would apply for encroachment permits for any excavation in State, county, and city roadways.

California Manual on Uniform Traffic Control Devices, Part 6

The *California Manual on Uniform Traffic Control Devices* (Caltrans 2014b) requires that a temporary traffic control plan be provided for "continuity of function (movement of traffic, pedestrians, bicyclists, transit operations), and access to property/utilities" during any time the normal function of a roadway is suspended. Caltrans, the County of Fresno, the County of Madera, and the City of Fresno are the administering agencies for this regulation. If applicable, a traffic control plan would be prepared before the start of construction.

San Joaquin River Parkway Master Plan

The Conservancy manages its projects and lands under its jurisdiction in the Parkway through policies included in the Parkway Master Plan.

The Conservancy's Parkway Master Plan includes the following policies relating to adequate provision of on-site parking (Appendix B):

- **Policy RTP1:** To the extent needed and possible, schedule Parkway facility events to avoid peak traffic periods (e.g., major summer holidays) and to avoid concurrent events that would overload transportation access routes and/or Parkway parking facilities.
- **Policy RTP4:** Develop operating plans for each Parkway segment, including access control locations, park hours, fees and enforcement provisions in conjunction with the affected local jurisdiction(s).
- **Policy RTP5:** Off-site improvements needed for access to and from Parkway facilities shall be designed in accordance with standards of the applicable local jurisdiction(s).
- **Policy RPP1:** Develop sufficient on-site parking at each public recreational facility to provide adequate parking supply for the desired usage level during peak periods and to meet the parking requirements of the local jurisdiction, while avoiding excess parking which would increase environmental impacts of construction and promote overuse of the site. On-site parking design should consider harmony with the natural environment while ensuring safety and security for users.

3.17.3.3 Local Laws, Regulations, and Policies

Madera County General Plan

The *Madera County General Plan* (County of Madera 1995) provides a land use diagram (map) and describes the allowable uses and standards for the land use designations in the diagram. The plan also describes the circulation plan diagram and the standards for the roadway classification system used for the circulation plan diagram. The circulation plan diagram supports the land uses shown in the land use diagram. The following goal and policy are relevant to the project:

Goal 1.A: To promote the wise, efficient, and environmentally sensitive use of Madera County land to meet the present and future needs of Madera County residents and businesses.

- **Policy 1.A.4**: The County shall encourage infill development and development contiguous to existing cities and unincorporated communities to minimize premature conversion of agricultural land and other open space lands.

Madera County 2011 Regional Transportation Plan

The *Madera County 2011 Regional Transportation Plan* (Madera County Transportation Commission 2010) provides a comprehensive long-range view of transportation needs and opportunities for Madera County's transportation system through 2035. The plan's policies and programs are aimed at safely and

efficiently accommodating anticipated population growth in the cities of Chowchilla and Madera, as well as Madera County, through 2035. The plan does not include goals or policies relevant to the project.

Fresno Council of Governments Regional Transportation Plan

The Fresno COG's Regional Transportation Plan (RTP) is a comprehensive assessment of all forms of transportation available in Fresno County and of needs for travel and goods movement, projected into the future through 2040 (Fresno COG 2014). The first RTP was adopted in 1975; the 2014 plan, the latest edition, continues a process of intergovernmental cooperation, coordination, and long-range planning that has involved the 15 cities in Fresno County, staff from related local public agencies, the air district, Caltrans, and the public. This process has been accomplished within the framework of the Fresno COG, which is the regional transportation planning agency for the Fresno County area. Updated editions are required every 4 years and are refinements of the original and subsequent plans. Federal and State laws mandate that long-range transportation planning be done every 4 years for at least 20 years into the future.

City of Fresno Draft General Plan Update 2035

The *City of Fresno General Plan* Mobility Element contains the following policy that is relevant to the project:

- **Policy MT-1-M:** Standards for Planned Bus Rapid Transit Corridors and Activity Centers. Independent of the Traffic Impact Zones identified in MT-2-I Chapter 4: Mobility and Transportation and Figure MT-4, strive to maintain the following vehicle LOS standards on major roadway segments and intersections along Bus Rapid Transit Corridors and in Activity Centers:
    - LOS E or better at all times, including peak travel times, unless the City Traffic Engineer determines that mitigation to maintain this LOS would be infeasible and/or conflict with the achievement of other General Plan policies.
    - Accept LOS F conditions in Activity Centers and Bus Rapid Transit Corridors only if provisions are made to improve the overall system and/or promote non-vehicular transportation and transit as part of a development project or a City-initiated project. In accepting LOS F conditions, the City Traffic Engineer may request limited analyses of operational issues at locations near Activity Centers and along Bus Rapid Transit Corridors, such as queuing or left-turn movements.
    - Give priority to maintaining pedestrian service first, followed by transit service and then by vehicle LOS, where conflicts between objectives for service capacity between different transportation modes occur.

- Identify pedestrian-priority and transit-priority streets where these modes would have priority in order to apply a multi-modal priority system, as part of the General Plan implementation.

3.17.4 Impact Analysis

3.17.4.1 Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis of transportation are based on the environmental checklist in the State CEQA Guidelines, as amended. The project would have a significant impact related to transportation if it would:

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

According to the *City of Fresno Traffic Impact Study Report Guideline*s (City of Fresno 2009), a project is considered to have an individually significant impact on the operation of an intersection if the additional traffic generated from the project would:

- trigger an intersection operating at an acceptable LOS to operate at an unacceptable LOS,
- trigger an intersection operating at an unacceptable LOS (LOS E) to operate at LOS F, or
- increase the average delay for a study intersection that is already operating at an unacceptable LOS.

Because the guidelines do not provide specific significance criteria for roadway segments, the first two conditions listed above were used to evaluate roadway segment impacts.

3.17.4.2 Methodology

Traffic volumes under Project Buildout (2025) conditions were developed by applying annual traffic growth factors to existing 2014 roadway segment volumes. In consultation with Fresno COG staff, future traffic projections were developed using Fresno COG's 2010 and 2035 traffic model forecasts for the study area.

Because of the project site's setting and location—the combination of open space and residential uses surrounding the project area—the application of annual growth factors (ranging from 3% to 4%) to existing traffic volume was deemed very conservative and sufficient to account for any potential project development that may influence the study area.

3.17.4.3 Impacts and Mitigation Measures

Impact 3.17-1: The project could conflict with an applicable plan, ordinance, or policy.

The project would not generate a substantial increase in the number of trips. Table 3.17-7 shows the ADT that would be added with implementation of the project. Compared to existing conditions, the traffic volume on SR 41 between the Fresno–Madera County line and Avenue 12 and the traffic volume on SR 41 east of Frontage Road and north of Vin Rose Lane would increase.

ADT would not increase on the remaining roadway segments. As shown in Table 3.17-7, all study roadway segments would operate at an acceptable LOS C or better under Existing plus Project Conditions. Therefore, the project would not conflict with any applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. The impact would be **less than significant**. No mitigation is required.

Table 3.17-7 Roadway Segment Analysis—Existing plus Project Conditions

Roadway Segment[1]	Number of Lanes[2]	Direction	ADT 24-Hour Volume	Existing plus Project Condition			
				A.M. Peak Hour		P.M. Peak Hour	
				Vol	LOS	Vol	LOS
1 SR 41 between the Fresno–Madera County line and Avenue 12	2/D	NB	25,095	554	B	825	B
		SB		428	B	945	B
2 SR 41 East Frontage Road (Cobb Ranch Road) north of Vin Rose Lane	1/U	NB	476	28	C	26	C
		SB		42	C	59	C
3 Audubon Drive between SR 41 and Palm Avenue	1/U	EB	10,886	293	C	346	C
		WB		330	C	447	C
4 Audubon Drive just east of SR 41	2/D	EB	11,078	294	C	345	C
		WB		338	C	466	C
5 Del Mar Avenue between Audubon Drive and West Riverview Drive	1/U	NB	1,604	25	C	50	C
		SB		67	C	71	C

Notes:

ADT = average daily traffic; D = divided; EB = eastbound; LOS = level of service; NB = northbound; SB = southbound; SR = State Route; U = undivided; Vol = volume; WB = westbound

[1] Evaluated using Table 7 Florida Tables.

[2] Number of lanes in each direction.

Source: Data compiled by AECOM in 2016

Impact 3.17-2: The project could conflict with an applicable congestion management program established by the county's congestion management agency for designated roads or highways.

See Impact 3.17-1. The project would not conflict with an applicable congestion management plan. The impact would be **less than significant**. No mitigation is required.

Impact 3.17-3: The project could result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that would result in substantial safety risks.

The project would not rely on or increase demand for air transportation and would not cause any change in air traffic patterns. **No impact** would occur.

Impact 3.17-4: The project could substantially increase hazards because of a design feature or incompatible uses.

The project would not include any design features or incompatible uses that would increase hazards substantially. **No impact** would occur.

Impact 3.17-5: The project could result in inadequate emergency access.

Adequate emergency access would be provided to the project site via Nees Avenue, Audubon Drive, and Palm Avenue. The impact would be **less than significant**. No mitigation is required.

Impact 3.17-6: The project could conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities or otherwise could decrease the performance or safety of such facilities.

The project would extend the existing Eaton Trail by constructing a multipurpose trail, thereby enhancing, augmenting, and encouraging bicycle and pedestrian use. **No impact** would occur.

3.18 Utilities and Service Systems

3.18.1 Introduction

This section describes the existing environmental and regulatory setting of the project area and analyzes the potential impacts of the project on utilities and service systems. This section also describes the criteria for determining the significance of impacts, approach to assessing impacts, and possible mitigation measures.

As described in Chapter 2, a public scoping meeting was held on June 17, 2014, to invite comments regarding environmental issues that should be examined in the DEIR. No comments were made regarding impacts on utilities and service systems.

3.18.2 Environmental Setting

3.18.2.1 Water Supply

The project site is located within the Fresno city limits. Potable water service would be provided to the project site by the City's Department of Public Utilities, Water Division. The Water Division supplies nearly 46 billion gallons of safe, reliable, and affordable water to Fresno residents through a supply system of about 1,800 miles of water mains.

Water for City customers comes from two primary sources: groundwater and surface water. For years, groundwater pumped up from an underground aquifer was the sole source of water for Fresno water customers. In 2004, treated surface water from the Surface Water Treatment Facility, located in northeast Fresno, began augmenting the groundwater to create a more balanced water supply. About 30 million gallons per day of water are provided by the Surface Water Treatment Facility. The City, in cooperation with FMFCD and Fresno Irrigation District, runs an aggressive recharge program to supplement the natural replenishment of the groundwater.

The City recently updated its *Metropolitan Water Resources Management Plan* for providing future water service in Fresno. The update includes plans to expand the City's existing Northeast Surface Water Treatment Facility, construct a new Southeast Surface Water Treatment Facility, reduce the use of groundwater and increase groundwater recharge to balance groundwater operations, and expand the use of recycled water to offset demands for potable water. The City began construction of new surface water treatment infrastructure in 2016. To offset the area's peak water demand and fire flow requirements until this larger regional facility can be built, the City recently completed construction of a 3-million-gallon water storage tank and a 4-million-gallon-per-day package surface water treatment facility (T-3 Facility) east of Fresno International Airport. The surface water treatment component of this site is anticipated to operate from May through October of each year, when water demands are highest.

One of the primary objectives of the City's future water supply plan is to maximize the use of its available surface water supplies, through either increased treatment and direct use (by constructing additional water treatment facilities) or increased intentional recharge (by increasing the use of existing recharge facilities and constructing new recharge facilities). Maximizing the use of available surface water supplies would provide the City with greater water supply reliability and operational flexibility and would lessen the City's dependency on groundwater supplies, thus minimizing further impacts on the underlying groundwater basin (City of Fresno 2013).

A nonpotable-water well is located along the paved road on the project site. The well's 55-gallon-per-minute pump is providing temporary irrigation for a habitat restoration program.

3.18.2.2 Solid Waste

The County of Fresno operates the regional American Avenue Landfill located at 18950 W. American Avenue in Kerman, California. The City of Fresno's Solid Waste Management Division collects municipal solid waste, recyclables, and green waste weekly from more than 107,000 residential customers, producing approximately 1,046 tons of material each collection day. The solid wastes are disposed of at the regional landfill. The landfill is expected to be able to continue operation until 2031, when it will be full and will have to be closed.

3.18.2.3 Wastewater

The City of Fresno's Wastewater Management Division provides high-quality wastewater collection, treatment, and reclamation services in a professional and competitive manner to preserve the environment and ensure the health, safety, and economic vitality of the community. The City owns more than 1,500 miles of sewer pipes and other sanitary collection system infrastructure, such as manholes and lift stations. It also owns the seventh largest wastewater reclamation facility in California, the Fresno-Clovis Regional Wastewater Reclamation Facility, a secondary-level treatment facility, and the North Fresno Wastewater Reclamation Facility, a tertiary-level treatment facility.

3.18.2.4 Power Supply

Pacific Gas and Electric Company provides electrical power to project site and has a transmission line on-site that serves the two private residences.

3.18.3 Regulatory Setting

3.18.3.1 Federal Laws, Regulations, and Policies

No federal laws, regulations, or policies related to utilities and service systems apply to the project.

3.18.3.2 State Laws, Regulations, and Policies

National Pollutant Discharge Elimination System

The Central Valley RWQCB is responsible for oversight of wastewater treatment and disposal and the terms of RWQCB-issued WDRs.

San Joaquin River Parkway Master Plan

The Conservancy develops and manages its projects and lands under its jurisdiction in the Parkway through policies included in the Parkway Master Plan. The Parkway Master Plan (Appendix B) contains goals, objectives, and policies that apply to the project area in relation to utilities, including the following policies:

- **Policy RDP15:** In areas where septic systems are prohibited, vault toilets sufficient to handle wastes generated by Parkway users shall be determined and shall be placed in easily accessible and numerous locations. Frequent and regular monitoring and removal of wastes to prevent overflows shall be implemented, particularly during periods of heavy Parkway use.
- **Policy RFP8:** Septic systems shall only be installed in areas approved by local ordinance and shall be sited, designed, and operated in accordance with all applicable State and local laws and regulations.
- **Policy ROP2:** …Parkway projects shall include as part of final project design … installation of efficient irrigation systems in landscaped areas, if any, to minimize runoff and evaporation and maximize the water that will reach plant roots. Such irrigation systems include drip irrigation and automatic irrigation systems.
- **Policy PS1:** Furnish necessary public service facilities (water, electricity, telephone) on land currently supporting a public service facility and other land needed for development of those facilities if considered necessary for the health, safety, and welfare of the people

of the area. Do not furnish public service facilities in areas with native vegetation or sensitive wildlife breeding or nesting habitat.

- **Policy PS3:** Any needed public facilities for drinking water will be built, operated and monitored in conformance with State standards for public, non-community water systems and in conformance with Fresno County, Madera County, and the City of Fresno water well ordinances.

These goals, objectives, and policies do not necessarily avoid impacts but may lessen them.

3.18.3.3 Local Laws, Regulations, and Policies

No local laws, regulations, or policies related to utilities and service systems apply to the project.

3.18.4 Impact Analysis

3.18.4.1 Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis of utilities and service systems are based on the environmental checklist in the State CEQA Guidelines, as amended. The project would have a significant impact on utilities and service systems if it would:

- exceed wastewater treatment requirements of the applicable RWQCB;
- require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects;
- require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- have insufficient water supplies available to serve the project from existing entitlements and resources, or need new or expanded entitlements;
- fail to result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demands in addition to the provider's existing commitments;
- be served by a landfill without sufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- fail to comply with federal, State, and local statutes and regulations related to solid waste.

3.18.4.2 Methodology

Analysis of the project's potential impacts was based on an evaluation of the project's compliance with Central Valley RWQCB requirements, the capacity of the County of Fresno's American Avenue Landfill, the City's water supply, and the capacity of the Fresno-Clovis Regional Wastewater Reclamation Facility.

3.18.4.3 Impacts and Mitigation Measures

Impact 3.18-1: The project could exceed wastewater treatment requirements of the applicable RWQCB.

Construction crews would use portable toilets that would be supplied by a contractor. The contractor would be responsible for installation, maintenance, and removal of the portable toilets and proper disposal of the waste. Visitor use of the proposed self-contained vault restrooms would not result in growth that would require additional wastewater treatment capacity. Waste products such as biosolids waste from the vault restrooms would be routinely removed by an approved contractor and transported to the Fresno-Clovis Regional Wastewater Reclamation Facility. **No impact** would occur.

Impact 3.18-2: The project could require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.

The project would not require or result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities. **No impact** would occur.

Impact 3.18-3: The project could require or result in construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

The project would not require construction, use, or expansion of municipal stormwater drainage facilities. **No impact** would occur.

Impact 3.18-4: The project could have insufficient water supplies available to serve the project from existing entitlements and resources, and thus new or expanded entitlements could be needed.

A water supply would be needed for dust control during construction, and for irrigation of the landscape plantings, until they are self-sustaining. The existing nonpotable-water well could be used for dust control and irrigation. The construction contractor would bring in additional water for dust control, if needed. The project would not require new or expanded water entitlements.

Water would be needed to serve drinking fountains and fire hydrants if feasible, and the short-term irrigation of landscape features, until established. The relatively small potable-water supply required for the project area would be provided by connection to a City water main, in conformance with City design and connection requirements, including backflow prevention and metering. The impact would be **less than significant**. No mitigation is required.

Impact 3.18-5: The project could fail to result in a determination by the wastewater treatment provider that serves or may serve the project, stating it has adequate capacity to serve the project's projected demands in addition to the provider's existing commitments.

The vault toilets would be cleaned weekly. Wastewater would be removed and trucked off-site for treatment. The impact would be **less than significant**. No mitigation is required.

Impact 3.18-6: The project could be served by a landfill without sufficient permitted capacity to accommodate the project's solid waste disposal needs.

Construction activities and the construction crew would generate some solid waste; however, the project would not entail demolition and would not generate large quantities of construction wastes. Trash and other waste generated during construction would be picked up daily and contained properly. The contractor would be responsible for removing all trash from the construction site and properly disposing of it. Some solid waste would be generated by maintenance activities and visitor use. American Avenue Landfill is owned by the County of Fresno and would receive the project's solid waste for disposal. The landfill is expected to be able to continue operations to serve the municipal area and region until 2031, when it will be full and will have to be closed. The impact would be **less than significant**. No mitigation is required.

Impact 3.18-7: The project could fail to comply with federal, State, or local statutes or regulations related to solid waste.

Project personnel would properly dispose of all wastes, would divert green wastes generated on the project site to approved facilities, and would provide recycling for visitors' recyclable materials. The project would comply with all applicable laws, regulations, and ordinances. **No impact** would occur.

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Chapter 4
Other CEQA Requirements

This chapter discusses mandatory findings of significance and potential cumulative and growth-inducing impacts. Section 15065 of the State CEQA Guidelines requires that the lead agency make findings on whether the project would individually or cumulatively have a significant effect on the environment.

4.1 Cumulative Impacts

Section 15355 of the State CEQA Guidelines defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Furthermore, the State CEQA Guidelines state that an EIR shall discuss cumulative impacts of the project when the project's incremental effect is cumulatively considerable (Section 15130). Where a lead agency is examining a project with an incremental effect that is not cumulatively considerable, a lead agency need not consider that effect significant but shall briefly describe its basis for concluding that the incremental effect is not cumulatively significant.

Section 15130 of the State CEQA Guidelines requires an analysis of cumulative impacts to contain the following elements:

- a list of past, present, and probable future projects producing related or cumulative impacts including, if necessary, those projects outside the control of the agency; or
- a summary of projections contained in an adopted local, regional, or statewide plan, or related planning document that describes or evaluates conditions contributing to the cumulative effect.

The environmental setting for this cumulative impact analysis is the Parkway planning area. This area was selected because it is sufficiently large to capture additional projects that have the potential to contribute to cumulative impacts. The Parkway planning area is approximately 22 miles long, from river mile 267.6 at the face of Friant Dam to the SR 99 crossing at river mile 243.2, and includes portions of Fresno County, Madera County, and the city of Fresno. The Parkway planning area varies in width from a narrow wildlife corridor where the bluff is steep and close to the San Joaquin River to extensive floodplains of several hundred acres.

The State of California owns 2,575 acres managed under the Conservancy's jurisdiction for Parkway purposes. Other public lands within the Parkway planning area include the City of Fresno's planned Riverbottom Park site, the County of Fresno's Lost Lake Park, CDFW's San Joaquin Fish Hatchery and San Joaquin River Ecological Reserve, and State sovereign lands under the jurisdiction of the California State Lands Commission.

In discussing cumulative impacts, the State CEQA Guidelines outline two approaches for characterizing the projects that may occur in the project vicinity:

- **Project list:** A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, projects outside the control of the agency (State CEQA Guidelines Section 15130[b][1][A]).
- **Summary of projections:** A summary of projections contained in an adopted local, regional, or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect (State CEQA Guidelines Section 15130[b][1][B]). This summary can be supplemented with additional information, including a regional modeling program.

This DEIR uses the list approach because it is more appropriate for the resource areas being analyzed.

Table 4.1-1 identifies future and related projects under preliminary consideration by the Conservancy and other possible developments in the vicinity determined as having the potential to interact with the project to the extent that a significant cumulative effect might be expected to occur. Any possible project within the planned Parkway that had been on a preliminary list of potential Conservancy projects at the time of the NOP for the project was considered a probable future project.

Table 4.1-1 Future and Related Projects

No.	Name of Project	Description of Project
1	Habitat Restoration throughout Parkway	Parkway land contains significantly degraded habitat. Habitat enhancement is planned to benefit sensitive species, facilitate wildlife movement, support adaptation by wildlife to climate change, and improve diversity, among other values. Habitat restoration within the Parkway can be an important accomplishment in the interim, while resources to support the operation and maintenance of public access and recreation facilities are being developed.
2	Habitat Restoration, River West Fresno	The Conservancy has granted funds to the San Joaquin River Parkway and Conservation Trust and River Partners to design, complete CEQA review, and implement restoration of land north and west of the H Pond on the former Spano property.
3	Ball Ranch Habitat Enhancement and Public Safety	Habitat restoration needs are bring assessed, including an evaluation of the northern slope of the main Ball Ranch Pond, a past gravel mining pond, which is very steep and erodible. The project would reduce the slope and improve greater public safety and habitat diversity and remove one or more stands of invasive tree-of-heaven.
4	River West Madera Pit 46e Berm Improvement, Floodplain Enhancement, and Public Access Project	The Conservancy has granted funds to DWR to complete preliminary and final design, secure environmental compliance, and construct the project. The project would reconnect an access road linking Sycamore Island and the neighboring Conservancy property. The project would provide a second route of emergency egress from Sycamore Island. The project would isolate the gravel pit from the River, thus protecting reintroduced salmon and providing for off-stream recreational fishing, and would restore floodplain habitat in the adjacent channel and pond, all of which would benefit the San Joaquin River Restoration Program.

No.	Name of Project	Description of Project
5	Multiple-Use Trail Extension	A 22-mile multiple-use trail is planned to extend from Friant Dam to SR 99. Approximately 7 miles have been constructed to date. The proposed project is related to this effort.
6	Riverside Trailhead Kiosk and Restroom	The City of Fresno required the developer of the Elderberry on the Bluffs residential development to construct trailhead parking and adjacent to Riverside Golf Course. The developer also constructed a segment for the multiple-use trail that extends from the existing Riverside Trail to the south. A trailhead kiosk, and possibly a restroom served by the municipal water and wastewater treatment systems, is desirable.
7	Camp Pashayan to Riverside Trail Multiple Use Trail Segment	This project would extend the multipurpose trail linking the Riverside/Elderberry Bluffs trail segment to Camp Pashayan.
8	Development of Miscellaneous Hiking Trails	In 2002, an interagency team developed a conceptual plan for a hiking trail leading from the Coke Hallowell River Center, across Rank Island, and on to Ledger Island. There were significant constraints in topography, habitat protection, River crossings, and other factors. Other hiking trails are included in the planned Parkway.
9	Canoe Rest Stops	The Conservancy proposes public boating rest stops with trash cans, picnic tables, and temporary or permanent restrooms.
10	Landmark Bridge Environmental Review and Planning	In 2009, the San Joaquin River Parkway Trust presented a conceptual proposal for a bridge crossing downstream of SR 41. The bridge would provide a pedestrian and bicycle trail connecting between the River West Fresno and River West Madera open space areas, and would provide a landmark attraction for the region.
11	River Vista and Remnant Bridge Demolition	The Conservancy, in partnership with the County of Madera, plans a public access and bridge demolition project, located immediately adjacent downstream of the SR 145 bridge (North Fork Road) on the Madera County side of the River. The project would include a small parking area, picnic shade structures, a restroom, a paved trail over a portion of an existing compacted farm road, an unpaved trail extending approximately one-quarter mile, and an unimproved River access trail. Measures are included to protect cultural resources at the site.
12	Fish Hatchery Visitor Improvements	CDFW, in partnership with the Conservancy, has developed a new parking area on Friant Road, a trail descending from the parking area to the hatchery and extending to Lost Lake Park, outdoor classroom seating, interpretive signs, and other related visitor amenities.
13	Lost Lake Park Master Plan EIR	The County of Fresno, in partnership with the Conservancy, proposes a long-range master plan for Lost Lake Park. The County anticipates preparing an EIR.
14	Lost Lake Park Campground Improvements	The Conservancy has awarded funding to the County of Fresno to renovate the campground at Lost Lake Park. This project will improve recreational vehicle and tent camping facilities, redesign the layout of the camping area, rehabilitate or replace existing picnic shelters, tables, and fire pits as necessary, and make some campsites ADA accessible. Lost Lake Park continues to be the primary park providing recreation on the San Joaquin River in Fresno and Madera counties.
15	Beck Pond Public Fishing Improvements	CDFW has evaluated improvements to develop the Conservancy's Beck Pond for public off-stream fishing as a possible expansion of Lost Lake Park.
16	Ledger Island Bridge Flood Protection	With funding from the Conservancy, DWR has assessed the structural integrity of the Ledger Island Bridge. The bridge, owned by the Conservancy, provides the only legal access to Ledger Island, 161 acres owned by the Conservancy on the Madera County side of the River. The bridge is currently closed because of safety concerns.

No.	Name of Project	Description of Project
17	Hallowell River Center Improvements: Group Picnic Shelter and Interpretive Exhibits	The San Joaquin River Parkway Trust has developed the Coke Hallowell Center for River Studies at Riverview Ranch, a regional Parkway visitor center at the current northerly terminus of the Eaton Trail. The San Joaquin River Parkway Trust has considered several improvements to the 20-acre River Center: stabilization of a historic dairy barn, construction of a large group picnic shelter, development of exhibits to be housed in and around the barn, construction of additional restroom facilities to serve the public shelter area, and installation of a native plant garden around the picnic shelter.
18	Owl Hollow Education and Boating Rest Stop Improvements	Owl Hollow is located along the San Joaquin River, across from the Rank Island Ecological Reserve and west of the River Center. With funding from the Conservancy, the San Joaquin River Parkway Trust is completing several improvements to the property: installation of two solar-powered access gates; installation of a restroom and storage building; construction and permitting of a well for hand washing, powered by a solar pump; construction and installation of a water storage tank for fire protection; construction of a picnic shelter with picnic tables; and construction of an amphitheater for group activities. The site would be open to participants for organized events and activities; public uses could be expanded in the future.
19	Caglia and Jenco Trailhead and Jensen Ranch Access Improvements	A trailhead parking and improvement with ADA access to Jensen River Ranch could be provided from Rice Road.
20	Jensen River Ranch to Eaton Trail—River to Bluff Trail Connection	A trail segment ascending the bluff from the multiuse trail on Jensen River Ranch to connect with the Eaton Trail was approved as a part of the Jensen River Ranch Project.
21	Jensen River Ranch Phase II Habitat Restoration	The Conservancy has granted funds to the San Joaquin River Parkway and Conservation Trust to create new wildlife habitat at the Conservancy's 167-acre Jensen River Ranch. The project involves eradicating weeds, developing a revegetation plan, planting native trees and shrubs, and irrigating the plants until they are self-sufficient. The project lies immediately north of Woodward Park near the San Joaquin River in Fresno County.
22	Sycamore Island Off-Stream Fishing and Access Improvement	CDFW has completed preliminary designs and environmental review for a stabilized boat launch, parking, restroom, and ADA access at a pond adjacent to the San Joaquin River. An ADA-accessible fishing dock is also proposed.
23	Old Highway 41 Bridge Traffic and Trail Safety Improvements	The Old Highway 41 Bridge is used by pedestrians and bicyclists as a way to move between Jensen River Ranch, Woodward Park, the Eaton Trail, Wildwood Native Park, and non-Parkway locations. The bridge accommodates primarily vehicular traffic. Caltrans is currently performing environmental review of the proposed bridge scour and seismic retrofits. Future traffic calming and safety improvements would be required to facilitate bicycle and possibly pedestrian use on the road.

No.	Name of Project	Description of Project
24	Palm Bluffs Fishing Access	The City of Fresno and California State Lands Commission have each secured public-access rights along a gravel private road. State sovereign lands under the jurisdiction of the California State Lands Commission could provide a location for Parkway improvements, such as a parking area and restroom, at the riverward end of the road. The possible project could include public access to a connecting trail between this site and the River West Fresno Trail Extension Project. This potential project is subsumed in Alternative 5, the Palm and Nees Access Alternative (see Section 5.10 of this DEIR).
25	Milburn Pond/Islewood Golf Course Public Access and Infrastructure Improvements	This possible project would replace the existing transient noncommunity water system at Islewood Golf Course with a connection to the City of Fresno's water utility. If feasible, the Conservancy may consider funding the water connection, repaving the access road, and funding improvements such as picnic shelters and an entrance gate to allow public access to the River and to the trail along Milburn Pond.
26	Riverbottom Park	The City of Fresno's design of Riverbottom Park was funded by the Conservancy in 2000–2001. The project, located at the end of the Riverside segment of the Eaton Trail near the BNSF railroad trestle, has been construction-ready since 2008. The project includes a parking area, restroom, and launch for hand-carried boats.
27	Camp Pashayan Public Access Improvements	Camp Pashayan's restroom is within the 100-year flood zone and requires expensive operation of an on-site well. Camp Pashayan is operated seasonally on weekends by the San Joaquin River Parkway Trust, which will continue operating the site through 2017. Visitor improvements, including a new restroom and entrance facility, could be planned, designed, and constructed.
28	Potential Land Acquisitions to Develop Parkway	Through negotiations and purchases with willing sellers, the Conservancy and others may secure additional lands to achieve the planned 5,900-acre Parkway.
29	Gunner Ranch West Bluff-Top Trail	The *Gunner Ranch West Specific Plan* proposes a trail located along the bluff top above the Van Buren Unit, generally running from Valley Children's Hospital to the southeastern corner of the specific plan boundary. A primary trail within the Van Buren Unit would connect to the bluff-top trail toward the center of the Van Buren Unit. The primary trail would be paved and would provide ADA accessibility from the bluff-top trail to the multipurpose trail at River West Madera. The connection would allow pedestrian, bicyclist, and equestrian users to access the center of the Van Buren Unit.
30	Valley Children's Hospital	A public-access easement exists along Avenue 9 north of the Van Buren Unit and south of the River Park Golf Course. The access easement ends at the bluff immediately south of Valley Children's Hospital. The trail easement could connect Valley Children's Hospital to Avenue 9 and the Van Buren Unit and would provide bicycle access on a paved surface.
31	Avenue 7½	Beyond the entry to Sycamore Island, the *Gunner Ranch West Specific Plan* plans for Road 40 to be a four-lane collector road with a 12-foot-wide community trail along the east side for bicyclists and pedestrians. Beyond the boundaries of the *Gunner Ranch West Specific Plan*, Road 40 could continue a minimum of two lanes and with the 12-foot-wide bicycle and pedestrian trail continuing south to the entrance of Sycamore Island.

No.	Name of Project	Description of Project
32	Riverbottom Park and Schneider Property Habitat Restoration	The Conservancy has granted funds to River Partners to restore 147 acres located on the City of Fresno's future Riverbottom Park site located adjacent to the BNSF Railroad and the Conservancy's Schneider property located in the same vicinity, in Madera County. Both project sites are within the floodplain of the San Joaquin River. The project will establish native plants and remove invasive weeds. Irrigation will be installed as needed to ensure plant survival. The project will provide critical breeding, roosting, and foraging habitat for nesting songbirds, woodpeckers, raptors, and water birds.
33	San Joaquin River Parkway Master Plan Update and EIR	The Conservancy contracted with a consultant to prepare an updated *San Joaquin River Parkway Master Plan*. The planning process is ongoing. An EIR is being prepared as part of the project. The public agencies and organizations will have the opportunity to comment on the plan pursuant to CEQA.

Notes:

ADA = Americans with Disabilities Act; BNSF = Burlington Northern Santa Fe; Caltrans = California Department of Transportation; CDFW = California Department of Fish and Wildlife; CEQA = California Environmental Quality Act; Conservancy = San Joaquin River Conservancy; DWR = California Department of Water Resources; Eaton Trail = Lewis S. Eaton Trail; EIR = environmental impact report; Parkway = San Joaquin River Parkway; River = San Joaquin River; SR = State Route

Source: Data compiled by AECOM in 2016

San Joaquin River Restoration Program. In July 2012, the U.S. Bureau of Reclamation and DWR prepared a programmatic environmental impact statement/EIR for the SJRRP. The SJRRP is based on the Settlement Agreement of the lawsuit in *Natural Resources Defense Council et al. v. Rodgers, et al.*

The Settlement established two primary goals:

- *Restoration Goal*—To restore and maintain fish populations in "good condition" in the main stem of the San Joaquin River below Friant Dam to the confluence with the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish.
- *Water Management Goal*—To reduce or avoid adverse water supply impacts on all of the Friant Division long-term contractors that may result from the Interim and Restoration flows provided for in the Settlement.

City of Fresno Parks Master Plan Update. The City of Fresno proposes to update the *Fresno Parks Master Plan.* The *Fresno Parks Master Plan Update* will integrate the City's General Plan Update 2035 and Active Transportation Plan and the *City of Fresno Bicycle, Trails, & Pedestrian Master Plan*.

4.1.1 Analysis of Cumulative Impacts

This DEIR evaluates and considers the project's contribution to cumulative environmental impacts; however, the analysis is limited to only those impacts that could contribute to significant or potentially

significant cumulative impacts. Consequently, this DEIR evaluates the project's contribution to cumulative impacts in the following resource areas:

- Aesthetic and Visual Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Recreation
- Transportation

The project would have no impact on the following resource areas:

- Agriculture and Forestry Resources
- Mineral Resources
- Population and Housing
- Public Services
- Utilities and Service Systems

Therefore, no cumulative impacts would occur and these resource areas are not discussed further in this cumulative impacts analysis.

4.1.2 Aesthetic and Visual Resources

The cumulative context for aesthetic resources is the viewshed in the project vicinity. The visual character of the project area consists of a floodplain corridor, the San Joaquin River with year-round flows, riparian vegetation, trees, grassland, and several surface mining gravel excavations inundated with water.

Two related projects are occurring in and adjacent to the project area: Habitat Restoration, River West Fresno (project #2 in Table 4.1-1) and River West Madera Pit 46e Berm Improvement, Floodplain

Enhancement, and Public Access Project (project #4). The River West Fresno habitat enhancement project is expected to generate an increase in habitat diversity, protect and improve the water quality of the pond on-site, and increase riparian and woodland habitat for wildlife. The Conservancy has granted funds to DWR to complete preliminary and final design, secure environmental compliance, and construct the Pit 46e project. That project would reconnect an access road linking Sycamore Island and the neighboring Conservancy property, providing a second route of emergency egress from Sycamore Island. The River West Fresno habitat enhancement project would also isolate the gravel pit from the River, thus protecting reintroduced salmon and providing for off-stream recreational fishing, and would restore floodplain habitat in the adjacent channel and pond, all of which would benefit the SJRRP.

The possible Palm Bluffs Fishing Access project (project #24 in Table 4.1-1) would provide public access along the private gravel road and could include Parkway improvements, such as a parking area and restroom, at the riverward end of the road. The Palm Bluffs Fishing Access project is evaluated in Chapter 5 of this DEIR as Alternative 5. The remaining related projects are distant from the project area and would not overlap visually with activities for the proposed project.

Temporary Impacts. Temporary construction activities for the proposed project, such as site preparation, clearing, grading, installation of new recreational amenities, and landscaping, would be visible to homeowners on the bluff, the public at Spano Park, visitors along the Bluff Trail, and traffic on SR 41. Construction activities would be temporary and would occur for 1 year. Temporary construction-related effects would be less than significant. It is not anticipated that construction of the River West Fresno habitat enhancement project, the Pit 46e project, or the Palm Bluffs fishing access project would occur simultaneously with construction of the proposed project. Therefore, no significant cumulative impact would occur. The proposed project would not result in a cumulatively significant incremental contribution to a significant cumulative impact associated with construction-related conflicts with existing visual character. This temporary impact would be **cumulatively less than significant**. No mitigation is required.

Long-Term Impacts. The presence of the trail extension, parking lot, and recreational amenities for the proposed project would alter the natural features of the San Joaquin River from viewing areas. The long-term presence and use of the trail extension could affect sensitive viewer groups and could be considered a conflict with the existing visual character and unique and scenic resource that is the River. In addition, the proposed project would include low-level outdoor security lighting, a new source of lighting in the project area. Implementation of Mitigation Measure Aesthetics and Visual Resources-1 would reduce conflicts with visual character and scenic vistas to less than significant because landscaping and recreation facilities would be designed to create visual buffers complementary and/or compatible with the area's scenic nature and because materials and colors for all facilities would be compatible with the surrounding natural environment. Implementation of Mitigation Measure Aesthetics and Visual Resources-2 would reduce the impact of new lighting to less than significant by requiring that lighting be

fully shielded, which would prevent glare and light from trespassing onto adjacent properties. Therefore, cumulatively significant long-term impacts would not occur, and the proposed project would not result in a cumulatively significant incremental contribution to a significant cumulative impact associated with conflicts with the existing visual character and unique and scenic resources and changes in lighting. This long-term impact would be **cumulatively less than significant**. No mitigation is required.

4.1.3 Air Quality

The cumulative context for air quality is the San Joaquin Valley Air Basin. A significant cumulative impact on air quality would occur if implementation of the proposed project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard.

The cumulative analysis of construction-related and operational emissions focuses on whether a specific project would result in a cumulatively considerable increase in emissions. By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development in the San Joaquin Valley Air Basin, and this regional impact is cumulative rather than attributable to any one source. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects. The thresholds of significance are relevant to whether a project's individual emissions would result in a cumulatively considerable incremental contribution to the existing cumulative air quality conditions. If a project's emissions would be less than those threshold levels, the project would not be expected to result in a considerable incremental contribution to the significant cumulative impact.

As in Impact 3.4-2, the total criteria air pollutant emissions generated would not exceed any thresholds for construction-related or operational activities (Tables 3.4-5 and 3.4-6). Projects that would not exceed the thresholds of significance would not contribute a considerable amount of criteria air pollutant emissions to the region's emissions profile, and would not impede attainment and maintenance of ambient air quality standards. The proposed project's construction and operational emissions would not result in a cumulatively considerable net increase for any criteria pollutant for which SJVAPCD is in nonattainment under applicable NAAQS or CAAQS. This impact would be **cumulatively less than significant**. No mitigation is required.

4.1.4 Biological Resources

The cumulative context for biological resources is the project area and related projects occurring on and in the vicinity of the Parkway planning area.

The proposed project would result in potentially significant and significant impacts on special-status plant species (California satintail and Sanford's arrowhead); special-status wildlife species (American badger

and silvery legless lizard); nesting and roosting habitat for avian species, such as bald eagle, Swainson's hawk, burrowing owl, and migratory birds; and wildlife movement corridors. Many of the related projects would occur in the Parkway planning area and would have the potential to affect the same special-status plant and wildlife species, avian species, and wildlife movement corridors as the proposed project. However, implementation of the mitigation measures described in detail in Section 3.5, "Biological Resources," would reduce the proposed project's impacts to less than significant. Therefore, no significant cumulative impact would occur and the proposed project would not result in a cumulatively significant incremental contribution to a significant cumulative impact associated with conflicts with biological resources. The impact would be **cumulatively less than significant**. No mitigation is required.

4.1.5 Cultural Resources

The cumulative context for cultural resources is related projects that include ground-disturbing activities in the planned Parkway. Previously identified or undiscovered cultural resources may underlie the sites of one or more of the other related projects, and because plans for those projects have not yet been adopted, it is unknown whether the related projects would implement appropriate BMPs and mitigation. Furthermore, even after mitigation is implemented, it may be impossible to avoid the cultural resource, and a substantial adverse change in the significance of the resource (such as damaging or destroying the qualities that make it significant) could result. Therefore, the related projects could result in potentially significant cumulative impacts on known and as-yet-undiscovered cultural resources.

The archaeological investigation of the project area identified a previously recorded archaeological resource. The site, CA-FRE-980, is a prehistoric habitation site (a probable permanent village) that was described in the original 1979 site record (Appendix E) as consisting of fire-cracked rock, obsidian flakes, shell, and carbon flecks. Construction activities such as vegetation removal, grading, and excavation could potentially uncover and disturb site CA-FRE-980 and other buried and unrecorded archaeological deposits. In addition, construction activities could disturb unknown human remains. Implementation of Mitigation Measure Cultural Resources-1 would reduce impacts from substantial adverse changes to an archaeological resource to less than significant, because Extended Phase I subsurface testing would be performed along the alignment of the trail extension to determine the boundary of site CA-FRE-980 and identify the presence of additional archaeological deposits to avoid those areas. Further, all cultural resources identified would be evaluated for eligibility for inclusion in the CRHR. Implementation of Mitigation Measure Cultural Resources-2 would reduce the impact of disturbance of human remains to less than significant because work in the vicinity of the find would stop until the appropriate actions have been completed. In addition, implementation of the cultural resources BMPs identified in Section 2.5.1, "Best Management Practices," would include measures deemed necessary for the recordation and/or protection of human remains and cultural resources. Therefore, the proposed project would not result in a

cumulatively significant incremental contribution to a potentially significant cumulative impact on cultural resources. The impact would be **cumulatively less than significant**. No mitigation is required.

4.1.6 Geology and Soils

The project area and related projects are located in the San Joaquin Valley. The geologic formations and soil types vary depending on project location, and therefore are site-specific.

The project area is unique in that flat topography has been cut by the San Joaquin River as it emerges from the foothills. As a result, tall, steep bluffs mark the limits of the River floodplain in the area. The Spano Park staircase and Bluff Trail/West Riverview Drive access trail would be constructed on the steep slope of the River bluffs. Soil erosion and loss of topsoil would be expected during construction. The construction contractor would be required to implement rules and regulations from the California Building Standards Code to control excavation, grading, and earthwork construction; implement the City's Bluff Preservation Overlay Zone District and Policy POSS-7-f standards for property located within the Bluff Preservation zone; and implement BMPs identified in the California Stormwater Quality Association's *Stormwater BMP Construction Handbook*. In addition, implementation of Mitigation Measure Geology and Soils-1 would reduce impacts of soil erosion to less than significant for several reasons: Qualified construction staff would evaluate the stability of the bluff slope daily; the stability of both temporary and permanent cut, fill, and otherwise affected slopes would be analyzed during development of grading and construction procedures; fiber rolls would be placed along the perimeter of the site; silt fences would be placed downgradient of disturbed areas; construction activities would be suspended as necessary during and immediately after periods of heavy precipitation; and measures would be implemented to avoid, accommodate, replace, or improve loose soils.

Furthermore, geology and soils BMPs identified in Section 2.5.1, "Best Management Practices," would require the Conservancy to prepare and implement an erosion and sediment control plan to manage sediment and prevent discharge of sediment from the project site in accordance with a SWPPP and the goals, objectives, and policies of the Parkway Master Plan.

Implementation of the various related projects could result in substantial soil erosion. However, each project considered in this cumulative analysis must individually meet the requirements of local policies (i.e., grading and erosion control plans). No additive effect would result and no cumulatively considerable impact related to substantial soil erosion would occur. Therefore, the proposed project would not result in a cumulatively significant incremental contribution to a significant cumulative impact associated with substantial soil erosion. The impact would be **cumulatively less than significant**. No mitigation is required.

4.1.7 Greenhouse Gas Emissions

Emissions of GHGs have the potential to adversely affect the environment because such emissions contribute on a cumulative basis to global climate change. The proper context for addressing this issue in an EIR is as a discussion of cumulative impacts, because although the emissions of one single project will 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.

Air districts and some lead agencies in California have developed numeric significance thresholds that allow a clear assessment of the degree to which projects would have cumulatively considerable contributions to the significant cumulative impact of climate change. As discussed in Impact 3.8-1, the amortized emissions or the total GHG emissions for the proposed project would not exceed any of the adopted or recommended thresholds of significance. Although GHG emissions generated by the short-term construction activities of the project may be considered new, they would be temporary and would not be considered substantial given the small size of the project (Table 3.8-1). The long-term operational GHG emissions associated with the project would be minimal. Therefore, the proposed project would not result in a cumulatively significant incremental contribution to a significant cumulative impact associated with GHG emissions. This impact would be **cumulatively less than significant**. No mitigation is required.

4.1.8 Hazardous Materials

Health and safety impacts associated with the past or current uses of a project site usually occur on a project-by-project basis, and are generally limited to the specific project site—in this case, the project area and its immediate vicinity.

The proposed project and the related projects would involve the storage, use, disposal, and transport of hazardous materials (such as fuel, lubricants, and solvents) to varying degrees during construction. These activities are extensively regulated by various federal, State, and local agencies; construction contractors that would handle hazardous substances would be required by law to implement and comply with the existing hazardous-materials regulations. Therefore, a cumulatively significant impact would not occur, and the project would not result in a cumulatively significant incremental contribution to a significant cumulative impact associated with storage and transport of hazardous materials. The impact would be **cumulatively less than significant**. No mitigation is required.

Since June 2006, 102 grassland wildfires have occurred between SR 99 and Willow Avenue/Friant Road and 12 grassland wildfires have occurred between SR 41 and Palm and Nees Avenues. The proposed project would construct a trail extension in an area of natural vegetation along the San Joaquin River. Equipment used for construction of the trail extension and ongoing maintenance at the project site could emit sparks, which could increase the wildland fire hazard. Implementation of Mitigation Measures

Hazards and Hazardous Materials-1 through Hazards and Hazardous Materials-6 would reduce the hazard from wildland fires to less than significant because the Conservancy would provide appropriate emergency access and signage, would prohibit open burning and the use of barbeque grills, would require all construction and maintenance equipment to be properly equipped with spark arrestors, and would prepare and implement a fire prevention plan. Therefore, a cumulatively significant impact would not occur, and the project would not result in a cumulatively significant incremental contribution to a significant cumulative impact associated with the risk of loss, injury, or death involving wildland fires. The impact would be **cumulatively less than significant**. No mitigation is required.

4.1.9 Hydrology and Water Quality

The project area and related projects are located within the low alluvial plains and fans of the central San Joaquin Valley, between the Coast Ranges and the Sierra Nevada. The following evaluation of cumulative hydrology and water quality impacts is made in light of the extent to which activities in the Parkway planning area can affect water quality and hydrologic conditions.

Future projects may be constructed within the designated the 100-year floodplain and/or the designated floodway of the San Joaquin River. The River's hydrologic and floodplain functions could be altered by placement outside of the 100-year floodplain of impervious surfaces; fill and new structures, including a pedestrian bridge, along the multiuse trail between the O and E ponds; and restroom facilities. These project components could increase the volume of stormwater runoff from the project site to existing stormwater drainage systems during intense storms, potentially affecting water quality standards or WDRs, and would alter hydrologic processes (i.e., hydromodification). With the addition of impervious surfaces and placement of other project components adjacent to or within the designated floodway and 100-year floodplain, runoff could be directed off-site onto adjacent properties or other features, potentially contributing to flooding.

In accordance with the Parkway Master Plan's goals, objectives, and policies, new structures and other project components would be designed without obstructions to flood flows and without placement within the floodplain of improvements that may come loose and become obstructions or pose safety hazards.

Implementing Mitigation Measure Hydrology and Water Quality-1 would reduce impacts related to water quality, erosion, and stormwater discharge to less than significant because structural BMPs would be designed to treat stormwater runoff before it reaches on-site surface waters and the River. Mitigation Measure Hydrology and Water Quality-2 would reduce impacts related to water quality, erosion, and stormwater discharge to less than significant because a nutrient management program would be implemented to identify and reduce potential adverse water quality effects from equestrian use and associated animal wastes. Finally, Mitigation Measure Hydrology and Water Quality-3 would reduce impacts on the River's hydrologic and floodplain functions to less than significant for two reasons:

Drainage and hydromodification studies would be prepared to evaluate runoff, drainage, and flooding potential and any adverse effects on riparian habitat; and the proposed project would be required to obtain approval of encroaching project elements from flood protection agencies and obtain CDFW approval of streambed alteration.

The Conservancy would comply with the Central Valley RWQCB's WDRs. Control measures would be consistent with the NPDES General Construction Permit (detailed in Section 2.5.1, "Best Management Practices"). The NPDES General Construction Permit requires development and implementation of an SWPPP that uses stormwater BMPs to control runoff, erosion, and sedimentation from the site both during and after construction.

There are no assurances that the related projects would incorporate the same degree or methods of treatment as the proposed project. However, each related project that would discharge stormwater runoff would be required to comply with NPDES discharge permits from the Central Valley RWQCB, which adjusts requirements on a case-by-case basis to avoid significant degradation of water quality, and with the goals, objectives, and policies of the Parkway Master Plan. Therefore, a significant cumulative impact would not occur and the proposed project would not result in a cumulatively significant incremental contribution to a potentially significant cumulative impact associated with hydrology and water quality during construction. The impact would be **cumulatively less than significant**. No mitigation is required.

4.1.10 Land Use and Planning

Impacts involving adopted land use plans or policies and zoning generally would not combine to result in cumulative impacts. The determination of significance for impacts related to these issues, as described by Appendix G of the State CEQA Guidelines, is whether a project would conflict with any applicable land use plan or policy adopted for the purpose of avoiding or mitigating environmental impacts. Such a conflict is site-specific; it is addressed on a project-by-project basis. In addition, any land use inconsistencies of future projects, by themselves, are not considered significant cumulative effects because the inconsistencies are relative to land use regulations, rather than being environmental impacts. Because land use impacts would occur on a project-specific basis rather than a cumulative basis, the proposed project would not result in a cumulatively significant incremental contribution to a significant cumulative impact associated with land use conflicts. The impact would be **cumulatively less than significant**. No mitigation is required.

4.1.11 Noise

When determining whether the overall noise impacts of related projects would be cumulatively significant and whether the proposed project's incremental contribution to any significant cumulative impacts would be cumulatively considerable, it is important to note that noise is a localized occurrence. As such, noise decreases rapidly in magnitude as the distance from the source to the receptor increases. Therefore, only

those related projects that are in the direct vicinity of the project area are considered for the cumulative context such as the Palm Bluffs Fishing Access (Project #24 in Table 4.1-1).

Construction activities for the proposed project would result in a short-term temporary increase in ambient noise levels. Noise would be generated by the operation of construction equipment. Increased noise levels would be experienced mostly close to the noise source (in the vicinity of the project site). The magnitude of the impact would depend on the type of construction activity, the noise level generated by various pieces of construction equipment, the duration of the construction phase, and the distance between the noise source and the receiver. The project's construction phase would involve site preparation; construction of the trail extension, foundations for buildings (restrooms), and the parking lot; and site cleanup. In addition, implementation of Mitigation Measure Noise-1 would reduce the noise impact to less than significant because the Conservancy and its contractor would comply with City of Fresno standards; use muffled construction equipment and other noise control techniques, procedures, and acoustically treated equipment; and limit construction hours to between 7 a.m. and 9 p.m., Monday through Saturday. It is not anticipated that construction of the Palm Bluff Fishing Access project would occur simultaneously with construction of the proposed project. Therefore, the proposed project would not result in a cumulatively significant incremental contribution to a significant cumulative impact associated with temporary increases in noise from construction activities. This temporary impact would be **cumulatively less than significant**. No mitigation is required.

4.1.12 Recreation

The project would extend the existing Eaton Trail by about 2.4 miles and add parking and a variety of recreation amenities. The proposed project was evaluated with respect to specific resource areas in this section of the DEIR to determine whether implementation would result in significant adverse cumulative impacts. The cumulative context and potential cumulative environmental impacts of project implementation are summarized in this section of the DEIR. All cumulative impacts that have been identified would be less than significant. Therefore, the proposed project would not result in a cumulatively significant incremental contribution to a significant cumulative impact associated with recreation. The impact would be **cumulatively less than significant**. No mitigation is required.

4.1.13 Transportation

Temporary Impacts. Construction-related traffic is expected to increase traffic on roadways that may be used during construction of the proposed project, such as SR 41, SR 99, Avenue 9, Nees Road, and Audubon Drive (see Tables 3.17-2 and 3.17-3 for a complete list of affected roadways). Construction activities would be temporary and would occur for 1 year. It is not anticipated that construction of the Spano River Ranch habitat enhancement project would occur simultaneously with construction of the proposed project. Therefore, no significant cumulative impact would occur. The proposed project would

not result in a cumulatively significant incremental contribution to a significant cumulative impact associated with increases in traffic from construction activities. This temporary impact would be **cumulatively less than significant**. No mitigation is required.

Long-Term Impacts. Implementation of the proposed project would increase the routes used to access the project site, including SR 41, Audubon Drive, and Del Mar Avenue. Table 4.1-2 shows the roadway segment conditions in 2025 without construction of the proposed project.

Table 4.1-2 Roadway Segment Analysis—Project Buildout (2025) No-Project Conditions

Roadway Segment[1]	Number of Lanes[2]	Direction	ADT 24-Hour Volume	(2025) No-Project Conditions			
				A.M. Peak Hour		P.M. Peak Hour	
				Vol	LOS	Vol	LOS
1 SR 41 between the Fresno–Madera County line and Avenue 12	2/D	NB SB	35,680	740 588	B B	1,112 1,332	B B
2 SR 41 East Frontage Road (Cobb Road Ranch) north of Vin Rose Lane	1/U	NB SB	210	11 3	C C	8 8	C C
3 Audubon Drive between SR 41 and Palm Avenue	1/U	EB WB	16,870	390 475	C C	460 644	C C
4 Audubon Drive just east of SR 41	2/D	EB WB	15,950	391 487	C C	459 671	C C
5 Del Mar Avenue between Audubon Drive and West Riverview Drive	1/U	NB SB	2,130	33 89	C C	67 94	C C

Notes:

ADT = average daily traffic; D = divided; EB = eastbound; LOS = level of service; NB = northbound; SB = southbound; SR = State Route; U = undivided; Vol = volume; WB = westbound

[1] Evaluated using Table 7 Florida Tables.

[2] Number of lanes in each direction.

Source: Data compiled by AECOM in 2016

Project Buildout (2025) Base plus Project conditions consider all improvements that are constructed or planned for completion by 2025. Appendix H provides a detailed discussion of the methodology used to determine LOS that is summarized below.

As shown in Table 4.1-3, all study roadway segments are forecast to operate at LOS C or better under Project Buildout (2025) Base plus Project conditions and all roadway segments have sufficient capacity to accommodate project-related traffic and still operate at acceptable LOS. Compared to the cumulative 2025 No-Project conditions, the traffic volume on SR 41 between the Fresno–Madera County line and Avenue 12 would increase by 318 trips and the traffic volume on SR 41 east of Frontage Road and north of Vin Rose Lane would increase by 318 trips. The remaining roadway segments would not have an

increase in ADT. Therefore, no significant cumulative impact would occur. The proposed project would not result in a cumulatively significant incremental contribution to a significant cumulative impact associated with increases in traffic from operation of the proposed project. This long-term impact would be **cumulatively less than significant**. No mitigation is required.

Table 4.1-3 Roadway Segment Analysis—Project Buildout (2025) Base plus Project Conditions

Roadway Segment[1]	Number of Lanes[2]	Direction	ADT 24-Hour Volume	(2025) Base plus Project Conditions			
				A.M. Peak Hour		P.M. Peak Hour	
				Vol	LOS	Vol	LOS
1 SR 41 between the Fresno–Madera County line and Avenue 12	2/D	NB	35,998	780	B	1,165	B
		SB		608	B	1,352	B
2 SR 41 East Frontage Road (Cobb Road Ranch) north of Vin Rose Lane	1/U	NB	528	31	C	28	C
		SB		43	C	61	C
3 Audubon Drive between SR 41 and Palm Avenue	1/U	EB	16,870	390	C	460	C
		WB		475	C	644	C
4 Audubon Drive just east of SR 41	2/D	EB	15,950	391	C	459	C
		WB		487	C	671	C
5 Del Mar Avenue between Audubon Drive and West Riverview Drive	1/U	NB	2,130	33	C	67	C
		SB		89	C	94	C

Notes:

ADT = average daily traffic; D = divided; EB = eastbound; LOS = level of service; NB = northbound; SB = southbound; SR = State Route; U = undivided; Vol = volume; WB = westbound

[1] Evaluated using Table 7 Florida Tables.

[2] Number of lanes in each direction.

Source: Data compiled by AECOM in 2016

4.2 Environmental Justice—Disadvantaged Communities

Cities, counties, and other local governmental entities have an important role to play in ensuring environmental justice for all California's residents. Under State law, "environmental justice" means the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies (California Government Code Section 65040.12[e]). The California Attorney General's Office has stated that "environmental justice requires an ongoing commitment to identifying existing and potential problems, and to finding and applying solutions, both in approving specific projects and planning for future development" (Office of the Attorney General 2012).

Under CEQA, "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects …." (PRC Section 21002). Human beings are an integral part of the

"environment." An agency is required to find that a "project may have a 'significant effect on the environment'" if, among other things, "[t]he environmental effects of a project will cause substantial adverse effects on human beings either directly or indirectly" (PRC Section 21083; State CEQA Guidelines Section 15126.2).

CEQA does not use the terms "fair treatment" or "environmental justice." Rather, the importance of a healthy environment for all California's residents is reflected in CEQA's purposes. In enacting CEQA, the California Legislature determined that:

- "The maintenance of a quality environment for the people of this state now and in the future is a matter of statewide concern." (PRC Section 21000[a].)
- We must "identify any critical thresholds for the health and safety of the people of the state and take all coordinated actions necessary to prevent such thresholds from being reached." (PRC Section 21000[d].)
- "[M]ajor consideration [must be] given to preventing environmental damage, while providing a decent home and satisfying living environment for every Californian." (PRC Section 21000[g].)
- We must "[t]ake all action necessary to provide the people of this state with clean air and water, enjoyment of aesthetic, natural, scenic, and historic qualities, and freedom from excessive noise." (PRC Section 21001[b].)

SB 535 was signed into law on September 30, 2012. SB 535 is based largely on the actions introduced by the Global Warming Solutions Act of 2006, AB 32. The goal of AB 32 is to reduce pollutants by implementing a cap-and-trade system in California. Companies must purchase extra credits when they exceed their allotted amount for the cap and trade. Each year, the money generated from companies purchasing extra credits is expected to generate about $1 billion of State revenue. SB 535 requires that 25% of the fund be spent on projects that benefit disadvantaged communities, while at least 10% of the 25% is to be spent on projects located in disadvantaged communities.

CalEPA is in charge of the identifying disadvantaged communities or census tracts. To facilitate the identification of low-income and highly polluted areas, OEHHA and CalEPA have adopted the California Communities Environmental Health Screening Tool, more commonly known as "CalEnviroScreen" (OEHHA 2016). The main goal is to accurately locate areas/neighborhoods using pollution "scores." CalEnviroScreen is a science-based tool that measures environmental, socioeconomic, and health indicators such as:

- O_3 concentrations in air;
- $PM_{2.5}$ concentrations in air;
- diesel PM emissions;

- use of certain high-hazard, high-volatility pesticides;
- toxic releases from facilities;
- traffic density;
- drinking-water quality; and
- toxic cleanup sites.

Based on data from OEHHA (2016), Figure 4-1 was developed to depict disadvantaged communities by census tract within 1.0 mile of the project area.

Census Tract 6019004404, located along the SR 41 corridor in Fresno, is about 0.5 mile south of the project areas. Census Tract 6039001000 is located across the River in Madera County. CalEPA has designated both of these communities as disadvantaged pursuant to SB 535 (OEHHA 2016). These communities are within 0.5 mile of the project area.

The proposed trail extension would provide access to an outdoor natural recreational area along the River for residents of the nearby disadvantaged communities, and more broadly for residents of Fresno and Madera counties. Activities such as recreation and exercise are fundamental to a healthy life. Beneficial use of the existing multiuse trail promotes greater productivity, less disease, and a brighter future. According to the National Institutes of Health, recreation and exercise result in:

- more energy and capacity for work and leisure activities;
- greater resistance to stress, disease, anxiety, and fatigue, and a better outlook on life;
- increased stamina, strength, and flexibility;
- improved efficiency of the heart and lungs;
- loss of extra pounds or body fat;
- improved ability to remain at a desirable weight; and
- reduced risk of heart attack.

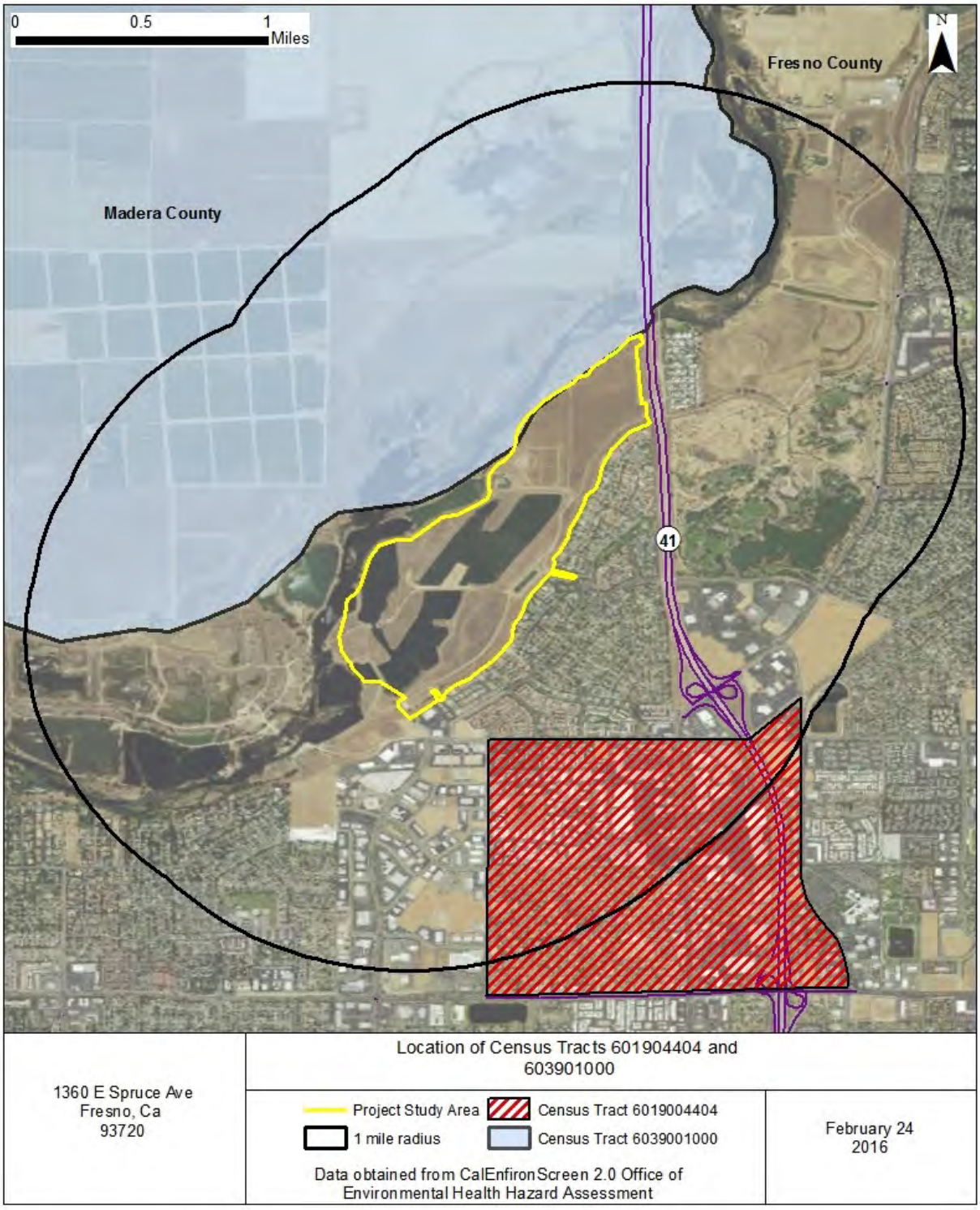


Figure 4-1 Disadvantaged Community Census Tracts 6019004404 and 6039001000

Providing recreational opportunities along the River can benefit disadvantaged communities because they can provide:

- social benefits by connecting people within the community regardless of income, background, and ability;
- economic benefits by improving the quality of life in the community and helping to attract businesses and visitors to the River; and
- benefits to individuals and the community by promoting physical fitness and self-improvement.

As stated in Section 2.7, "Scoping," a public review and open house public scoping meeting was held on June 17, 2014, at the nearby Pinedale Community Center, located at 7170 N. San Pablo Avenue. The purpose of the scoping meeting was to solicit guidance from agencies and the public to the scope and content of environmental information to be included in the EIR in accordance with the State CEQA Guidelines. Several issues were raised regarding access to the project area from the Fresno side of the River via alternative entrances.

Impact 4.2-1: Would the proposed project provide equal access to an outdoor natural recreational area along the San Joaquin River for residents of nearby disadvantaged communities, and more broadly, for residents of the city of Fresno and Madera County?

Two disadvantaged community census tracts are located within 1.0 mile of the project area. Access to the extended trail and recreation amenities along the River would benefit individuals, improving quality of life and the community. However, access to the proposed trail extension and recreation amenities would be provided by a single access point, the Perrin Avenue entrance. The location would benefit residents of Census Tract 6039001000 and Madera County residents traveling to the project area via SR 41. Travel to this entrance would require residents of the nearby disadvantaged Census Tract 6019004404 community, and more broadly, residents of Fresno to travel north along SR 41 to Children's Boulevard, then south along the SR 41 East Frontage Road, also known as Blackstone Avenue, a 180-degree reverse in direction. This would increase VMT by 8.3 miles (Table 6.2, Appendix H) and increase the generation of vehicular emissions. This would be an **unavoidable significant** impact on a nearby disadvantaged community or census tract, and more broadly, on the residents of Fresno. No feasible mitigation measures are available to reduce this impact.

4.3 Growth-Inducing Impacts

Pursuant to CEQA Section 21100(b)(5) and Section 15126.2(d) of the State CEQA Guidelines, growth-inducing impacts should be assessed in terms of whether the project influences the rate, location, and amount of growth. Projects that remove obstacles to population growth, or that allow or encourage growth

that would not have occurred if the project were not built, are considered growth-inducing. Potential growth-inducing impacts are also assessed based on a project's consistency with adopted plans that have addressed growth management from a local and regional standpoint.

Growth-inducing policies include projects that would remove obstacles to population growth (for example, a major expansion of a wastewater treatment plant might allow for more construction in service areas). Population increases may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also considered are characteristics of some projects that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Section 15126.2(d) of the State CEQA Guidelines requires a discussion of how the potential growth-inducing impacts of the project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Induced growth is distinguished from the direct employment, population, or housing growth of a project. If a project has characteristics that "may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively," then these aspects of the project must be discussed as well. Induced growth is any growth that exceeds planned growth and results from new development that would not have taken place in the absence of the project. For example, a project could induce growth by lowering or removing barriers to growth or by creating or allowing a use, such as an industrial facility, that attracts new population or economic activity. The State CEQA Guidelines also indicate that the topic of growth should not be assumed to be either beneficial or detrimental.

The proposed project would not influence the rate, location, and amount of growth; would not foster economic or population growth; would not remove obstacles to population growth; and would not allow or encourage growth that otherwise would not have occurred if the project were not built. Therefore, the project would not be growth inducing. **No impact** would occur.

4.4 Energy

The proposed project does not include development of new buildings. The project is required to comply with applicable portions of the 2010 California Green Building Code (Part 11, Title 24), which was developed to enhance the design and construction of buildings and sustainable construction practices through planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental air quality. It is the intent of this code to achieve more than a 15% reduction in energy use when compared to existing standards, to reduce indoor potable-water demand by 20%, to reduce landscape water usage by 50%, and to reduce construction waste by 50%. The proposed project would not generate an increase in demand for electricity and natural gas relative to

existing or future electrical and natural gas consumption. The project proposes smart lighting with motion detector sensors and LED lights. This impact would be **less than significant.** No mitigation is required.

Project-generated vehicle trips would not be expected to cause queuing and related congestion; however, the use of the study area is not expected to significantly increase beyond capacity. Therefore, the effects associated with petroleum consumption would be **less than significant**. In addition, with implementation of the 2010 California Green Building Code (CCR Title 24), the proposed project would not cause the inefficient, wasteful, or unnecessary consumption of energy. This impact would be **less than significant.** No mitigation is required.

4.5 Effects Not Found to be Significant

Section 15128 of the State CEQA Guidelines states that "an EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR." During the scoping process for this EIR, it was determined that all the issues cited in the NOP should be evaluated in detail; therefore, the project was analyzed in detail with respect to all impact areas described in the State CEQA Guidelines. To the extent that a particular project feature was not analyzed in detail in any given discussion of an impact area, it is implied that this project feature did not result in a significant impact. The results of the comprehensive environmental analysis are presented in Chapter 3 of this DEIR. Many potential impacts were found to be either less than significant; most were found to be less than significant after mitigation.

4.6 Unavoidable Significant Environmental Effects

Section 15126.2(b) of the State CEQA Guidelines requires a description of any significant impacts, including those that can be mitigated but not reduced to a level of insignificance. When impacts cannot be alleviated without imposing an alternative design, the analysis should describe the implications of the impacts and the reasons why the project is being proposed, notwithstanding its effects. The project was evaluated with respect to specific resource areas to determine whether implementation would result in significant adverse impacts. The potential environmental impacts of the project are summarized in Table 1.6-1 in Chapter 1, "Executive Summary," of this DEIR. Some of the impacts identified would be less than significant. In other instances, incorporating the mitigation measures proposed in this DEIR would reduce the impacts to less than significant. The proposed project would result in one unavoidable significant impact, related to environmental justice/disadvantaged communities, as discussed in Section 4.2 above.

Where the decision of the public agency allows the occurrence of significant effects that are identified in the final EIR but are not at least substantially mitigated, the agency shall state in writing the specific reasons to support its action based on the final EIR and/or the information in the record (State CEQA Guidelines Section 15093[b]). This statement is called a "statement of overriding considerations."

4.7 Significant Irreversible Environmental Changes

Section 15126.2(c) of the State CEQA Guidelines requires that an EIR address significant irreversible environmental effects that cannot be avoided if the project is implemented. As stated in Section 15126.2(c):

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Implementation of the project would result in the short-term commitment during construction activities of natural resources including sand and gravel, asphalt, steel, copper, lead, other metals, and water. As the project site is developed, recreation use would require further commitment of energy resources in the form of an increase in motor vehicle travel. The resource commitments are irreversible environmental changes.

Chapter 5
Alternatives

5.1 Introduction

This chapter describes the alternatives to the project and compares their environmental impacts to those of the project. The purpose of the alternatives analysis in an EIR is to describe a range of reasonable, potentially feasible alternatives to the project that can reasonably attain most of the identified project objectives, but reduce or avoid one or more of the project's significant impacts. A detailed description of the CEQA requirements for the alternatives analysis is provided below.

5.2 Regulatory Requirements

Section 15126.6(a) of the State CEQA Guidelines sets forth the requirements for the consideration and discussion of alternatives to the project. An EIR shall describe a range of reasonable alternatives to the project, or to the project location, that would feasibly attain most of the project's basic objectives but would avoid or substantially lessen any of the significant effects of the project, and shall evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. An EIR is not required to consider alternatives that are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. No ironclad rule governs the nature or scope of the alternatives to be discussed, other than the rule of reason. The EIR must identify the environmentally superior alternative, even if the environmentally superior alternative is not the chosen alternative.

The following are key provisions of the State CEQA Guidelines (Section 15126.6):

- The discussion of alternatives shall focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the proposed project, even if these alternatives would impede to some degree the attainment of the proposed project objectives or would be more costly.
- The No Project Alternative shall be evaluated, along with its impacts. The No Project analysis shall discuss the existing conditions at the time the NOP was published, as well as what would be reasonably expected to occur in the foreseeable future if the proposed project were not approved, based on current plans and consistent with available infrastructure and community services.

- The range of alternatives required in an EIR is governed by a "rule of reason." Therefore, the EIR must evaluate only those alternatives necessary to permit a reasonable choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the proposed project.
- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the proposed project need to be considered for inclusion in the EIR.
- An EIR does not need to consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

The range of potentially feasible alternatives is selected and discussed in a manner to foster meaningful public participation and informed decision making. Among the factors that may be taken into account when addressing the feasibility of alternatives (as described in Section 15126.6[f][1] of the State CEQA Guidelines) are environmental impacts; site suitability; economic viability; social and political acceptability; technological capacity; availability of infrastructure; general plan consistency; regulatory limitations; jurisdictional boundaries; and whether the proponent could reasonably acquire, control, or otherwise have access to an alternative site. An EIR need not consider an alternative that would not achieve the basic project objectives.

5.3 Project Objectives

As mentioned in Chapter 2, "Project Description," the Conservancy Act (PRC Section 32500 et seq.) sets forth the statutory mission and authorities of the Conservancy to develop, and manage in the San Joaquin River Parkway, a planned 22-mile natural and recreational area in the San Joaquin River floodplain extending from Friant Dam to SR 99. Specifically, the Conservancy's activities are to implement the Parkway Master Plan, a 22-mile regional greenspace and wildlife corridor along both sides of the River, with an interconnected trail system and recreational and educational features.

5.4 Alternatives

This discussion of alternatives identifies and examines a range of potentially feasible alternatives that could avoid or reduce the severity of one or more significant environmental effects and/or address the public comments received during the scoping process. Five alternatives and a No Project alternative are evaluated in this DEIR:

- Alternative 1: Added Parking
- Alternative 2: Bluff Trail Alignment
- Alternative 3: River's Edge Trail Alignment

- Alternative 4: No Parking
- Alternative 5: Palm and Nees Access
- Alternative 6: No Project

5.5 Alternative Development Process

The project's purpose and objectives and its potentially significant environmental impacts were considered during the development of alternatives. The Conservancy cohosted three open house–style public and agency scoping meetings with the City and the San Joaquin River Parkway and Conservation Trust. The first public meeting was held on November 17, 2008, at 7815 N. Palm Avenue, Suite 310, in Fresno (office of H. T. Harvey & Associates). The second public meeting was held on March 29, 2011, at Nelson Elementary School, 1336 West Spruce Avenue in Fresno. A third public meeting was held on June 17, 2014, at the Pinedale Community Center, 7170 N. San Pablo Avenue in Fresno. In this DEIR, the five alternatives are modifications of the proposed project and may include project elements as described in Section 2.4, "Project Description."

The basis for selecting each alternative is provided below.

- Alternative 1, "Added Parking," was developed to address the potential impacts of the project on air quality and project VMT, to provide greater, more convenient vehicle access for residents of the Fresno metropolitan area, including providing equal access for disadvantaged communities, and to provide more parking capacity.
- Alternative 2, "Bluff Trail Alignment," was developed to reduce the circuitous alignment of the proposed trail and to reduce potential impacts on riparian habitat and disturbance to nearby residences on the floodplain.
- Alternative 3, "River's Edge Trail Alignment," was developed to provide multiuse trail access close to the river and to possibly reduce the potential effects of wildland fires on the residences located on the bluffs.
- Alternative 4, "No Parking," was developed to address the potential effects of parking at the project site.
- Alternative 5, "Palm and Nees Access," was developed to address the potential impacts of the project on air quality and VMT; to provide greater, more convenient vehicle access for residents of the Fresno metropolitan area, including providing equal access for disadvantaged communities; and to provide more parking capacity. In accordance with the State CEQA Guidelines (Section 15126.6[f][2]), Alternative 5 is an added off-site alternative and includes the project as described in Section 2.4, "Project Description."

- Alternative 6, the No Project Alternative, is included in accordance with Section 15126.6(e)(3)(B) of the State CEQA Guidelines. Analysis of this alternative considers the effects if the project were to not proceed, and if no trail extension, parking, or recreational amenities were constructed.

5.6 Alternative 1: Added Parking

Alternative 1 consists of the project as described in Section 2.4, "Project Description," plus a public vehicle entrance, additional parking area, and public access to the trail extension from West Riverview Drive. Alternative 1 was developed to augment public vehicular access to the project site for residents of the Fresno metropolitan area, and for residents of nearby disadvantaged communities, because of the travel distance to the proposed Perrin Avenue vehicle entrance and parking area. As discussed in Section 4.2, "Environmental Justice—Disadvantaged Communities," providing recreational opportunities along the River can benefit nearby disadvantaged communities.

In this alternative, the trail extension alignment, Perrin Avenue parking lot, and associated recreation amenities would be constructed as described for the project. In addition, a 40-stall parking lot would be constructed between the H Pond and the E Pond. This parking lot would not accommodate horse trailers. LED light sets with rechargeable batteries and a solar panel would be mounted on light poles, providing sufficient illumination for security and maintenance. A two-vault ADA-accessible restroom, fire hydrant, and pet station would be located in the parking lot area. Access to the parking lot would be provided by a controlled vehicle entrance and a two-lane paved road from West Riverview Drive. Figure 5-1 presents a conceptual drawing of the parking lot and the road. Table 5.6-1 summarizes Alternative 1 project components by length and mile.

Table 5.6-1 Summary of Alternative 1 Project Components

Project Component	Alternative 1	
	Length (miles)	**Area (acres)**
Multiuse Trail (paved—12 feet wide)	2.4	3.5
Multiuse Trail (unpaved—10 feet wide)	3.1	3.5
Perrin Avenue Parking (paved) (unpaved)	 0 0	 0.8 0.9
Bluff Trail (paved)	0.3	0.4
Added Parking (paved)	0	1.7
Unimproved Hiking Trails	1.8	1.3
Total	**7.6**	**12.1**

Source: Data compiled by AECOM 2016

Figure 5-1 Alternative 1—Added Parking

In total, the project components of Alternative 1 described above would cover approximately 7.6 miles or 12.1 acres.

5.6.1 Environmental Setting

The geographic location and environmental and regulatory settings for Alternative 1 are the same as stated for the project in Chapter 3 of this DEIR.

5.6.2 Aesthetics and Visual Resources

Under Alternative 1, an additional 40-stall parking lot, recreation amenities, and a two-lane road would be visible to homeowners with residences on the bluffs. This alternative would alter the view of the River. Effects of construction activities on aesthetics would be temporary.

The proposed trail extension would generally follow the alignment shown in the conceptual drawing in Figure 2-3.

After construction, the second parking lot and recreation amenities, traffic, and people using the trail would be visible during the day. Cars parked in the added parking lot and the Perrin Avenue parking lot would be visible to homeowners on the bluffs, the public at Spano Park, visitors along the Bluff Trail, and traffic traveling along SR 41. All of these changes would alter the visual character of the project area. The presence of the trail extension, parking lot, and recreational amenities would alter the natural aesthetic features of the River as seen from the surrounding area. The long-term presence and use of the trail extension could affect sensitive viewer groups and could be considered a conflict with the unique and scenic resource that is the River. The impact would be **potentially significant**. However, implementation of Mitigation Measure Aesthetics and Visual Resources-1 would reduce the impact on scenic vistas to **less than significant**. No additional mitigation is required.

Access to the additional parking lot would be limited to the daytime. Alternative 1 includes low-level outdoor security lighting that would be fully shielded and would point down toward the ground. This would represent a new source of lighting; therefore, the impact would be **potentially significant**. However, implementation of Mitigation Measure Aesthetics and Visual Resources-2 would reduce the impact from a new source of lighting and glare to **less than significant.** No additional mitigation is required.

5.6.3 Agriculture and Forestry Resources

As stated for the project, no Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or forestland is located in the project area. **No impact** on agriculture or forestry resources would occur under Alternative 1.

5.6.4 Air Quality

Alternative 1 includes project construction and the addition of a new vehicle entrance and parking lot. Air pollutant emissions were calculated using construction of a 3.5-mile multipurpose trail extension, the Perrin Avenue parking lot, and an additional parking lot as inputs. The paved portion of the Perrin Avenue parking lot is calculated to be 0.8 acre; the additional parking lot and paved road from West Riverview Drive to the parking lot are estimated to be 1.7 acres. Under this alternative, the added parking lot, recreational amenities, and a restroom would be constructed and could generate approximately 558 daily trips.

This alternative would generate only slightly more construction-related and operational emissions than the project (Table 5.6-2 and Table 5.6-3). Alternative 1 would reduce VMT per visitor to the project site from the Fresno metropolitan area. However, because of improved public vehicular access and increased parking, it is projected that total project emissions would increase under this alternative. The CalEEMod results for the Perrin Avenue parking lot and the additional parking lot can be found in Appendix C. All air quality impacts of Alternative 1 would be **less than significant.** No mitigation is required.

Table 5.6-2 Estimated Unmitigated Annual Construction Emissions—Project vs. Alternative 1

	Criteria Pollutant Emissions (tons per year)					
	CO	**NO_X**	**ROG**	**SO_X**	**PM_{10}[1]**	**$PM_{2.5}$[1]**
Project	1.0	1.5	2.2	0.0	0.1	0.1
Alternative 1	1.0	1.5	2.2	0.0	0.1	0.1
SJVAPCD Threshold	100	10	10	27	15	15
Exceed Threshold?	No	No	No	No	No	No

Notes:

CO = carbon monoxide; NO_X = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter; PM_{10} = suspended particulate matter; ROG = reactive organic gases; SJVAPCD = San Joaquin Valley Air Pollution Control District; SO_X = oxides of sulfur

[1] PM emissions shown include the sum of particulate matter with aerodynamic diameter 0 to 2.5 micrometers and particulate matter with aerodynamic diameter 2.5 to 10 micrometers.

Source: Estimated by AECOM in 2016

Table 5.6-3 Estimated Unmitigated Annual Operational Emissions—Project vs. Alternative 1

	Criteria Pollutant Emissions (tons per year)					
	CO	**NO_X**	**ROG**	**SO_X**	**PM_{10}[1]**	**$PM_{2.5}$[1]**
Project	2.7	0.8	1.9	0.0	0.4	0.1
Alternative 1	4.3	1.3	2.4	0.0	0.6	0.2
SJVAPCD Threshold	100	10	10	27	15	15
Exceed Threshold?	No	No	No	No	No	No

Notes:

CO = carbon monoxide; NO_X = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter; PM_{10} = suspended particulate matter; ROG = reactive organic gases; SJVAPCD = San Joaquin Valley Air Pollution Control District; SO_X = oxides of sulfur

[1] PM emissions shown include the sum of particulate matter with aerodynamic diameter 0 to 2.5 micrometers and particulate matter with aerodynamic diameter 2.5 to 10 micrometers.

Source: Estimated by AECOM in 2016

5.6.5 Biological Resources

Alternative 1 would result in slightly more ground disturbance, noise generation, and vegetation removal than the project because of the additional parking lot. Impacts on candidate, sensitive, or special-status species or their habitats would be **potentially significan**t. Species using habitat associated with the H and E ponds would be temporarily displaced by noise and visitor activity from the additional parking lot. The impact would be **potentially significant**. The biological resources BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 1. Implementation of Mitigation Measures Biological Resources-1 through Biological Resources-8 would reduce the impact to **less than significant.** No additional mitigation is required.

5.6.6 Cultural Resources

Impacts of Alternative 1 on cultural and historic resources would be the same as described for the project. The additional parking lot and road would be located to avoid the recorded archaeological resource and Perrin Ditch described in Section 3.6, "Cultural Resources." Less potential exists for construction to uncover cultural or paleontological resources under Alternative 1 than under the project because this alternative would be located at a greater distance from a previously identified cultural or paleontological resource site. Inadvertent discovery of cultural resources and human remains during construction cannot be definitely ruled out; therefore, the impact would be **potentially significant**. The cultural resources BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 1. Implementation of Mitigation Measures Cultural Resources-1 and Cultural Resources-2 would reduce the impact to **less than significant.** No additional mitigation is required.

5.6.7 Geology and Soils

Impacts from exposure to seismic events, unstable geological units, and expansive soils would be the same under Alternative 1 as under the project. However, clearing, grading, and excavation activities for construction of the additional parking lot and road would remove more vegetative cover and induce more soil erosion than under the project. Table 5.6-4 compares the acreages affected by Alternative 1 and by the project. Alternative 1 would disturb about 12.1 acres, compared to 10.5 acres disturbed by the project.

Table 5.6-4 Acres of Land Disturbed—Project vs. Alternative 1

Project Component	Proposed Project		Alternative 1	
	Length (miles)	Size (acres)	Length (miles)	Size (acres)
Paved Multiuse Trail	2.4	3.5	2.4	3.5
Unpaved Multiuse Trail	3.1	3.6	3.1	3.5
Perrin Avenue Parking—Paved	0	0.8	0	0.8
Perrin Avenue Parking—Unpaved	0	0.9	0	0.9
Bluff Trail	0.3	0.4	0.3	0.4
Added Parking	NA	NA	0	1.7
Existing Hiking Paths	1.8	1.3	1.8	1.3
Total	**7.6**	**10.5**	**7.6**	**12.1**

Source: Compiled by AECOM in 2016

The impact would be **potentially significant**. The geology and soils BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 1. Implementation of Mitigation Measure Geology and Soils-1 would reduce the impact to **less than significant.** No additional mitigation is required.

5.6.8 Greenhouse Gas Emissions

Alternative 1 would generate only slightly more construction-related and operational emissions of GHGs than the project (Table 5.6-5). The emissions would not approach any adopted or recommended thresholds. The CalEEMod results for the Perrin Avenue parking lot and the additional parking lot can be found in Appendix C. All impacts of Alternative 1 related to GHG emissions would be **less than significant.** No mitigation is required.

Table 5.6-5 Total Greenhouse Gas Emissions—Project vs. Alternative 1

	Total Construction Emissions ($MTCO_2e$)	Amortized Construction Emissions ($MTCO_2e$)	Total Operational Emissions ($MTCO_2e$)
Project	192	6	501
Alternative 1	192	6	748

Note: $MTCO_2e$ = metric tons of carbon dioxide equivalent

Source: Estimated by AECOM in 2016

5.6.9 Hazards and Hazardous Materials

The impacts of Alternative 1 from routine transport, storage, and use of hazardous materials, along with the potential for accidental spills, would be similar to those of the project and would be **less than significant**. No mitigation is required.

The additional facilities proposed under Alternative 1 would be located within the same overall project site as the project's facilities; therefore, like the project, this alternative would have **no impact** related to emissions of hazardous materials within 0.25 mile of a school, or to hazards from airports and airstrips.

Alternative 1 would provide appropriate emergency-vehicle access (fire, police, and ambulance) via the West Riverview Drive entrance onto the project site, including the additional parking lot. This road would also provide additional emergency egress for members of the public using the trail extension. Construction activity would occur only within the project site and would not block or reduce access to city streets. Therefore, like the project, Alternative 1 would have **no impact** related to interference with emergency response and/or evacuation plans.

Because Alternative 1 would entail construction of additional facilities, the potential for wildland fire hazards from sparks emitted by construction equipment would be slightly greater than the project's wildland fire hazard, and the impact would be **potentially significant**. The hazards and hazardous materials BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 1. Additionally, implementing Mitigation Measures Hazards and Hazardous Materials-1 through Hazards and Hazardous Materials-6 would reduce the impact to **less than significant**. No additional mitigation is required.

The additional vehicle entrance, access road, and parking lot would not be located on a hazardous materials site that is part of the Cortese List. Thus, like the project, Alternative 1 would result in a **less-than-significant** impact related to potential exposure of construction workers and the public from known hazardous materials. No mitigation is required.

5.6.10 Hydrology and Water Quality

Impacts of Alternative 1 on hydrology and water quality are described below.

Water Quality

Temporary Impacts. Under Alternative 1, a 40-stall parking lot, access road, and restroom facilities would be constructed in addition to the facilities described for the project in Chapter 2. As shown in Table 5.6-4, a greater area would be disturbed under Alternative 1 than under the project; however, the construction activities would be similar. The BMPs and mitigation measures would also be the same under Alternative 1; therefore, the temporary impacts of Alternative 1 on water quality (similar to those described in Chapter 3 for the project) would be potentially **significant.** However, implementation of Mitigation Measures Hydrology and Water Quality-1, Hydrology and Water Quality-2, and Hydrology and Water Quality-3 would reduce the impacts to **less than significant.** No additional mitigation is required.

Long-Term Impacts. The area of new impervious surfaces and parking would be greater under Alternative 1 than under the project (see Table 5.6-4). Alternative 1 would have an additional restroom at the added parking lot along with the facilities and uses described for the project. The additional parking area would result in impacts related to the presence of urban contaminants in runoff. However, the BMPs and mitigation measures for Alternative 1 would be the same as those for the project. The long-term impacts of Alternative 1 on water quality (similar to those described in Chapter 3 for the project) would be potentially **significant.** However implementation of Mitigation Measures Hydrology and Water Quality-1, Hydrology and Water Quality-2, and Hydrology and Water Quality-3 would reduce the impacts to **less than significant.** No additional mitigation is required.

Groundwater

Temporary Impacts. The construction activities for the project and Alternative 1 would be similar; therefore, the temporary impacts of Alternative 1 on groundwater (similar to those described in Chapter 3 for the project) would be **less than significant**. No mitigation is required.

Long-Term Impacts. The area of new, impervious surface would be greater under Alternative 1 than under the project (see Table 5.6-4). However, the percentage of impervious surface proposed is very small relative to the total area of the project site, and this increase would not measurably affect recharge to the local groundwater basin. Operations under Alternative 1 would not substantially increase groundwater demands, and existing supplies provided for fire suppression are expected to be adequate to serve the site without lowering groundwater levels. The long-term impact on groundwater would be **less than significant.** No mitigation is required.

Drainage

Temporary Impacts. Like the project, Alternative 1 would require grading, moving soil, and placing structures on steep slopes and within flood zones, which could alter drainage courses and runoff patterns relative to existing conditions. Table 5.6-6 depicts the total area of disturbance within the 100-year floodplain and designated floodway for Alternative 1. Compared to the project (see Table 3.10-1), the area of disturbance would differ slightly, but the construction activities for the project and Alternative 1 would be similar, and the BMPs and mitigation measures would be the same. Therefore, the temporary impacts of Alternative 1 on drainage (similar to those described in Chapter 3 for the project) would be **less than significant**. No mitigation is required.

Table 5.6-6 Project Components of Alternative 1 within the 100-Year Floodplain and Designated Floodway

Project Component	100-Year Floodplain		Designated Floodway	
	Length (miles)	Area (acres)	Length (miles)	Area (acres)
Multiuse Trail (paved—12 feet wide)	1.1	1.6	0	0
Multiuse Trail (unpaved—10 feet wide)	1.3	1.7	0	0
Perrin Avenue Parking (paved) (unpaved)	0 0	<0.1 0	0	0
Perrin Avenue Parking (unpaved)	0	0	0	0
Bluff Trail (paved)	0	0	0	0
Added Parking (paved)	NA	0.7	0	0
Existing Unimproved Hiking Trails	1.8	1.3	1.4	1.0
Total	**4.3**	**5.3**	**1.4**	**1.0**

Note: NA = not applicable
Source: Compiled by AECOM in 2016

Long-Term Impacts. Placing impervious surfaces and other project components adjacent to or within the designated floodway and 100-year floodplain and on the steep bluffs could contribute to hydromodification processes and associated water quality impacts. Modifications to the bluffs for construction of the Spano Park stairway and the Bluff Trail access would be the same as under the project. No impervious surfaces would encroach into the designated floodway under Alternative 1. The total area of impervious and hard-packed surfaces within the 100-year floodplain would be slightly greater under Alternative 1 than under the project (as shown in Table 3.10-1). The area of flood zone would differ slightly, but implementation of project design features, BMPs, and Parkway Master Plan policies and mitigation measures would be the same. Therefore, the long-term impacts of Alternative 1 on drainage (similar to those described in Chapter 3 for the project) would be **less than significant**. No mitigation is required.

Runoff. Temporary and long-term impacts of Alternative 1 on runoff would be similar to those described for the project and would be **potentially significant.** The water quality and geology BMPs identified in Section 2.5.1, “Best Management Practices,” would be implemented as part of Alternative 1. Implementation of Mitigation Measures Hydrology and Water Quality-1, Hydrology and Water Quality-2, and Hydrology and Water Quality-3 would reduce the impact to **less than significant**. No additional mitigation is required.

Floodway and 100-Year Floodplain Hazard Area. Table 5.6-6 summarizes the components of Alternative 1 that would affect land within the 100-year floodplain and designated floodway. Under Alternative 1, about 5.4 acres of land within the 100-year floodplain would be disturbed by construction-related activities. Compared to the project, this is an increase of about 0.7 acre (Table 3.10-1). Similar to the project, 1 acre of land within the designated floodway would be disturbed by construction of the proposed improvements to the existing hiking trails under Alternative 1. Overall, impacts of Alternative 1 related to the construction and placement of structures within the designated floodway and the 100-year floodplain would be slightly greater than the impacts of the project and would be **significant**. However, implementation of Mitigation Measures Hydrology and Water Quality-4 and Hydrology and Water Quality-5 would reduce the impact to **less than significant**. No additional mitigation is required.

Exposure of People or Structures to Flooding. Temporary and long-term impacts of Alternative 1 regarding exposure of people or structures to flooding would be similar to those described for the project and would be **less than significant**. No mitigation is required.

Seiche, Tsunami, or Mudflow. Temporary and long-term impacts of Alternative 1 regarding the potential for seiche, tsunami, or mudflow would be similar to those described for the project. **No impact** would occur related to potential for a seiche or tsunami, and the impact related to mudflow potential would be **less than significant**. No mitigation is required.

5.6.11 Land Use and Planning

Under Alternative 1, the trail extension and amenities described for the project and the additional parking lot and a paved two-way road would be located on an alluvial floodplain terrace along the south side of the River. Vehicle access to the parking lot would be provided via West Riverview Drive. Alternative 1 would not physically divide an established community or conflict with any applicable land use plan or policy. **No impact** would occur.

5.6.12 Mineral Resources

Like the project, Alternative 1 would not result in the loss of a known mineral resource. **No impact** would occur.

5.6.13 Noise

Construction activities under Alternative 1 would cause a short-term temporary increase in ambient noise levels. Noise levels could exceed ambient noise standards established by the City of Fresno for residential areas. The impact of noise levels exceeding 55 dBA, even temporarily, would be **significant**. Implementation of Mitigation Measure Noise-1 would reduce the impact to **less than significant.** No additional mitigation is required.

5.6.14 Population and Housing

Like the project, Alternative 1 would not induce substantial population growth or displace a substantial number of housing. **No impact** would occur.

5.6.15 Public Services

Like the project, Alternative 1 would not alter existing public service ratios, response times, or performance standards for fire or police protection and would not induce population growth or demand for new school facilities. **No impact** would occur.

5.6.16 Recreation

Alternative 1 would provide additional parking (40 more spaces) and vehicular visitor access to the trail extension and recreation amenities via the West Riverview Drive entrance. The alternative would reduce the travel distance for each visitor from the Fresno metropolitan area. Additional access would encourage visitor use such as hiking, bicycling, jogging, and picnicking. In particular, the Alternative 1 entrance would provide new and enhanced recreation opportunities for residents of the nearby disadvantaged communities or census tract. Visitors would not have to travel north along SR 41 to Children's Boulevard, then south along the SR 41 East Frontage Road, also known as Blackstone Avenue, a 180-degree reverse in direction and an 8.3-mile trip. Visitors would be able to enter the project area via the existing West West Riverview Drive entrance. The impact would be **less than significant**. No mitigation is required.

5.6.17 Transportation

The transportation analysis of Project Buildout (2025) Base plus Alternative 1 considers all improvements that are constructed or planned for completion by 2025. Appendix H provides a detailed discussion of the methodology used to determine LOS and VMT summarized below.

All study roadway segments are forecast to operate at LOS C or better under Project Buildout (2025) Base plus Alternative 1 conditions (Table 5.6-7). Similar to with-project conditions, all roadway segments under Alternative 1 have sufficient capacity to accommodate added traffic and still operate at acceptable LOS.

In July 2011, the City completed a traffic signal warrant study for the Audubon Drive/Del Mar Avenue intersection. The study was performed at the request of local residents because the traffic volume is so heavy on Audubon Drive that traffic entering the intersection from the minor street, Del Mar Avenue, suffers excessive delay. The warrant for 8-hour, 4-hour, and peak-hour traffic is satisfied. The City proposes to add a signal at the Audubon Drive/Del Mar Avenue intersection in the future. The study reported that no accidents occurred at this intersection between July 2010 and July 2011. Under

Alternative 1, traffic volume is anticipated to increase because visitors would turn at the Audubon Drive/Del Mar Avenue intersection to either access or leave the West Riverview Drive entrance. The additional traffic may result in accidents and add to traffic delays at Del Mar Avenue. This impact would be **potentially significant**.

Table 5.6-7 Roadway Segment Analysis Project Buildout (2025) plus Alternative 1 Conditions

Roadway Segment[1]	Number of Lanes[2]	Direction	ADT 24-Hour Volume	(2025) Base plus Alternative 1 Conditions			
				A.M. Peak Hour		P.M. Peak Hour	
				Vol	LOS	Vol	LOS
1 SR 41 between the Fresno–Madera County line and Avenue 12	2/D	NB	35,998	780	B	1,165	B
		SB		608	B	1,352	B
2 SR 41 East Frontage Road (Cobb Road Ranch) north of Vin Rose Lane	1/U	NB	528	31	C	28	C
		SB		43	C	61	C
3 Audubon Drive between SR 41 and Palm Avenue	1/U	EB	16,990	405	C	480	C
		WB		482	C	651	C
4 Audubon Drive just east of SR 41	2/D	EB	16,070	399	C	467	C
		WB		502	C	691	C
5 Del Mar Avenue between Audubon Drive and West Riverview Drive	1/U	NB	2,370	63	C	107	C
		SB		104	C	109	C

Notes:

ADT = average daily traffic; D = divided; EB = eastbound; LOS = level of service; NB = northbound; SB = southbound; SR = State Route; U = undivided; Vol = volume; WB = westbound

[1] Evaluated using Table 7 Florida Tables.

[2] Number of lanes in each direction.

Source: Data compiled by AECOM in 2016

Mitigation Measure Alt. 1–Traffic-1

The Conservancy shall share with the City, on a pro rata basis, the cost of installing either a traffic signal or other effective traffic control such as a traffic roundabout, designed by the City for the Audubon Drive/Del Mar Avenue intersection. The West Riverview Drive entrance and added parking for Alternative 1 would not be open to the public until such traffic improvements are constructed and operational.

Effectiveness of Mitigation Measure

The traffic signal or traffic roundabout would improve access to the West Riverview Drive entrance by reducing wait time for traffic entering the intersection from Del Mar Avenue, and would reduce the potential for traffic accidents. Implementation of Mitigation Measure Alt. 1–Traffic-1 would reduce the impact to **less than significant.** No additional mitigation is required.

5.6.18 Utilities and Service Systems

Similar to the project, Alternative 1 would not affect utility infrastructure or services such as water supply, solid waste, wastewater, or power supply. **No impact** would occur.

5.6.19 Environmental Justice

Disadvantaged Community Census Tract 6019004404 is located about 0.5 mile south of the project area. Residents of this community, and more broadly, residents of Fresno would have the opportunity to access the multiuse trail and recreation amenities via the additional public vehicle entrance and parking. Visitors would not have to travel north along SR 41 to Children's Boulevard, then south along the SR 41 East Frontage Road, also known as Blackstone Avenue, a 180-degree reverse in direction. Visitors would be able to enter the project area via the existing West Riverview Drive gate and access road. The impact would be **less than significant**. No mitigation is required.

5.7 Alternative 2: Bluff Trail Alignment

Alternative 2 includes the project elements described in Section 2.4, "Project Description," with a less circuitous trail extension alignment lying nearer the toe of the bluff.

Under Alternative 2, the trail extension would be aligned about 300 feet from the base of the bluffs. The multiuse trail specifications would be the same as described for the project. All other amenities, including the parking lot, recreation facilities, landscaping, and restrooms, would be the same as described for the project. A conceptual drawing of the Bluff Trail alignment is provided in Figure 5-2. In total, project components described for Alternative 2 would cover approximately 6.7 miles or 9.1 acres. Table 5.7-1 summarizes Alternative 2 project components by length and area.

Table 5.7-1 Summary of Alternative 2 Project Components

Project Component	Alternative 2	
	Length (miles)	Area (acres)
Multiuse Trail (paved—12 feet wide)	1.5	2.2
Multiuse Trail (unpaved—10 feet wide)	2.3	2.9
Perrin Avenue Parking (paved)	0	0.8
Perrin Avenue Parking (unpaved)	0	0.7
Bluff Trail (paved)	0.3	0.5
Existing Unimproved Hiking Trails	2.6	1.9
Total	**6.7**	**9.1**

Source: Compiled by AECOM in 2016

5.7.1 Environmental Setting

The geographic location and environmental and regulatory settings for Alternative 2 are the same as stated for the project in Chapter 3 of this DEIR.

5.7.2 Aesthetics and Visual Resources

Under Alternative 2, as under the project, the trail extension, parking lot, recreation amenities, and people using the trail would be visible during the day from various viewing areas. This visibility would result in a conflict with the unique and scenic riverine resource and would degrade the existing visual quality of the surrounding area. LED lighting in the parking lot would create a new source of glare. This impact would be **potentially significant**. However, implementation of Mitigation Measures Aesthetics and Visual Resources-1 and Aesthetics and Visual Resources-2 would reduce the impact to **less than significant.** No additional mitigation is required.

5.7.3 Agriculture and Forestry Resources

As stated for the project, no Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or forestland is located in the project area. **No impact** on agriculture or forestry resources would occur under Alternative 2.

5.7.4 Air Quality

Air quality modeling for Alternative 2 produced the same results as modeling for the project. The CalEEMod inputs used for the project were also used for this alternative. The CalEEMod run for the Perrin Avenue parking lot can be found in Appendix C. The air quality impacts of this alternative would be the same as the impacts of the proposed project. All air quality impacts of Alternative 2 would be **less than significant.** No mitigation is required.

5.7.5 Biological Resources

Alternative 2 would result in slightly less ground disturbance, noise generation, and vegetation removal than the project. Impacts on candidate, sensitive, or special-status species or their habitats would be **potentially significant**. The biological resources BMPs identified in Section 2.5.1, “Best Management Practices,” would be implemented as part of Alternative 2. Implementation of Mitigation Measures Biological Resources-1 (Special-Status Plant Species) through Biological Resources-10 (Wildlife Movement) would reduce impacts to **less than significant**. No additional mitigation is required.

Figure 5-2 Alternative 2—Bluff Trail Alignment

5.7.6 Cultural Resources

As stated for the project, no historic resources are present in the area. Under Alternative 2, the trail extension alignment would be located to avoid the recorded archaeological resource and Perrin Ditch described for the project in Section 3.6, "Cultural Resources." Less potential exists under this alternative to uncover cultural or paleontological resources during construction; however, discovery of cultural resources and human remains during construction cannot be definitely ruled out. Therefore, this impact would be **potentially significant**. The cultural resources BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 2. Additionally, implementation of Mitigation Measures Cultural Resources-1 and Cultural Resources-2 would reduce the impact to **less than significant**. No additional mitigation is required.

5.7.7 Geology and Soils

Impacts from exposure to seismic events, unstable geological units, and expansive soils would be the same under Alternative 2 as under the project. Clearing, grading, and excavation activities to construct the trail extension alignment would remove vegetative cover and induce soil erosion. Table 5.7-2 compares the acres of land affected by Alternative 2 with the acreage affected by the project. Fewer acres would be disturbed under Alternative 2.

Construction activities under Alternative 2 would result in soil erosion or loss of topsoil, although less than under the proposed project. This impact would be **potentially significant**. The geology and soils BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 2. Additionally, implementation of Mitigation Measure Geology and Soils-1 would reduce the impact to **less than significant**. No additional mitigation is required.

Table 5.7-2 Acres of Land Disturbed—Project vs. Alternative 2

Project Component	Proposed Project		Alternative 2	
	Length (miles)	Size (acres)	Length (miles)	Size (acres)
Paved Multiuse Trail	2.4	3.5	1.5	2.2
Unpaved Multiuse Trail	3.1	3.6	2.3	2.9
Perrin Avenue Parking—Paved	0	0.8	0	0.8
Perrin Avenue Parking—Unpaved	0	0.9	0	0.9
Bluff Trail	0.3	0.4	0.3	0.4
Added Parking	NA	NA	NA	NA
Existing Hiking Paths	1.8	1.3	2.6	1.9
Total	**7.6**	**10.5**	**6.7**	**9.1**

Note: NA = not applicable

Source: Compiled by AECOM in 2016

5.7.8 Greenhouse Gas Emissions

GHG emissions modeling for Alternative 2 produced the same results as modeling for the project. The CalEEMod inputs used for the project were also used for this alternative. The CalEEMod run for the Perrin Avenue parking lot can be found in Appendix C. The impacts of this alternative related to GHG emissions would be the same as the impacts of the proposed project: all GHG emissions impacts of Alternative 2 would be **less than significant.** No mitigation is required.

5.7.9 Hazards and Hazardous Materials

The impacts of Alternative 2 from routine transport, storage, and use of hazardous materials, along with the potential for accidental spills, would be similar to those of the project and would be **less than significant**. No mitigation is required.

The facilities proposed under Alternative 2 would be located within the same overall project site as the project; therefore, like the project, this alternative would have **no impact** related to emissions of hazardous materials within 0.25 mile of a school or related to hazards from airports and airstrips.

Alternative 2 would provide appropriate emergency-vehicle access (fire, police, and ambulance) at both the West Riverview Drive and Perrin Avenue entrances. These access points would also provide additional emergency egress for members of the public using the trail extension. Construction activity would occur only within the project site and would not block or reduce access to city streets. Therefore, like the project, Alternative 2 would have **no impact** related to interference with emergency response and/or evacuation plans.

Alternative 2 would entail constructing a slightly shorter trail extension than under the project; therefore, the potential for wildland fire hazards from sparks emitted by construction equipment would be slightly less than the project's wildland fire hazard. However, the trail extension would be closer to the bluffs under Alternative 2, and the greater proximity could slightly increase the fire hazard for the residential housing on top of the bluffs. As under the project, this impact of Alternative 2 would be **potentially significant,** but mitigation measures such as implementing a fire prevention plan, prohibiting open burning and the use of barbeque grills, and requiring that all equipment be properly equipped with spark arresters would reduce the impact to **less than significant**.

The Alternative 2 trail extension and associated facilities would not be located on a hazardous materials site that is part of the Cortese List. Thus, as under the project, the impact of Alternative 2 related to potential exposure of construction workers and the public from known hazardous materials would be **less than significant**. No mitigation is required.

As under the project, plant species and prevailing winds may constitute a fire hazard and expose people or property to a significant wildland fire risk under Alternative 2. This alternative consists of a different trail

extension alignment, located about 300 feet from the base of the bluffs in an area of natural vegetation. Equipment used for trail construction and ongoing maintenance within the project site could emit sparks, which could increase the wildland fire hazard. A wildfire could be inadvertently ignited during recreational use of the trail and its amenities. .

Therefore, this impact would be **potentially significant**. The hazards and hazardous materials BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 2. Additionally, implementation of Mitigation Measures Hazards and Hazardous Materials-1 through Hazards and Hazardous Materials-6 would reduce the impact to **less than significant.** No additional mitigation is required.

5.7.10 Hydrology and Water Quality

Water Quality

Temporary Impacts. Construction activities for the project and Alternative 2 would be similar; however, Alternative 2 would disturb a larger area than the project. BMPs and mitigation measures would be the same as under the project. Therefore, the temporary impacts of Alternative 2 on water quality would be similar to those described in Chapter 3 for the project and would be **potentially significant.** However, implementation of Mitigation Measures Hydrology and Water Quality-1, Hydrology and Water Quality-2, and Hydrology and Water Quality-3 would reduce the impacts to **less than significant.** No additional mitigation is required.

Long-Term Impacts. Alternative 2 would have a smaller area of new impervious/paved surfaces and parking than the project (Table 5.7-2), but would have the same uses. The BMPs and mitigation measures would be the same as under the project. Therefore, the long-term impacts of Alternative 2 on water quality would be similar to those described in Chapter 3 for the project and would be **potentially significant.** However, implementation of Mitigation Measures Hydrology and Water Quality-1, Hydrology and Water Quality-2, and Hydrology and Water Quality-3 would reduce the impacts to **less than significant.** No additional mitigation is required.

Groundwater

Temporary Impacts. Construction activities for the project and Alternative 2 would be similar; therefore, the temporary impacts of Alternative 2 on groundwater would be similar to those described above for the project and would be **less than significant.** No mitigation is required.

Long-Term Impacts. The amount of new impervious/paved surfaces associated with Alternative 2 would be slightly smaller than that of the project. Operations under Alternative 2 would not substantially increase groundwater demands. Existing supplies that would be provided for fire suppression are expected to be

adequate to serve the site under Alternative 2 without lowering groundwater levels. The long-term impact on groundwater would be **less than significant**. No mitigation is required.

Drainage

Temporary Impacts. Like the project, Alternative 2 would require grading, moving soil, and placing structures on steep slopes and within flood zones, which could alter drainage courses and runoff patterns relative to existing conditions. Table 5.7-3 presents the total area of disturbance within the 100-year floodplain and designated floodway. A slightly smaller area within the 100-year floodplain and designated floodway would be disturbed under Alternative 2 than under the project (as shown in Table 3.10-1). The area of disturbance would differ slightly, but the construction activities for the project and Alternative 2 would be similar, and the BMPs and mitigation measures would be the same. Therefore, the temporary impacts of Alternative 2 on drainage (similar to those described in Chapter 3 for the project) would be **less than significant**. No mitigation is required.

Table 5.7-3 Project Components of Alternative 2 within the 100-Year Floodplain and Designated Floodway

Project Component	100-Year Floodplain		Designated Floodway	
	Length (miles)	Area (acres)	Length (miles)	Area (acres)
Multiuse Trail (paved—12 feet wide)	0.7	0.3	0	0
Multiuse Trail (unpaved—10 feet wide)	1.0	0.5	0	<0.1
Perrin Avenue Parking (paved)	0	0	0	0
Perrin Avenue Parking (unpaved)	0	0	0	0
Bluff Trail (paved)	0	0	0	0
Existing Unimproved Hiking Trails	2.4	1.8	1.5	1.1
Total	**4.1**	**2.6**	**1.5**	**1.1**

Source: Compiled by AECOM in 2016

Long-Term Impacts. Placing impervious/paved surfaces and other project components adjacent to or within the designated floodway and 100-year floodplain and on the steep bluffs could contribute to hydromodification processes and associated water quality impacts. Modifications of the bluffs would be the same under Alternative 2 as under the project. No impervious/paved surfaces would encroach into the designated floodway under Alternative 2. The total area of impervious/paved and hard-packed surfaces within the 100-year floodplain would be slightly greater under Alternative 2 than under the project.

Although the area of flood zone would differ slightly, implementation of project design features, BMPs, and Parkway Master Plan policies and mitigation measures would be the same. Therefore, the long-term impacts of Alternative 2 on drainage would be similar to those described above for the project, and would be **potentially significant.** Implementation of Mitigation Measures Hydrology and Water Quality-4, Hydrology and Water Quality-5, and Hydrology and Water Quality-6 would reduce the long-term impact to **less than significant**. No additional mitigation is required..

Runoff. Temporary and long-term impacts of Alternative 2 on runoff would be similar to those described for the project and would be **potentially significant.** The water quality and geology BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 2. Implementation of Mitigation Measure Hydrology and Water Quality-7 would reduce the impact to **less than significant**. No additional mitigation is required.

Floodway and 100-Year Floodplain Hazard Area. Table 5.7-3 summarizes project components under Alternative 2 that would affect land within the 100-year floodplain and designated floodway. In the 100-year floodplain, a total of 4.6 acres would be affected compared to a total of 3.9 acres for the project. No construction of paved surfaces would occur within the designated floodway under this alternative. Overall, impacts of Alternative 2 related to the construction and placement of structures within the designated floodway and the 100-year floodplain would be slightly greater than the impacts of the project and would be **potentially significant**. However, implementation of Mitigation Measures Hydrology and Water Quality-9 would reduce the impact to **less than significant**. No additional mitigation is required.

Exposure of People or Structures to Flooding. Temporary and long-term impacts of Alternative 2 regarding exposure of people or structures to flooding would be similar to those described for the project and would be **less than significant**. No mitigation is required.

Seiche, Tsunami, or Mudflow. Temporary and long-term impacts of Alternative 2 regarding the potential for seiche, tsunami, or mudflow would be similar to those described for the project. **No impact** would occur related to potential for a seiche or tsunami, and the impact related to mudflow potential would be **less than significant**. No mitigation is required.

5.7.11 Land Use and Planning

Like the project, Alternative 2 would not physically divide an established community or conflict with any applicable land use plan or policy. **No impact** would occur.

5.7.12 Mineral Resources

Like the project, Alternative 2 would not result in the loss of a known mineral resource. **No impact** would occur.

5.7.13 Noise

Construction activities under Alternative 2 would cause a short-term temporary increase in ambient noise levels. Noise levels could exceed ambient noise standards established by the City of Fresno for residential areas. The impact of noise levels exceeding 55 dBA, even temporarily, would be **potentially significant**. Implementation of Mitigation Measure Noise-1 would reduce the impact to **less than significant**. No additional mitigation is required.

5.7.14 Population and Housing

Like the project, Alternative 2 would not induce substantial population growth or displace a substantial number of housing. **No impact** would occur.

5.7.15 Public Services

Like the project, Alternative 2 would not alter existing public service ratios, response times, or performance standards for fire or police protection and would not induce population growth or demand for new school facilities. **No impact** would occur.

5.7.16 Recreation

Impacts of Alternative 2 on recreation would be similar to those described for the project. **No impact** would occur.

5.7.17 Transportation

Alternative 2 would result in the same LOS as the proposed project. All roadway segments under this alternative would have sufficient capacity to accommodate added traffic and still operate at acceptable LOS. In addition, VMT would be the same as under the project. The impact would be **less than significant**. No mitigation is required.

5.7.18 Utilities and Service Systems

Like the project, Alternative 2 would not affect utility infrastructure or services, such as water supply, solid waste, wastewater, or power supply. This impact would be **less than significant**. No mitigation is required.

5.7.19 Environmental Justice

As described in Section 4.2, “Environmental Justice—Disadvantaged Communities,” two disadvantaged community census tracts are located within 1.0 mile of the project area. Access to the Bluff Trail alignment and recreation amenities along the River for Alternative 2 would benefit individuals by improving quality of life and the community. However, access to the trail extension and recreation

amenities would be provided by a single access point, the Perrin Avenue entrance. The location would benefit residents in disadvantaged community Census Tract 6039001000 and Madera County residents traveling to the project area via SR 41. However, travel to this entrance would require residents of the nearby disadvantaged community Census Tract 6019004404, and more broadly, residents of Fresno to travel north along SR 41 to Children's Boulevard, then south along the SR 41 East Frontage Road, also known as Blackstone Avenue, a 180-degree reverse in direction. This would increase VMT by 8.3 miles and increase the generation of vehicular emissions. This impact would be **potentially significant.** No feasible mitigation measures are available to reduce this impact. Therefore, this would be an **unavoidable significant** impact on a nearby disadvantaged community or census tract, and more broadly, on the residents of Fresno.

5.8 Alternative 3: River's Edge Trail Alignment

Alternative 3 includes the project elements described in Section 2.4, "Project Description," but with the trail extension alignment lying nearer to and along the bank of the San Joaquin River.

In Alternative 3, the trail extension would be aligned closer to the River's edge (around the O Pond) in the more southerly (downstream) portion of the site, and would remain as proposed by the project in the northerly (upstream) portion of the site. An observation platform or viewing deck would be constructed on the trail near the O Pond to provide a sightseeing view of the River. A pedestrian bridge or crossing would be constructed over the breach along the berm that separates the O Pond from the River. The observation platform and pedestrian bridge would be designed to accommodate a high flow of 8,000 cfs at a minimum. All other amenities, including the proposed parking lot near Perrin Avenue, landscaping, and restrooms, would be as described for the project. Figure 5-3 presents a conceptual drawing of the River's Edge Trail Alignment. In total, project components described for Alternative 3 would cover 8.9 miles or 14.1 acres. Table 5.8-1 summarizes Alternative 3 project components by length and area.

5.8.1 Environmental Setting

The geographic location and environmental and regulatory settings for Alternative 3 are the same as stated for the project in Chapter 3 of this DEIR.

Table 5.8-1 Summary of Alternative 3 Project Components

Project Component	Alternative 3	
	Length (miles)	Area (acres)
Multiuse Trail (paved—12 feet wide)	3.3	4.7
Multiuse Trail (unpaved—10 feet wide)	4.2	4.7
Perrin Avenue Parking (paved)	0	0.8
Perrin Avenue Parking (unpaved)	0	0.9
Bluff Trail (paved)	0.3	0.4
Existing Unimproved Hiking Trails	1.1	2.6
Total	**8.9**	**14.1**

Source: Compiled by AECOM in 2016

5.8.2 Aesthetics and Visual Resources

Under Alternative 3, as under the project, the trail extension, parking lot, recreation amenities, and people using the trail would be visible during the day from various viewing areas. This visibility would result in a conflict with the unique and scenic riverine resource and would degrade the existing visual quality of the surrounding area. LED lighting in the parking lot would create a new source of glare. The impact would be **potentially significant**. However, implementation of Mitigation Measures Aesthetics and Visual Resources-1 and Aesthetics and Visual Resources-2 would reduce the impact to **less than significant**. No additional mitigation is required.

5.8.3 Agriculture and Forestry Resources

As stated for the project, no Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or forestland is located in the project area. **No impact** on agriculture or forestry resources would occur under Alternative 3.

5.8.4 Air Quality

Air quality modeling for Alternative 3 produced the same results as modeling for the project. The CalEEMod inputs used for the project were also used for this alternative. The CalEEMod runs for the Perrin Avenue parking lot are provided in Appendix C. The air quality impacts of Alternative 3 would be **less than significant.** No mitigation is required.

Figure 5-3 Alternative 3—River's Edge Trail Alignment

5.8.5 Biological Resources

Under Alternative 3, the trail extension would be aligned closer to the river's edge (around the O Pond) than under the project in the more southerly (downstream) portion of the site. In the northerly (upstream) portion of the site, the trail extension would remain as proposed by the project. An observation platform or viewing deck would be constructed on the trail near the O Pond to provide a sightseeing view of the River. A pedestrian bridge or crossing would be constructed over the breach along the berm that separates the O Pond from the River. Construction of the Alternative 3 trail alignment, parking lot, vault toilets, wildlife viewing areas, and recreation amenities would involve site preparation, clearing, grading, installation of new hardscape, and landscaping. These activities would require the presence and operation of heavy equipment (graders, trucks, and pavers), materials such as gravel and asphalt, and a construction work force. Construction impacts would include noise, ground disturbance, and dust generation. Implementation of Alternative 3 could adversely affect candidate, sensitive, or special-status species. The impact would be **potentially significant**. However, implementation of Mitigation Measures Biological Resources-1 through Biological Resources-10 would reduce the potential impact to **less than significant**. No additional mitigation is required.

Wildlife Corridors and Riparian Habitat

Riparian habitat provides wildlife habitat and movement corridor along the river. A wildlife corridor, habitat corridor, or green corridor is an area of habitat connecting wildlife populations separated by human activities or structures. A corridor provides connectivity for plants and wildlife species to disperse or migrate throughout the landscape.

Under Alternative 3, native riparian vegetation would be removed along the river's edge and possibly in other construction areas. As a result, food, nesting habitat, and cover for upland wildlife and riparian corridor connectivity would be lost. Wildlife species would avoid the area, thus adversely affecting species whose life cycles are closely tied to the riparian environment. Permanent fill would be used in constructing the pedestrian bridge or crossing and the viewing platform. These activities would increase sediment, thus affecting water quality and permanently filling other waters of the United States. This impact would be **potentially significant.**

Mitigation Measure Alt. 3–Biological Resources-11

The Conservancy shall implement the following mitigation measures:

- Riparian vegetation shall be removed only if necessary; vegetation outside the construction areas shall not be removed.

- Trees that are removed shall be replaced. The mitigation replacement ratio shall meet the standard established by CDFW. Replacement trees shall be grown from on-site cuttings, or if obtained from a native plant nursery, shall be locally adapted ecotypes of native tree or shrub species.

- Riparian habitat shall be avoided during construction to the maximum extent possible.

- The Conservancy shall coordinate with USACE and CDFW and shall implement all permit requirements.

- The Conservancy shall implement BMPs BIO-2, GEO-1, and HYDRO-1 through HYDRO-4.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Alt. 3–Biological Resources-11 would reduce the impact of native vegetation removal to **less than significant** because riparian habitat would be avoided during construction, and trees that are removed would be replaced to the maximum extent possible. No additional mitigation is required.

Conflict with Local Policies and Ordinances

No local ordinances protecting wildlife or plant species and no habitat conservation plans or natural community conservation plans are applicable to the project area. However, the Parkway Master Plan includes design policies for new facilities and trails and policies to protect riparian and wetland habitat and wildlife corridors.

- **Design Policy 5.6-1(b)**: The Conservancy shall include the following design policies for future Parkway development activities:
  - New facilities shall be sited in restored or previously developed areas. Visitor overlooks and viewing areas shall be located to avoid intrusion into sensitive habitat areas and to avoid habitat fragmentation.
  - Whenever feasible, route trails on the outside edges of habitat areas, rather than through the center of mature riparian stands.
- **Policy NP1:** Provide a minimum width for the wildlife corridor of 200 feet on both sides of the river. Acquire a wider corridor whenever possible. Provide a buffer width wider than 150 feet whenever more intensive uses on adjacent lands exist or are planned.
- **Policy NRD1.5:** Seek to establish a continuous corridor of riparian vegetation on both sides of the river to provide for the movement and migration of wildlife, as well as the restoration and improvement of in-stream shaded habitat.

- **Policy RP7.:** Prescribes that a buffer of 150 feet be established between the riparian corridor of the edge of the existing riparian habitat and the planned primary Parkway multipurpose trail. However, where the 150-foot buffer is not feasible, an offsetting riparian corridor on the opposite bank may be considered.
- **Policy Buffer 12.:** A buffer of 150 feet shall be established between the riparian corridor of the edge of the existing riparian habitat and the planned primary Parkway multipurpose trail. However, where the 150-foot buffer is not feasible, an offsetting corridor on the opposite bank may be considered.

Alternative 3 also conflicts with the policies of the Parkway Master Plan to protect the riparian corridor. Because of these policy conflicts, this impact would be **potentially significant**.

Mitigation Measure Alt. 3–Biological Resources-12

The Alternative 3 trail alignment shall be moved away from the River's edge consistent with the objectives of the proposed project and in accordance with the policies and buffer established by the Parkway Master Plan.

Effectiveness of Mitigation Measure

Alternative 3 would require a discharge of fill to waters of the United States to construct a crossing of a breach on the riverward bank of the O Pond. Such discharges are regulated by Sections 404 and 401 of the federal Clean Water Act, requiring permits from USACE. Implementation of BMPs BIO-2, BIO-3, HYDRO-1, HYDRO-2, and HYDRO-3 before any construction would minimize impacts on waters of the United States.

The narrow berm around the O Pond makes infeasible the setback required by the above mitigation measure, which is intended to meet the policies and buffer established in the Parkway Master Plan. Alternative 3 conflicts with the objectives and policies of the Parkway Master Plan. Therefore, this would be an **unavoidable significant** impact**.**

5.8.6 Cultural Resources

As stated for the project, no historic resources are present in the area. The location of the trail extension alignment under Alternative 3 would avoid the recorded archaeological resource and Perrin Ditch as described for the project in Section 3.6, "Cultural Resources." However, historic Native American use is known to occur along the River (Appendix E). Therefore, greater potential exists to uncover cultural resources and human remains during construction under Alternative 3 than under the project. This impact would be **potentially significant.** The cultural resources BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 3. Implementation of Mitigation

Measure Cultural Resources-1 would reduce the impact to **less than significant**. No additional mitigation is required.

5.8.7 Geology and Soils

Impacts from exposure to seismic events, unstable geological units, and expansive soils under Alternative 3 would be similar to impacts of the project. However, the ground-disturbing activities of Alternative 3 would be slightly greater than those of the project (Table 5.8-2). With the addition of clearing, grading, and excavation activities to construct the new parking lot and road, construction for Alternative 3 would remove more riparian vegetation cover along the River and induce more soil erosion than construction for the project. This impact would be **potentially significant**. The geology and soils BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 3. Implementation of Mitigation Measure Geology and Soils-1 would reduce the impact to **less than significant**. No additional mitigation is required.

Table 5.8-2 Acres of Land Disturbed—Project vs. Alternative 3

Project Component	Proposed Project		Alternative 3	
	Length (miles)	Size (acres)	Length (miles)	Size (acres)
Paved Multiuse Trail	2.4	3.5	3.3	4.7
Unpaved Multiuse Trail	3.1	3.6	4.2	4.7
Perrin Avenue Parking—paved	0	0.8	0	0.8
Perrin Avenue Parking—unpaved	0	0.9	0	0.9
Bluff Trail	0.3	0.4	0.3	0.4
Added Parking	NA	NA	NA	NA
Existing Hiking Paths	1.8	1.3	1.1	2.6
Total	**7.6**	**10.5**	**8.9**	**14.1**

Source: Compiled by AECOM in 2016

5.8.8 Greenhouse Gas Emissions

GHG emissions modeling for Alternative 3 produced the same results as modeling for the project. The CalEEMod inputs used for the project were also used for this alternative. The CalEEMod run for the Perrin Avenue parking lot can be found in Appendix C. The impacts of Alternative 3 related to GHG emissions would be the same as the impacts of the proposed project: all GHG emissions impacts would be **less than significant**. No mitigation is required.

5.8.9 Hazards and Hazardous Materials

The impacts of Alternative 3 from routine transport, storage, and use of hazardous materials, along with the potential for accidental spills, would be similar to those of the project and would be **less than significant**. No mitigation is required.

The additional facilities proposed under Alternative 3 would be located within the same overall project site as the project's facilities; therefore, like the project, this alternative would have **no impact** related to emissions of hazardous materials within 0.25 mile of a school or related to hazards from airports and airstrips.

Alternative 3 would provide appropriate emergency-vehicle access (fire, police, and ambulance) at both the West Riverview Drive and Perrin Avenue entrances. These access points would also provide additional emergency egress for members of the public using the trail extension. Construction activity would occur only within the project site and would not block or reduce access to city streets. Therefore, like the project, Alternative 3 would have **no impact** related to interference with emergency response and/or evacuation plans.

Alternative 3 would entail constructing additional facilities and a longer trail extension relative to the project; therefore, the potential for wildland fire hazards from sparks emitted by construction equipment would be slightly greater than the project's wildland fire hazard. Under this alternative, the trail alignment would be in an area of natural vegetation adjacent to the River. Moreover, the project area is composed of nonnative upland grass species. The eastern half of the project site has been zoned as a moderate fire hazard and the western half is unzoned (CAL FIRE 2007). The impact would be **potentially significant,** but implementation of Mitigation Measures Hazards and Hazardous Materials-1 through Hazards and Hazardous Materials-6 would reduce the potential impact to **less than significant** because the Conservancy would provide appropriate emergency access and signage, prohibit open burning, and the use of barbeque grills, and would perform annual and periodic fire prevention activities. No additional mitigation is required.

The Alternative 3 trail extension and associated facilities would not be located on a hazardous materials site that is part of the Cortese List. Thus, as under the project, the impact of Alternative 3 related to potential exposure of construction workers and the public from known hazardous materials would be **less than significant**. No mitigation is required.

As under the proposed project, plant species and prevailing winds may constitute a fire hazard and expose people or property to a significant wildland fire risk under Alternative 3. This alternative consists of a different trail extension alignment than the project, located closer to the River's edge in an area of natural vegetation. A segment of the tail (near the O Pond) would have open water on both sides, creating a fire break for that short segment. Equipment used on the project site for trail construction and

ongoing maintenance could emit sparks, which could increase the wildland fire hazard. A wildfire could be inadvertently ignited during recreational use of the trail and its amenities.

Therefore, this impact would be **potentially significant**. The hazards and hazardous materials BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 3. Implementation of Mitigation Measures Hazards and Hazardous Materials-1 through Hazards and Hazardous Materials-6 would reduce the impact to **less than significant.**

5.8.10 Hydrology and Water Quality

Water Quality

Temporary Impacts. Alternative 3 would involve construction along an alternative trail extension route in addition to construction of the facilities described for the project. Table 5.8-2 presents the area of disturbance for paved and unpaved surfaces. The construction activities under Alternative 3 could affect water quality because exposed soils could erode and be transported in stormwater runoff. In addition, short-term construction activities could generate water pollutants, including sediment, trash, construction materials, and equipment fluids. These impacts would be **potentially significant**.

Construction of the pedestrian bridge and viewing area could discharge fill to waters of the United States. This temporary impact would be **potentially significant.**

Mitigation Measure Alt. 3–Hydrology and Water Quality-10

The Conservancy shall comply with all Phase I NPDES stormwater regulations for major project construction activities. In particular, a project-grading plan shall include drainage and erosion control plans to minimize impacts from erosion and sedimentation during grading. This plan shall conform to all standards required by CDFW, the Central Valley RWQCB, the SWRCB, and USACE. The plan shall include at least the following procedures:

- restricting grading to the dry season;
- protecting all finished graded slopes from erosion, using such techniques as erosion control matting and hydroseeding;
- protecting downstream storm drainage inlets from sedimentation;
- using silt fencing and hay bales to retain sediment on the project site;
- using temporary water conveyance and water diversion structures to eliminate runoff; and
- Implementing any other suitable measures outlined by State and federal agencies.

Effectiveness of Mitigation Measure

Compliance with the NPDES program would ensure stormwater pollutants would not substantially degrade water quality. Implementation of Mitigation Measure Alternative 3 Hydrology and Water Quality-10 would reduce temporary impacts on water quality to **less than significant** by reducing runoff.

Long-Term Impacts. Like the proposed project, Alternative 3 would generate runoff from the paved trail; however, for the part of the trail confined to the berm along the O Pond, the runoff could not be directed to a bioswale for treatment before discharge to the River. The untreated discharge would be greater under Alternative 3 than under the project, but would be a negligible contribution of pollutants to the River. The long-term impact would be **less than significant**. No mitigation is required.

Groundwater

Temporary Impacts. Construction activities for the project and Alternative 3 would be similar; therefore, the temporary impacts of Alternative 3 on groundwater (similar to those described in Chapter 3 for the project) would be **less than significant**. No mitigation is required.

Long-Term Impacts. The area of new impervious/paved surfaces associated with Alternative 3 would be slightly greater than that of the project (see Table 5.8-3 and Table 3.10-1 in Chapter 3). However, the increase in impervious/paved surface proposed is very small relative to the total portion of the project site, and this increase would not measurably affect recharge to the local groundwater basin. Operations under Alternative 3 would not substantially increase groundwater demands, and existing supplies provided for fire suppression are expected to be adequate to serve the site under Alternative 3 without lowering groundwater levels. The long-term impact on groundwater would be **less than significant**. No mitigation is required.

Drainage

Table 5.8-3 Project Components of Alternative 3 within the 100-Year Floodplain and Designated Floodway

Project Component	100-Year Floodplain		Designated Floodway	
	Length (miles)	Area (acres)	Length (miles)	Area (acres)
Multiuse Trail (paved—12 feet wide)	2.0	3.0	1.0	1.4
Multiuse Trail (unpaved—10 feet wide)	2.3	2.8	1.9	1.2
Perrin Avenue Parking (paved)	0	0	0	0
Perrin Avenue Parking (unpaved)	0	0	0	0
Bluff Trail (paved)	0	0	0	0
Existing Unimproved Hiking Trails	1.1	0.8	1.0	0.7
Total	**5.4**	**6.6**	**3.9**	**3.3**

Source: Compiled by AECOM in 2016

Temporary Impacts. Like the project, Alternative 3 would require grading, moving soil, and placing structures on steep slopes and within flood zones, which could alter drainage courses and runoff patterns relative to existing conditions. The total area of disturbance within the designated floodway for Alternative 3 would be smaller compared to the area of disturbance for the project (see Table 5.8-3 and Table 3.10-1 in Chapter 3); however, Alternative 3 would place the trail extension and associated surfaces in the 100-year floodplain. Table 5.8-3 shows the disturbed area for Alternative 3 within the 100-year floodplain. The area of disturbance would differ slightly, but the construction activities for the project and Alternative 3 would be similar, and the BMPs and mitigation measures would be the same. Therefore, the temporary impacts of Alternative 3 on drainage (similar to those described in Chapter 3 for the project) would be **less than significant**. No mitigation is required.

Long-Term Impacts. Placing impervious/paved surfaces and other project components adjacent to or within the riverbank, designated floodway, and 100-year floodplain and on the steep bluffs under Alternative 3 could contribute to hydromodification processes and associated water quality impacts. Table 5.8-3 presents the portion of Alternative 3 located within the riverbank, designated floodway, and floodplain. Modifications of the bluffs would be the same under Alternative 3 as under the project. One mile of impervious/paved surfaces would encroach into the designated floodway under Alternative 3. The total area of impervious/paved and hard-packed surfaces within the 100-year floodplain would be slightly greater under Alternative 3 than under the project. The area of flood zone would differ slightly, but implementation of project design features, BMPs, and Parkway Master Plan policies and mitigation measures would be the same. Therefore, the long-term impacts of Alternative 3 on drainage (similar to those described in Chapter 3 for the project) would be **less than significant**. No mitigation is required.

Runoff. For the part of the trail confined to the berm along the O Pond, the runoff could not be directed to a bioswale for treatment before discharge to the River. The untreated discharge would be greater than under the project, but would be a negligible contribution of pollutants to the river. Temporary and long-term impacts of Alternative 3 on runoff would be similar to those described for the project and would be **potentially significant.** The water quality and geology BMPs identified in Section 2.5.1, “Best Management Practices,” would be implemented as part of Alternative 3. Additionally, implementation of Mitigation Measures Hydrology and Water Quality-4 and Hydrology and Water Quality-5 would reduce the impact to **less than significant**.

Floodway and 100-Year Floodplain Hazard Area. Table 5.8-3 summarizes the components of Alternative 3 that would affect land within the 100-year floodplain and designated floodway. Under this alternative, a total of 6.6 acres within the 100-year floodplain would be affected by construction-related activities, about 2 acres more than under the proposed project (Table 3.10-1). Construction of both paved and unpaved trails within the 100-year floodplain and designated floodway. Overall, impacts of Alternative 3 related to the construction and placement of structures within the designated floodway and the 100-year

floodplain would be greater than the impacts of the project and would be a potentially **significant impact**. However, implementation of Mitigation Measures Hydrology and Water Quality-4 and Hydrology and Water Quality-5 would reduce the impact to **less than significant**.

Exposure of People or Structures to Flooding. Temporary and long-term impacts of Alternative 3 regarding exposure of people or structures to flooding would be similar to those described for the project and would be **less than significant**. No mitigation is required.

Seiche, Tsunami, or Mudflow. Temporary and long-term impacts of Alternative 3 regarding the potential for seiche, tsunami, or mudflow would be similar to those described for the project. **No impact** would occur related to potential for a seiche or tsunami, and the impact related to mudflow potential would be **less than significant**. No mitigation is required.

5.8.11 Land Use and Planning

Similar to the project, Alternative 3 would not physically divide an established community. **No impact** would occur.

However, the trail alignment would conflict with riparian protection and buffer policies in the Parkway Master Plan (see Section 5.8.5). This impact would be **potentially significant.** The narrow berm around the O Pond precludes the setback from meeting the policies and buffer established in the Parkway Master Plan. Therefore, the potential impact of Alternative 3 would be an **unavoidable significant** impact.

5.8.12 Mineral Resources

Like the project, Alternative 3 would not result in the loss of a known mineral resource. **No impact** would occur.

5.8.13 Noise

Construction activities under Alternative 3 would cause a short-term temporary increase in ambient noise levels. Noise levels could exceed ambient noise standards established by the City of Fresno for residential areas. The impact of noise levels exceeding 55 dBA, even temporarily, would be **significant**. Implementation of Mitigation Measure Noise-1 would reduce the impact to **less than significant**.

5.8.14 Population and Housing

Like the project, Alternative 3 would not induce substantial population growth or displace a substantial number of housing. **No impact** would occur.

5.8.15 Public Services

Like the project, Alternative 3 would not alter existing public service ratios, response times, or performance standards for fire or police protection and would not induce population growth or demand for new school facilities. **No impact** would occur.

5.8.16 Recreation

Impacts of Alternative 3 on recreation would be similar to those described for the project by increasing visitor use of a regional park or recreation area. The impact would be **less than significant**. No mitigation is required.

5.8.17 Transportation

Alternative 3 would result in the same LOS as the proposed project. All roadway segments under this alternative would have sufficient capacity to accommodate added traffic and still operate at acceptable LOS. In addition, VMT would be the same as under the project. The impact would be **less than significant**. No mitigation is required.

5.8.18 Utilities and Service Systems

Like the project, Alternative 3 would not affect utility infrastructure or services, such as water supply, solid waste, wastewater, or power supply. The impact would be **less than significant**. No mitigation is required.

5.8.19 Environmental Justice

As described in Section 4.2, “Environmental Justice—Disadvantaged Communities,” two disadvantaged community census tracts are located within 1.0 mile of the project area. Access to the River’s Edge Trail alignment and recreation amenities along the River would benefit individuals, improving quality of life and the community. However, access to the trail extension and recreation amenities would be provided by a single access point, the Perrin Avenue entrance. The location would benefit residents in disadvantaged community Census Tract 6039001000 and Madera County residents traveling to the project area via SR 41. However, travel to this entrance would require residents of the nearby disadvantaged community Census Tract 6019004404, and more broadly, residents of Fresno to travel north along SR 41 to Children’s Boulevard, then south along the SR 41 East Frontage Road, also known as Blackstone Avenue, a 180-degree reverse in direction. Alternative 3 does not address limited public access to the River for residents of the nearby disadvantaged community (Census Tract 6019004404) and for residents of the Fresno metropolitan area. The impact on disadvantaged communities would be an **unavoidable significant** impact. No feasible mitigation measures are available to reduce this impact.

5.9 Alternative 4: No Parking

Alternative 4 includes the trail extension as described in Section 2.4, "Project Description"; however, no public vehicle entrance to the project site or on-site parking would be provided.

The Perrin Avenue parking lot would not be constructed under Alternative 4. The trail extension would follow the same alignment as described for the project. Public access via the Perrin Avenue entrance would be walk-in/bicycle-in only. Walk-in/bicycle-in access would also be available from the Bluff Trail and Spano Park. At the northern end of the site, access to the trail extension would be provided at the Perrin Avenue undercrossing of SR 41. An emergency and service gate would provide access to the trail extension for first responders and maintenance staff. A two-vault ADA-accessible restroom, a drinking fountain, and a small pet station would be provided at both the Perrin Avenue entrance and near Spano Park. If feasible, three fire hydrants would be located along the trail extension: at the Perrin Avenue entrance, near a parcel of private property, and near the toe of Spano Park. The Spano Park access and bicycle guides may be constructed on the steep slope of the bluffs. Existing unimproved hiking paths to the River would be connected to the trail extension. These paths may be widened up to 6 feet and overlain with permeable material such as decomposed gravel. Figure 5-4 presents a conceptual drawing of the No Parking Alternative. In total, project components described for Alternative 4 would cover approximately 7.5 miles or 8.7 acres. Table 5.9-1 summarizes Alternative 4 project components by length and area.

Table 5.9-1 Summary of Alternative 4 Project Components

Project Component	Alternative 4	
	Length (miles)	**Area (acres)**
Multiuse Trail (paved—12 feet wide)	2.3	3.4
Multiuse Trail (unpaved—10 feet wide)	3.1	3.6
Perrin Avenue Parking (paved) (unpaved)	 0 0	 0 0
Bluff Trail (paved)	0.3	0.4
Existing Unimproved Hiking Trails	1.8	1.3
Total	**7.5**	**8.7**

Source: Compiled by AECOM in 2016

5.9.1 Environmental Setting

The geographic location and environmental and regulatory settings for Alternative 4 are the same as stated for the project in Chapter 3 of this DEIR.

5.9.2 Aesthetics and Visual Resources

Under Alternative 4, as under the project, the trail extension, recreation amenities, and people using the trail would be visible during the day from various viewing areas. This visibility would result in a conflict with the unique and scenic riverine resource and would degrade the existing visual quality of the surrounding area. The impact would be **significant**. Implementation of Mitigation Measure Aesthetics and Visual Resources-1 would reduce the impact to **less than significant**. No additional mitigation is required.

Long-Term Impacts. Placing impervious/paved surfaces and other project components adjacent to or within the designated floodway and 100-year floodplain and on the steep bluffs could contribute to hydromodification processes and associated water quality impacts. Modifications of the bluffs would be the same under Alternative 2 as under the project. No impervious/paved surfaces would encroach into the designated floodway under Alternative 2. The total area of impervious/paved and hard-packed surfaces within the 100-year floodplain would be slightly greater under Alternative 2 than under the project. Although the area of flood zone would differ slightly, implementation of project design features, BMPs, and Parkway Master Plan policies and mitigation measures would be the same. Therefore, the long-term impacts of Alternative 4 on drainage would be similar to those described above for the project, and would be **potentially significant.** Implementation of Mitigation Measures Hydrology and Water Quality-4, Hydrology and Water Quality-5, and Hydrology and Water Quality-6 would reduce the long-term impact to **less than significant**. No additional mitigation is required.

5.9.3 Agriculture and Forestry Resources

As stated for the project, no Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or forestland is located in the project area. **No impact** on agriculture or forestry resources would occur under Alternative 4.

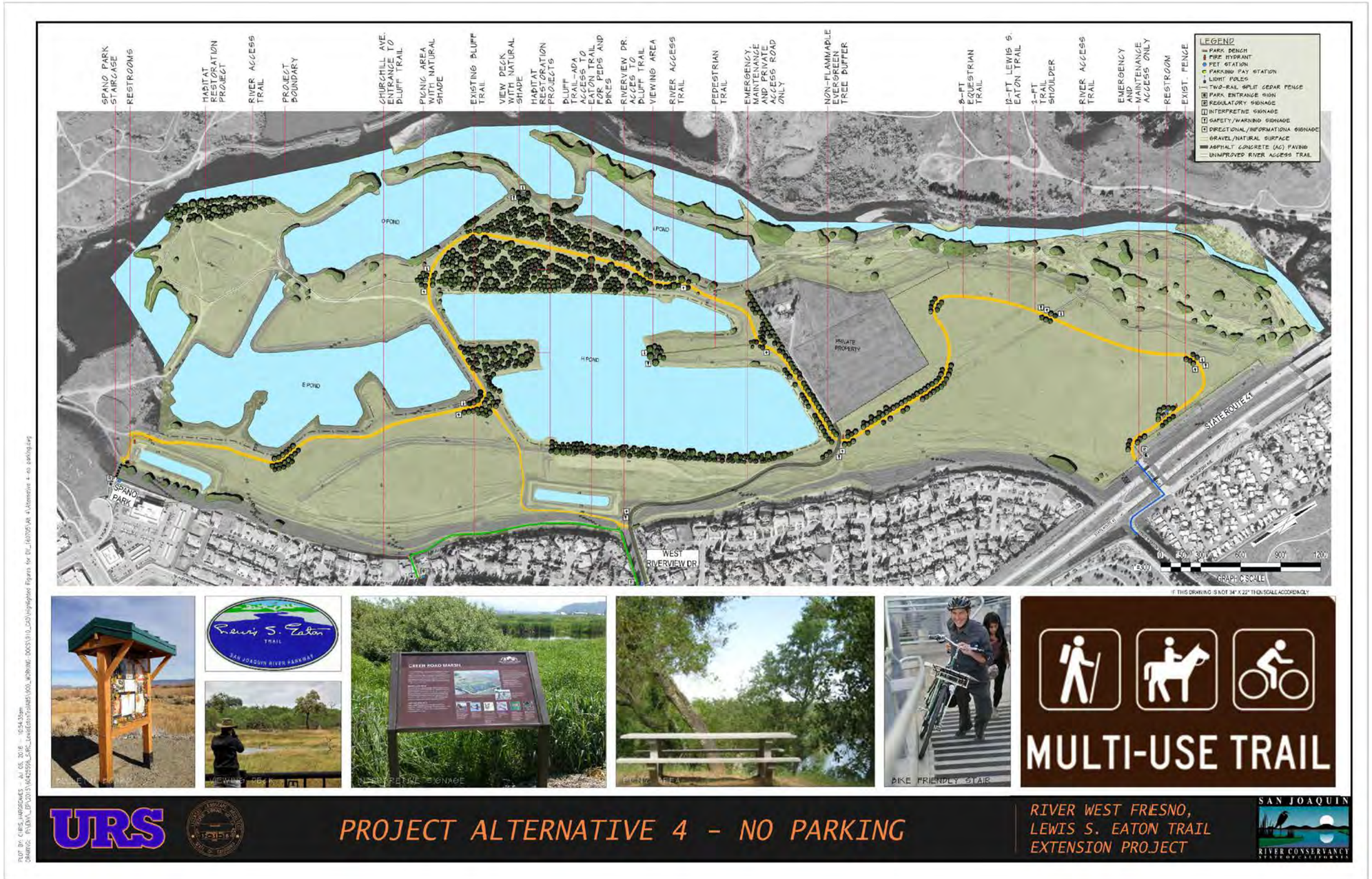


Figure 5-4 No Parking Alternative

5.9.4 Air Quality

Alternative 4 includes construction of only the 3.5-mile trail extension, with no construction of a parking lot. However, the trail and recreational amenities described in the proposed project would be built. This alternative is estimated to generate fewer vehicle trips to the project site and reduce emissions, because the public would need to find parking on adjacent streets.

As shown in Table 5.9-2 and Table 5.9-3, Alternative 4 would generate slightly less construction emissions than the project. This alternative would generate less operational emissions because no dedicated parking would be provided. The CalEEMod results for Alternative 4 can be found in Appendix C.

All air quality impacts of Alternative 4 would be **less than significant.** No mitigation is required.

Table 5.9-2 Estimated Unmitigated Annual Construction Emissions—Project vs. Alternative 4

	Criteria Pollutant Emissions (tons per year)					
	CO	**NO_X**	**ROG**	**SO_X**	**PM_{10}[1]**	**$PM_{2.5}$[1]**
Project	1.0	1.5	2.2	0.0	0.1	0.1
Alternative 4	0.8	1.1	0.1	0.0	0.1	0.1
SJVAPCD Threshold	100	10	10	27	15	15
Exceed Threshold?	No	No	No	No	No	No

Notes:

CO = carbon monoxide; NO_X = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter; PM_{10} = suspended particulate matter; ROG = reactive organic gases; SJVAPCD = San Joaquin Valley Air Pollution Control District; SO_X = oxides of sulfur

[1] PM emissions shown include the sum of particulate matter with aerodynamic diameter 0 to 2.5 micrometers and particulate matter with aerodynamic diameter 2.5 to 10 micrometers.

Source: Estimated by AECOM in 2016

Table 5.9-3 Estimated Unmitigated Annual Operational Emissions—Project vs. Alternative 4

	Criteria Pollutant Emissions (tons per year)					
	CO	**NO_X**	**ROG**	**SO_X**	**PM_{10}[1]**	**$PM_{2.5}$[1]**
Project	2.7	0.8	1.9	0.0	0.4	0.1
Alternative 4	0.0	0.0	1.3	0.0	0.0	0.0
SJVAPCD Threshold	100	10	10	27	15	15
Exceed Threshold?	No	No	No	No	No	No

Notes:

CO = carbon monoxide; NO_X = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter; PM_{10} = suspended particulate matter; ROG = reactive organic gases; SJVAPCD = San Joaquin Valley Air Pollution Control District; SO_X = oxides of sulfur

[1] PM emissions shown include the sum of particulate matter with aerodynamic diameter 0 to 2.5 micrometers and particulate matter with aerodynamic diameter 2.5 to 10 micrometers.

Source: Estimated by AECOM in 2016

5.9.5 Biological Resources

Alternative 4 would result in slightly less ground disturbance, noise generation, and vegetation removal than the project. Impacts on candidate, sensitive, or special-status species or their habitats would be **potentially significant**. The biological resources BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 4. Implementation of Mitigation Measures Biological Resources-1 (Special-Status Plant Species) through Biological Resources-10 (Wildlife Movement) would reduce the impact to **less than significant**. No additional mitigation is required.

5.9.6 Cultural Resources

As stated for the project, no historic resources are present in the area. Alternative 4 would disturb substantially less surface area than the project and would have less potential to uncover cultural or paleontological resources during construction. However, discovery of cultural resources and human remains during construction cannot be definitely ruled out. This impact would be **potentially significant**. The cultural resources BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 4. Additionally, implementation of Mitigation Measure Cultural Resources-1 would reduce the impact to **less than significant**. No additional mitigation is required.

5.9.7 Geology and Soils

Impacts from exposure to seismic events, unstable geological units, and expansive soils would be the same under Alternative 4 as under the project. However, clearing, grading, and excavation activities for construction of the trail extension alignment would remove less vegetative cover and induce less soil erosion than under the project. The ground-disturbing activities of Alternative 4 would be less than those of the project (Table 5.9-4). However, construction would result in soil erosion or the loss of topsoil. The impact would be **potentially significant**. The geology and soils BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 4. Implementation of Mitigation Measure Geology and Soils-1 would reduce the impact to **less than significant.** No additional mitigation is required.

Table 5.9-4 Acres of Land Disturbed—Project vs. Alternative 4

	Proposed Project		Alternative 4	
Project Component	**Length (miles)**	**Size (acres)**	**Length (miles)**	**Size (acres)**
Paved Multiuse Trail	2.4	3.5	2.4	3.5
Unpaved Multiuse Trail	3.14	3.6	3.1	3.6
Perrin Avenue Parking—Paved	0	0.8	0	0
Perrin Avenue Parking—Unpaved	0	0.9	0	0
Bluff Trail	0.36	0.5	0.3	0.4
Added Parking	NA	NA	NA	NA
Existing Hiking Paths	1.8	1.3	1.8	1.3
Total	7.6	10.5	7.6	8.8

Note: NA = not applicable
Source: Compiled by AECOM in 2016

5.9.8 Greenhouse Gas Emissions

Alternative 4 includes construction of only the 3.5-mile trail extension and recreational amenities, with no dedicated parking. This alternative is estimated to generate fewer vehicle trips to the project site and reduce emissions, because the public would need to find parking on adjacent streets.

Alternative 4 would generate less construction emissions of GHGs than the project (Table 5.9-5). Less than 1 $MTCO_2e$ of operational GHG emissions would be generated by this alternative because no parking lot would be constructed. The CalEEMod results for the No Parking Alternative can be found in Appendix C.

All impacts of Alternative 4 related to GHG emissions would be **less than significant.** No mitigation is required.

Table 5.9-5 Total Greenhouse Gas Emissions—Project vs. Alternative 4

	Total Construction Emissions ($MTCO_2e$)	Amortized Construction Emissions ($MTCO_2e$)	Total Operational Emissions ($MTCO_2e$)
Project	192	6	501
Alternative 4	137	5	0

Note: $MTCO_2e$ = metric tons of carbon dioxide equivalent

Source: Estimated by AECOM in 2016

5.9.9 Hazards and Hazardous Materials

The impacts of Alternative 4 from routine transport, storage, and use of hazardous materials, along with the potential for accidental spills, would be similar to those of the project and would be **less than significant**. No mitigation is required.

The facilities proposed under Alternative 4 would be located within the same overall project site as the project's facilities; therefore, similar to the project, this alternative would have **no impact** related to emissions of hazardous materials within 0.25 mile of a school or related to hazards from airports and airstrips.

Alternative 4 would provide appropriate emergency-vehicle access (fire, police, and ambulance) at both the West Riverview Drive and Perrin Avenue entrances. These access points would also provide additional emergency egress for members of the public using the trail extension. Construction activity would occur only within the project site and would not block or reduce access to city streets. Therefore, similar to the project, Alternative 4 would have **no impact** related to interference with emergency response and/or evacuation plans.

Alternative 4 would entail constructing somewhat fewer facilities than would be constructed for the project, because no on-site parking would be provided. Therefore, the potential for wildland fire hazards from sparks emitted by construction equipment would be slightly less. However, this impact would be **potentially significant.** The hazards and hazardous materials BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 4. Implementation of Mitigation Measures Hazards and Hazardous Materials-1 through Hazards and Hazardous Materials-6 would reduce the impact to **less than significant**. No additional mitigation is required.

The Alternative 4 trail extension and associated facilities would not be located on a hazardous materials site that is part of the Cortese List. Thus, as under the project, the impact of Alternative 4 related to potential exposure of construction workers and the public from known hazardous materials would be **less than significant**. No mitigation is required.

5.9.10 Hydrology and Water Quality

Water Quality

Temporary Impacts. Construction activities for the project and Alternative 4 would be similar; however, the area of disturbance under Alternative 4 would be less than that of the project. Nonetheless, construction would result in potentially significant impacts. BMPs and mitigation measures would be the same under both alternatives; therefore, the temporary impacts of Alternative 4 on water quality (similar to those described in Chapter 3 for the project) would be would be **potentially significant.** However, implementation of Mitigation Measures Hydrology and Water Quality-1, Hydrology and Water Quality-2, and Hydrology and Water Quality-3 would reduce the impacts to **less than significant.** No additional mitigation is required.

Long-Term Impacts. The area of new impervious/paved surfaces and parking associated with Alternative 4 would be less than under the project, but Alternative 4 would have the same uses. Long-term impacts would be potentially significant. The BMPs and mitigation measures would be the same under both alternatives; therefore, the long-term impacts of Alternative 4 on water quality (similar to those described in Chapter 3 for the project) would be would be **potentially significant.** However, implementation of Mitigation Measures Hydrology and Water Quality-1, Hydrology and Water Quality-2, and Hydrology and Water Quality-3 would reduce the impacts to **less than significant.**

Groundwater

Temporary Impacts. Construction activities for the project and Alternative 4 would be similar; therefore, the temporary impacts of Alternative 4 on groundwater (similar to those described above for the project) would be **less than significant**. No mitigation is required.

Long-Term Impacts. The area of new impervious/paved surfaces associated with Alternative 4 would be less than that of the project (Table 5.9-4). The percentage of impervious/paved surface proposed is very small relative to the total portion of the project site, and this new impervious area would not measurably affect recharge to the local groundwater basin. Operations under Alternative 4 would not substantially increase groundwater demands, and existing supplies provided for fire suppression are expected to be adequate to serve the site under Alternative 4 without lowering groundwater levels. The long-term impact on groundwater would be **less than significant**. No mitigation is required.

Drainage

Table 5.9-6 presents Alternative 4 components within the 100-year floodplain and designated floodway.

Table 5.9-6 100-Year Floodplain and Floodway Alternative 4 Components

Project Component	100-Year Floodplain		Designated Floodway	
	Length (miles)	**Area (acres)**	**Length (miles)**	**Area (acres)**
Multiuse Trail (paved—12 feet wide)	1.1	1.6	0	0
Multiuse Trail (unpaved—10 feet wide)	1.3	1.7	0	0
Perrin Avenue Parking (paved) (unpaved)	 0 0	 0.1 0	 0 0	 0 0
Bluff Trail (paved)	0	0	0	0
Unimproved Hiking Trails	1.8	1.3	1.4	1.0
Total	**4.2**	**4.7**	**1.4**	**1.0**

Source: Compiled by AECOM in 2016

Temporary Impacts. Similar to the project, Alternative 4 would require grading, moving soil, and placing structures on steep slopes and within flood zones, which could alter drainage courses and runoff patterns relative to existing conditions. The total area of disturbance within the designated floodway under Alternative 4 would be similar to the total under the project, and the area of 100-year floodplain disturbance would be less than that of the project (see Table 5.9-6 and Table 3.10-1 in Chapter 3). The area of disturbance would differ slightly, but the construction activities for the project and Alternative 4 would be similar. The BMPs and mitigation measures would be the same. Therefore, the temporary impacts of Alternative 4 on drainage (similar to those described in Chapter 3 for the project) would be **less than significant**. No mitigation is required.

Long-Term Impacts. Placing impervious/paved surfaces and other project components adjacent to or within the designated floodway and 100-year floodplain and on the steep bluffs could contribute to hydromodification processes and associated water quality impacts. Table 5.9-6 presents the portion of Alternative 4 located within the designated floodway and floodplain. Modifications to the bluffs would be the same under Alternative 4 as under the project. No impervious/paved surfaces would encroach into the designated floodway under Alternative 4. The total area of impervious/paved and hard-packed surfaces within the 100-year floodplain would be slightly less under Alternative 4 than under the project (see Table 5.9-6 and Table 3.10-1 in Chapter 3). The area of flood zone would differ slightly, but implementation of project design features, BMPs, and Parkway Master Plan policies and mitigation measures would be the same. Therefore, the long-term impacts of Alternative 4 on drainage (similar to those described in Chapter 3 for the project) would be **potentially significant**. Implementation of Mitigation Measures Hydrology and Water Quality-4, Hydrology and Water Quality-5, and Hydrology and Water Quality-6 would reduce the impact to **less than significant.** No additional mitigation is required.

Runoff. Temporary and long-term impacts of Alternative 4 on runoff would be similar to those described for the project; however, under this alternative, there would be less potential than under the project for construction impacts related to exceedance of stormwater drainage capacity and polluted runoff. Because Alternative 4 would not include the parking lot(s), drainage and treatment of polluted water from these impervious/paved surfaces would not be necessary. However, impacts from runoff during constructing of the Trail would be **potentially significant. I**mplementation of Mitigation Measure Hydrology and Water Quality-7 would reduce the impacts to **less than significant.** No additional mitigation is required.

Floodway and 100-Year Floodplain Hazard Area. Table 5.9-6 summarizes project components under Alternative 4 that would affect land within the 100-year floodplain and designated floodway. Under Alternative 4, a total of 4.7 acres within the 100-year floodplain would be affected. Construction of both paved and unpaved areas would occur within the 100-year floodplain and designated floodway. Overall, impacts of Alternative 4 related to the construction and placement of structures within the designated floodway and the 100-year floodplain would be similar to the impacts of the project and would be **potentially significant**. However, implementation of Mitigation Measure Hydrology and Water Quality-9 would reduce the impact to **less than significant**. No additional mitigation is required.

Exposure of People or Structures to Flooding. Temporary and long-term impacts of Alternative 4 regarding exposure of people or structures to flooding would be similar to those described for the project and would be **less than significant**. No mitigation is required.

Seiche, Tsunami, or Mudflow. Temporary and long-term impacts of Alternative 4 regarding the potential for seiche, tsunami, or mudflow would be similar to those described for the project. **No impact** would occur related to potential for a seiche or tsunami, and the impact related to mudflow potential would be **less than significant**. No mitigation is required.

5.9.11 Land Use and Planning

Similar to the project, Alternative 4 would not physically divide an established community or conflict with any applicable land use plan or policy. The project would not conflict with Parkway Master Plan or City land use policies or regulations. The impact would be **less than significant.** No mitigation is required.

5.9.12 Mineral Resources

Similar to the project, Alternative 4 would not result in the loss of a known mineral resource. **No impact** would occur.

5.9.13 Noise

Construction activities under Alternative 4 would cause a short-term temporary increase in ambient noise levels. Noise levels could exceed ambient noise standards established by the City of Fresno for residential areas. The impact of noise levels exceeding 55 dBA, even temporarily, would be **potentially significant**. Implementation of Mitigation Measure Noise-1 would reduce the impact to **less than significant**. No additional mitigation is required.

5.9.14 Population and Housing

Similar to the project, Alternative 4 would not induce substantial population growth or displace a substantial number of housing. **No impact** would occur.

5.9.15 Public Services

Similar to the project, Alternative 4 would not alter existing public service ratios, response times, or performance standards for fire or police protection and would not induce population growth or demand for new school facilities. **No impact** would occur.

5.9.16 Recreation

Under Alternative 4, access to the site would be available via walk-in/bicycle-in only through Perrin Avenue and West Riverview Drive. Visitors to the trail extension would park their cars near the project area entrance on the roadway along Perrin Avenue and Blackstone Avenue, or along the residential streets in the neighborhood near the entrance to the Bluff Trail. Some vehicles may park at Woodward Park; visitors would walk or bicycle to the Perrin Avenue entrance. No parking or loading or unloading of horses would occur. All other recreation amenities described for the project would be constructed.

The Conservancy's Parkway Master Plan includes the following policy relating to adequate provision of on-site parking:

- **Policy RPP1:** Provide sufficient on-site parking at each recreational facility for the desired usage level during peak periods and to meet the parking recommendations of the affected local jurisdiction.

Alternative 4 would not be consistent with adopted policies.

Further, this alternative would preclude access for members of the public who are less mobile, as otherwise accommodated through compliance with the Americans with Disabilities Act. Although there is parking at Spano Park, Alternative 4 would preclude ADA-compliant access because the entrance to the trail and recreation amenities at Spano Park would be too steep to meet ADA requirements. Similarly, access to the Bluff Trail and to the project site would be too steep to meet ADA requirements, and access from Woodward Park on the Eaton Trail would be too steep and would require a long travel distance. However, ADA-compliant access to the proposed trail and recreation amenities could be available at the Perrin Avenue entrance. Currently parking along Perrin Avenue is streetside parking and no ADA-restricted parking is available. Because of the lack of accessible parking, this impact would be **potentially significant**.

Mitigation Measure Alt. 4–Recreation-1

The Conservancy shall provide a limited number of ADA-placard parking spaces at the Perrin Avenue entrance. The accessible parking and passenger loading spaces shall be located on the shortest accessible route of travel to the trail entrance. The parking spaces and passenger loading area shall be striping in a color that contrasts with the surface of the parking area. Colors such as blue and white are the preferred colors. The parking spaces and passenger loading area shall be identified with disabled/ADA-compliant parking signage.

Effectiveness of Mitigation Measure.

Implementation of Mitigation Measure Alt. 4–Recreation-1 would reduce the impact to **less than significant** because the Conservancy would provide accessible parking spaces and passenger loading spaces and provide access to the trail and recreational amenities via the Perrin Avenue entrance. No additional mitigation is required. .

5.9.17 Transportation

Alternative 4 would result in the same LOS as the proposed project. All roadway segments under this alternative would have sufficient capacity to accommodate added traffic and still operate at acceptable LOS. In addition, VMT under this alternative would be similar to VMT under the project. The impact would be **less than significant**. No mitigation is required.

5.9.18 Utilities and Service Systems

Similar to the project, Alternative 4 would not affect utility infrastructure or services, such as water supply, solid waste, wastewater, or power supply. The impact would be **less than significant**. No mitigation is required.

5.9.19 Environmental Justice

As described in Section 4.2, "Environmental Justice—Disadvantaged Communities," two disadvantaged census tracts are located within 1.0 mile of the proposed project area. Access to the trail extension and recreation amenities would be provided by a single access point, the Perrin Avenue entrance. No parking would be provided. Travel to this entrance would require residents of nearby Census Tract 6039001000, Madera County, and disadvantaged community Census Tract 6019004404, and more broadly, residents of Fresno to travel north along SR 41 to Children's Boulevard, then south along the SR 41 East Frontage Road, also known as Blackstone Avenue, a 180-degree reverse in direction. This would increase VMT by 8.3 miles and increase the generation of vehicular emissions. This would be an **unavoidable significant** impact on a nearby disadvantaged community or census tract, and more broadly, on the residents of Fresno. No feasible mitigation measures are available to reduce this impact.

5.10 Alternative 5: Palm and Nees Access

Alternative 5 includes the project as described in Section 2.4, "Project Description," plus a public vehicle entrance and parking and public access to the trail extension through adjacent privately owned property near the intersection of Palm and Nees avenues. Alternative 5 was developed to address limited public access to the River for residents of nearby disadvantaged communities, and more broadly for residents of the Fresno metropolitan area, because of the travel distance to the proposed Perrin Avenue parking area. As discussed in Section 4.2, "Environmental Justice—Disadvantaged Communities," providing recreational opportunities along the River is an important benefit of the project to nearby disadvantaged communities.

In this alternative, the existing trail would be extended downriver from the end of the proposed trail extension near the FMFCD stormwater basin. Trail design would remain the same as described for the project. Public vehicle access to the River would be provided from the intersection of Palm and Nees avenues via improvements constructed on the existing paved private road (herein identified as the "outermost road"). A 40-stall parking lot would be constructed at the end of a two-way paved vehicle access road. A physically separated pedestrian path and/or bikeway would parallel the paved road. The paved road would lead to a turnaround near the parking lot. The turnaround would be designed to accommodate the turning radius of a Fresno Fire Department fire truck. Recreational amenities such as a two-vault-toilet ADA-compliant restroom, landscaping, lighting, and picnic tables would be added near the parking lot. The trail extension would extend from the project site along the riverbank and end at the

turnaround. Access to the parking lot would be managed by a vehicle control gate, or traffic bollards and a fee entrance station.

Figure 5-5 and Figure 5-6 present conceptual drawings of Alternative 5 and the proposed parking area. Some of the proposed features would be located on State sovereign lands. Although there are limited public-access easements on the private access roads, the underlying land is privately owned.

Other vehicle routes and public access, identified as Routes 5a, 5b, and 5c, were considered for Alternative 5. Each possible route was intended to meet the Conservancy's public-access objectives and provide equivalent public vehicle access and parking, public-use amenities, and pedestrian trail connections. Road feasibility studies (e.g., alignments, slopes, grading, soils, topography), review of land use and waste disposal history and investigations, and a Phase 1 hazardous-materials site assessment were conducted to assess any significant engineering constraints, risks to public health and safety, or environmental liabilities. From the standpoint of considering reasonable alternatives pursuant to CEQA, based on the feasibility studies, each of these routes would be expected to have more significant impacts than the proposed Alternative 5. These are important limiting factors related to the selection of any route in the vicinity of Palm and Nees avenues. The basis for eliminating Routes 5a–5c and discussing the preferred Alternative 5 route further in the DEIR is described in Appendix F and Appendix H and summarized below.

In total, project components described for Alternative 5 would cover approximately 9.5 miles or 13.6 acres. Table 5.10-1 summarizes Alternative 5 project components by length and area.

Table 5.10-1 Summary of Alternative 5 Project Components

Project Component	Alternative 5	
	Length (miles)	**Area (acres)**
Multiuse Trail (paved—12 feet wide)	2.7	3.9
Multiuse Trail (unpaved—10 feet wide)	3.7	4.3
Perrin Avenue Parking (paved)	0	0.8
Perrin Avenue Parking (unpaved)	0	0.9
Bluff Trail (paved)	0.3	0.4
Existing Unimproved Hiking Trails	2.6	2.6
Trail Extension (paved)	0.2	0.1
Palm-Nees Parking	0	0.6
Total	**9.5**	**13.6**

Source: Compiled by AECOM in 2016

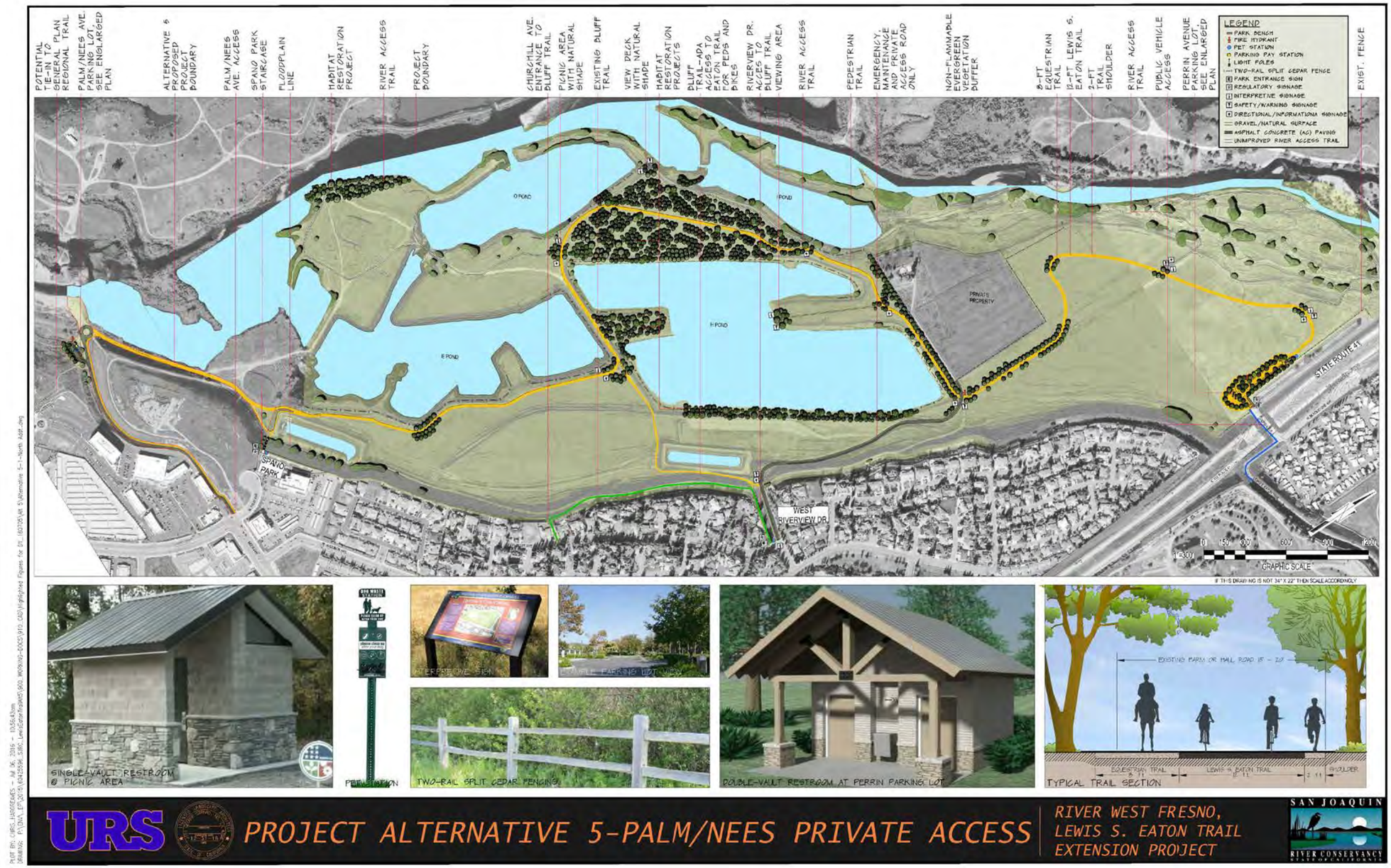


Figure 5-5 Alternative 5—Palm and Nees Access

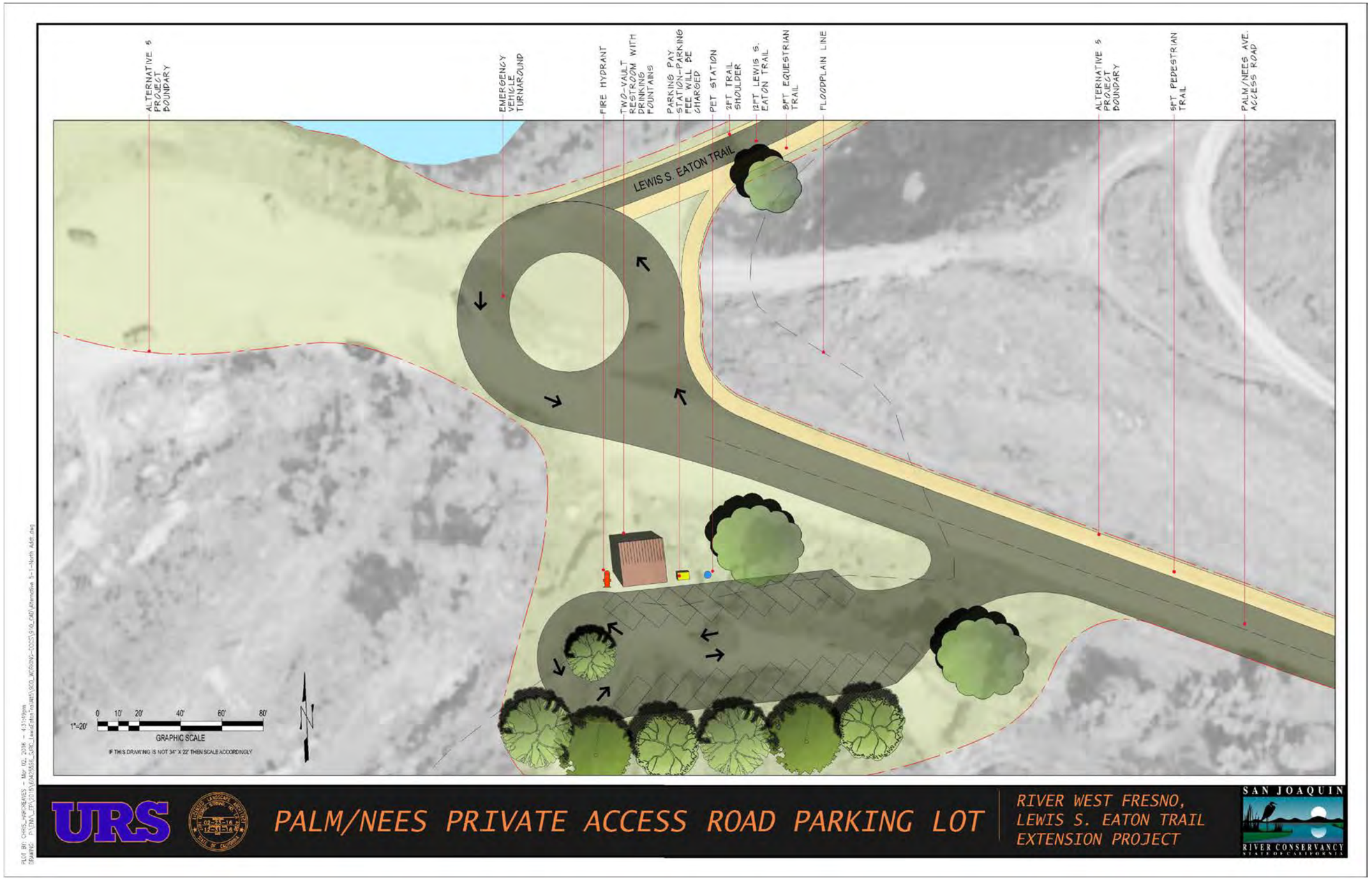


Figure 5-6 Palm/Nees Private Access Road Parking Lot

Route 5a. For Route 5a, access would be provided by improving two existing private access roads as depicted in the conceptual drawing shown in Figure 5-7. For this route, each road would provide one-way vehicle traffic to a parking lot in the River bottom. The proposed trail extension would terminate at the new parking area and would lead to the project staircase to Spano Park. The outermost road, West Nees Avenue, is an existing paved private road that connects with the intersection of Palm and Nees avenues and continues downslope toward the River bottom, where it meets an existing dirt road. The dirt road parallels the River and continues toward a vacant private parcel where a proposed 40-space parking lot would be constructed. The innermost road is a dirt road that parallels the outermost road and proceeds toward the proposed parking lot. Both roads would be used for one-way traffic to comply with the Fresno Fire Department's roadway width of 15 feet. About 2,200 feet of retaining walls would be constructed along both roads to stabilize the bluff face and underlying fill material. This route is significantly constrained and has been determined to be largely infeasible for the following reasons:

- Environmental contaminants of concern are present at sites associated with the access roads and parking area (see Appendix F, which includes Figure 5-8, a map of past disposal operations). The innermost road would lie on and cut into fill material containing organic wastes. Extensive engineered retaining walls for both roadways would be necessary to attempt to stabilize these materials. The parking area would lie on fill and disposed construction debris. Furthermore, regulatory agencies might require cleanup measures to develop the roads and parking in these areas.
- The narrow width of the outermost road at the riverbank would preclude extending the multipurpose trail to the Palm/Nees area; this would conflict with the objectives of the project (see Section 2.2, "Project Objectives") and would create a potential vehicle/pedestrian hazard (a safety issue), because pedestrians would likely use the roadways in any case.
- The outermost road at the riverbank could not be widened to accommodate both a road and the trail, because fill would have to be deposited in the regulated floodway and waters of the United States on the riverward side, and construction would have to cut into the unconsolidated fill and organic waste materials on the bluff side.
- The route would conflict with grading standards as described in Article 14 of the Bluff Protection Overlay District (City of Fresno 2015). Section 15-1407 of the Citywide Development Code dated March 31, 2015 (Bluff Protection Overlay District) states: "No grading or modification of the existing landscape or alteration of existing topography or construction of any structures shall be permitted on the bluff face or air space above it."
- The private landowner's plans for future development may pose constraints.

Route 5b. For Route 5b, access would be provided by constructing a road from the cul-de-sac at Palm Avenue north of Nees Avenue, as depicted in a conceptual drawing shown in Figure 5-9. The road, with two 15-foot travel lanes, would be constructed with a 10% gradient and would proceed across the bluff face downgradient toward the River bottom and then around the FMFCD basin. The proposed road would end at a proposed 40-space parking lot in the same location as for Route 5a. The proposed trail would terminate at the new parking area, along with the proposed trail to the staircase to Spano Park. About 700 feet of retaining wall would be constructed along the road to stabilize the bluff face and underlying fill and organic wastes. This route is significantly constrained and has been determined to be largely infeasible for the following reasons:

- Environmental contaminants of concern are present at sites associated with the access road and the parking area (see Route 5a and Appendix F).
- The route would conflict with grading standards as described in Article 14 of the Bluff Protection Overlay District (City of Fresno 2015). Section 15-1407 of the Citywide Development Code dated March 31, 2015 (Bluff Protection Overlay District) states: “No grading or modification of the existing landscape or alteration of existing topography or construction of any structures shall be permitted on the bluff face or air space above it.”
- The private landowner’s plans for future development may pose constraints.

Route 5c. For Route 5c, access would be provided by constructing a paved road from the corner of West Alluvial and North Harrison Avenues, as depicted in a conceptual drawing shown in Figure 5-10. The proposed road would proceed across a vacant parcel of land toward the top of the bluff. The road would end at a proposed 40-space parking lot near the bluff face. From the parking lot, an ADA-compatible access trail would be constructed down the bluff face to the river bottom. This route is significantly constrained and has been determined to be largely infeasible for the following reasons:

- Environmental contaminants of concern are present. In this instance, the area affected by the road alignment, parking area, and trail have been affected by the disposal of organic wastes (see Appendix F).
- The route would conflict with grading standards as described in Article 14 of the Bluff Protection Overlay District (City of Fresno 2015). Section 15-1407 of the Citywide Development Code dated March 31, 2015 (Bluff Protection Overlay District) states: “No grading or modification of the existing landscape or alteration of existing topography or construction of any structures shall be permitted on the bluff face or air space above it.”
- The private landowner’s plans for future development may pose constraints.

Figure 5-7 Proposed Alternative Routes: Route 5a

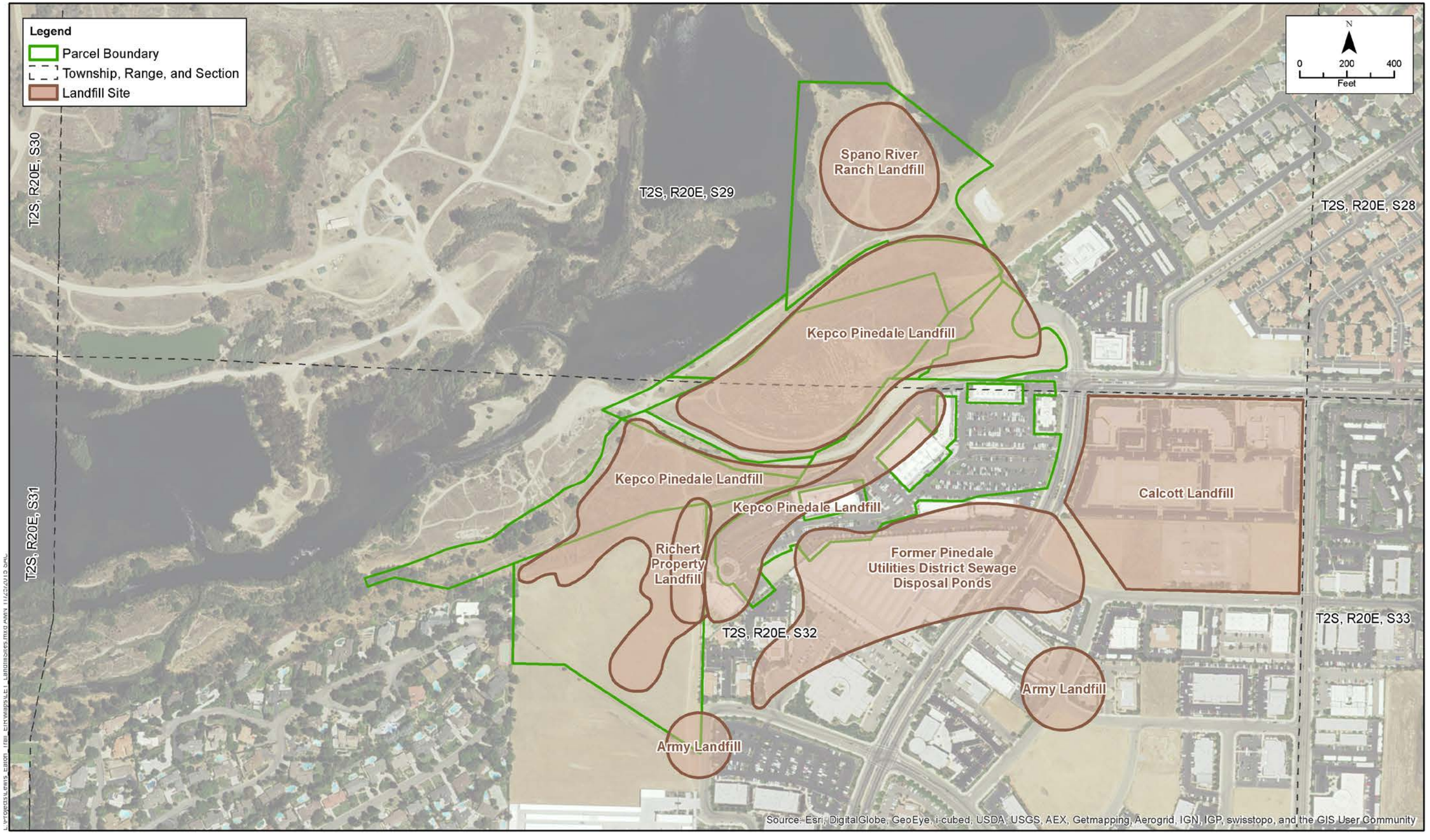


Figure 5-8 Landfill Sites

Figure 5-9 Proposed Alternative Routes: Route 5b

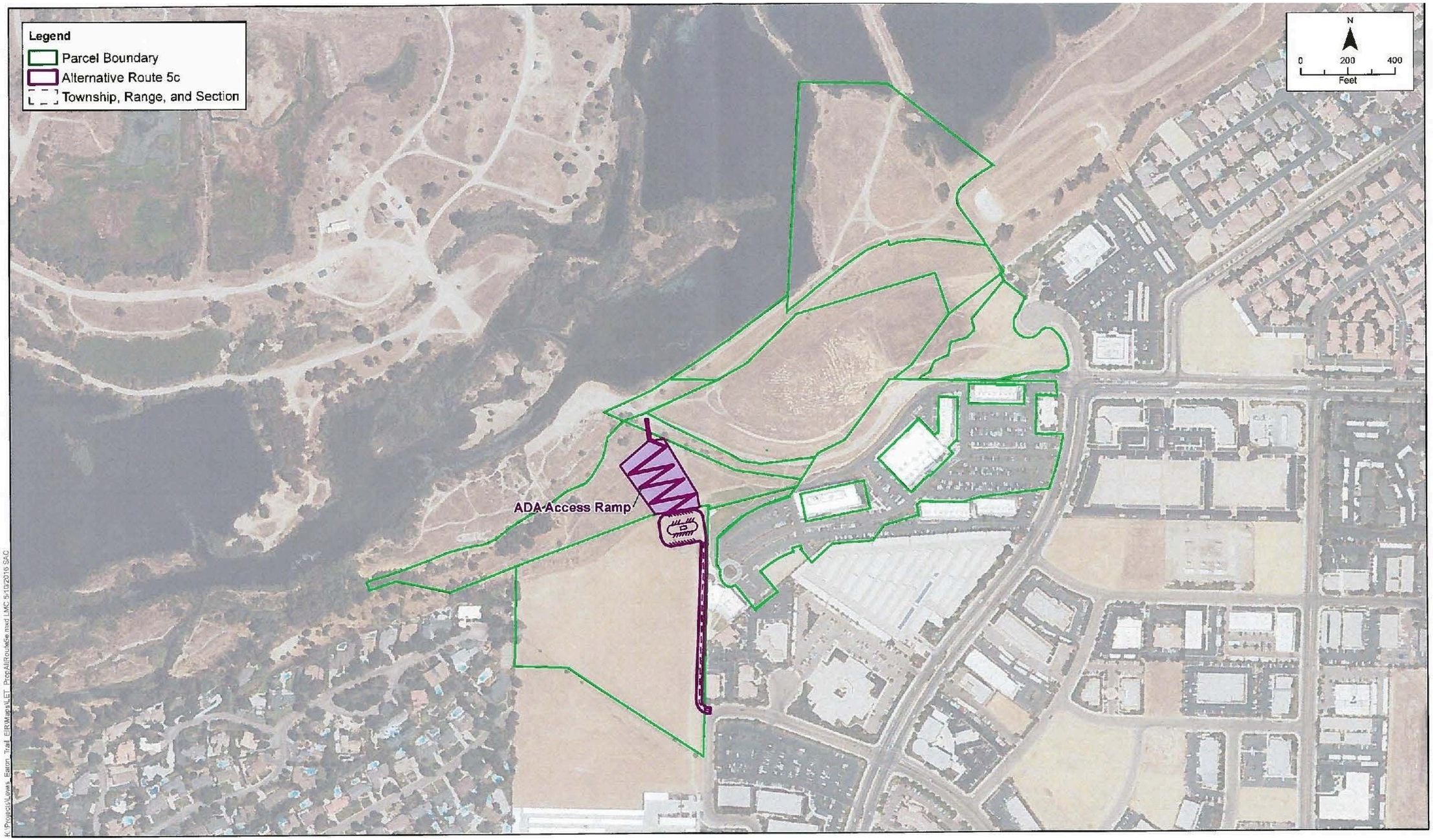


Figure 5-10 Proposed Alternative Routes: Alternative Route 5c

5.10.1 Environmental Setting

Alternative 5 is located along the San Joaquin River east of Spano Park, within the city limits of Fresno. The study area for this alternative is generally delineated on the north by the River and on the south and east by commercially developed parcels on the plateau above the steep river bluff, including the Park Place Shopping Center and the Palm Bluffs Corporate Center. Residential development is located on the plateau northeast and southwest of the study area. Most of the study area for Alternative 5 consists of open space.

The area encompasses about 65 acres on 10 parcels of land, all of which are privately owned. Table 5.10-2 identifies the individual parcels, their sizes, land uses and zoning, and owner names, and Figure 5-11 shows the parcels. There are two private-access roads, on which State and local agencies have certain public-access easements. These roads are referred to as the "gravel haul roads."

The area is located adjacent to the end of the proposed trail extension and has been identified in the Parkway Master Plan and the City's General Plan 2025 as a potential River access point.

Alternative 5 also includes the project, as described in Section 2.4, "Project Description." Therefore, the setting for this alternative is the same as described in Chapter 3.

The improvements proposed for Alternative 5 would lie within or immediately adjacent to the parcels listed in Table 5.10-2 and shown in Figure 5-11.

Table 5.10-2 Alternative 5 Parcels, Sizes, Land Uses, and Owner(s)

Assessor's Parcel Number	Acreage	Existing Land Use Description	Planned Land Use Description	Zoning	Owner
40203063S	11.61	Open Space/Multiuse	Open Space/Multiuse	AE-5	SOB Enterprises
40203067S	4.52	Open Space/Multiuse	Open Space/Multiuse	AE-5	SOB Enterprises
40203043	1.19	Vacant	Commercial/Special	SPLIT: AE-5 and AE-20	SOB Enterprises
40203070	3.06	Vacant	Commercial/Special	SPLIT: AE-5 and AE-20	SOB Enterprises
40553085	11.66	Office/Commercial	Commercial/Office	C-2	Park Place
40534019S	0.70	Vacant	Open Space/Multiuse	AE-20	SOB Enterprises
40534018S	0.76	Open Space/Multiuse	Open Space/Ponding Basin	AE-20	SOB Enterprises
40203064S	10.94	Vacant	Open Space/Multiuse	AE-20	SOB Enterprises
40534004	11.89	Vacant	Commercial/Office	C-P	C&A Farms, LLC; North Palm Partners
40534017S	8.75	Vacant	Open Space/Multiuse	AE-20	SOB Enterprises
Total Acres	**65.08**				

Source: Compiled by AECOM in 2016

5.10.1.1 Past Land Use

From the early 1940s to mid-1970s, several locations on the Alternative 5 parcels were used for open dumps and landfills. The earliest landfilling is associated with the U.S. Army's Camp Pinedale in 1942; landfilling continued to 1947, when the base was closed. A sewage treatment plant and associated ponds were built in 1943 to serve the Army camp. In 1962, Pinedale Utility District took over the treatment plant and began landfilling or allowed landfilling by Kepco until 1977, when the plant was closed.

Areas in the Alternative 5 study area have been used for the disposal of concrete, asphalt, and construction and demolition wastes. Additional landfilling activities of organic wastes (domestic garbage) took place at the former Pinedale Dump (also known as Kepco Pinedale Landfill) along the bluffs of the subject property. The majority of the former Pinedale Dump exists near Palm Avenue and West Nees Avenue, and portions have been more deeply buried, reworked, or remediated.

Figure 5-8 depicts the approximate location of the various disposal sites. The illustrated boundaries are approximate and are based on a review of data provided from a Phase I Environmental Site Assessment (Appendix F).

Based on historical information, the California Department of Resources Recycling and Recovery (CalRecycle) and the County of Fresno Public Health Department, Environmental Health Division, now consider the Kepco landfill, the adjacent A. R. Richer landfill, Calcot landfill, Spano River Ranch landfill, and Pinedale Utility District landfill to be one landfill site. Other names for this landfill area include Kepley Dump, Pinedale Dump, Spano Dump, and Spano River Ranch Landfill Cell. According to the Solid Waste Information System database maintained by CalRecycle, the landfill was known as the Kepco Pinedale Landfill, a Class II landfill, and its regulatory status was "permitted" and operational status was "closed" (Appendix F).

Photographs 5-1, 5-2, and 5-3 show landfill activities and the types of wastes accepted. Waste material ranges from commercial deposits of concrete to household debris including vegetation, wood, paper, cardboard, metals, and barrels with unknown contents. Waste and fill material from these landfill sites added to and expanded the bluffs. Photograph 5-3 shows the extended bluffs overlooking the River. Figure 5-12 is a conceptual view of the change in the boundary of the top of the bluffs from before 1940 to 2007. The depiction of the boundary change was made by comparing a pre-1940 edition of the Fresno North Topographic Quadrangle with the 2012 revision. The maps and photographs show that the composition of some of the parcels within the Alternative 5 study area are composed of unconsolidated wastes and fill.

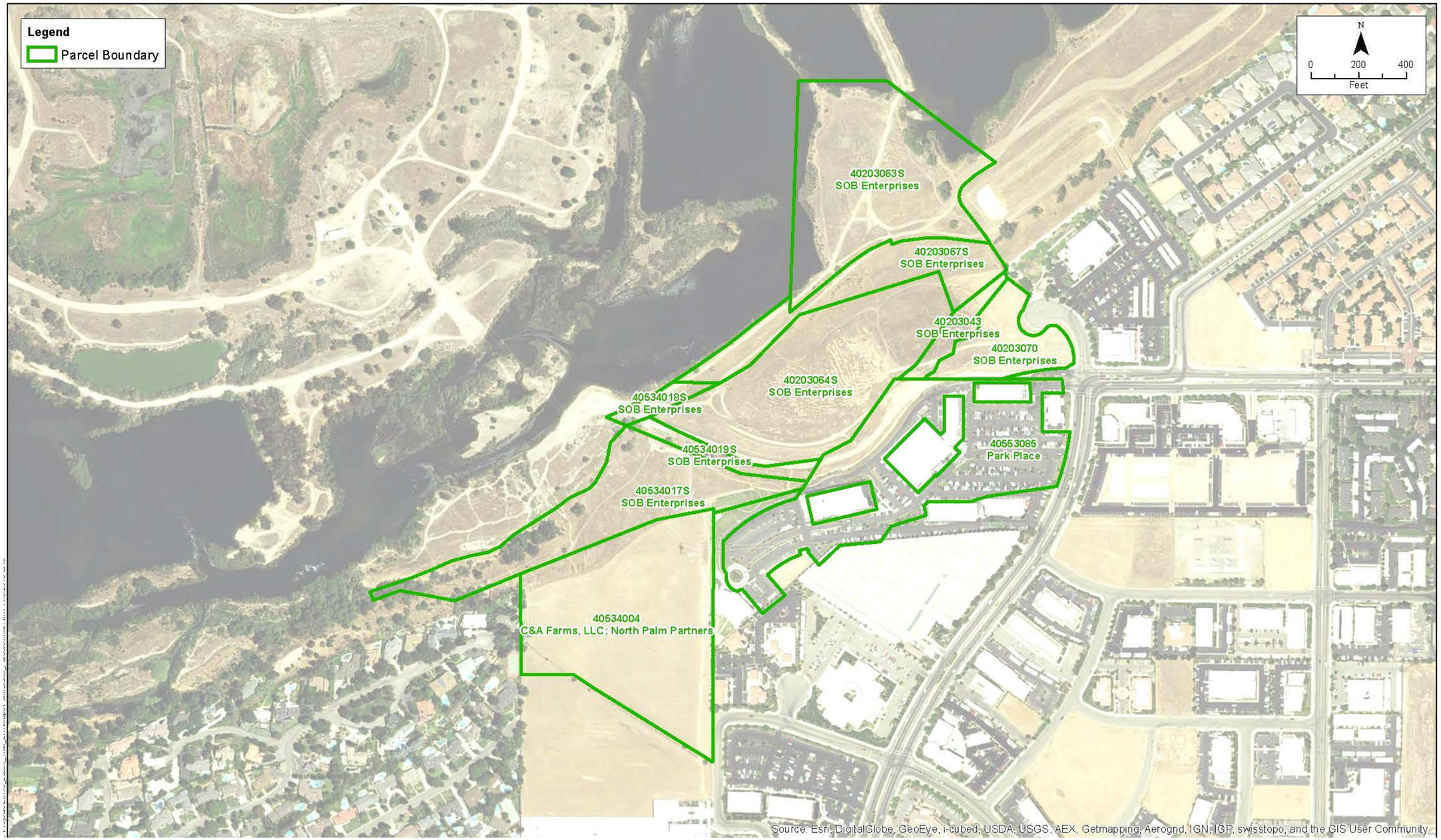


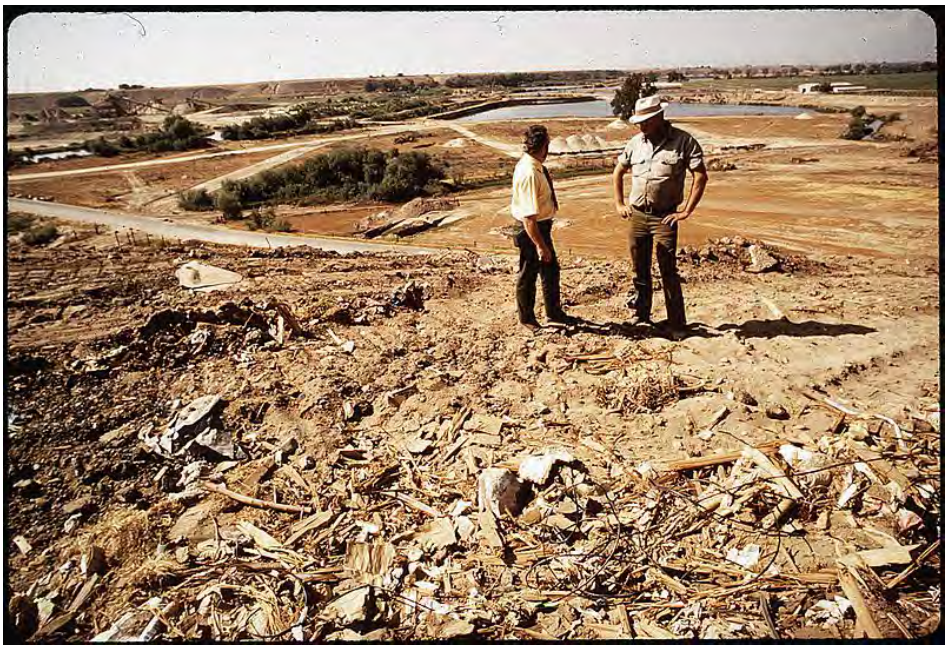
Figure 5-11 Map of Parcels within Alternative 5 Area

Figure 5-12 Conceptual Illustrations Comparing Current Bluff Crest with Original Bluff Crest

Of the routes and configurations considered for Alternative 5, the proposed locations, alignments, and conceptual site plan are designed to avoid disturbing areas documented to contain unremediated wastes and unconsolidated fill to a greater extent than Routes 5a–5c as presented above. The potential impacts of Alternative 5 associated with hazards and hazardous materials are analyzed in Section 5.10.9, "Hazards and Hazardous Materials."

Photograph 5-1: View facing toward the south. The area in the foreground is the toe of the bluff.

Photograph 5-2: View facing toward the north (facing upstream of the distant San Joaquin River).



Photograph 5-3: View looking across the San Joaquin River.
The individuals are believed to be standing on Parcel 40203067S.

5.10.2 Aesthetics and Visual Resources

Alternative 5 would result in construction of an additional parking lot and recreational amenities. These additional features and the features associated with the project would be most visible to tenants in commercial buildings; however, some improvements would also be visible to homeowners with residences on the bluffs. This alternative would alter the view of the River. The long-term presence of the additional parking lot, with an associated increase in visitor use, would affect sensitive viewer groups and would conflict with the existing visual character of the area. LED lighting in the parking lot would create a new source of glare. The impact would be **potentially significant;** however**,** implementation of Mitigation Measures Aesthetics and Visual Resources-1 and Aesthetics and Visual Resources-2 would reduce the impact to **less than significant**. No additional mitigation is required.

5.10.3 Agriculture and Forestry Resources

As stated for the project, no Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or forestland is present in the project area. **No impact** on agriculture and forestry resources would occur under Alternative 5.

5.10.4 Air Quality

Alternative 5 includes construction of the project and an additional public vehicle entrance and parking lot off Palm and Nees avenues. Air pollutant emissions were calculated using construction of a 3.5-mile multipurpose trail extension, the Perrin Avenue parking lot, and a parking lot off Palm and Nees avenues

as inputs. The Perrin Avenue parking lot is estimated to be 2.23 acres and the Palm and Nees parking lot is calculated to be 1.18 acres. With construction of the Perrin Avenue parking lot, an assumed 1,000 square feet of recreational amenities and a restroom would be constructed. This alternative is estimated to generate 558 daily trips.

As shown in Table 5.10-3 and Table 5.10-4, this alternative would generate only slightly more construction-related and operational emissions than the project. Alternative 5 would reduce VMT by each visitor to the project area from the Fresno metropolitan area; however, it is assumed that total operational emissions would be greater because public vehicle access and parking would increase and become more convenient. The CalEEMod results for the Perrin Avenue parking lot and the Palm and Nees parking lot can be found in Appendix C. All air quality impacts associated with Alternative 5 would be **less than significant.** No mitigation is required.

Table 5.10-3 Estimated Unmitigated Annual Construction Emissions—Project vs. Alternative 5

	Criteria Pollutant Emissions (tons per year)					
	CO	**NO_X**	**ROG**	**SO_X**	**PM_{10}[1]**	**$PM_{2.5}$[1]**
Project	1.0	1.5	2.2	0.0	0.1	0.1
Alternative 5	1.0	1.5	2.2	0.0	0.1	0.1
SJVAPCD Threshold	100	10	10	27	15	15
Exceed Threshold?	No	No	No	No	No	No

Notes:

CO = carbon monoxide; NO_X = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter; PM_{10} = suspended particulate matter; ROG = reactive organic gases; SJVAPCD = San Joaquin Valley Air Pollution Control District; SO_X = oxides of sulfur

[1] PM emissions shown include the sum of particulate matter with aerodynamic diameter 0 to 2.5 micrometers and particulate matter with aerodynamic diameter 2.5 to 10 micrometers.

Source: Estimated by AECOM in 2016

Table 5.10-4 Estimated Unmitigated Annual Operational Emissions—Project vs. Alternative 5

	Criteria Pollutant Emissions (tons per year)					
	CO	**NO_X**	**ROG**	**SO_X**	**PM_{10}[1]**	**$PM_{2.5}$[1]**
Project	2.7	0.8	1.9	0.0	0.4	0.1
Alternative 5	4.3	1.2	2.3	0.0	0.6	0.2
SJVAPCD Threshold	100	10	10	27	15	15
Exceed Threshold?	No	No	No	No	No	No

Notes:

CO = carbon monoxide; NO_X = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter; PM_{10} = suspended particulate matter; ROG = reactive organic gases; SJVAPCD = San Joaquin Valley Air Pollution Control District; SO_X = oxides of sulfur

[1] PM emissions shown include the sum of particulate matter with aerodynamic diameter 0 to 2.5 micrometers and particulate matter with aerodynamic diameter 2.5 to 10 micrometers.

Source: Estimated by AECOM in 2016

5.10.5 Biological Resources

This section describes the habitat conditions and species observed on the day of the biological resources survey for Alternative 5. On September 22, 2015, a reconnaissance-level biological field survey was performed on about 62 acres of land within the Alternative 5 project area. Before this survey, this area had not been surveyed for biological resources. However, two previous surveys had been conducted on the adjacent project site. The results of all biological surveys are provided in Appendix D of this DEIR.

Disturbed annual grassland, defined as dominated by nonnative, annual upland grass species, occupies approximately 30 acres (84%) of the project site. The grassland also includes scattered woody vegetation, including tobacco brush (*Ceanothus velutinus*), blue elderberry shrubs (*Sambucus nigra* ssp. *caerulea*), and willow (*Salix*). During the survey, evidence of desert cottontail (*Sylvilagus audubonii*) was spotted. Red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), black phoebe (*Sayornis nigricans*), mourning dove (*Zenaida macroura*), and common raven (*Corvus corax*) were observed in or over grassland habitat. Red-tailed hawk, American kestrel, osprey (*Pandion haliaetus*), and northern harrier (*Circus cyaneus*) were seen flying above the site, as were cliff swallow (*Petrochelidon pyrrhonota*), black phoebe, and mourning dove.

Large sections of the grassland had been recently burned, exposing a network of California ground squirrel (*Otospermophilus beecheyi*) burrows along the hillside. Because these burrows occur along the hillside, they would not affect trail construction or use. However, ground squirrel burrows provide potential nesting habitat for burrowing owls. Burrowing owls have been observed within 1 mile of the project site (D. Young, personal observation). However, no evidence of habitation of burrows by burrowing owls was noted during the reconnaissance survey. Some burrows were the correct size for foxes and coyotes, although no tracks or scat were found to indicate an active burrow.

Aquatic habitat, the San Joaquin River, occupies approximately 3 acres (7%) of the project site.

Species observed include Canada goose (*Branta canadensis*), American coot (*Fulica americana*), mallard (*Anas platyrhynchos),* pied-billed grebe (*Podilymbus podiceps*), and tree swallow (*Tachycineta bicolor*).

Riparian habitat occupies approximately 2 acres, 6% of the project site. The vegetation is a mix of native and nonnative species. Species include rattlebox (*Sesbania punicea*), sandbar willow (*Salix exigua*), buttonbush (*Cephalanthus occidentalis*), and blue elderberry shrubs (*Sambucus nigra* ssp. *caerulea*).

A variety of species were observed in the riparian area; although this area occupies less than 6% of the project site, it shelters the most abundant diversity of species. Species observed included western scrub jay (*Aphelocoma californica*), Anna's hummingbird (*Calypte anna*), house finch (*Haemorhous mexicanus*), northern mockingbird (*Mimus polyglottos*), tree swallow (*Tachycineta bicolor*), white-crowned sparrow *(Zonotrichia leucophrys*), red-winged blackbird (*Agelaius phoeniceus*), red-tailed hawk, California quail (*Callipepla californica*), European starling (*Sturnus vulgaris*), cedar waxwing (*Bombycilla cedrorum*), and Bewick's wren (*Thryomanes bewickii*). Scat from desert cottontail was also observed.

North of the site across the River (in Madera County) is a diverse riparian area with ample nesting opportunities. California quail could be heard and waterfowl were seen moving in and out of this area.

There are no federally listed or State-listed endangered or threatened plant species have the potential to occur on the Alternative 5 project site (see the 2011 Lewis Eaton Trail Biotic Study and the 2014 Biological Resources Report Update in Appendix D). Various special-status wildlife species occur in Fresno and Madera counties and the project vicinity, but those species were determined to be absent from the project site because the site is outside of the known range of the species, no suitable habitat occurs on the project site, and/or recent species occurrence records are lacking in the site vicinity. Since 2011, there have been no changes to the site or the species observed that would affect this determination. The 2015 survey found no changes to this finding and updated the status of four species.

The Alternative 5 study area is adjacent to areas previously surveyed and has plant species that do not differ from those covered in earlier reports. No federally listed or State-listed endangered or threatened plant species have the potential to occur in the Alternative 5 area. Special-status wildlife species occur within 5 miles of the Alternative 5 site; however, they were determined to be absent because the site is outside of the known range of the species, no suitable habitat occurs on the project site, and/or recent species occurrence records are lacking in the site vicinity.

Although no special-status wildlife species are currently present at the Alternative 5 site, the potential exists for some of these species to be present at a future time. All native nongame birds are protected under the federal MBTA, which prohibits the take of birds and destruction of their nests and eggs. Nesting raptors are present in the vicinity of the site, and previous surveys have identified red-tailed hawks and an

osprey nesting within a mile of the site. During the 2015 survey, an osprey and red-tailed hawk were observed flying over the site. Raptors are protected under the MBTA and could affect work at this site.

No occurrences of burrowing owl (*Athene cunicularia*) are currently recorded within 5 miles of the Alternative 5 site; however, this project is within the species' California range and habitat is present. Some potential burrows were observed on but evidence that would indicate an active burrow (Appendix D). San Joaquin kit fox (*Vulpes macrotis mutica*) is currently absent from the site, but the area is within its range.

Similar to the project, potential impacts of Alternative 5 on plant and animal species would be **significant.** The biological resources BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 5. In addition, Mitigation Measures Biological Resources-1 (Special-Status Plant Species) through Biological Resources-10 (Wildlife Movement) would reduce the impact to **less than significant**. No additional mitigation is required.

5.10.6 Cultural Resources

A pedestrian survey of the Alternative 5 project area was conducted in October 2015. Survey results are presented in the Phase II Archaeological Survey Report (Appendix E). The investigation identified no historical resources in the area. Remnants of Perrin Ditch are present; however, the ditch was evaluated previously and is ineligible for the CRHR. Aside from a few small fragments of historic ceramics and concrete that lacked association or context, no cultural resources were found during the pedestrian survey.

Impacts of Alternative 5 on cultural resources would be similar to those of the project. No historic resources are present in the area. However, historic Native American use is known to have occurred along the San Joaquin River. Therefore, a greater potential exists than under the project to uncover cultural resources or human remains along the river during construction of the Alternative 5 trail extension, parking lot, and turnaround. The impacts would be **potentially significant**. The cultural resources BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 5. Implementation of Mitigation Measures Cultural Resources-1 and Cultural Resources-2 would reduce the impact to **less than significant**.

5.10.7 Geology and Soils

According to the U.S. Natural Resources Conservation Service, the soils of the Alternative 5 project area are the same as described for the project: Grangeville fine sandy loam, Hesperia sandy loam, Tujunga, and Riverwash (NRCS 2014).

Potential impacts of Alternative 5 on geology and soils would be significant, the same as described for the project and would be **potentially significant.** The geology BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 5. Additionally, implementation of Mitigation Measure Geology and Soils-1 would reduce the impact to **less than significant**. No additional mitigation is required.

5.10.8 Greenhouse Gas Emissions

Alternative 5 includes the construction of the project and an additional parking lot off Palm Avenue and Nees Avenue. GHG emissions were calculated using construction of the multipurpose trail extension, the Perrin Avenue parking lot, and a parking lot off Palm Avenue and Nees Avenue as inputs. The Perrin Avenue parking lot is estimated to be 1.7 acres and the Palm and Nees parking lot is calculated to be 0.6 acre. With construction of the Perrin Avenue parking lot, an assumed 1,000 square feet of recreational amenities and a restroom would be constructed. This alternative is estimated to generate 558 daily trips.

This alternative would generate slightly more construction-related and operational emissions than the project (Table 5.10-5). Alternative 5 would reduce VMT by each visitor to the project area from the Fresno metropolitan area; however, it is assumed that total operational emissions, including GHG emissions, would be greater because public vehicle access and parking would increase and would be more convenient. The emissions would not approach any adopted or recommended thresholds. CalEEMod results for the Perrin Avenue parking lot and the Palm and Nees parking lot can be found in Appendix C. All impacts of Alternative 5 related to GHG emissions would be **less than significant.** No mitigation is required.

Table 5.10-5 Total Greenhouse Gas Emissions—Project vs. Alternative 5

	Total Construction Emissions ($MTCO_2e$)	Amortized Construction Emissions ($MTCO_2e$)	Total Operational Emissions ($MTCO_2e$)
Project	192	6	501
Alternative 5	192	6	735

Note: $MTCO_2e$ = metric tons of carbon dioxide equivalent

Source: Estimated by AECOM in 2016

5.10.9 Hazards and Hazardous Materials

Impacts of Alternative 5 from routine transport, storage, and use of hazardous materials, along with the potential for accidental spills, would be similar to those of the project and would be **less than significant**. No mitigation is required.

The additional facilities proposed under Alternative 5 would be located west of the project site, but would still be approximately 0.60 mile from Nelson Elementary School, 3.1 miles from the Sierra Skypark airport, and 2.45 miles from the heliport at Valley Children's Hospital. Therefore, like the project, Alternative 5 would have **no impact** related to emissions of hazardous materials within 0.25 mile of a school or related to hazards from airports and airstrips.

Alternative 5 would provide appropriate emergency-vehicle access (fire, police, and ambulance) via a paved road from the Palm and Nees avenues entrance onto the project site, including the additional parking lot. This road would also provide additional emergency egress for members of the public using the trail. The West Riverview Drive and Perrin Avenue entrances would also provide access for emergency vehicles. The trail leading form the Alternative 5 site to the trail extension would accommodate emergency response vehicles. Construction activity would occur only within the project site and would not block or reduce access to city streets. Therefore, like the project, Alternative 5 would have **no impact** related to interference with emergency response and/or evacuation plans.

Because Alternative 5 would entail construction of additional recreation facilities, the potential for wildland fire hazards from sparks emitted by construction equipment would be greater than the project's wildland fire hazard, and the impact would be **potentially significant**. The hazards and hazardous materials BMPs identified in Section 2.5.1, "Best Management Practices," would be implemented as part of Alternative 5. Implementing Mitigation Measures Hazards and Hazardous Materials-1 through Hazards and Hazardous Materials-6 would reduce the potential impact to **less than significant**. No additional mitigation is required.

The existing paved roadway that would be used for the Palm and Nees Avenue access is 21 feet wide, which may be enough to meet the minimum standards required by the City of Fresno for emergency-vehicle access. However, this alternative would also entail constructing a paved, 5-foot-wide pedestrian/bicycle access path alongside the existing road. This path would connect the trail to existing city streets for pedestrians and bicyclists, and would provide trail access for members of the public who may park along the top of the bluffs (e.g., in the parking area at Spano Park) when the proposed new parking lot at the base of the trail is full. Under Alternative 5, the additional paved pedestrian/bicycle path would be constructed within deposits associated with the former Kepco Pinedale Landfill. The proposed new parking lot at the foot of the bluffs could also be constructed within these deposits from the former landfill.

As discussed in the Phase I Environmental Site Assessment (Appendix F), an open dump and landfill on the Alternative 5 project site was operating under the name Kepco in the 1950s. Class II and Class III waste materials were placed in natural depressions and drainages from the 1950s to 1978. The exact boundaries of the Kepco landfill are difficult to determine. Anecdotal reports suggest that several locations were used somewhat indiscriminately in the 1950s and 1960s. Waste accepted at these landfills included

concrete and brick construction debris and garbage. Paint and degreaser sludge were also deposited into the Kepco Pinedale Landfill. This sludge contained metallic pigments, volatile aliphatic hydrocarbons, alcohols, esters, and ketones. Waste also included household and commercial refuse, garbage, other decomposable organic material, scrap metals, and solid inert materials. These materials have been intermixed with layers of soil, and they reportedly extend to a maximum depth of approximately 30 feet below the ground surface. In addition, construction debris has been dumped on the surface.

Previous tests concluded that groundwater quality has not been adversely affected by the landfill activities, with the exception of the deposit of Freon-12 into the landfill (Appendix F). Gas monitoring wells have detected the presence of methane gas, a gas generated by decomposing wastes, at levels above the lower explosive limit.[14] Two underground fires were observed in the 1990s at nearby locations east and south of the proposed parking lot, at the foot of the existing paved access road. Soil vapor samples collected from within the landfill area have indicated the presence of several volatile organic compounds, such as vinyl chloride and benzene, at levels above the respective human health screening levels (OEHHA 2010).

Postclosure plans must be prepared before disposal areas can be converted to other uses. A postclosure plan was never prepared for the unregulated landfill activities on and near the Alternative 5 site. The presence of the known contaminants in the Kepco Pinedale Landfill represents a Recognized Environmental Condition. Constructing a paved pedestrian/bicycle pathway along the existing road through the landfill, and a new parking lot at the base of the road, under Alternative 5 could expose construction workers and members of the public to hazardous materials (gases such as methane and volatile organic compounds such as vinyl chloride and benzene). Furthermore, construction activities at the former landfill could disturb drainage patterns or disturb cover, which could cause or allow the landfill materials to become wet. Over time, this condition would increase the potential for the presence of explosive and flammable gases and possible leachate movement and accumulation. Additionally, disturbed landfill soils could become mobilized, causing potential human health and pollution issues. Construction across the bluff face, potentially through the landfill materials, also presents a potential hazard from unstable soils that may be unsuitable for use as a base material. Therefore, the impact of Alternative 5 from hazards related to project construction and operation within a Cortese-listed site would be **potentially significant**.

Mitigation Measure Alt. 5–Hazards and Hazardous Materials-7

Before the acquisition of any public land or the final design of planned improvements, a licensed environmental professional shall be retained to perform a Phase II Environmental Site Assessment at

[14] The lower explosive limit is the lowest concentration (percentage) of a gas or a vapor in air capable of producing a flash of fire in presence of an ignition source (arc, flame, or heat).

the locations of the proposed paved pedestrian/bicycle path (adjacent to the existing access road) and new parking area and associated facilities (at the base of the existing access road). Testing shall include sampling of soil and groundwater for constituents of concern such as volatile organic compounds, along with vapor monitoring for ambient air emissions of constituents such as methane. Laboratory results shall be presented and summarized in a report, which shall be submitted to the County of Fresno Department of Public Health. The report shall recommend specific remedial activities and any project design features that are necessary to assure human and environmental health and safety with the implementation of Alternative 5. (For example, installing a concrete-lined drainage ditch adjacent to the paved pathway next to the access road may be necessary to prevent potentially explosive gases from forming as stormwater runoff interacts with landfill materials, and to prevent runoff from transporting landfill leachate materials into the San Joaquin River.) All remedial actions recommended in the report or required by regulatory agencies shall be implemented before the start of any earthmoving or ground-disturbing activities within the Alternative 5 project site.

Mitigation Measure Alt. 5–Hazards and Hazardous Materials-8

Before the start of any earthmoving activities at the Alternative 5 project site, a postclosure land use plan shall be prepared in compliance with 27 CCR Sections 20950–21420. As required by Section 21190, the postclosure land use shall be designed and maintained to:

- protect public health and safety and prevent damage to structures, roads, utilities, and gas monitoring and control systems;
- prevent public contact with waste, landfill gas, and leachate; and
- prevent landfill gas explosions.

The land use plan shall be submitted to the County of Fresno Department of Public Health and the Central Valley RWQCB for review and approval.

Mitigation Measure Alt. 5–Hazards and Hazardous Materials-9

A worker health and safety plan shall be prepared before the start of construction activities within the Alternative 5 project site. The plan shall identify, at a minimum:

- the potential types of contaminants that could be encountered during construction activity;
- all appropriate equipment and procedures to be used during project activities to protect workers, public health, and the environment;
- emergency response procedures;
- the most direct route to the nearest hospitals; and

- an on-site safety officer.

The plan shall describe actions to be taken should hazardous materials be encountered during construction, including protocols for handling hazardous materials and preventing their spread, and procedures for notifying local and/or State regulatory agencies in case of an emergency. The plan shall specify that if evidence of hazardous materials contamination is observed or suspected during site preparation or construction through either obvious or implied measures (i.e., stained or odorous soil or groundwater), construction activities shall immediately cease in the area of the find. A qualified hazardous materials specialist shall assess the site and collect and analyze soil and/or groundwater samples, if needed. If the samples identify contaminants, the Conservancy shall employ measures in accordance with federal and State regulations, or shall coordinate with the landowner or other responsible party to employ such measures, before construction activities can resume at the site.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measures Alt. 5–Hazards and Hazardous Materials-7, Alt. 5–Hazards and Hazardous Materials-8, and Alt. 5–Hazards and Hazardous Materials-9 would reduce the potential impact related to human health and environmental hazards from construction at the former Kepco Pinedale Landfill to **less than significant** because any necessary remedial activities would occur before the start of earthmoving activities; a worker health and safety plan would be implemented should contaminated soil or groundwater be encountered; and a postclosure land use plan approved by regulatory agencies would be implemented. No additional mitigation is required.

5.10.10 Hydrology and Water Quality

Water Quality

Temporary Impacts. For Alternative 5, an extended multiuse trail route, 40-stall parking lot, access road and turnaround, and restrooms would be constructed in addition to the facilities described in Chapter 3 for the project. The BMPs would be the same for this alternative as for the project. The area of disturbance and paved surfaces for Alternative 5 would be greater than that of the project. The Alternative 5 project features are located in an area that was formerly used for the Kepco Pinedale Landfill. A plume of groundwater contaminated with trichloroethylene, polychlorinated biphenyls, and chloroform is situated below the residential development on the bluffs, near the intersection of Nees and Palm avenues. The soils near the groundwater plume may also be contaminated. Disturbing the soil during construction could mobilize sediments laced with contaminants of concern, resulting in a health hazard and a potential source of polluted sediment that could enter receiving waters. Construction near the former landfill could disturb drainage patterns, or could disturb vegetative cover, which could cause or allow the landfill materials to become wet, thereby increasing the potential for possible leachate accumulation over time. The impact would be **potentially significant.**

Hydrology and water quality BMPs and applicable policies from the Conservancy's Parkway Master Plan would be implemented and other regulatory requirements would be met. Additionally, implementation of Mitigation Measures Hydrology and Water Quality-1, Hydrology and Water Quality-2, and Hydrology and Water Quality-3 as described for the project would adequately reduce most water quality impacts associated with construction of Alternative 5 to **less than significant**. However, the potential would remain for water quality impacts associated with construction in areas with possible contamination. The impact would be **potentially significant.**

Mitigation Measure Alt. 5–Hydrology and Water Quality-3a

> Before any surface-disturbing construction begins, the Conservancy shall implement Mitigation Measure Alt. 5–Hazards and Hazardous Materials-7, requiring completion of a Phase II Environmental Site Assessment for land adjacent to the alignment of the multiuse trail, parking lot, and the gravel haul road to determine the presence of contaminants of concern. The Phase II investigation shall be completed along the face of the slope adjacent to the trail and gravel haul road alignment. If contaminants of concern are present, the area shall be remediated as recommended in the assessment and as required by regulatory agencies. In addition, the Conservancy shall implement Mitigation Measure Alt. 5–Hazards and Hazardous Materials-8, requiring preparation of a postclosure plan.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Alt. 5 Hydrology and Water Quality-3a would reduce the potential temporary impact on water quality associated with the former Kepco Pinedale Landfill to **less than significant** because any necessary remedial activities would occur before the start of earthmoving activities, a worker health and safety plan would be implemented should any contaminated soil or groundwater be encountered, and a postclosure land use plan approved by regulatory agencies would be implemented. No additional mitigation is required.

Long-Term Impacts. The area of new impervious/paved surfaces associated with Alternative 5 would add additional surfaces to those of the project (Table 5.10-1). Alternative 5 would provide an additional restroom facility along with the facilities and uses described for the project.

As discussed above for temporary impacts, placing facilities near the former landfill could disturb drainage patterns or disturb cover, which could cause or allow the landfill materials to become wet, thereby increasing the potential for possible leachate movement or accumulation over time. The impact would be **potentially significant**.

Hydrology and water quality BMPs and applicable policies from the Conservancy's Parkway Master Plan would be implemented and other regulatory requirements would be met. Implementation of Mitigation

Measures Hydrology and Water Quality-1, Hydrology and Water Quality-2, Hydrology and Water Quality-3, and Hydrology and Water Quality-4 as described for the project would adequately reduce long-term water quality impacts of Alternative 5 to **less than significant**. No additional mitigation is required.

Groundwater

Temporary Impacts. The construction activities for the project and Alternative 5 would be similar; therefore, the temporary impacts of Alternative 5 on groundwater would be similar to those described in Chapter 3 for the project and would be **less than significant**. No mitigation is required.

Long-Term Impacts. The area of new impervious/paved surface associated with Alternative 5 would be greater than that of the project (see Table 5.10-6 and Table 3.10-1 in Chapter 3). However, the percentage of impervious/paved surface proposed is very small relative to the total area of the project site, and this increase would not measurably affect recharge to the local groundwater basin. Operations under Alternative 5 would not substantially increase groundwater demands, and existing supplies provided for fire suppression are expected to be adequate to serve the site under Alternative 5 without lowering groundwater levels. The long-term impact on groundwater would be **less than significant.** No mitigation is required.

Table 5.10-6 Project plus Alternative 5 Components within the 100-Year Floodplain and Designated Floodway

Project Component	100-Year Floodplain		Designated Floodway	
	Length (miles)	Area (acres)	Length (miles)	Area (acres)
Multiuse Trail (paved—12 feet wide)	1.4	2.0	0	0
Multiuse Trail (unpaved—10 feet wide)	1.7	2.1	0	0
Perrin Avenue Parking (paved)	0	0	0	0
Perrin Avenue Parking (unpaved)	0	0	0	0
Bluff Trail (paved)	0	0	0	0
Hiking Trails	1.8	1.3	0	0
Trail Extension (paved)	0	0	1.4	1.0
Palm-Nees Parking	0	0	0	0.3
Total	**4.9**	**5.4**	**1.4**	**1.3**

Source: Compiled by AECOM in 2016

Drainage

Temporary Impacts. Like the project, Alternative 5 would require grading, moving soil, and placing structures on steep slopes and within flood zones, which could alter drainage courses and runoff patterns from existing conditions. Table 5.10-6 shows that the area of disturbance in the 100-year floodplain and the designated floodway is greater than that of the project (Table 3.10-1). Although the area of disturbance is slightly larger, the construction activities for the project and Alternative 5 would be similar, and the BMPs and mitigation measures would be the same. Therefore, the temporary impacts of Alternative 5 would be similar to those described in Chapter 3 for the project. However, during construction of facilities near the former landfill, drainage patterns could be altered and affect the 100-year flood plain and designated floodway, which could contribute further to hydromodification. This temporary impact would be **potentially significant.**

Hydrology and water quality BMPs and applicable policies from the Conservancy's Parkway Master Plan would be implemented and other regulatory requirements would be met. Implementation of Mitigation Measures Hydrology and Water Quality-4, Hydrology and Water Quality-5, and Hydrology and Water Quality-6 as described for the project would reduce the temporary hydromodification impacts from placement of structures in areas of the former landfill to **less than significant**.

Long-Term Impacts. Placing impervious/paved surfaces and other project components adjacent to or within the designated floodway and 100-year floodplain and on the steep bluffs could contribute to changes to hydrologic and/or geomorphic processes within the 100-year floodplain or designated floodway. Table 5.10-6 presents the portion of Alternative 5 located within the designated floodway and floodplain. Modifications of the bluffs would be the same under Alternative 5 as under the project. Portions of the trail at the base of the bluff, the turnaround (as illustrated in Figure 5-6), and the roadway approach encroach into the designated floodway. These surfaces would be hardscaped or paved. The total area of impervious/paved and hard-packed surfaces within the 100-year floodplain and designated floodway would be slightly greater under Alternative 5 than under the project. As discussed above for construction, placing facilities near the within the 100-year floodplain, designated floodway, and former landfill could disturb drainage patterns or disturb cover, which could further affect hydrologic and/or geomorphic processes. This impact would be **potentially significant.**

Hydrology and water quality BMPs and applicable policies from the Conservancy's Parkway Master Plan would be implemented and other regulatory requirements would be met. Implementation of Mitigation Measures Hydrology and Water Quality-4, Hydrology and Water Quality-5, Hydrology and Water Quality-6 as described for the project would reduce the long-term hydromodification impacts from placement of structures for Alternative 5 to **less than significant**.

Runoff. Temporary and long-term impacts of Alternative 5 on runoff would be similar to those described for the project. Hydrology and water quality BMPs and applicable policies from the Conservancy's Parkway Master Plan would be implemented and other regulatory requirements would be met. Implementation of Mitigation Measure Hydrology and Water Quality-7 as described for the project, and Mitigation Measure Alt. 5 Hydrology and Water Quality-3a as described above would reduce hydromodification impacts from placement of structures for Alternative 5 to **less than significant**. No additional mitigation is required.

100-Year Floodplain and Designated Floodway. Table 5.10-6 summarizes the components of Alternative 5 that would affect land within the 100-year floodplain and designated floodway. Under Alternative 5, a total of 5.4 acres within the 100-year floodplain and 1.3 acres within the designated floodway would be affected, slightly more than under the proposed project (Table 3.10-1). Construction of both paved and unpaved portions of the trail would occur within the 100-year floodplain and designated floodway. Overall, impacts of Alternative 5 would be greater than impacts of the project and would be **potentially significant**. Portions of the multiuse trail and roundabout would be located within the designated floodway. However, implementation of Mitigation Measure Hydrology and Water Quality-9 would reduce the impact to **less than significant**. No additional mitigation is required.

Exposure of People or Structures to Flooding. Temporary and long-term impacts of Alternative 5 regarding exposure of people or structures would be similar to those described for the project and would be **less than significant**. No mitigation is required.

Seiche, Tsunami, or Mudflow. Temporary and long-term impacts of Alternative 5 regarding the potential for seiche, tsunami, or mudflow would be similar to those described for the project. **No impact** would occur related to potential for a seiche or tsunami, and the impact related to mudflow potential would be **less than significant**. No mitigation is required.

5.10.11 Land Use and Planning

Some lands in the Alternative 5 project area are in private ownership; they would need to be acquired by a public agency for Alternative 5 to be implemented. The private-access roads affected by Alternative 5 are encumbered by public-access easements owned by the City of Fresno and the State of California.

The California State Lands Commission has jurisdiction and management authority over all ungranted submerged lands owned by the State; the beds of navigable rivers, streams, lakes, bays, estuaries, inlets, and straits including tidelands and submerged lands; and the beds of navigable rivers (PRC Section 6301). The lands along the River between the ordinary high-water marks are subject to the jurisdiction of the California State Lands Commission. The proposed uses and improvements are generally consistent with the public-trust uses allowed by the commission.

Alternative 5 would not physically divide an established community or conflict with any applicable land use plan or policy. **No impact** would occur.

5.10.12 Mineral Resources

Like the project, Alternative 5 would not result in the loss of a known mineral resource. **No impact** would occur.

5.10.13 Noise

Construction activities under Alternative 5 would cause a short-term temporary increase in ambient noise levels. Noise levels could exceed ambient noise standards established by the City of Fresno for residential areas. The impact of noise levels exceeding 55 dBA, even temporarily, would be **significant**. Implementation of Mitigation Measure Noise-1 would reduce the impact to **less than significant**. No additional mitigation is required.

5.10.14 Population and Housing

Similar to the project, Alternative 5 would not induce substantial population growth or displace a substantial number of housing units. **No impact** would occur.

5.10.15 Public Services

Similar to the project, Alternative 5 would not alter existing public service ratios, response times, or performance standards for fire or police protection and would not induce population growth or demand for new school facilities. **No impact** would occur.

5.10.16 Recreation

Under Alternative 5, additional parking (40 more spaces) and vehicular visitor access to the trail extension and recreation amenities would be provided through the Palm and Nees Avenue entrance. ADA-compliant access would be provided from the parking area to the trail extension. Additional access and reduced VMT for visitors from the Fresno metropolitan area would encourage visitor use such as hiking, bicycling, jogging, and picnicking. In particular, the Alternative 5 entrance would provide new and enhanced recreation opportunities for residents of the nearby disadvantaged communities. The increase in visitor use would not result in substantial damage to or have an adverse physical effect on the environment. The impact would be **less than significant**. No mitigation is required.

5.10.17 Transportation

The transportation analysis of Project Buildout (2025) Base plus Alternative 5 considers all improvements that are constructed or planned for completion by 2025. Appendix H provides a detailed discussion of the methodology used to determine LOS and VMT as summarized below.

As shown in Table 5.10-7, all study public roadway segments are forecast to operate at LOS C or better under Project Buildout (2025) Base plus Alternative 5 conditions. Similar to with-project conditions, all roadway segments under Alternative 5 have sufficient capacity to accommodate added traffic and still operate at acceptable LOS. The impact would be **less than significant.** No mitigation is required.

Table 5.10-7 Roadway Segment Analysis Project Buildout (2025) Base plus Alternative 5 Conditions

Roadway Segment [1]	Number of Lanes [2]	Direction	ADT 24-Hour Volume	(2025) Base plus Alternative 5 Conditions			
				A.M. Peak Hour		P.M. Peak Hour	
				Vol	LOS	Vol	LOS
1 SR 41 between the Fresno–Madera County line and Avenue 12	2/D	NB	35,998	780	B	1,165	B
		SB		608	B	1,352	B
2 SR 41 East Frontage Road (Cobb Road Ranch) north of Vin Rose Lane	1/U	NB	528	31	C	28	C
		SB		43	C	61	C
3 Audubon Drive between SR 41 and Palm Avenue	1/U	EB	16,918	393	C	463	C
		WB		481	C	652	C
4 Audubon Drive just east of SR 41	2/D	EB	15,998	394	C	462	C
		WB		493	C	677	C
5 Del Mar Avenue between Audubon Drive and West Riverview Drive	1/U	NB	2,130	33	C	67	C
		SB		89	C	94	C

Notes:

ADT = average daily traffic; D = divided; EB = eastbound; LOS = level of service; NB = northbound; SB = southbound; SR = State Route; U = undivided; Vol = volume; WB = westbound

[1] Evaluated using Table 7 Florida Tables.

[2] Number of lanes in each direction.

Source: Data compiled by AECOM in 2016

5.10.18 Utilities and Service Systems

Like the project, Alternative 5 would not alter existing public service ratios, response times, or performance standards for fire or police protection, would not require a significant new water supply, and would not induce population growth or demand for new school facilities. The impact would be **less than significant.** No mitigation is required.

5.10.19 Environmental Justice

Disadvantaged Community Census Tract 6019004404 is located about 0.5 mile south of the project area. Residents of this community, and more broadly, residents of Fresno would be able to access the multiuse trail and recreation amenities via the opportunity provided by the additional parking. Visitors would not have to travel north along SR 41 to Children's Boulevard, then travel south along the SR 41 East Frontage Road, also known as Blackstone Avenue, a 180-degree reverse in direction. Visitors would be able to enter the project area via the existing West Riverview Drive entrance. The impact would be **less than significant**. No mitigation is required.

5.11 Alternative 6: No Project

In accordance with Section 15126.6(e)(3)(B) of the State CEQA Guidelines, the No Project Alternative consists of an analysis of the effects under which the project would not proceed; that is, no trail, parking, or recreational amenities would be constructed.

Temporary and long-term construction impacts associated with aesthetics, air quality, biological resources, cultural and paleontological resources, hazards and hazardous materials, hydrology and water quality, noise, public services and utilities, and transportation and traffic would be avoided with the No Project Alternative because no construction activities would occur on the project site. Under this alternative, there would be a greater unmet demand for parks and open space in the City of Fresno. The project area would remain closed to public recreational use, denying open space and recreational opportunities to a nearby disadvantaged community, and more broadly, to the residents of Fresno. This would be an **unavoidable significant** impact.

No temporary traffic impacts would occur related to the truck trips required to transport materials to and from the project site. No impacts on air quality and noise would occur as a result of on-site construction because no construction activities would occur. In addition, the temporary impacts of on-site project construction on biological resources would not occur. Further, the potential for uncovering previously unknown archaeological or paleontological resources would be avoided because grading would not take place on the project site. Because of the lack of grading activities, no hazards or hazardous materials would be encountered or disturbed.

Operational impacts would be avoided under the No Project Alternative because no changes to the project site would occur and the site would remain closed to the public.

Under this alternative, the design goals and vision of the Parkway Master Plan would not be implemented. Further, the No Project Alternative would not fully achieve any of the objectives of the project. This would be an **unavoidable significant** impact.

5.12 Comparison of Alternatives and the Project

Section 15126.6 of the State CEQA Guidelines mandates that an EIR include a comparative evaluation of the proposed project with a range of reasonable alternatives to the project, which would feasibly attain most of the basic objectives of the project while simultaneously avoiding or substantially lessening any of the significant effects of the project. As stated in Section 15126.6(f)(1) of the State CEQA Guidelines:

> *[A]mong the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent).*

Although these factors do not present a strict limit on the scope of reasonable alternatives to be considered, they help establish the context against which "the rule of reason" is measured when determining an appropriate range of alternatives sufficient to establish and foster meaningful public participation and informed decision-making.

Table 5.12-1 compares the results of the CEQA analysis for each resource category, and identifies alternatives that would result in unavoidable significant impacts. A summary of the resources with significant impacts that can be mitigated to less than significant or unavoidable significant impacts is provided. This comparison provides the means to consider, in conformance with Section 15126.6 of the State CEQA Guidelines, factors affecting the feasibility of the alternatives, whether any of the alternatives would mitigate, avoid, or substantially lessen environmental impacts associated with the project.

5.12.1 Mitigated Significant Impacts

For the proposed project and Alternatives 1–5, impacts on the following resource categories would be significant but would be reduced to less than significant with the same mitigation measures: aesthetics and visual resources, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, and noise.

5.12.2 Alternatives with Additional Mitigation Measures

Compared to the proposed project, impacts on biological resources and hydrology and water quality in Alternative 3 would be reduced to less than significant, but with additional mitigation measures. Recreation impacts under Alternative 4 would require additional mitigation measures compared to the proposed project. Under Alternative 5, impacts associated with hazards and hazardous materials and hydrology and water quality would also require additional mitigation measures compared to the proposed project.

5.12.3 Alternatives with Unavoidable Significant Impacts

Under CEQA, a project would result in unavoidable significant environmental effects if the impacts of the project (both construction-related and operational impacts) would be significant and no feasible mitigation is available or only partial mitigation is feasible. Unavoidable significant impacts are presented in Table 5.12-1. The proposed project, Alternative 2, and Alternative 4 would have unavoidable significant environmental impacts with respect to environmental justice for disadvantaged communities/designated census tracts by denying equal access and use of a neighborhood park, open space, and recreational opportunities to the residents of a designated disadvantaged community, and more broadly, to residents of Fresno. Alternative 3 would have unavoidable significant impacts on disadvantaged communities/designated census tracts by denying equal access and use of a neighborhood park, open space, and recreational opportunities; and an unavoidable significant impact related to land use policies of the Parkway Master Plan. The No Project Alternative would have unavoidable significant impacts on disadvantaged communities/designated census tracts and recreation.

State law and policy support efforts to secure environmental justice through commitments to identify existing and potential problems, and find and apply solutions in approving specific projects. Project proponents must ensure that the project would not create unequal access for residents of identified disadvantaged communities. Both Alternative 1 and Alternative 5 would result in less-than-significant impacts with respect to environmental justice. Neither Alternative 1 nor Alternative 5 would have potential unavoidable significant impacts, and all potential impacts would be less than significant with the identified mitigation.

The proposed project and Alternatives 1–5 meet the Conservancy's project objectives as stated in the Parkway Master Plan.

5.12.4 Alternatives Not Meeting Project Objectives

The No Project Alternative would not extend the existing Lewis S. Eaton Trail downstream along the San Joaquin River, nor would it provide recreation amenities. This alternative fails to meet the objectives of the proposed project as described in Section 1.4 of this EIR by denying linkage to the existing multiuse trail, and preventing access and use of a neighborhood park, open space, and recreation amenities to the residents of Fresno. Therefore, the No Project Alternative does not meet the project objectives.

Table 5.12-1 Comparison of Environmental Impacts of the Project with Impacts of the Alternatives

	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	No Project
Meets Project Objectives?	Yes	Yes	Yes	Yes	Yes	Yes	No

	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	No Project
Is Land Owned by State of California/San Joaquin River Conservancy?	Yes	Yes	Yes	Yes	Yes	No, land or easement must be acquired by willing seller	Yes
Aesthetics and Visual Resources							
Impact 3.2-1: Scenic Vista	Less than Significant with Mitigation Incorporated	Same	Same	Same	Same	Same	No Impact
Impact 3.2-2: Scenic Resources	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.2-3: Visual Character	Less than Significant with Mitigation Incorporated	Same	Same	Same	Same	Same	No Impact
Impact 3.3-4: Light and Glare	Less than Significant with Mitigation Incorporated	Same	Same	Same	Same	Same	No Impact
Agriculture and Forestry Resources							
Impact 3.3-1: Conversion of Prime Farmland, etc.	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.3-2: Conflict with Agricultural Zoning, Williamson Act	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.3-3: Forestland Zoning	No Impact	Same	Same	Same	Same	Same	No Impact
Impact 3.3-4: Conversion of Forestland	No Impact	Same	Same	Same	Same	Same	No Impact
Impact 3.3-5: Conversion of Agriculture and Forestland to Nonagricultural Use	No Impact	Same	Same	Same	Same	Same	No Impact

	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	No Project
Air Quality							
Impact 3.4-1: Conflict with Air Quality Plans	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.4-2: Air Quality Violation	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.4-3: Cumulative Increase of Criteria Pollutants	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.4-4: Exposure to Sensitive Receptors	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.4-5: Objectionable Odors	Less than Significant	Same	Same	Same	Same	Same	No Impact
Biological Resources							
Impact 3.5-1: Special-Status Species	Less than Significant with Mitigation Incorporated	Same	Same	Same	Same	Same	No Impact
Impact 3.5-2: Riparian Habitat, Natural Communities	Less than Significant	Same	Same	Less than Significant with Mitigation Incorporated	Same	Same	No Impact
Impact 3.5-3: Federally Protected Wetlands	Less than Significant	Same	Same	Less than Significant with Mitigation Incorporated	Same	Same	No Impact
Impact 3.5-4: Wildlife Corridors	Less than Significant with Mitigation Incorporated	Same	Same	Same	Same	Same	No Impact
Impact 3.5-5: Policies and Ordinances	No Impact	Same	Same	Unavoidable Significant Impact	Same	Same	No Impact
Impact 3.5-6: Conservation Plans	No Impact	Same	Same	Same	Same	Same	No Impact

	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	No Project
Cultural Resources							
Impact 3.6-1: Historical Resources	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.6-2: Archaeological Resources	Less than Significant with Mitigation Incorporated	Same	Same	Same	Same	Same	No Impact
Impact 3.6-3: Paleontological Resources	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.6-4: Human Remains	Less than Significant with Mitigation Incorporated	Same	Same	Same	Same	Same	No Impact
Geology and Soils							
Impact 3.7-1: Exposure to Earthquake Fault	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.7-2: Soil Erosion	Less than Significant with Mitigation Incorporated	Same	Same	Same	Same	Same	No Impact
Impact 3.7-3: Unstable Geologic Unit or Soil	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.7-4: Expansive Soils	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.7-5: Soil Incapable of Wastewater Disposal	Less than Significant	Same	Same	Same	Same	Same	No Impact
Greenhouse Gas Emissions							
Impact 3.8-1: Greenhouse Gas Emissions	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.8-2: Conflicts with Greenhouse Gas Reduction Plans	Less than Significant	Same	Same	Same	Same	Same	No Impact

	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	No Project
Hazardous Materials							
Impact 3.9-1: Transport of Hazardous Materials	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.9-2: Emission of Hazardous Materials	No Impact	Same	Same	Same	Same	Same	No Impact
Impact 3.9-3: Hazardous Materials Site	Less than Significant	Same	Same	Same	Same	Less than Significant with Mitigation Incorporated	No Impact
Impact 3.9-4: Airport Land Use Plan Conflict	No Impact	Same	Same	Same	Same	Same	No Impact
Impact 3.9-5: Hazard due to Private Airstrip	No Impact	Same	Same	Same	Same	Same	No Impact
Impact 3.9-6: Conflict with Emergency Response Plan	No Impact	Same	Same	Same	Same	Same	No Impact
Impact 3.9-7: Exposure to Wildland Fire	Less than Significant with Mitigation Incorporated	Same	Same	Same	Same	Same	No Impact
Hydrology and Water Quality							
Impact 3.10-1: Water Quality Standards	Less than Significant with Mitigation Incorporated	Same	Same	Same with additional mitigation measure	Same	Same with additional mitigation measure	No Impact
Impact 3.10-2: Groundwater Supply	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.10-3: Drainage Patterns Affecting Erosion	Less than Significant with Mitigation Incorporated	Same	Same	Same	Same	Same	No Impact

	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	No Project
Impact 3.10-4: Drainage Patterns Affecting Flooding	Less than Significant with Mitigation Incorporated	Same	Same	Same	Same	Same	No Impact
Impact 3.10-5: Exceedance of Drainage Capacity	Less than Significant with Mitigation Incorporated	Same	Same	Same	Same	Same	No Impact
Impact 3.10-6: Other Degradation of Water Quality	Less than Significant with Mitigation Incorporated	Same	Same	Same	Same	Same	No Impact
Impact 3.10-7: Housing within 100-Year Floodplain	No Impact	Same	Same	Same	Same	Same	No Impact
Impact 3.10-8: Structures within 100-Year Floodplain	Less than Significant with Mitigation Incorporated	Same	Same	Same	Same	Same	No Impact
Impact 3.10-9: Failure of Dam or Levee	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.10-10: Seiche, Tsunami, Mudflow	Less than Significant	Same	Same	Same	Same	Same	No Impact
Land Use and Planning							
Impact 3.11-1: Physical Division of Established Community	No Impact	Same	Same	Same	Same	Same	No Impact
Impact 3.11-2: Conflict with Land Use Policy	Less than Significant	Same	Same	Unavoidable Significant Impact	Same	Same	No Impact
Impact 3.11-3: Conflict with Habitat Conservation Plan	No Impact	Same	Same	Same	Same	Same	No Impact
Mineral Resources							
Impact 3.12-1: Loss of Mineral Resource	No Impact	Same	Same	Same	Same	Same	No Impact

	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	No Project
Impact 3.12-2: Loss of Locally Important Mineral Resource Recovery Site	No Impact	Same	Same	Same	Same	Same	No Impact
Noise							
Impact 3.13-1: Noise Levels Exceeding Standards	Less than Significant with Mitigation Incorporated	Same	Same	Same	Same	Same	No Impact
Impact 3.13-2: Exposure to Groundborne Vibration or Noise	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.13-3: Permanent Increase in Ambient Noise Levels	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.13-4: Temporary Increase in Ambient Noise Levels	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.13-5: Noise Exposure within Airport Land Use Plan	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.13-6: Noise Exposure within Private Airstrip Vicinity	No Impact	Same	Same	Same	Same	Same	No Impact
Population and Housing							
Impact 3.14-1: Inducement of Substantial Population Growth	No Impact	Same	Same	Same	Same	Same	No Impact
Impact 3.14-2: Displacement of Existing Housing	No Impact	Same	Same	Same	Same	Same	No Impact

	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	No Project
Impact 3.14-3: Displacement of Substantial Numbers of People	No Impact	Same	Same	Same	Same	Same	No Impact
Public Services							
Impact 3.15-1: Impacts from Construction of Government Facilities	No Impact	Same	Same	Same	Same	Same	No Impact
Recreation							
Impact 3.16-1: Neighborhood and Regional Parks	Less than Significant	Same	Same	Same	Same with additional mitigation measure	Same	Unavoidable Significant Impact
Impact 3.16-2: Adverse Physical Impact of Recreation Facilities	Less than Significant	Same	Same	Same	Same	Same	No Impact
Transportation							
Impact 3.17-1: Conflict with Traffic Plan or Policy	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.17-2: Conflict with Congestion Management Program	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.17-3: Change in Air Traffic Pattern	No Impact	Same	Same	Same	Same	Same	No Impact
Impact 3.17-4: Increased Design Standards	No Impact	Same	Same	Same	Same	Same	No Impact
Impact 3.17-5: Inadequate Emergency Access	Less than Significant	Same	Same	Same	Same	Same	No Impact

	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	No Project
Impact 3.17-6: Conflict with Public Transit, Bicycle, Pedestrian Plan	No Impact	Same	Same	Same	Same	Same	No Impact
Utilities and Service Systems							
Impact 3.18-1: Exceedance of Wastewater Treatment Requirements	No Impact	Same	Same	Same	Same	Same	No Impact
Impact 3.18-2: New Water or Wastewater Treatment	No Impact	Same	Same	Same	Same	Same	No Impact
Impact 3.18-3: New or Expanded Water Drainage Facilities	No Impact	Same	Same	Same	Same	Same	No Impact
Impact 3.18-4: Insufficient Water Supply	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.18-5: Exceedance of Wastewater Treatment Capacity	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.18-6: Insufficient Landfill Capacity	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 3.18-7: Noncompliance with Solid Waste Regulations	No Impact	Same	Same	Same	Same	Same	No Impact
OTHER CEQA REQUIREMENTS							
Cumulative Impacts	Less than Significant	Same	Same	Same	Same	Same	No Impact
Impact 4.2-1: Environmental Justice—Disadvantaged Community	Unavoidable Significant Impact; no mitigation measures	Less than Significant	Same	Same	Same	Less than Significant	Same

	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	No Project
Impact 4.3-1: Growth Inducing	No Impact	Same	Same	Same	Same	Same	No Impact
Impact 4.3-2: Energy	Less than Significant	Same	Same	Same	Same	Same	No Impact

5.13 Environmentally Superior Alternative

The State CEQA Guidelines require sufficient information to allow meaningful evaluation, analysis, and comparison of alternatives to the proposed project (Section 15126.6(d)), presented in Chapter 5 of this DEIR. State CEQA Guidelines Section 15126.6(e)(2) requires, "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." The environmentally superior alternative is generally defined as the alternative that would result in the least adverse environmental impacts on the project site and the surrounding area.

The broad objective of the Conservancy is to conserve habitat, provide public access to the River, and provide low-impact public recreation, linking all public recreational areas between SR 99 and Friant Dam with a continuous, multipurpose trail on land along the River; to create a low-impact recreation system with a variety of recreational opportunities; and to connect the multipurpose trail with other local and regional trails. Specifically, the objective of the proposed project is to extend the existing Lewis S. Eaton Trail from its current southern terminus near Woodward Park for about 2.4 miles downstream along the San Joaquin River across State-owned land and provide recreational amenities consistent with the policies of the Parkway Master Plan.

The No Project Alternative fails to meet the objectives of the proposed project as described in Section 1.4 of this EIR by denying linkage to the existing Lewis S. Eaton Trail, and preventing access and use of a planned neighborhood park, open space, and recreation amenities to the residents of Fresno. The No Project Alternative has unavoidable significant environmental impacts, including an impact not presented by the proposed project, and is not found to be environmentally superior in this DEIR.

The other alternatives meet the objective of the project and the overall impacts associated with each are similar. Although not explicitly required in the State CEQA Guidelines, the remaining alternatives are compared to the proposed project, to analyze whether any of them may be considered environmentally superior.

Alternative 1, Added Parking, was developed to augment public vehicular access to the project area for residents of the Fresno metropolitan area, and to residents of the nearby disadvantaged communities because of the travel distance to the proposed Perrin Avenue vehicle entrance and parking area. In

Alternative 1, the trail extension, parking lot, and associated recreation amenities described for the proposed project would be provided along with added parking via an entrance to be provided at West Riverview Drive. Compared to the proposed project, Alternative 1 would offer environmentally superior attributes with regard to environmental justice by providing equal access via the entrance through the Riverview Drive gate. However, this alternative may be infeasible because of the cost and time frame required to construct, in partnership with the City of Fresno, a traffic signal or traffic roundabout at the intersection of Audubon Avenue and Del Mar Avenue.

Alternative 2, the Bluff Trail Alignment, was developed to reduce the circuitous proposed trail alignment and reduce potential impacts on riparian habitat and disturbance to nearby residences on the floodplain. The multiuse trail specifications, the Perrin Avenue parking lot, and associated recreation amenities described for the proposed project would be provided. However, under Alternative 2, parking and public vehicle access would be limited to the Perrin Avenue entrance. Therefore, this alternative does not address limited public access to the River for residents of the nearby disadvantaged communities, and more broadly, for Fresno metropolitan area residents. The impact on disadvantaged communities would be an unavoidable significant impact.

Alternative 3, the River's Edge Trail Alignment, was developed to provide multiuse trail access close to the River and to possibly reduce the potential effects of wildland fires on residences located on the Bluffs. It includes all of the project elements described in for the proposed project, with the trail extension alignment lying nearer and along the bank of the River. The River's Edge Trail alignment conflicts with the policies of the Parkway Master Plan. The Conservancy's policies require a minimum width of 200 feet on both sides of the River as wildlife movement corridors. A buffer of 150 feet is to be established between riparian habitat and the planned multipurpose trail. Also, whenever feasible, the trail should be routed on the outside edges of habitat area areas, rather than through the center of riparian vegetation. The impact on and conflict with the Conservancy's land use policy is an unavoidable significant impact with no feasible mitigation measures available. In addition, because Alternative 3 would provide public vehicle access only through the Perrin Avenue entrance, it would not provide equal access to the River for residents of the nearby disadvantaged communities and for residents of the Fresno metropolitan area. This would be an unavoidable significant impact on disadvantaged communities.

Alternative 4, the No Parking Alternative, was developed to address the potential impacts of parking near the River. The trail alignment and recreational amenities described for the proposed project would be constructed. However, no public vehicle parking would be provided on the project site. Alternative 4 would not address limited public access to the River for residents of the nearby disadvantaged communities, including those nearby in the city of Fresno and in Madera County, and for residents of the Fresno metropolitan area. This is considered an unavoidable significant impact on nearby disadvantaged communities.

Alternative 5, the Palm and Nees Access, was developed to address the potential impacts on air quality and VMT associated with the proposed project, and to provide greater, more convenient vehicle access for nearby disadvantaged communities, and more broadly, residents of the Fresno metropolitan area. Compared to the proposed project, Alternative 5 would offer environmentally superior attributes with regard to environmental justice by providing equal access to the project site through the access road from the intersection of Palm and Nees Avenues. However, this alternative may prove to be infeasible because of the challenge of securing land ownership or easements, and the cost, uncertainties, and potential liabilities of remediation.

In summary, the proposed project and Alternatives 2, 3, and 4 would create an unavoidable significant impact on residents living in two disadvantaged community census tracts, and more broadly on residents of Fresno, by restricting access to open space and recreation opportunities that would be more readily available to residents living closer to the project area. Therefore, these alternatives would not be environmentally superior.

5.13.1 Conclusion: Environmentally Superior Alternative

Alternative 1 and Alternative 5 would offer environmentally superior attributes by providing public vehicle access in closer proximity for residents of a nearby disadvantaged community, and more broadly, for the residents of Fresno, thus ensuring equal access to the proposed project for all user groups. Based on the analysis of potential environmental impacts in this DEIR, either Alternative 1 or Alternative 5, with the appropriate mitigation, would result in the fewest impacts, and both have been selected for this DEIR as the environmentally superior alternative.

Visitors would be able to access the multiuse trail and recreation amenities via the additional public vehicle entrance and parking provided Riverview Drive (Alternative 1) or at the access site in the vicinity of Palm and Nees Avenues (Alternative 5). Visitors would not have to travel north along SR 41 to Children's Boulevard, then south along the SR 41 East Frontage Road, also known as Blackstone Avenue, a 180-degree reverse in direction.

Although environmental impacts may be lessened by either Alternative 1 or Alternative 5 in comparison to the proposed project, both of these alternatives have attributes and proposed mitigation measures, so that one or both alternatives may prove to be infeasible.

Notwithstanding the comparison of alternatives and conclusions in this section, under CEQA a lead agency is charged with the important task of determining whether and how a project should be approved, and must exercise its own best judgment to "balance a variety of public objectives, including economic, environmental, and social factors and in particular the goal of providing a decent home and satisfying living environment for every Californian" (State CEQA Guidelines Section 15021[d]). A lead agency has discretion to approve a project even where, after the application of all feasible mitigation, the project will

have unavoidable adverse environmental impacts (State CEQA Guidelines Section 15093). However, when the agency does so, it must be clear and transparent about the balance it has struck.

To satisfy CEQA's public information and informed decision-making process, if significant unavoidable impacts remain for the selected project (or alternative), the lead agency shall make a statement of overriding considerations, as described in Section 15093, that reflect the ultimate balancing of competing public objectives when the lead agency decides to approve a project that will cause one or more significant effects on the environment. The lead agency shall clearly state not only the specific economic, legal, social, technological, or other benefits, including regionwide or statewide environmental benefits, that in its view warrant approval of the project (or selected alternative), but also the unavoidable adverse environmental effects.

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Chapter 6
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WRCC. *See* Western Regional Climate Center.

RECORD OF CONVERSATION

Project:	Lewis S. Eaton Trail	**Client:**	San Joaquin River Conservancy
Date:	August 28, 2014	**URS Job Number:**	
Recorded By:	Maya Tjahjadi	**Contract Number:** **Task Number:**	
Talked With:	Diane Printz-White, Executive Assistant	**Of:** PARCS	
Telephone No:	(559) 621-2955	**Admin Record/File Guide Code:**	

Main Subject: Vehicle count at Woodward Park during two summer holidays

Item(s) Discussed: The number of tickets or cars entering Woodward Park during Memorial Day and 4th of July weekends; included the date, day, and total number of cars for each day

Project:	Lewis S. Eaton Trail	**Client:**	San Joaquin River Conservancy
Date:	September 2, 2014	**URS Job Number:**	
Recorded By:	Maya Tjahjadi	**Contract Number:** **Task Number:**	
Talked With:	Cheryl Callistro, Senior Account Clerk	**Of:** City of Fresno Parks	
Telephone No:	(559) 621-2900	**Admin Record/File Guide Code:**	

Main Subject: Trip generation/distributions for the proposed project area

Project:	Lewis S. Eaton Trail	**Client:**	San Joaquin River Conservancy
Date:	September 4, 2014	**URS Job Number:**	
Recorded By:	Noel Casil, PE, TE, PTOE	**Contract Number:** **Task Number:**	
Email With:	Jill Gormley, TE	**Of:**	Assistant Traffic Engineering Manager City of Fresno, Public Works Department 2600 Fresno Street, 4th Floor Fresno, CA 93721-3623
Telephone No:	(559) 621-8792	**Admin Record/File Guide Code:**	

Main Subject: Acres of parks in the City of Clovis

Item(s) Discussed: The population, number of parks, and number of people per acre in the City of Clovis

Project:	Lewis S. Eaton Trail	**Client:**	San Joaquin River Conservancy
Date:	9/22/14	**URS Job Number:**	
Recorded By:	Maya Tjahjadi	**Contract Number:** **Task Number:**	
Talked With:	Cindy Sauls, Environmental Health Specialist (EHS)	**Of:** City of Clovis	
Telephone No:	(559) 600-3271	**Admin Record/File Guide Code:**	

Main Subject: Certified Unified Program Agency (CUPA)

Item(s) Discussed: Whether any local agencies are part of the Certified Unified Program Agency (CUPA) in Fresno

Project:	Lewis S. Eaton Trail	**Client:**	San Joaquin River Conservancy
Date:	11/05/14	**URS Job Number:**	
Recorded By:	Maya Tjahjadi	**Contract Number:** **Task Number:**	
Talked With:	Carolyn Hogg, Chief Information Officer (CIO)	**Of:**	
Telephone No:	(559) 621-7171	**Admin Record/File Guide Code:**	

Main Subject: Information about parcel numbers

Item(s) Discussed: Whether any fire-related information is available for two parcel numbers near the project site

Project:	Lewis S. Eaton Trail	**Client:**	San Joaquin River Conservancy
Date:	11/11/14	**URS Job Number:**	
Recorded By:	Maya Tjahjadi	**Contract Number:** **Task Number:**	
Talked With:	Andrew Noel, GIS Analyst/ GIS Team Coordinator/ Fire Captain	**Of:** Fresno Fire Department	
Telephone No:	(559) 621-4044	**Admin Record/File Guide Code:**	

Main Subject: River Bottom Fire Questions

Item(s) Discussed: History, response time, and guidelines about fires in the river bottom

Project:	Lewis S. Eaton Trail	**Client:**	San Joaquin River Conservancy
Date:	01/06/15	**URS Job Number:**	
Recorded By:	Maya Tjahjadi	**Contract Number:** **Task Number:**	
Talked With:	Mary Ann Seay, Director	**Of:** Madera Parks and Community Services	
Telephone No:	(559) 661-5491	**Admin Record/File Guide Code:**	

Main Subject: Number of parks and acres of park space in the City of Madera

Item(s) Discussed: The number of parks and the total number of acres of park space in the City of Madera

Project:	Lewis S. Eaton Trail	**Client:**	San Joaquin River Conservancy
Date:	8/11/15	**URS Job Number:**	
Recorded By:	Maya Tjahjadi	**Contract Number:** **Task Number:**	
Talked With:	Timothy Leming, Assistant Assessor-Recorder	**Of:** City of Madera	
Telephone No:	(559) 256-5200	**Admin Record/File Guide Code:**	

Main Subject: Mining Resources

Item(s) Discussed: Status of mineral reserves within the project area

Project:	Lewis S. Eaton Trail	**Client:**	San Joaquin River Conservancy
Date:	4/22/2016	**URS Job Number:**	
Recorded By:	David Young	**Contract Number:** **Task Number:**	
Talked With:	Melinda Marks, Executive Officer	**Of:** San Joaquin River Conservancy	
Telephone No:	(559) 253-7324	**Admin Record/File Guide Code:**	

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Chapter 7
Preparers

This section identifies all individuals, firms, and agencies involved in preparing the DEIR, by contract or other authorization.

7.1 San Joaquin River Conservancy

Melinda Marks, Executive Director

7.2 AECOM

David Young, Project Manager

Matthew Gerken, AICP, Senior Urban Planner

George Strnad, RLA, RA, Trail Design

Chris Hargreaves, Landscape Design

Jenifer King, Senior Planner

Noel Casil, PE, TE, PTOE, Traffic

Natalie Smith, Hydrology

Caitlin Miller, Air Quality/Greenhouse Gas Emissions

Frank Gegunde, PG, Hazards and Hazardous Materials, Environmental Site Assessment

Rachel Avila, Biological Resources

Maya Tjahjadi, Assistant Planner

Julie Nichols, Senior Technical Editor

Beth Duffey, Senior Technical Editor

Deborah Jew, Document Specialist

7.3 J and R Environmental

Jon Brady, Cultural Resources

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Appendix A
Notice of Preparation

NOTICE OF PREPARATION

DATE: June 4, 2014

To: State Clearinghouse
1400 Tenth Street
P.O. Box 3004
Sacramento, CA 95812-3044

From: Melinda Marks
Executive Officer
San Joaquin River Conservancy
5469 E. Olive Avenue
Fresno, CA 93727

Subject: Notice of Preparation of a Draft Environmental Impact Report
River West, Eaton Trail Extension Project

Lead Agency: San Joaquin River Conservancy

The San Joaquin River Conservancy (Conservancy) will be the Lead Agency and will prepare an environmental impact report (EIR) for the River West, Eaton Trail Extension Project within the San Joaquin River Parkway. We want to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project.

The project description, location, and the potential environmental effects are described in the attached materials.

An open-house Scoping Meeting will be held on June 17, 2014 from 4:30 PM to 7:00 PM at the Pinedale Community Center, 7170 N. San Pablo Avenue, Fresno, California 93650.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but no later than the close of the 30-day Notice of Preparation review period on July 8, 2014. We will need the name for a contact person in your agency.

Please mail your comments to Melinda Marks, Executive Officer, at the address shown above or email to melinda.mark@sjrc.ca.gov with "River West, Eaton Trail Extension Project EIR" as the subject. Please include a contact person for your agency.

Location

The study area of the proposed Project is located along the San Joaquin River between State Route (SR) 41 and Spano Park and is within the city limits of Fresno (Figure 1). It extends from the south side of the San Joaquin River (River) to the San Joaquin River bluffs (bluffs). It extends westward from SR 41 to Spano Park located near the intersection of Nees and Palm Avenues. The study area encompasses approximately 352 acres on the south side of the River. A majority of the study area is owned by the Conservancy. Two parcels owned by the City of Fresno are adjacent to Conservancy owned land. Implementation of the proposed project may occur on these properties.

Three other parcels within the study area are owned by others and not proposed for project development: One parcel of privately owned land, located near the center of the study area, contains two residences. Access to these residences is provided by a paved road from W. Riverview Drive. Two parcels owned by the Fresno Metropolitan Flood Control District contain stormwater detention basins.

A residential subdivision is located on the bluff adjacent to the southern boundary of the study area.

Project Description

The proposed Fresno River West, Eaton Trail Extension Project (Project) will extend the Lewis S. Eaton Trail (Trail), a multiple use trail, and include ancillary support features. The proposed Project will provide for low-impact recreation on the site, primarily consisting of hiking, bicycling, fishing and nature observation, consistent with the San Joaquin River Parkway Master Plan.

Most of the study area consists of several large ponds formed from past gravel mining operations and non-native, annual upland grass species. Riparian habitat is present around the ponds and along the River. The Project will conserve the open space character of the site and includes the establishment of native plants to enhance habitat and provide visual screening.

The Trail would be extended by constructing a 22-foot wide multi-purpose trail approximately 2.5 miles long. The proposed trail would be 12-feet wide paved surface, a parallel 8-foot wide hard natural surface for equestrian use, and a 2-foot buffer (opposite the natural surface area). The trail will generally follow the alignment as seen in the enclosed illustration. However, other trail alignments such as a “commuter trail alignment” and a “river’s edge trail alignment” may be considered.

A wide staircase with bicycle guides may be constructed from Spano Park to the trail below. Pedestrian and bicycle access to the proposed trail will be provided at three locations: Spano Park, and the W. Riverview Drive and Churchill Ave entrances to the Bluff Trail. The Bluff Trail is

an existing neighborhood trail located on the historic Perrin Canal Bench. A proposed 12-foot wide trail will connect the Bluff Trail to the proposed Trail extension. The connecting trail would be constructed on the steep bluff slope.

The proposed Project will include a controlled vehicle entrance and a 50-stall parking lot adjacent to SR 41. Access to the parking lot will be provided by the Perrin Avenue undercrossing of SR 41. The parking area will provide trail access in accordance with the Americans with Disabilities Act. The parking lot will include up to 3 horse trailer stalls, potable water and a two-vault accessible restroom. A second single vault accessible restroom will be provided along the Trail near the Spano Park stairway.

The trail will be landscaped at intervals with native vegetation for habitat enhancement and shade. Vegetation creating shade and visual buffers will be established at the parking lot. Landscaping will be irrigated until vegetation is permanently established. Picnic tables, benches, and wildlife observations areas will be provided along the trail at various locations. Unimproved hiking paths to the riverbank will be connected to the trail. The paths may be widened to 6 feet and overlaid with decomposed gravel surface. These paths would not be landscaped. No structures would be constructed within the State Designated Floodway.

Alternatives

In addition to the Project as proposed, four alternatives will be evaluated in the EIR. The alternatives are:

1. Added Parking: In this alternative an additional controlled vehicle entrance and a public 40-stall parking lot between the H pond and E pond will be provided. A paved road from W. Riverview Drive to the parking lot will provide access. This parking area would not accommodate horse trailers. The added parking could be approved in combination with the proposed or alternative trail alignments.

2. Commuter Trail Alignment: In this alternative, the multi-use Trail would be aligned about 300 feet from the base of the bluff. The trail alignment as described in the proposed project description would not be constructed; however, all other amenities described in the proposed project, including the proposed parking lot, landscaping and restrooms will be provided, and the additional parking as described in Alternative 1 may be provided.

3. River's Edge Trail Alignment: In this alternative the multi-use Trail would be aligned on the river's edge in the more southerly portion of the site, and remain as proposed in the northerly portion of the site. All other amenities described in the proposed project, including the parking lot, landscaping and restrooms will be provided, and the additional parking as described in Alternative 1 may be provided.

4. No Parking: In this alternative no public parking or trailering would be provided on-site. The Trail would be constructed on the proposed or alternative trail alignments. All

entrances would be walk-in/bicycle-in only. All amenities other than the entrance station and parking landscaping described in the proposed project would be provided.

Environmental Resources Potentially Affected

Aesthetics: The proposed project may affect the open space setting and scenery of the San Joaquin River and floodplain.

Air Quality: The proposed project may affect air quality during construction.

Biological Resources: The proposed project may affect the habitat of plants, fish and wildlife species.

Cultural Resources: The proposed project may affect cultural or paleontological resources.

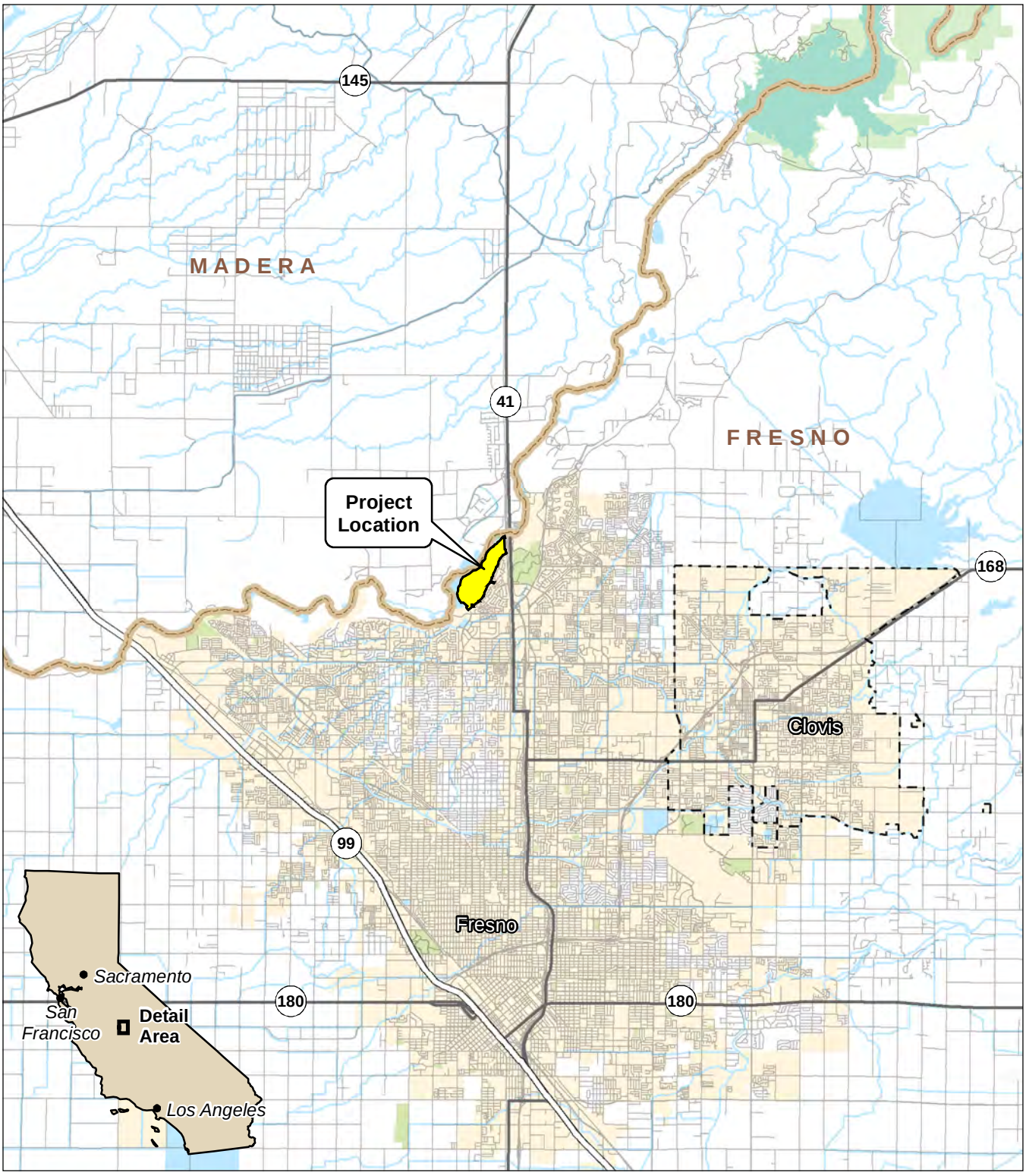
Greenhouse Gas Emissions: The proposed project may generate greenhouse gas emissions.

Hydrology and Water Quality: The proposed project may affect water quality and drainage patterns of the floodplain.

Land Use Planning: The proposed project may conflict with local land use policies.

Recreation: The proposed project may increase visitor use and affect public recreation services.

Transportation and Traffic: The proposed project may affect traffic and increase the potential for street parking by visitors.



URS

LOCATION OF THE RIVER WEST EATON TRAIL EXTENSION PROJECT

Figure 1

4,500 CUBIC FEET/SECOND FLOW LINE

SPANO PARK STAIRCASE RESTROOMS

PROJECT BOUNDARY

RIVER ACCESS TRAIL

SEASONAL FORD

PROJECT BOUNDARY

CHURCHILL AVE. ENTRANCE TO BLUFF TRAIL

PICNIC AREA WITH NATURAL SHADE

EXISTING BLUFF TRAIL

VIEW DECK WITH NATURAL SHADE

HABITAT RESTORATION PROJECTS

BLUFF TRAIL ACCESS TO EATON TRAIL

RIVERVIEW DR. ACCESS TO BLUFF TRAIL VIEWING AREA

RIVER ACCESS TRAIL

PEDESTRIAN TRAIL

PRIVATE ACCESS ROAD

NON-FLAMMAPLE EVERGREEN VEGETATION BUFFER

8-FT EQUESTRIAN TRAIL

12-FT LEWIS S EATON TRAIL

2-FT TRAIL SHOULDER

RIVER ACCESS TRAIL

PERRIN AVENUE PARKING LOT

EXIST. FENCE

LEGEND
- PARK BENCH
- FIRE HYDRANT
- PET STATION
- PARKING PAY STATION
- LIGHT POLES
- TWO-RAIL SPLIT CEDAR FENCE

SIGNAGE
- E ENTRANCE
- R REGULATORY
- I INTERPRETIVE
- S SAFETY/WARNING
- D DIRECTIONAL/INFORMATIONAL

- GRAVEL/NATURAL SURFACE
- ASPHALT CONCRETE (AC) PAVING
- UNIMPROVED RIVER ACCESS TRAIL

O POND

I POND

H POND

E POND

PRIVATE PROPERTY

NEWARK AVE

N ABBY ST

N ALDEN AVE

CHURCHILL AVE

PERRIN AVE

STATE ROUTE 41

1"=800'

0 150' 300' 600' 900' 1200'

GRAPHIC SCALE

IF THIS DRAWING IS NOT 34" X 22" THEN SCALE ACCORDINGLY

SINGLE-VAULT RESTROOM @ PICNIC AREA

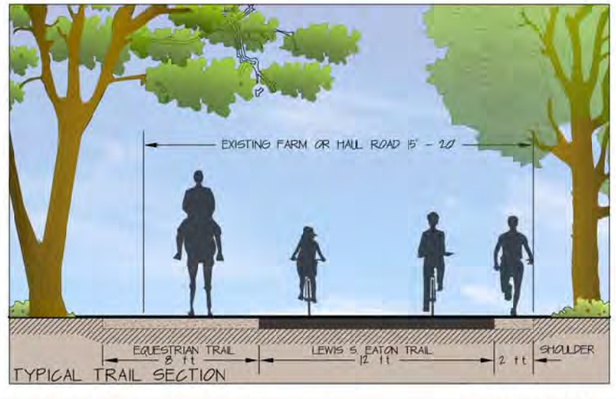
PET STATION

INTERPRETIVE SIGN

EXAMPLE PARKING LOT VIEW

TWO-RAIL SPLIT CEDAR FENCING

DOUBLE-VAULT RESTROOM AT PERRIN PARKING LOT



TYPICAL TRAIL SECTION

URS

PROPOSED PROJECT

RIVER WEST FRESNO, LEWIS S. EATON TRAIL EXTENSION PROJECT

SAN JOAQUIN RIVER CONSERVANCY STATE OF CALIFORNIA

City of FRESNO

PUBLIC WORKS DEPARTMENT

CAPITAL MANAGEMENT DIVISION · 559-621-8650
2600 FRESNO STREET, RM 4016 · FAX 559-488-1045
FRESNO CA 93721-3615
WWW.FRESNO.GOV

NOTICE OF PUBLIC OPEN HOUSE FOR THE LEWIS S. EATON TRAIL - RIVER WEST PROJECT

DATE: **Monday, November 17, 2008**

TIME: **4:00 – 7:00PM**

LOCATION: **Office of H.T. Harvey & Associates**
7815 N. Palm Avenue, Suite 310
Fresno, CA 93711

HOSTED BY: **City of Fresno**
San Joaquin River Conservancy
San Joaquin River Parkway and Conservation Trust
URS Corporation and H.T. Harvey & Associates

The City of Fresno and the San Joaquin River Conservancy invite you to an Open House to review and discuss the proposed extension of the Lewis S. Eaton Trail. This segment of the trail will be from Highway 41 westward toward Spano Park along the San Joaquin River and includes multi-use trails and public parking areas. Graphical displays showing the project area and the preliminary conceptual design will be available at the Open House to provide details of the proposed trail. Public input is encouraged during the development of this project.

The Open House will be held at the offices of H.T. Harvey & Associates between the hours of 4:00 and 7:00 PM on November 17, 2008. Representatives from the City of Fresno, the San Joaquin River Conservancy and the San Joaquin River Parkway and Conservation Trust will be available at this time to discuss the project and answer any questions. Please see attached Exhibit "A" for directions to their office.

If you cannot attend, you may send comments to Randall Morrison with the City of Fresno at the following address:

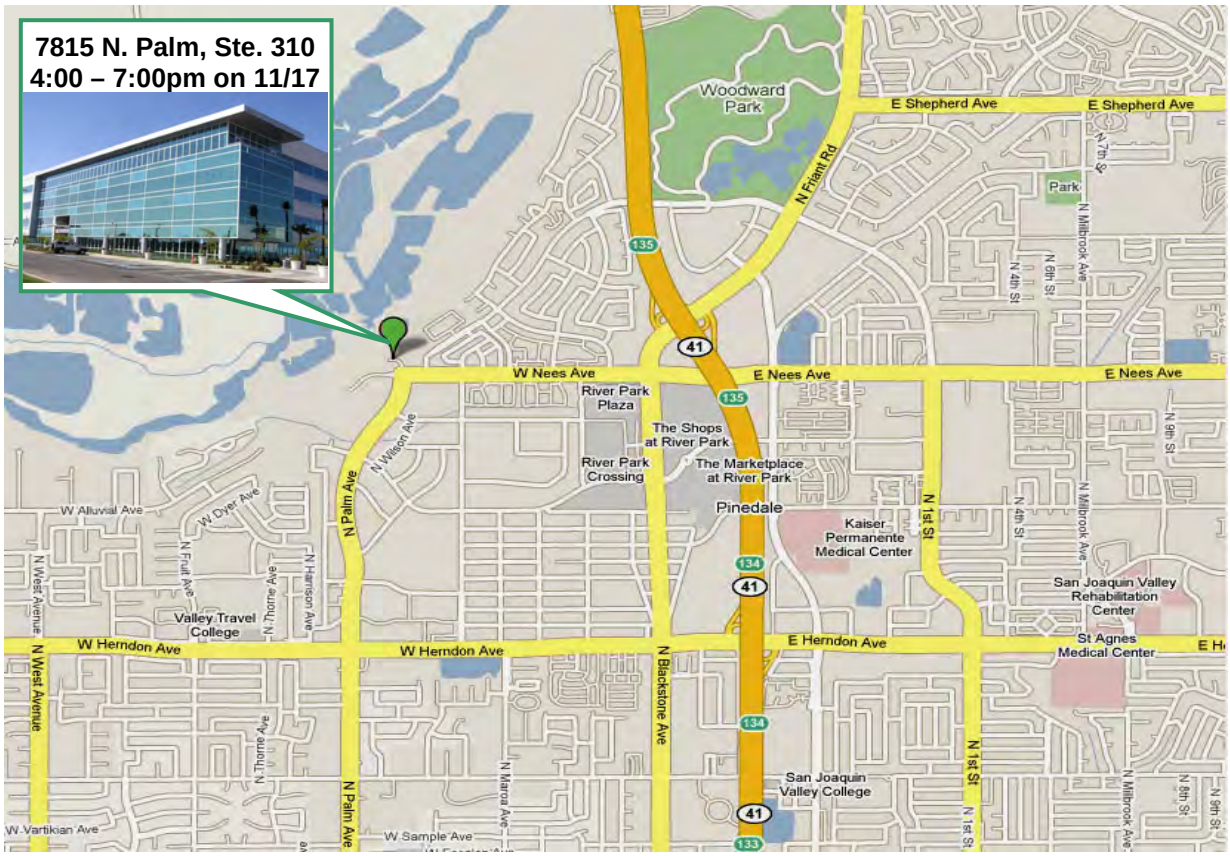
Mr. Randall Morrison, Project Manager
City of Fresno, Department of Public Works
2600 Fresno Street, 4th Floor
Fresno, CA 93721
randall.morrison@fresno.gov

OPEN HOUSE INFORMATION

November 17, 2008

4:00-7:00pm

Directions: The office of H.T. Harvey & Associates is located at the north end of Palm Avenue at Nees Avenue. Turn into the shopping center at the Daily Grill and go west past GB3. The office is located in the 4-story office building (green and grey) on the third floor.



RIVER WEST
LEWIS S. EATON TRAIL

Exhibit "A"

Introduction

The San Joaquin River Conservancy (Conservancy) as the Lead Agency is preparing an Environmental Impact Report (EIR) for the River West Eaton Trail Extension Project pursuant to the California Environmental Quality Act (CEQA).

The Conservancy was created by the California Legislature in 1992 through the passage of the San Joaquin River Conservancy Act (Public Resources Code Section 32500) to develop and manage the San Joaquin River Parkway, a planned 22-mile natural area and wildlife corridor extending from Friant dam to State Route 99, with interconnected trails, recreation and outdoor features. The mission of the San Joaquin River Conservancy is to preserve and restore San Joaquin River lands having ecological, scenic or historic significance, to educate the public on the need for stewardship, to research issues affecting the river, and to promote educational, recreational and agricultural uses consistent with the protection of the river's resources.

Specifically the Conservancy activities are to implement the San Joaquin River Parkway Master Plan, a 22-mile regional greenspace and wildlife corridor along both sides of the river extending from Friant Dam to Highway 99, with an interconnected trail system and recreational and educational features.

This report describes the proposed project and four alternatives and summarizes the comments received during the public scoping period, June 9, 2014 through July 8, 2014. Over two hundred comments cards, emails and letters were submitted to the Conservancy. Each comment was reviewed and summarized in Table 1 starting on page 5.

Summary of NOP Responses

The Notice of Preparation (NOP) is a brief notice sent by a Lead Agency, San Joaquin River Conservancy (Conservancy), to notify Responsible Agencies, Trustee Agencies, and the Office of Planning and Research that the Lead Agency plans to prepare an Environmental Impact Report (EIR). The purpose is to seek guidance from those agencies "as to the scope and content of the environmental information to be included in the EIR" (CEQA Guidelines Section15375).

The following provides a summary of the responses to the NOP, including all written comments mailed, emailed, or submitted at the public scoping meeting. The comments address the content of the EIR, including concerns about potential impacts and the scope of the analysis to be covered in the EIR. A more detailed matrix of comments is provided below in Table 1.

NOP

A NOP was set by certified delivery to the State Clearinghouse on June 4, 2014 and was received on June 5, 2014. The NOP requested public agencies provide their views as to the scope and

content of the environmental information which is germane to their statutory responsibilities in connection with the proposed project. The project description, location, alternatives and the potential environmental effects were briefly described. The NOP announced a 30 day agency and public scoping/comment period from June 9 to July 8, 2014. The NOP also announced a public scoping meeting for June 17, 2014.

The NOP was posted to the home web address of the San Joaquin River Conservancy at www.sjrc.ca.gov. In addition copies of the NOP were mailed to the City of Fresno, Fresno County and Madera County and to various stakeholder groups.

Public Scoping Meeting

An open-house public scoping meeting was held on June 17, 2014, from 4:30 PM to 7:00 PM at the Pinedale Community Center, 7170 N. San Pablo Avenue, Fresno, California 93650. Postcard invitations were set to addresses within ¼ mile of the project boundary. The proposed project description, location, alternatives briefly described on maps and handouts. Individuals who attended the scoping meeting were encouraged to provide written comments.

General Comments

Comments received to date primarily focus on concerns related to environmental issues that should be addressed in the EIR. There were a number of comments that supported or opposed the proposed project or one or more of the proposed four alternatives. Key general comments include:

- Access to the River
- ADA, bicycle, vehicle, pedestrian, equestrian access
- Traffic
- Effects to adjacent residential neighborhoods
- Parking – location
- Recreation
- Air Quality / pollution
- Public safety (drugs, alcohol, vagrants)
- Fire
- Support for a specific alternative
- Consistency with the City of Fresno Draft General Plan

Public Agency Comments

Comments from the City of Fresno (City) and Madera County communicated their position on the proposed project.

City of Fresno

The City submitted two comment letters. In the first letter the City expressed concern about:

- Parking in residential neighborhoods particularly at W. Riverview Drive;
- The City's draft general plan states parking should be adjacent to SR 41;
- There should be limited access (cyclist and pedestrians) into Riverview Drive area;
- Public parking should not conflict with the residential nature of the neighborhood;
- Trail alignment should be aligned to provide maximum public enjoyment and to allow a buffer for adjacent property owners.

In the second letter, the City requested a financial analysis associated with the cost of operations and maintenance be prepared. Also the City informed the Conservancy that it was unlikely to fund the cost of operations once the project is completed.

Madera County

Madera County expressed concern that eliminating all access to the Eaton Trail Extension in the City of Fresno would place an undue burden on the citizens of Madera County, increase vehicle miles traveled, exacerbate air quality and increase road maintenance costs. Access to the trail should be proposed to the jurisdiction that would benefit and utilize the project the most.

Project Description

The San Joaquin River Conservancy is proposing to extend the existing Eaton Trail from State Route 41 downstream to Spano Park within the San Joaquin River Parkway. The trail would be extended by about 2.5 miles, 22-feet wide with a 12-foot wide paved surface, a parallel 8-foot wide hard natural surface, and a 2-foot buffer. The trail will provide opportunities for equestrian use, hiking, bicycling, fishing and nature observation, consistent with the San Joaquin River Parkway Master Plan.

A wide staircase with bicycle guides may be constructed from Spano Park to the trail below. Pedestrian and bicycle access to the proposed trail will be provided at three locations: Spano Park, and the W. Riverview Drive and Churchill Avenue entrances to the Bluff Trail.

A proposed 12-foot wide trail will connect the Bluff Trail to the proposed Trail extension. The connecting trail would be constructed on the steep bluff slope.

The proposed Project will include a controlled vehicle entrance and a 50-stall parking lot adjacent to SR 41. Access to the parking lot will be provided by the Perrin Avenue undercrossing of SR 41. The parking area will provide trail access in accordance with the Americans with Disabilities Act. The parking lot will include up to 3 horse trailer stalls, potable water and a two-vault accessible restroom. A second single vault accessible restroom will be provided along the Trail near the Spano Park stairway.

The trail will be landscaped at intervals with native vegetation for habitat enhancement and shade. Vegetation creating shade and visual buffers will be established at the parking lot. Landscaping will be irrigated until vegetation is permanently established. Picnic tables, benches,

and wildlife observations areas will be provided along the trail at various locations. Unimproved hiking paths to the riverbank will be connected to the trail. The paths may be widened to 6 feet and overlaid with a natural/gravel surface.

Alternatives

In addition to the Project as proposed, four alternatives will be evaluated in the EIR. The alternatives are:

1. Added Parking: In this alternative an additional controlled vehicle entrance and a public 40-stall parking lot between the H pond and E pond will be provided. A paved road from W. Riverview Drive to the parking lot will provide access. This parking area would not accommodate horse trailers. The added parking could be approved in combination with the proposed or alternative trail alignments.

2. Commuter Trail Alignment: In this alternative, the multi-use Trail would be aligned about 300 feet from the base of the bluff. The trail alignment as described in the proposed project description would not be constructed; however, all other amenities described in the proposed project, including the proposed parking lot, landscaping and restrooms will be provided, and the additional parking as described in Alternative 1 may be provided.

3. River's Edge Trail Alignment: In this alternative the multi-use Trail would be aligned on the river's edge in the more southerly portion of the site, and remain as proposed in the northerly portion of the site. All other amenities described in the proposed project, including the parking lot, landscaping and restrooms will be provided, and the additional parking as described in Alternative 1 may be provided.

4. No Parking: In this alternative no public parking or trailering would be provided on-site. The Trail would be constructed on the proposed or alternative trail alignments. All entrances would be walk-in/bicycle-in only. All amenities other than the entrance station and parking landscaping described in the proposed project would be provided.

Scoping Comments

The following Table 1 is a summary of public comments. Each comment was recorded by number, the name of individual providing the comment (if available), type of comment, date comment was received, and the CEQA issue area.

Table 1 Scoping Comment Summary Table

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
1	Public Scoping Meeting Card	June 17, 2014	Air Quality/ Pollution/ Access	• Effects of air pollution from driving to Madera and back to access the property • The trail should be away from the river to prevent flooding. • Provide access from Fresno for vehicles, pedestrians, bicycles, and Americans with disabilities
2	Public Scoping Meeting Card	June 17, 2014	Access (ADA, bicycles, vehicles, boats, etc.)	• Provide access for vehicles and boats on Fresno side. Prefers the Commuter Trail Alternative. • Provide boat ramp on Fresno side of river
3	Public Scoping Meeting Card	June 17, 2014	Alternatives/ Access/ Recreation	• Supports Alternatives 1 and 2 • Prefers boat access on the Fresno side
4	Public Scoping Meeting Card	June 17, 2014	Parking/ Alternative	• Does not support access through residential neighborhoods. • Does not support Commuter Trail Alignment. • Supports River's edge alignment. • No access to parking through Riverview Drive
5	Public Scoping Meeting Card	June 17, 2014	Access (ADA, bicycles, vehicles, boats, etc.)	• The parkway should be available for all people: handicap, bicyclist, kayakers, equestrian, and picnickers.
6	Public Scoping Meeting Card	June 17, 2014	Access/ Air Quality/ Parking/ Recreation	• Access to a boat launch as close to the river. • Effects of pollution would be from driving 10 miles roundtrip. • There should be parking and a road at Del Mar that goes down to the river. This option should be considered if the Palm and Nees area can't be implemented.
7 Vince Correll	Public Scoping Meeting Card	June 17, 2014	Access/ Alternatives	• There needs to be parking and boat access. • Fully supports Alternative 1.
8	Public Scoping Meeting Card	June 17, 2014	Trail distance from river/ Parking/ Security/ Fire	• The trail should be as close to the river as possible because of fire hazards during the summer • There should be parking at the West side of the project, not in the center • Wants security due to people littering the area.

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
9	Public Scoping Meeting Card	June 17, 2014	Safety/ Traffic Control	• The steep incline from Woodward Park to Old State Route 41 poses a risk to people and cyclists due to traffic • Does not support staircase at Spano Park for bicyclists • Request safety signs on trails.
10 Carolyn Romersa	Public Scoping Meeting Card	June 17, 2014	Access (ADA, bicycles, vehicles, boats, etc.)	• Would like easier access from the Pinedale area instead of going to Madera to access the river.
11	Public Scoping Meeting Card	June 17, 2014	Air Quality/ Access	• The air quality will diminish if one has to drive all the way to Madera to access the river. • Access for everyone, including Americans with disabilities, people with strollers, wheelchairs, and picnickers.
12	Public Scoping Meeting Card	June 17, 2014	Access/ Air Pollution	• There should be access for vehicles, bikes, and boats via Audubon Avenue • Everything is too far away for convenience; it would create more air pollution due to driving.
13	Public Scoping Meeting Card	June 17, 2014	Water Quality/ Parking	• Main concerns are the water quality issues. • There needs to be parking on the Fresno side.
14	Public Scoping Meeting Card	June 17, 2014		• Supports proposed project.
15	Public Scoping Meeting Card	June 17, 2014	Access (ADA, bicycles, vehicles, boats, etc.)	• There needs to be convenient access for kayaks and canoes to the Fresno side to prevent driving 10 miles to access the river. • Opposes cement trailway • Everyone should be able to enjoy this park and it will create many positive effects on the city.
16	Public Scoping Meeting Card	June 17, 2014	Alternatives	• Supports Alternatives 1 and 2. Would like parking in the river bottom. Would like there to be bike and vehicle access, since the slope is too steep near State Route 41.
17	Public Scoping Meeting Card	June 17, 2014	Alternatives	• Supports both Alternatives 2 and 3. • Supports access via Riverview Drive
18	Public Scoping Meeting Card	June 17, 2014	Access/ Vegetative Restoration	• Would like to have vehicle, bike, and boat access from the Fresno side. • Make sure there will be plenty of plants and that it will be properly maintained. • Bike trail added at Del Mar and Audubon.

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
19	Public Scoping Meeting Card	June 17, 2014	Access/ Air Pollution/ Aesthetics	• There needs to be parking with handicap access • Available access for bikes will reduce car use, which will reduce the amount of emissions • Having vault bathrooms available will reduce environmental impacts. Also, having plenty of shaded picnic areas will encourage use during the warm summer months.
20 Bob Specht	Public Scoping Meeting Card	June 17, 2014	Traffic	• Allowing access in a residential area will create problems. Vehicles should enter at Palm and Nees.
21	Public Scoping Meeting Card	June 17, 2014	Access (ADA, bicycles, vehicles, boats, etc.)	• Would like to have bicycle access near Audubon, which will encourage others to enjoy the park.
22	Public Scoping Meeting Card	June 17, 2014	Alternatives/ Access	• Fully supports the proposed project, Alternative 1, and would like to have boat launches.
23	Public Scoping Meeting Card	June 17, 2014	Alternatives	• Supports Alternative 2, which will have the least impact on wildlife and encourage bicycle use. • Does not support parking at River bottom.
24	Public Scoping Meeting Card	June 17, 2014	Security/ Homeless/ Fire/ Access	• Concerned that there will not be enough security to make people feel safe from homeless, littering, and fire hazards. • Would like to have access, including boat access, from the Palm and Nees area. • Concerned about not having access from Fresno side.
25	Public Scoping Meeting Card	June 17, 2014	Alternatives/ Safety/ Air Pollution	• Fully supports Alternatives 1 and 2 for running and cycling, but doesn't believe Alternative 3 will do well. There are safety concerns including sharp turns and curves in the area. • Alternatives 1 and 2 will help reduce emissions.
26	Public Scoping Meeting Card	June 17, 2014	Alternatives	• Supports both Alternative 1 and 2 for increased parking near Del Mar and Riverview Drive.
27	Public Scoping Meeting Card	June 17, 2014	Access	• There needs to be more parking or else there will be more impacts.

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
28	Public Scoping Meeting Card	June 17, 2014	Parking/ Traffic/ Air Quality/ Environmental protection/ Public engagement	• Comment card 28 listed the following issues. • Parking: Additional parking would be beneficial for people to access the river, easily. • Traffic flow would be reduced from having to drive to Madera and back. • Air Quality would improve as stated above. • Environmental protection: Having awareness to not disturb wildlife in the area.
29	Public Scoping Meeting Card	June 17, 2014	Alternatives	• Would like to have a combination of Alternatives 1 and 2, which would have a trail and river access.
30	Public Scoping Meeting Card	June 17, 2014	Alternatives/ Parking	• Supports Alternative 2, but would like to have a connection from south of Palm. • Would also like parking at Del Mar to prevent having to drive 10 miles to Madera and back.
31	Public Scoping Meeting Card	June 17, 2014	Alternative/ Access/ Recreation	• Alternative two is the best option. • Would like a boat launch and loading area for easier access • Create a separate equestrian and bicycle/ pedestrian trail so users won't collide with each other.
32	Public Scoping Meeting Card	June 17, 2014	Alternatives	• Combining Alternatives 2 and 3 would include the commuter trail and river edge routes. Alternative 1 beneficial with the added parking. • Opposes stairs at Spano Park
33	Public Scoping Meeting Card	June 17, 2014	Safety/ Alternatives	• Provide a service road from Riverview Drive for use in case of emergencies, such as fire. Can also be used as an access point for bicycles and maintenance • Supports Alternative 1.
34 Ernestine M.	Public Scoping Meeting Card	June 17, 2014	Access	• Entrance at Palm and Nees Avenue should be made so the public can have access to the river.

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
35	Public Scoping Meeting Card	June 17, 2014	Alternatives/ Pollution/ Aesthetics	• Supports both Alternatives 1 and 2. Alternative 1 is good for handicapped people and will reduce emissions from driving to Madera and back. Alternative 2 is the best option for cyclist and will reduce the amount of vehicular traffic. • Bathrooms should be accessible to everyone, including those who have disabilities. • Opposes Alternatives 3 and 4.
36 Elaine Guerrero	Public Scoping Meeting Card	June 17, 2014	Access	• There should be an entrance to the river from Palm and Nees Avenues.
37	Public Scoping Meeting Card	June 17, 2014	Parking/ Security/ Fire	• Spano Park has the most parking and access to the river. • There is a concern about fire hazards • Illegal parking, barbecues, and people camping needs to be policed.
38	Public Scoping Meeting Card	June 17, 2014	Access	• There needs to be access for the handicap, kayaks, and canoes on the Fresno side, as well as access for bicyclist from Riverview Drive. • Supports Alternatives 1 and 2.
39	Public Scoping Meeting Card	June 17, 2014	Alternatives/ Pollution	• Supports Alternatives 1 and 2. • Alternative 1 needs to reduce emissions. Parking at 41 is not accessible for the handicapped. • Alternative 2 is the best option environmentally as it allows people to commute by bike.
40	Public Scoping Meeting Card	June 17, 2014	Parking	• Does not support parking at Perrin Avenue near Interstate 41. • Does support parking in Riverview Drive.
41	Public Scoping Meeting Card	June 17, 2014	Alternatives	• Supports Alternatives 1, 2, and 3, but suggests a few things. Alternative 1 needs to accommodate recreational interests. • Alternative 2 will benefit the community by encouraging fitness. • Alternative 3 will allow people to enjoy the sights.
42	Public Scoping Meeting Card	June 17, 2014	Alternatives/ Air Quality	• Alternative 1 is overdue for parking. • Alternative 2 will encourage people to ride bikes, which will reduce emissions and improve health

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
43	Public Scoping Meeting Card	June 17, 2014		• Opposes parking in river bottom (Alternatives 1 and 3).
44	Public Scoping Meeting Card	June 17, 2014	Access/ Recreation	• Would like access from the Fresno side to prevent driving all the way to Madera. • Also suggests the Palm and Nees area as a potential parking area. Also would like boat and bicycle access.
45	Public Scoping Meeting Card	June 17, 2014	Alternatives	• Supports Alternatives 1 and 3, but would like them to be combined. Wants vehicle and bicycle access at Del Mar/ Audubon • Parking near a Fresno access point • Supports a paved bicycle trail at Del Mar/ Audubon • Connector route linking Fresno and Madera.
46 Herb Morgenstern	Public Scoping Meeting Card	June 17, 2014	Alternatives/ Fire/ Biology	• Supports Alternative 4, No Parking. Does not support the parking in Riverview/ Churchill. • Opposes opening an access point to the public due to fire hazards and wildlife disruptions. • Not consent of Draft General Plan.
47	Public Scoping Meeting Card	June 17, 2014		• Supports Alternative 1. Desires Churchill gate entrance to Bluff Trail to be paved. • Supports paved trail at river's edge and commuter trail alignments.
48 David Grubbs	Public Scoping Meeting Card	June 17, 2014	Access (ADA, bicycles, vehicles, boats, etc.)	• Would like access to the river from Fresno. Would also like access for the handicapped and boats. • Improve Fresno image for open space.
49	Public Scoping Meeting Card	June 17, 2014	Access (ADA, bicycles, vehicles, boats, etc.)	• Would like to have access to the river from Fresno.
50	Public Scoping Meeting Card	June 17, 2014	Alternatives/ Access	• Supports Alternative 2 because it has the best access for bicycles to access the river. • Would like a 12-foot paved trail located at Riverview Drive connecting to whichever trail is chosen. • Pave Bluff Trails

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
51	Public Scoping Meeting Card	June 17, 2014	Alternatives	• Supports Alternative 1. Broader public access.
52	Public Scoping Meeting Card	June 17, 2014	Access (ADA, bicycles, vehicles, boats, etc.)	• Would like to have access for vehicles on the Fresno side • Provide easier kayak, boat, and provide bicycle access via Del Mar
53	Public Scoping Meeting Card	June 17, 2014	Biology/ Safety	• Public access has disrupted wildlife near Freeway 41. Nobody is overseeing the area, which has caused littering, including drugs noise, unleashed pets, and alcohol.
54	Public Scoping Meeting Card	June 17, 2014	Access/ Air Quality	• Would like to have access for all, along with parking at Del Mar, as well as a boat launch. • Making the roundtrip to Madera and back would cause even more pollution.
55	Public Scoping Meeting Card	June 17, 2014	Alternatives/ Parking/ Air Quality	• Supports Alternative 1. Wants to make sure there will be an adequate amount of parking without inconveniencing the homeowners.
56	Public Scoping Meeting Card	June 17, 2014	Alternatives/ Air Quality/ Access/ Recreation	• Believes Alternative 1 will reduce the pollution from having to drive to Madera and back. • Alternative 2 will create better bicycle access to the river.
57	Public Scoping Meeting Card	June 17, 2014	Access/ Recreation	• Would like to have vehicle, boat, and pedestrian access to the river. • Mentioned how the City of Fresno lacks green space.
58	Public Scoping Meeting Card	June 17, 2014	Parking	• Doesn't want parking to go in until the Spano property is accessible.
59	Public Scoping Meeting Card	June 17, 2014	Air Quality/ Access	• Making the trip to Madera and back to access the river will create more pollution. Would like to have a boat launch, parking, and access for the handicapped. • Possible to have access at Audubon and Del Mar.
60	Public Scoping Meeting Card	June 17, 2014	Access/ Air Quality/ Noise	• Wants access from the Fresno side, access to the river. Having to drive 10 miles roundtrip will create more pollution and increase the noise. • Access provided to everyone who uses the trail to walk, bike, and boat, including Americans with disabilities.

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61	Public Scoping Meeting Card	June 17, 2014	Alternatives	• Supports Alternative 1. Believes the river needs to be available to everyone. Adding parking will make it easier to access the river.
62 Gerald D. Vinnard	Public Scoping Meeting Card	June 17, 2014	Access	• Wants there to be access to the river from Riverview Drive. Also would like kayak and canoe, and bicycle access.
63	Public Scoping Meeting Card	June 17, 2014	Access/ Air Quality	• Need direct access to the river from the Fresno side. This will prevent air quality issues and allow people with disabilities, elderly, and people with children to have access.
64	Public Scoping Meeting Card	June 17, 2014	Access/ Maintenance	• Prefers to have access from the old 41. • Concerned with maintenance on and around the trail, graffiti, and trash. Would rather have a dirt trail as opposed to a concrete or asphalt trail, as it is more natural and is less damaging to the wildlife/ vegetation. • Opposes parking from Del Mar
65	Public Scoping Meeting Card	June 17, 2014	Access/ Biology	• Would like to have access for vehicles and boats. Doesn't want to have to drive more miles than necessary to access the river. • Prefers to keep the trail away from wildlife.
66	Public Scoping Meeting Card	June 17, 2014	Air Quality/ Maintenance	• Making the trip to Madera and back will results in excess pollution. • Would like trail with porous material, as opposed to asphalt or concrete.
67	Public Scoping Meeting Card	June 17, 2014	Parking	• Would like to have more parking to accommodate everyone that wants to access the river.
68	Public Scoping Meeting Card	June 17, 2014	Access/ Recreation	• Wants the river to be accessed by everyone. Concern that people with disabilities, canoers, and horseback riders won't be able to use it. • The city of Fresno ranks last in cities that have park space. By having this park, it would benefit the city.
69	Public Scoping Meeting Card	June 17, 2014	Alternatives	• Supports Alternative 1. Likes the idea of not having to cross to the Madera side to access the river in Fresno.

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70 Sam Lane	E-mail	June 18, 2014	Consistency with the General Plan/ Parking/ Traffic	• Is the Conservancy contempt with the February vote on amending the General Plan? • Parking at Riverview Drive creates problems, including traffic and public annoyances. Traffic can extend north and south on Audubon.
71 Brandon Dorman	E-mail	June 20, 2014	Public Access	• Supports the proposed project • Works with underserved youth so they can experience outdoor activities.
72 Charlie McMurray and Family	E-mail	July 2, 2014	Access (ADA, bicycles, vehicles, boats, etc.)	• Supports the proposed project. Would like bike trail continued, but to State Route 99. • Parking should be kept at a minimum.
73 Mr. Walters	E-mail	July 2, 2014	Access (ADA, bicycles, vehicles, boats, etc.)/ Aesthetics	• Does not support access near the Del Mar entrance. Would rather have access at Highway 41. • Does not support parking in river bottom because it will ruin the preservation of the land.
74 Sue Fielden	E-mail	July 2, 2014	Access (ADA, bicycles, vehicles, boats, etc.)	• Likes the idea of having access for bikes, boats, and pedestrians. Does not support parking at the river bottom. • Suggestion: Having access behind GB3.
75 Marc Stamper	E-mail	July 2, 2014	Access/ Air Quality	• Wants access to the river from Fresno. If not, air pollution will increase. • Would also like to have bicycles and pedestrian access.
76 Alyssa Thurber	E-mail	July 2, 2014	Aesthetics/ Air Quality/ Access/ Public Engagement	• There needs to be doggy bags to control dog waste on the trail. • Would like to have access from the Fresno side, which would decrease the amount of emissions. • Add multiple points of entry to canoes and kayaks • Get the public involved to volunteer when building this trail. This will help decrease costs.
77 Ellen Hemink	E-mail	July 2, 2014	Access/ Air Quality	• Would like to have access to the river from the Fresno side. This will reduce pollution and the cost to drive there. • Likes the idea of having boat access • Fully supports the proposed project.

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78 Donald R. Slinkard	E-mail	July 2, 2014	Access/ Air Quality	• Access to the river from the Fresno side means less driving and less pollution. • Would like bike access from Del Mar and Audubon.
79 Arlene Costa	E-mail	July 2, 2014	Access/ Parking	• Supports the proposed project • Believes Palm and Nees entrance is public access and better because there is parking space set aside.
80 Alan Kawakami	E-mail	July 2, 2014	Public Access	• Has there been approval of subdivisions adjacent/ abutting the San Joaquin River?
81 Neil Angelillo	E-mail	July 2, 2014	Air Quality/ Access	• Concerned about the air quality from having to drive to Madera and back. • Would like to have boat and bicycle access to encourage use of the river. Likes the idea of using Del Mar as an entrance.
82 Lesly Rife	E-mail	July 2, 2014	Access	• Would like access from Fresno via Del Mar and Audubon. • It would give the residents easier access and will benefit the environment from drive less.
83 Robert G. Ware	E-mail	July 2, 2014	Access	• Supports the proposed project with a few suggestions: • Vehicle access from Fresno to prevent driving 10 miles roundtrip • Boat access as close to the project site as possible • Bicycle access from Del Mar and Audubon.
84 Matt Renney	E-mail	July 2, 2014	Access	• Would like to have access to the river bottom. Believes Del Mar and Audubon is a great access point. • States that the parkway will benefit the homeowners living in the area.
85 Sue Stone	E-mail	July 2, 2014	Access	• Wants access from the Fresno side so cyclists and people with boats can enjoy this park.
86 Richard Sloan	E-mail	July 2, 2014	Access	• Believes that access at Palm and Nees could be developed to have two one-lane roads to solve the parking issue.

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87 Ray Falkenburg	E-mail	July 2, 2014	Aesthetics and Recreation/ Transportation and Traffic	• Installing a pedestrian bridge connecting ponds O, I, and E would make access easier • Supports having access from Spano Park. Del Mar and Audubon are ideal for bicycle access. • Envisions Woodward Park as a parking area for bicycle access.
88 Michael Schuh	E-mail	July 2, 2014	Alternatives/ Access	• Supports Alternative 2 with additional parking. • Doesn't support access near Riverview Drive and Churchill due to safety concerns.
89 Charles LaRue	E-mail	July 2, 2014	Access (ADA bicycles, vehicles, boats, etc.)/ Recreation	• Would like to have access from the Fresno side to cut down on driving time. • Would also like non-motorized boat and bicycle access.
90 David and Bach-Tuyet Brown	E-mail	July 2, 2014	Alternatives	• Supports Alternative 1. The project would add a lot of parking to the city with minimal environmental impacts. • Recommend reasonable access for Fresno citizens.
91 Sharon Koehler	E-mail	July 2, 2014	Access	• Would like access near Palm and Nees so those that work in the area can access the river during lunch hours.
92 Richard Jennings	E-mail	July 2, 2014	Parking	• Supports the proposed project. Wants parking so that it will be more accessible to the public.
93	E-mail	July 2, 2014	Access	• Recommends unlocking the gate and pave the trail at Palm and Nees for access.
94 Jim Richardson	E-mail	July 2, 2014	Access	• Supports vehicle access at Palm and Nees. • Does not support an entrance at Del Mar and Audubon due to increased traffic in a residential area. • Supports bicycle and pedestrian access along the river bottom.

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95 Demi Mehas	E-mail	July 2, 2014	Alternatives/ Access/ Consistency with General Plan	• Does not support Alternative 1 or access from Del Mar • Does not support traffic on river bottom • The trail should only be for pedestrians, bicyclists, horseback riders, and boats. • Trail should be near the river • Supports an entrance at Palm and Nees • Consistency with Fresno General Plan Update.
96 Herb Morgenstern	E-mail	July 2, 2014	Alternatives/ Access/ Consistency with General Plan Update/ Fire/ Funding	• Does not support Alternative 1 • Likes the idea of bicycle and pedestrian access at Del Mar/ Audubon. Allowing vehicles at this location will only create more congestion. • Wants funding for maintenance • Wants the trail to be as close to the river as possible. • Does not support parking on the river bottom because it will cause fires and disrupt wildlife
97 John Terzian	Letter Mail	June 19, 2014	Aesthetics/ Parking/	• Supports public parking on the river bottom. • Address traffic impacts in residential areas.
98 Maurice and Diane Talbot	Letter Mail	June 23, 2014	Parking/ Access/ Safety	• Make sure there is enough parking on the parkway to prevent congestion in neighborhood • Put trail as close to river as possible • Make sure there will be police to provide protection in the area. Put up fence near houses to prevent intruders.
99 Georgia Marach	Letter Mail	June 23, 2014	Access/ Alternatives	• Would like access for boats, fishers, family picnickers, the handicapped, and the elderly. • Likes Alternatives 1 and 2, but would like them to be combined.
100 Bruce Rudd	Letter Mail	July 2, 2014	Consistency with the General Plan	• The City of Fresno states there should be limited public access and the area should be limited to pedestrians and bicyclists, as stated in General Plan policy POSS-7-g

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101 Richard Carpenter	Letter Mail	June 17, 2014	Access/ Safety	• Would like vehicle access at Del Mar and Audubon and Spano Park. • Locate the trail near the base of the bluffs • Would like security in the area. Believes access near a residential area will have more security compared to a more remote area.
102 Dave Koehler	E-mail	June 18, 2014	Access/ Hazards and Hazardous Materials	• Supports access at Palm and Nees • Identified property issues from Palm and Nees • Recommend studies by engineers to access feasibility of a multiuse trail at Palm and Nees • Private property (Spano) parcels are subject to waste dump closure requirements.
103 John R. Nelson	Letter Mail	June 25, 2014	Access/ Pollution/ Alternatives/ Fire (See attached map)/ Air Quality/ Safety	• Does not support Alternative 1 because it will increase emissions and fire hazards • Doesn't support a trail going by the E pond, as there is already a trail near the O pond • Would like fire hydrants near Spano property.
104 Nanci Bellante and Zoe Treadwell	E-mail	July 2	Parking/ Access	• Does not support parking at the river bottom, except for emergency vehicles. • Access near Palm and Nees will serve people with disabilities better • Address impacts on adjacent private property • Supports parking at Palm and Nees.
105 Douglas J. Cusumano	E-mail	July 2	Access/ Impact	• Trail should be as close to the river as possible • Supports parking at Palm and Nees • Impacts on homeowners should be considered • Does not support parking on the river bottom, except emergency vehicles.
106 Lynette and Dennis Statham	E-mail	July 2	Access/ Air Quality	• Would like access from the Fresno side to prevent driving to Madera • Would like public access from Del Mar and Audubon. This will prevent excess emissions • Access for vehicles, kayaks, and bicycles on Fresno side.

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107 Kristine Walter	E-mail	July 2	NOP	• Notification about typographical error in e-mail address.
108 Diane B. Merrill	E-mail	July 2	Alternatives/ Safety/ Wildlife	• Supports Alternative 1. It will reduce pollution due to driving to Madera and back. • Would like drinking fountains put in at both ends of the trail and at Spano Park. • Owners should keep dogs on leashes to prevent disruption with wildlife.
109 Chad Reder	E-mail	July 2	Alternatives/ Access/ Recreation	• Supports Alternative 3, River's Edge Trail, but would only like parking at Perrin Avenue and State Route 41. Most people who access the trail are pedestrians or bike riders. • Make use of the existing parking spots at Spano Park.
110 George Madrid Member	E-mail	July 3	Access	• Swimming and picnics should be planned on the Madera side; walkers, runners, bicyclist, and equestrian use should be on the Fresno side. • Everyone should have access to the river.
111 Klytia Cozzi	E-mail	July 3	Parking/ Access/ Fire/ Alternatives/ Air Quality/ Noise/ Aesthetics	• Does not support parking at the river bottom (Alternative 1) • Using Spano Park and 41 are better options for parking. These areas provide easier access. • Concern for fire hazards and littering
112 Deborah Kemp	E-mail	July 3	Access/ Air Quality	• Would like public access from the Fresno side. This would reduce the amount of air pollutants • Would like boat access for visitors. • Wants a paved bike trail.
113 Hiram Dewitt	E-mail	July 3	Parking/ Access	• There needs to be plenty of parking on the west extension of the proposed project. • Homeowners near the site should allow public access.
114 Michael Smith	E-mail	July 3	Access	• Would like to have bicycle access on both ends and the middle of the trail. • Project description is unclear about access at western terminal •

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115 Oz Lone	E-mail	July 3	Access/ Air Quality/ Recreation	• Supports the proposed project and would like bicycle access at Del Mar and Audubon. • Would also like to have boat access at Del Mar and Audubon. This would reduce pollution in the air from driving to Madera and back.
116 Dominic Papagni	E-mail	July 3	Alternatives/ Access (ADA)/ Aesthetics	• Supports Alternative 1 and the access from Audubon. • Wants trail access for the handicapped, and parents with children. • Planting vegetation would add beauty to the area
117 Timothy VanDyne	E-mail	July 3	Parking/ Access/ Fire and Safety/ Air Quality/ Traffic/ Alternatives/ Consistency with the General Plan	• Doesn't support parking on the river bottom. The only exceptions are for emergency vehicles. • Only pedestrian and bicycle access should be allowed through adjacent neighborhood • Would like fire and police protection • Wants funding before any construction begins. • Trail should be close to river • Consistency with San Joaquin River and Bluff Protection Ordinance • Access to parking at Palm and Nees.
118 Lynne and Frank Glaser	E-mail	July 3	Access/ Recreation	• Supports the proposed project and would like to have access to the Parkway from the Fresno side. • Also likes the idea of access for bicycles, and both motorized and non-motorized boats. Wants access suitable parking for vehicles wherever necessary.
119 Nancy Blankinship	E-mail	July 3	Access	• Supports the proposed project and wants as much access to green space as possible.
120 Clare Statham	E-mail	July 3	Alternatives/ Access/ Recreation	• Fully supports Alternatives 1 and 2 for the proposed project.
121 Judy Irvine	E-mail	July 8, 2014	ACCESS	• Fully supports the proposed project for public access.
122 David A. Nemeth	E-mail	July 8, 2014	Access	• Supports the proposed project. • Supports vehicle access from Fresno, boat access, and bicycle access from Del Mar and Audubon.

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123 Rich Gilman	E-mail	July 8, 2014	Access	• Fully supports the proposed project.
124 William Podolsky	E-mail	July 8, 2014	Access/ Air Quality/ Recreation	• All potential access points need to be open during the day. • More access points will reduce gasoline in the air. • Provide access in the residential areas.
125 Steve and Kathy Jackson	E-mail	July 8, 2014	Access/ Fire and Safety/ Consistency with the General Plan/ Parking Traffic	• Would like access for the handicapped, the elderly, and children • Access for pedestrians and bicyclists through neighborhood • Make sure there will be fire and police protection • Trail should be as close to the river as possible. • Supports parking at Palm and Nees • Address impacts on adjacent property owners • No parking or residential access on river bottom • Develop plan for code enforcement • Use existing levees for trails • Agreement with San Joaquin River and Bluff Protection code • Provide access for people with limited mobility.
126 Gerald Vinnard	E-mail	July 8, 2014	Alternatives/ Access/ Traffic/ Parking/ Recreation	• Supports Alternative 1. • Perrin and 41 is inconvenient. It would increase miles driven and add traffic onto State Route 41. • Would like the following to be addressed: Traffic, impact on homeowners, and emergency vehicles access • EIR should address: Traffic congestion on SR 41 related to Perrin Avenue parking lot • Street parking at Riverview Drive and Churchill Avenue and impacts to residents in those areas • Adequacy of parking at proposed stairway at Spano park • Access for canoeists and kayakers be provided.
127 Jeanne Coyne	E-mail	July 8, 2014	Alternatives	• Supports Alternatives 1 and 2, but would like them to be combined.
128 Julie Linxwiler	E-mail	July 8, 2014	Alternatives	• Supports Alternatives 1 and 2.

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129 Daniel Baxter	E-mail	July 8, 2014	Access/ Parking	• Supports the proposed project. • Likes access at Riverview Drive, but parking past the gate. • Past no parking, standing near neighborhood entrances • Close entrance gate from sunset to sunrise.
130 John Donaldson	E-mail	July 8, 2014	Access	• Would like access from the Fresno side, for boats, and bicyclists.
131 Jacquelin Pilar	E-mail	July 8, 2014	Alternatives/ Access	• Supports both Alternatives 1 and 2. • Would like access from both the Madera and Fresno sides.
132 Leroy B. Coffman II	E-mail	July 8, 2014	Access/ Parking	• Access in the neighborhood should only be for pedestrians and cyclists. • Does not support parking on the river bottom. • The Trail should be as far from the bluff and as close to the river as possible. • There should be no parking or vehicle access to the river bottom except emergency vehicles. • There should be only pedestrian and bicycle access through adjacent neighborhoods. • Using Palm and Nees access for Parking is best also for access and egress of Emergency Vehicles such as Fire, Ambulances as well as easy access to reach Hospitals nearby. This will also aid Police as well as addressing other public safety issues including vandalism, trash, homeless encampments, and traffic congestion which should all be of paramount concern. • All Plans should be in agreement with the San Joaquin River and Bluff Protection Ordinance. • All Plans must support the City Council policy recommendations to the General Plan. • Impacts on adjacent private property must be considered. • There must be demonstrable ability to fund the necessary operations and maintenance, not just construction of the trail.
133 David Grubbs	E-mail	July 8, 2014	Alternatives/ Access/	• Would like access from the Fresno side and at Palm and Nees • Supports Alternative 1, additional parking

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134 Trica Coffman	E-mail	July 8, 2014	Access/ Parking	• Supports the trail to be as close to the river as possible • Does not support parking on the river bottom. • Supports access at Palm and Nees and Highway 41. • Secure future funding for maintenance and improvements
135 Christina Lawrence	E-mail	July 8, 2014	Access/ Air Quality	• Supports access from the Fresno side to prevent excess pollutants from driving to Madera and back. • Supports boat access as close to the river as possible. • Supports bicycle access from Del Mar and Audubon
136 Jackie Spencer	E-mail	July 8, 2014	Public Support	• Supports the proposed project
137 Dexter Coffman	E-mail	July 8, 2014	Access	• Wants boat, bicycle, and vehicle access from Fresno
138 Sheri Bohigian	E-mail	July 8, 2014	Access/ Parking/ Air Quality	• Wants access for bicycles • Not having access on the Fresno side will increase the amount of emissions from having to drive to Madera and back. • Wants access at Riverview Drive. Supports an alternative of having access at Palm and Nees.
139 Shannon Pozovich	E-mail	July 8, 2014	Access	• Supports the proposed project. Wants multiple and easy access points.
140 Jerry and Diane Pajouh	E-mail	July 8, 2014	Access/ Safety/ Maintenance	• Trail should only be accessible to pedestrians and bicyclists. It should be as far from the homes as possible. • Emergency vehicles access to river bottom. • Need funds for maintenance to prevent problems, such as fires.
141 Shelley Lew	E-mail	July 8, 2014	Access	• Does not support access near Audubon. Concerned about increased traffic, trash, and burglaries. • Prefers access at Palm and Nees
142 Alireza Najjaran	E-mail	July 8, 2014	Parking/ Access	• Does not support parking and vehicle access at Riverview Drive.
143 Greg Olin	E-mail	July 8, 2014	Alternatives/ Access	• Supports Alternatives 1 and 2. • Would like parking near the river for boaters to have easier access to the water.

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
144 Steve and Judy Holtkamp	E-mail	July 8, 2014	Access	• Would like access from the Fresno side to reduce miles driven. This will also decrease emissions. Those with handicaps will have easier access to the river. • Would also like boat and bicycle access.
145 Maria Faria	E-mail	July 8, 2014	Master Plan/ NOP	• Supports City Council's recommendations for the 2035 Master Plan.
146 Kathy Marks	E-mail	July 8, 2014	Alternatives/ Access	• Supports Alternatives 1 and 2. • Would like access from Del Mar and Audubon to prevent driving 10 miles and polluting the air. • Would also like boat access, since the nearest access is many miles away.
147 Ryan and Elena Donaghy	E-mail	July 8, 2014	Access/ Safety	• Supports access for the greater public • The area already has illegal activities such as fires, hunting, etc. • The 2035 General Plan show pedestrian and bicycle access only to the river bottom.
148 Kris Kessey	E-mail	July 8, 2014	Alternatives/ Access	• Supports Alternatives 1 and 2, but would like them to be combined. • Would also like boat access
149 Janet Hubner	E-mail	July 8, 2014	Access	• Would like easier vehicle and bicycle access from Fresno to reduce environmental impacts.
150 Diane Merrill	E-mail	July 8, 2014	Alternatives/ Access	• Supports Alternative 1, as it will benefit the air and make access easier for everyone, instead of a steep staircase. • Wants two vehicle access points and parking on the river bottom. This will help reduce pollution from a 10 mile roundtrip to Madera and back.
151 Cliff Tutelian	E-mail	July 8, 2014	Traffic/ Maintenance/ Aesthetics/ Hazards/ Land Use/ General Plan	• Wants traffic to be evaluated in the EIR • There will be visual impacts from allowing access in the residential area. Traffic will increase. • Fires and uncontrolled camping need to be policed. • Certain policies in the General Plan are being violated, including the need for funding for maintenance and operations

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
152 Jacalyn Thornton	E-mail	July 8, 2014	Access	• Wants access from the Fresno side so that everyone can enjoy the river (vehicles, pedestrians, bicycles) • Save gas from not having to drive 10 miles roundtrip.
153 Harry A. Massucco	E-mail	July 8, 2014	Access/ Location/ Safety/ General Plan/ City Council	• There should be access for everyone, including the handicapped and children. • The trail should be closer to the river and further from the Bluffs. • Need police and fire services • Plans must agree with the City Council and Bluff Ordinance.
154 Joe Faria	E-mail	July 8, 2014	Parking/ General Plan	• Does not support parking at the river bottom. • Wants what the General Plan says about only pedestrian and bicycle access.
155 Suk Han Wan	E-mail	July 8, 2014	Access/ Location/ Safety	• Pedestrians, bicycles, and emergency vehicles should only be allowed on the river bottom. • Trail should be close to the river • Need funds for fire and police protection.
156 Nicholas Don Paladino	E-mail	July 8, 2014	Access/ Safety	• Would like vehicle access from Fresno; Bicycle access from Riverview and Churchill. • Sharp turns are a concern and would like them to be avoided.
157 Robert D. Merrill	E-mail	July 8, 2014	Alternatives/ Access	• Supports Alternative 1, additional parking spaces. • Compromise by restricting access near residential area to certain hours • Have access from the Fresno side to lessen unnecessary pollutants. Make sure everyone has access, including those with disabilities.
158 Janice Dreyer	E-mail	July 8, 2014	Parking/ Funds	• Supports parking on both ends, near 41 and Spano Park. • Wants to know if park fees will decrease and if there will be maintenance fees
159 Reena Simone	E-mail	July 8, 2014	Access	• Does not support access in the neighborhood. Comment card 158 lives in the area and does not want unnecessary disturbances.

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
160 Rhoda Howell- Gonzales	E-mail	July 8, 2014	Access/ Safety/Parking	• Does not support vehicle access, with the exception of emergency vehicles at Riverview Drive. Also supports pedestrian and bicycle access • Would like police and fire services, trash pick-up, etc. • Believes parking and access at Palm and Nees is essential.
161 Name not included	E-mail	July 8, 2014	Public Support	• Homeowners that recently moved in oppose this project. Also states that birds adapt to humans and crime reduces with parks.
162 Kevin Hook	E-mail	July 8, 2014	Location/ Safety/ Access	• Wants trail as close to the river as possible. • Only emergency vehicles, bicycles, and pedestrians should be allowed access • Services for protection: fire, police, crime, littering • Needs funding • Access should be for everyone: disabled, children, elderly.
163 Shaikh Matin	E-mail	July 8, 2014		• Put trail close to the river. • Emergency vehicles, bicycles, and pedestrians should only be allowed access • Funding needs to be met • Everyone including disabled, children, elderly deserves to have access
164 Bob Papazian	E-mail	July 8, 2014	Public Access	• Supports the proposed project. • Supports access from the Fresno side for everyone to enjoy. • Doesn't have a preference as to where the trail will be placed. • Believes that the trail will benefit the city.
165 Joan and John McCleary	E-mail	July 8, 2014	Access/ Parking	• Supports the proposed project. • Has concerns about handicapped access • Would like bicycle and boat access.
166 John P. Kinsey	E-mail	July 8, 2014	Access/ Safety/ Alternatives	• Only pedestrians and cyclists should have access to the river bottom. • There are concerns that Alternatives 1-3 will cause problems, such as crime, traffic, and safety. • The area near Spano Park should be considered as a fifth alternative for access and parking.

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
167 Bert and Edith Tribbey	E-mail	July 8, 2014	Access	• Supports the proposed project. • It is essential to have access from the Fresno side so one doesn't have to drive 10 miles roundtrip. • Would also like bicycle and boat access.
168 Michael P. Paoli	E-mail	July 8, 2014	NOP	• States that the NOP is incomplete and needs to include evaluations.
169 Barry Bauer	E-mail	July 8, 2014	Access (see map)	• Would like access at Spano Park, Riverview Drive (only for pedestrians), and 41 and Perrin Avenue (include access and parking for the handicapped). • Wants trail near the river.
170 Carol J. Eliason	E-mail	July 8, 2014	Air Quality/ Access	• EIR needs to evaluate air quality impacts from driving 10 miles to access the river • Would also like bike access • Make it available to everyone
171 Coke Hallowell	E-mail	July 8, 2014	Access/ Public Support	• Supports the proposed project and wants to make sure it is accessible for everyone (disabled, families with children).
172 Michael C. Murphy	E-mail	July 8, 2014	Access/ Safety/ Air Quality	• Will there be funding for necessary services: police, fire, etc. • Doesn't support vehicle access in residential areas. Would rather have access at Woodward and Spano Park. This will cut down on pollution. • Supports bike access in residential areas.
173 Andrea Moushigian	E-mail	July 9, 2014	Public Support	• Doesn't support access or parking in residential neighborhood as it will cause problems (traffic, noise, trash) Prefers a quieter lifestyle. • States there is already access at SR41
174 Dale and Debbie Priaulx	E-mail	July 9, 2014	Access	• Does not support access via Del Mar for vehicles or boats. There will be an increase in traffic, crime, and trash
175 Pat Howe	E-mail	July 9, 2014	Access/ General Plan	• Supports the 2035 Master Plan update about access at Riverview for pedestrians and bicycles only • Supports article written by Marek Warszawski

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
176 Mark A. Reynolds	E-mail	July 9, 2014	Access	• Supports having access to the river bottom. • Concerned that the entrance at Riverview is too steep • Supports access at Palm and Nees
177 Kristine	E-mail	July 9, 2014	EIR/ Access/ Air Quality/ Funding	• EIR needs to include evaluations about topics: police/ fire services, funding, etc. • Signs to guide visitors • Will there be fees/ tolls? • Doesn't support access at Del Mar and Audubon because of increased traffic • Supports access at Palm and Nees
178 Marsha Talbert	E-mail	July 9, 2014	Traffic/ Access/ Air Quality	• Supports only having pedestrian and bicycle access at Del Mar. There is concern of increased traffic. • Allowing vehicles will only add to the air pollution problem
179 Diane Messerlian	E-mail	July 9, 2014	General Plan	• Honor City Council recommendations for the 2035 General Plan Update
180 Sarah Pittman	E-mail	July 9, 2014	Access/ Air Quality	• Would like boat and bicycle access from Fresno. This would cut down on air pollution.
181 Peter E. Weber	E-mail	July 9, 2014	Access/ Location/	• Put trail close to the river. This will reduce fire hazards and allow for a better view. • Only emergency vehicles should be allowed at the Del Mar and Audubon entrance. • Supports access at Palm and Nees.
182 Mary K.	Letter Mail	July 3, 2014	Access/ Air Quality	• Doesn't support the idea of driving to Madera and back to access a Fresno park. • Driving would increase the amount of pollution
183 Lavanya Bobba	Letter Mail	July 7, 2014	Location/ Access/ Safety/	• Wants trail as close to river as possible • Emergency vehicles, pedestrians, and bicyclists should only have access on river bottom. • Would like fire and police protection, and funding for maintenance and operation • Palm and Nees is an essential access point.

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
184 Vishnu Bobba	Letter Mail	July 3, 2014		• Trail as close to river as possible • Only emergency vehicles, pedestrians, and bicyclists are allowed on the river bottom through residential area. • Would like fire and police protection, and funding for maintenance and operation Palm and Nees is an essential access point.
185 Judy Davis	Letter Mail	July 3, 2014	Access/ Parking/ Location	• Does not support access at Riverview/ Del Mar or parking at the river bottom, except for emergency vehicles • Put trail as close to river as possible.
186 Jim and Peggy Riley	Letter Mail	July 2, 2014	Funding/ Parking/ Access/ Safety/ General Plan	• Would like funding for maintenance, operations, and construction of the trail • Consider the impacts on the residential area • Emergency vehicles, pedestrians, and cyclists should only be allowed through the neighborhood and river bottom. • Would like to make sure there will be fire and police services • Support for the General Plan • People with disabilities, children, boaters, and the elderly needs easier access to the river.
187 Tim Taira	Letter Mail	July 7, 2014	Access/ Safety/ Parking/ General Plan	• Does not support parking or vehicle access at the river bottom • Only pedestrians, bicyclists, and emergency vehicles should be allowed. • Construct trail as close to river as possible. • Would like police and fire protection, as well as funding • Supports parking and access at Palm and Nees Avenues
188 Lisa Woolf	Letter Mail	July 7, 2014	Access	• Would like boat, kayak, and canoe access on the Fresno side.
189 Thomas Holyoke	Letter Mail	July 7, 2014	Access/ Air Quality/ Recreation	• Supports access from Del Mar and Audubon Avenues. • This will lessen the pollution from cars driving to Madera and back to Fresno • The City of Fresno ranks last in greenspace available to its residents.

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
190 Harry A. Massucco	Letter Mail	July 7, 2014	Location/ Access/ Safety/ Parking	• Put trail as close to river as possible • Only pedestrians and cyclists should be allowed in neighborhood • There should be fire and police protection • People with disabilities, the elderly, and children should have easier access to the river • Supports access and parking at Palm and Nees Avenues.
191 Jo and Ray Dull	Letter Mail	July 7, 2014	Access/ Bicycle Trail/ Signage	• Supports vehicle access on the Fresno side • Would like a paved bicycle trail • Would also like plenty of signs
192 Bruce Rudd	E-mail/ Letter Mail	July 15, 2014	Funding	• Would like a financial analysis associated with the costs of operation and maintenance.
193 S. Brett Sutton	Letter Mail	July 15, 2014	Access/ Crime/ Safety/ Traffic	• Does not support access through the residential area. Crime, noise, and traffic will increase. • Supports access on Madera side near State Route 41, since it is underdeveloped
194 Marcia Falk	E-mail	July 15, 2014	Access (ADA)	• Supports the proposed project. • Supports having access for Americans with disabilities
195 Candy Hansen-Gage	E-mail	July 15, 2014	Access/ Fire/Safety	• Does not support vehicle access near GB3 • Vehicles will disrupt homeowners in the area. • Concern of fires in the area.
196 Sharon Weaver/ Tamara S. Galanter	E-mail	July 16, 2014	Access/Air Quality/ Traffic Alternatives/	• The Parkway needs to be accessible to everyone • Higher income residents have better access within walking distance than low income residents • Making a 10 mile trip to Madera and back will impact the air quality. It will also increase traffic • Supports Alternatives 1, additional parking, and 2, commuter bike trail • Does not support Alternative 4. It will make access for low income areas harder, therefore traffic and parking will increase in neighborhoods • Construct trail as close to river as possible for easier canoe and kayak access.

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
197 Maria J. Garcia	Letter Mail	July 9, 2014	Access	• Supports multiple access points on the Fresno side.
198 Brian J. Rincon	Letter Mail	July 9, 2014	Public Access	• Supports public access for everyone, not just to those who live near the river.
199 Cameron Young	Letter Mail	July 9, 2014	Public Access	• Everyone should be able to access and use the park.
200 Aaliyah Wiggins	Letter Mail	July 9, 2014	Access/ Gas Prices/ Flooding/ Recreation	• There should be more than one access point to the river. • Gas prices are an issue from having to drive longer distances to access the river • Does not support the trail being close to river, as flooding is a concern
201 Shaheeda Haqq	Letter Mail	July 9, 2014	Access	• Wants access from the Fresno side, instead of driving to Madera and back • Supports boat access.
202 Daniel Jimenez	Letter Mail	July 9, 2014	Access	• Does not support driving to Madera and back to access the river
203 Trayven Upshaw	Letter Mail	July 9, 2014	Access/ Parking	• Supports better access • Supports additional parking (Alternative 1)
204 Julian Sanchez	Letter Mail	July 9, 2014	Access/ Recreation	• Supports boat access for fishing • Suggests putting in a playground.
205 Allison Carrillo	Letter Mail	July 9, 2014	Parking/ Access	• Supports additional parking on the Fresno side • Would like multiple entrances and a boat launch
206 Marina Mata	Letter Mail	July 9, 2014	Parking/ Access	• Supports additional parking. Without parking, people won't want to use the park • Wants easier access for families and elderly
207 Joshua Lockhart	Letter Mail	July 9, 2014	Access	• Supports vehicle access on the Fresno side of the river. It would make access easier for those that have children, or any reason one would need a vehicle

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
208 Pablo Montanez	Letter Mail	July 9, 2014	Access	• Supports easier access to the river. It is not just for those who live nearby • Does not support driving extra miles to get to the river. This will add up in gas costs
209 David Thammauny	Letter Mail	July 9, 2014	Access/ Air Quality/ Health	• Supports vehicle access in the neighborhood • Does not support driving to Madera and back, as it will increase air pollution • Supports bicycle access. A bike trail will improve the health of children and prevent obesity
210 Baron H. Sandoval	Letter Mail	July 9, 2014	Recreation/ Education/ Access	• Supports the proposed project because it is a family oriented area • It will educate children (“Wonder and exploration”) • Supports boat access for fishing
211 Yesenia Marin	Letter Mail	July 9, 2014	Access	• Supports access through the residential area
212 Leann Lynn	Letter Mail	July 9, 2014	Access	• Supports access on the Fresno side, as it will reduce the costs and time to travel
213 Damien Rideaux	Letter Mail	July 9, 2014	Access	• Supports access on the Fresno side. • Does not want to have to drive extra miles because it wastes money spent on gas • Would also like boat access
214 Demaurea Dennis	Letter Mail	July 9, 2014	Access/ Parking / Recreation	• Supports boat access • Would like free access and parking • Would like a camping site for people to camp
215 Selena Huerta	Letter Mail	July 9, 2014	Access	• Supports easier and closer access • Does not support driving to Madera and back
216 Monique Molano	Letter Mail	July 9, 2014	Access/ Parking	• Does not support driving to Madera to access the river in Fresno. • Support additional parking (Alternative 1)

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
217 Savannah DeSantiago	Letter Mail	July 9, 2014	Access	• Would like multiple access points to the river • Does not support having to drive to Madera and back. It's wasteful of time and money for gas
218 Danielle Allen	Letter Mail	July 9, 2014	Access/ Recreation	• Would like multiple entrances to the river • Does not support having to drive to Madera and back to access the Fresno side of the river • Supports boat access for recreational use
219 Maria R. Ybarra	Letter Mail	July 9, 2014	Funding/ Access	• Wants to keep the fee for accessing the park • Supports having a boat ramp
220 Issac S.	Letter Mail	July 9, 2014	Access/ Recreation	• Supports having a boat ramp • Would like a road from the Fresno side to access the river. • Does not support driving to Madera and back
221 Noel Salas	Letter Mail	July 9, 2014	Access	• Does not support vehicle access
222 Chris Cha	Letter Mail	July 9, 2014	Public Access	• Supports public access at River West
223 B. Marsella	Letter Mail	July 10, 2014	Access	• Would like public access and parking from the Fresno side • Supports boat and canoe access from the Fresno side • Supports a bike trail to connect Madera and Fresno communities.
224 Matthew Treber	Letter Mail	July 9, 2014	Access/ Air Pollution	• Supports access to the proposed project. • Without access on the Fresno side, there will be an increase in air pollution from driving to Madera • Driving will increase traffic and maintenance costs for the roads.
225 Riley Walter	Letter Mail	July 9, 2014	Location/ Access/ Fire/ Safety/ EIR	• Supports having the trail close to the river • Does not support vehicle access in the residential neighborhood • Supports access at Palm and Nees Avenues. • Wants fire and police services, as well as funding • Funding for maintenance and operations • Address impacts of constructing the 40 stall parking lot.
226 Tom Schroeder	E-mail	July 22, 2014	Access	• Supports access at Palm and Nees Avenues.

Public Comment	Description	Date of Comment	CEQA Issue Area	Comment Summary
227 John Rios	E-mail	July 22, 2014	Access/ Air Quality/	• Supports access for bikes, boats, canoes, kayaks, and vehicles at Riverview Drive • Does not support driving to Madera and back. It will results in excessive pollutants.
228 Andreas Borgeas	E-mail	July 22, 2014	Safety/ Placement/ Access	• Concerns from the homeowners should be mentioned • Trail should be close to the river • EIR should include Palm and Nees access point • "Public Safety Policies"
229 Riley Walter	E-mail	July 22, 2014	Funding/ Access/ EIR/ Water	• Make sure there is funding before construction begins • EIR to include Palm and Nees as an access area • EIR to address water issues.
230 David Grubbs	E-mail	July 22, 2014	Access	• Supports having the trail close to the river's edge
231 Barry Bauer	E-mail	July 22, 2014	Placement/ Parking (See attached maps)	• Put trail close to river • On map AA, blue lines represent secondary trail • Map BB shows proposed parking lot under SR 41 with 21 parking spaces • Supports additional parking at Spano Park
232 Tom Tidyman	E-mail	July 22, 2014	Alternatives	• Supports combining Alternatives 1 and 2
233 Jeremy Ward	E-mail	July 22, 2014	Alternatives	• Supports combining Alternatives 1 and 2
234 Marek Warzawski	Newspaper Article	July 3, 2014	Alternatives	• Saw the beginnings of the trail, with just a gravel road • There are three outcomes: No parking, litigation, or access at Palm and Nees. Believes Palm and Nees is ideal
235 Joshua Reyna	Letter Mail	July 9, 2014	Access	• Comment card 235 wants the river to open
236 Pedro Valencia	Letter Mail	July 9, 2014	Access	• Comment card 236 wants the river to open

Appendix B
San Joaquin River Parkway Master Plan
(Recompiled 2000)

Interim San Joaquin River Parkway Master Plan Goals, Objectives and Policies[1]	
RA1	Preserve and manage the natural and cultural resources in the Parkway, including archaeological and Native American sites, to meet current and future recreational and educational needs
RA2	Provide recreational and educational opportunities to all segments of the population
RA3	Manage recreational uses to reduce or eliminate indiscriminate activities, trespass on private lands, and human impacts on sensitive habitat areas.
RA4	Evaluate all Parkway facilities and features from the perspective of their potential for education or interpretation.
Recreation Area Objectives	
RO1	Locate intensive recreational activity sites away from sensitive natural resources and private residence
RO2	Prevent and control undesirable activities and unlawful conduct in the Parkway
RO3	Link all recreation areas and natural reserves between Highway 99 and Friant Dam with a continuous, multipurpose trail on land and with canoe-put-in, take-out, and rest areas along the river to create a recreation system with a variety of recreational opportunities within the Parkway. Connect the multipurpose trail with other local and regional trails and bikeways originating in surrounding areas. Do not construct a trail or canoe facilities downstream of Highway 99 unless warranted by recreational demand and in response to identify needs in managing indiscriminate activities.
RO4	Unify Parkway elements into a recognizable unit and a visually integrated park system.
Recreation Area Sitting Policies	
RPS1	The Parkway shall consider proposed Parkway facilities sites to avoid areas that were formerly riparian forest, or have high potential for restoration to this threatened habitat
RPS2	To the extent feasible, any new access roadways associated with specific projects under the Plan should be located to reduce disturbance from intermittent vehicle passbys at the nearest noise-sensitive land uses
RPS3	At a minimum, avoid siting any recreational or educational facilities in any areas exposed to existing or projected future noise levels exceeding applicable ONC noise guidelines: • RPS3.1 75 dBA Ldn/ CNEL for golf courses, equestrian facilities, canoe put-out and take-in facilities and swimming areas. • RPS3.2 70 dBA Ldn/ CNEL for picnic areas, turf areas, and any other daytime gathering area. • RPS3.3 6- dBA Ldn/ CNEL for camping areas or indoor educational facilities, although noise exposure up to 70 dBA Ldn may be acceptable for the latter if adequate sound insulation can be demonstrated.
RPS4	Recreational activities will be evaluated for potential noise impacts on avian species and site to avoid noise impacts.
RPS5	Except for turf, use native plant species for landscaping and vegetation restoration.
RPS6	Physically control access with gates and collected user fees to support Parkway operations and deter indiscriminate activities. Manage high-demand Parkway uses through permits or additional fees as needed.
RPS7	Separate recreational areas form residences by a buffer at least 150 wide and if possible, screening vegetation as well.
RPS8	Have rangers and other Parkway personnel prevent and control undesirable activities and unlawful conduct as their most important responsibility.

[1] From *Recompiled San Joaquin River Parkway Master Plan for the San Joaquin River Conservancy*, approved and adopted by the San Joaquin River Conservancy Governing Board on July 20, 2000.

Interim San Joaquin River Parkway Master Plan Goals, Objectives and Policies[1]	
RPS9	Whenever possible, avoid steep grades, environmentally sensitive areas, erodible soils, existing residences, agricultural operations, and hazards in the alignment and engineering of trails and bikeways. Provide separate surfaces for pedestrians, wheeled vehicles, and equestrians if feasible. Utilize existing trails and unimproved roads if appropriate. Make the multipurpose trail sufficiently wide to permit the passage of patrol, rescue, and maintenance vehicles. Provide a corridor for the multipurpose trail at least 100 feet wide and with vegetation planted as buffer/ screening, whenever feasible.
RPS10	Monitor all recreational activities that could have undesirable impacts on the river, wildlife, other visitors, and nearby residents and take action to minimize or control those impacts.
RPS11	Establish uniform Parkway facilities and sign standards
RPS12	Conduct interpretive programs as close as feasible to the site where the physical evidence of the theme is being interpreted is found.
RPS13	Use educational and interpretive curricula that will reach all segments of the community. Rely heavily on compatible programs already developed by volunteers, schools, and nonprofits organizations in the area.
RPS14	Pave areas selected for vehicle parking or access roads with asphalt or concrete, or use gravel or other permeable surfacing, depending on the potential risks or needs associated with soil erosion, water quality, or groundwater recharge.
RPS15	Recreation area development shall be consistent with statutory requirements and Resolutions 93-4 (Appendix A).
Recreation Traffic Policies	
RPT 1	To the extent needed and possible, schedule Parkway facility events to avoid peak traffic periods (e.g., major summer holidays) and to avoid concurrent events that would overload transportation access routes and/or Parkway parking facilities.
RTP 2	Monitor, regulate and maintain Parkway recreational visitation to various areas (through management techniques such as fees and permits as provided for in the Parkway Plan) to ensure acceptable levels of service on Friant Road and Herndon Avenue during peak periods of Parkway usage, in accordance with applicable Level of Service policies of the City of Fresno and County of Fresno.
RTP 3	At such time that plans are developed for the Wildwood site, Woodward Park expansion and development in the SR 99 vicinity, consider measures to provide efficient access to SR 41 and SR 99 so as to minimize impacts on lower Friant Road and Herndon Avenue
RTP 4	Develop operating plans for each Parkway segment, including access control locations, park hours, fees and enforcement provisions in conjunction with affected local jurisdiction(s)
RTP 5	Off-site improvements needed for access to and from Parkway facilities shall be designed in accordance with standards of the applicable local jurisdiction(s)
Recreation Parking Policies	
RPP 1	Develop sufficient on-site parking at each public recreational facility to provide adequate parking supply for the desired usage level during peak periods and to meet the parking requirements of the affected local jurisdiction, while avoiding excess parking which would increase environmental impacts of construction and promote overuse of the site. On-site parking design should consider harmony with the natural environment while ensuring safety and security for users
Recreation Circulation Policies	
RCP 1	Participate in and promote coordinated planning efforts by the Conservancy and affected jurisdictions to provide linkages to the regional bicycle and trail systems, and ensure safe conditions for bicyclists on those routes

Interim San Joaquin River Parkway Master Plan Goals, Objectives and Policies[1]	
RCP 2	At such time that individual improvements are planned, identify the need for bicyclist facilities, including separated bike paths (Class I) and striped bike lanes (Class II), and evaluate impacts of the Parkway improvements on existing and planned bicycle routes and trails in adjoining urbanized areas. Particular attention should be given to bicycle facilities needs and impacts on Friant Road and Herndon Avenue, both of which are high speed expressways along which bicycle routes are planned to be separated from the roadway
RCP 3	Design of bridge crossing along the Parkway trail, all of which are subject to project-level environment, be pleasing aesthetically, meet safety requirements for cyclists and other users and be designed in accordance with the 250-year flood event
RCP 4	Promote alternative transportation access to the Parkway by developing a Parkway access Program including development of a regional transit access map with linkages to Parkway recreational and educational/ outreach facilities and coordination with transit providers to facilitate Parkway access
Recreation Public Transit Policies	
RTPP 1	At such time that individual site improvements are planned, identify the need for transit facilities at railheads and Parkway staging areas, considering special events (such as the annual spring Parkway benefit fete)
RTPP 2	Participate in and promote planning efforts by Fresno Area Express and other public transit operators in the region to serve the Parkway, particularity during periods of high activity such as summer weekends. Also, promote and advertise available transit services and facilities among private and public event sponsors
Recreation Facilities Construction Policies	
RFP 1	Parkway development will be consistent with adopted local government PM10 emissions mitigation programs. Parkway operations should include the following standard construction provisions: • Restrict of ban intensive activities on dry soil on days of high winds (> 30 mph). • Limit the speed of construction-related vehicles to 25 miles per hour
RFP 2	Prior to final project design of any structures, all plan shall be reviewed for compliance with regulatory requirements for non-residential structures, as appropriate
RFP 3	Best Management Practices (BMPs), as identified by the responsible jurisdiction through an adopted ordinance or standard, shall be implemented to minimize potential effects from grading and construction-related erosion. The BMP's shall include site-specific erosion and sedimentation control plans to be prepared for each site to be developed prior to construction
RFP 4	A spill prevention and cleanup policy shall be prepared. Staging areas for heavy equipment and construction materials shall be established so that inadvertent spills of oil, grease, asphalt, other petroleum by-products, or other hazardous materials shall be properly maintained and cleaned to prevent spills and leaks
RFP 5	The Conservancy shall pursue a policy of avoiding the use of herbicides to the extent feasible to remove unwanted vegetation during construction activities. In the event there is not alternative way to remove unwanted vegetation, herbicide use shall be coordinated with the appropriate jurisdiction's Agricultural Commissioner's Office and shall be limited to the use of herbicides that are presently used for routine maintenance. Herbicides shall be applied in accordance with all applicable Agricultural Commissioner's Office requirements for the jurisdiction in which Parkway Plan features are implemented, and with the manufacturers recommendations
RFP 6	Implement a landscape maintenance program to integrate BMP's that eliminate, reduce, or minimize the use of pesticides and herbicides

Interim San Joaquin River Parkway Master Plan Goals, Objectives and Policies[1]	
RFP 7	Geotechnical investigations shall be performed by qualified personnel prior to approval of final design for each feature to identify geologic or soil characteristics that could result in adverse effects on water quality, for example, highly erodible soils or slope conditions. Siting of project features shall avoid areas where potential adverse impacts to water quality could occur through erosion control or slope instability.
RFP 8	Septic systems shall be installed in areas approved by local ordinance and shall be sited, designed, and operated in accordance with all applicable State and local laws.
RFP 9	Construction activities potentially impacting noise-sensitive land uses in Madera County shall comply with the most stringent of applicable provisions from the County and City of Fresno's noise ordinances. Specifically, any construction activities occurring outside of the hours between 7 a.m. and 9 p.m., Monday through Saturday, shall comply with the noise exposure limits for the most noise-sensitive land sues established in Fresno County's Noise Control Ordinance (see Table 5.8-3), and with the exposure limits for other (commercial and industrial) land uses established in the City of Fresno's Noise Regulation (see Table 5.8-4).
RFP 10	Incorporate requirements of state or federal law or any local ordinance prohibiting or restricting modification of cultural sites.
Park Operation Policies	
ROP1	Reduce impervious land coverage associated with parking areas and boat ramps. Such measures could include, but would not be limited to: • Construct parking stalls of more permeable material than aisles, for example, gravel, open-celled unit pavers, porous asphalt, or porous concrete; • Use trees and bollards spaced 20 feet apart in parking areas. As an added benefit, stall width would be slightly greater than in conventional lots, parked cars would be shaded, and open space would be more attractive when cars are absent; • Locate linear landscaped areas (grass swales)on the perimeter of the lot of as an internal island so that pollutants can settle and runoff velocities are slowed; • Construct oil and grease separators to control parking lot contaminants; • Clean or sweep parking lots on a regular basis; • Utilize gravel or other granular materials for boat tamps; • Slope boat ramps to drain adjacent permeable landscaping or natural or enhanced vegetation to allow pollutants to be dispersed and cleaned by soil.

Interim San Joaquin River Parkway Master Plan Goals, Objectives and Policies[1]	
ROP 2	Parkway projects, recreational amenities and resource restoration shall be developed consistent with the responsible jurisdiction's standards for Stormwater Pollution Prevention Plan (SWPPP) and maintenance programs. The Conservancy shall include as part of final project design appropriate BMP's, consistent with recommendations of the Stormwater Quality Task Force's California Stormwater Best Management Practices Handbook, that could include a combination of the following BMP's, or equally effective measures: • Incorporation of peak flow reduction and infiltration practices, such as grass swales, infiltration trenches and grass filter strips; • Labeling of storm drain inlets, if any, to educate the public of the adverse impacts associated with dumping on receiving waters (i.e., "Don't Dump! Drains to River!"); • Use of warm-season grasses and drought tolerant vegetation wherever feasible in landscape areas (if any), including borders to reduce demand for irrigation and thereby reduce irrigation runoff; and • Installation of efficient irrigation systems in landscaped areas, if any, to minimize runoff and evaporation and maximize the water that will reach plant roots. Such irrigation systems include drip irrigation and automatic irrigation systems
ROP 3	Install signage at regular intervals at and near river access points to educate users of the importance of protecting water quality. Information regarding adverse effects of illicit dumping of such materials as automotive fluids or other household-type liquid wastes on water quality and wildlife shall be included as part of the educational and interpretive programs
ROP 4	Establish and implement a Parkway management program to monitor trail conditions, canoe put-ins, and bridge overcrossing approaches and footings and for regular maintenance and repair of such features. Establish and implement a program to monitor these locations for regular maintenance and repair
ROP 5	Participate, promote or organize community-based litter removal programs for the Parkway
ROP 6	The Parkway shall develop and implement guidelines to include elements addressing public education regarding appropriate behavior while on Parkway property
ROP 7	Any use of recreational areas within the Planning Area, aside from camping, shall be limited to the hours between sunrise and sunset. Access to these areas shall be limited to these hours
ROP 8	A minimum buffer of 300 feet shall be required between any existing, occupied residential property or residential structure and any turf areas, picnic areas, dog play areas, or permanent outdoor education areas where large groups of people and/or pets may gather
ROP 9	Develop Parkway manual for park staff and wardens instructing them on cultural sites and their sensitivity
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ROP 11	The Conservancy shall use its authority to prohibit motorized vessels (motor boats, jet boats, jet skis) from accessing the area between Friant Dam and the Highway 99 during the months of November through July to protect heron and egret rookery
Recreation and Flood Management Policies	

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RFMP 1	The local jurisdiction shall take into consideration the presence of the regulatory floodway, FEMA-designated 100-year floodplain, estimated 250-year floodplain, and the FMFCD Riverine Floodplain Policy in determining the location of future development within the Parkway. Any development sited in a designated 100-year floodplain shall comply with the regulatory requirements at a minimum and with the FMFCD Riverine Floodplain Policy criteria, where applicable
RFMP 2	Structures and amenities associated with anticipated uses within the Parkway shall be designed and sited to ensure that such features do not obstruct flood flows, do not create a public safety hazard, or result in a substantial increase in off-site water surface elevations. For permanent structures, such a bridge overcrossing, the minimum level of design flood protection shall be the Standard Project Flood (which is roughly equivalent to a 250-year event) to ensure flood flows are not dammed and to prevent flooding on surrounding properties. Amenities such as picnic tables, litter containers, interpretive displays, and vault toilets shall be designed, placed, and securely fastened to allow for water to easily flow through or around them and so that they do not become dislodged during flood events. Fences , if any, shall be sized, placed, and securely anchored to minimize the potential to impact the flow, location, or depth of floodwater
RFMP 3	Flood warning alert and evacuation procedures shall be developed and implemented with the Counties of Madera and Fresno, the City of Fresno, and FMFCD to ensure evacuation of visitors from the Parkway during event with high flow risks, and to prevent public access into the Parkway during such events
Recreation Design Policies	
RDP 1	Parkway trail alignment, recreational facility siting and riparian restoration projects shall coordinate with local flood control maintenance and public safety agencies to avoid conflicts with access for maintenance and public safety
RDP 2	Provide adequate bicycle locking facilities at key “fixed recreational and educational facilities for planning area recreational users who may not have a car parked on site for stowing the bicycles
RDP 3	Add Design Policy: Prior to final project design of any structures, all plans shall be reviewed to ensure that adequate drainage has been incorporated into project design to reduce post-project runoff to pre-project levels or direct such runoff to a planned system of public facilities designed to receive such runoff. Such measures could include, but would not be limited to: • The construction or expansion of storm detention basins, drainage pipes, drains or pumps • Natural drainage swales incorporated into the Parkway design to the extent feasible • Natural drainage swales should be used to the extent feasible, because runoff flows in the direction of the natural topography due to gravity, and little additional energy (pumping) would be required. In addition, natural drainage swales could be incorporated into the Parkway design
RDP 4	Unpaved parking areas and interval driveways for Parkway facilities will be treated to reduce dust generation
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Interim San Joaquin River Parkway Master Plan Goals, Objectives and Policies[1]	
RDP 7	Where feasible and appropriate, construct separate, parallel multipurpose trails, one with a firm granular or paved 12-foot-wide surface for cyclists, persons in wheelchairs, and other users preferring a hard surface; and one with a soft granular (e.g., decomposed granite or crushed quarry fines) or native soil 8-foot-wide surface for equestrian and hikers. Where separate trails are not appropriate or feasible, provide an extra-wide single corridor trail constructed of a 12-foot wide firm granular or asphalt section and an 8-foot-wide soft granular or native soil shoulders on one side The trail width and surface shall be suitable for use by patrol, maintenance, and emergency vehicles
RDP 8	In the event there is not sufficient width to construct a trail as described above, implement restrictions on vehicular, horse, bicycle and foot traffic to reduce potential effects from heavy use. Control measures shall include but would not be limited to, proper trail siting, seasonal trail closures, signage, barriers, and enforcement
RDP 9	Asphalt paving shall be considered for segments of the multipurpose trail that are expected to receive heavy traffic within two to three years after being opened to such use (e.g., the segment along Woodward Bluffs between Woodward Park and East Copper Avenue)
RDP 10	Internal trails that provide access to natural reserves or trail loops within the multipurpose trail shall consist of low-impact footpaths that are a minimum of 24 inches wide and constructed of soft granular material, such as decomposed granite or crushed quarry fines, or native soil
RDP 11	Equestrian facilities and connections to the multipurpose trail system shall be sites, graded, and constructed of suitable materials resistant to the effects of wind and water erosion to minimize the potential for sediments to be carried into adjacent waterways. A program to monitor the effectiveness of such controls shall be established, including implementation of a maintenance and repair plan
RDP 12	For buildings that do not use gutter system, landscape planting around the base shall provide increased opportunities for storm water infiltration and protect soil from erosion caused by runoff volumes
RDP 13	Trash receptacle including recycling bins sufficient to handle waste generated by Parkway users shall be determined and shall be placed in easily accessible and numerous locations. Frequent and regular monitoring and trash collection to prevent container overflow shall be implemented, particularly during periods of heavy Parkway use
RDP 14	In public use areas, install signage to educate users of the importance of proper litter disposal and to designate locations of trash containers. Information regarding adverse effects of litter on water quality and wildlife shall be included as part of the educational and interpretive programs
RDP 15	In areas where septic systems are prohibited, vault toilets sufficient enough to handle wastes generated by the Parkway users shall be determined and shall be placed in easily accessible and numerous locations. Frequent and regular monitoring and removal of wastes to prevent overflows shall be implemented, particularly during periods of heavy Parkway use
RDP 16	In public use areas, designate locations of the sanitary facilities
RDP 17	Whenever construction of a project features is proposed within 300 feet of the riparian corridor, construction supervision shall be made aware of the biological resources, and shall implement mitigation measures to avoid adversely impacting the riparian corridor

Interim San Joaquin River Parkway Master Plan Goals, Objectives and Policies[1]	
RDP 3	Whenever construction of project features is proposed within 100 feet of the riparian corridor, construction supervisors shall be made aware of the biological value of the elderberry shrubs, and shall be implemented mitigation measures to avoid adversely affecting this species
RDP 11	Prior to approval of any construction in the Plan area, a records search shall be conducted to determine whether cultural resources have been recorded in or near the project development area, or are likely to occur. The study area should include areas to be directly affected as well as any areas of increased ingress in which cultural resources could be located. An on-the-ground field survey shall also be conducted by a qualified archaeologist of all potentially affected areas, with all resources inventoried and evaluation made to determine the significance of any recourses present. Mitigation measures shall be developed and implemented to reduce any impacts to any cultural resources to a less than significant level before construction begins
RDP 12	In the event of the discovery of any subsurface archaeological artifact, feature or deposit during construction activities, work within 100 feet of the find shall be halted, and an archaeologist will be conducted for an in-field evaluation • If the resource is determined to be significant, an appropriate plan for resource preservation or site excavation must be developed and implemented • If bone is found that appears to be human, work within 100 feet of the find shall be halted, and the County Coroner must be contacted. If the remains are determined to be of Native American origin, the Coroner shall notify the Native American Heritage Commission (NAHC). The NAHC shall determine the "most likely descendent", who will work to develop a plan for the area of the find. Construction work shall remain halted in the vicinity of the discovery until the plan can be implemented
RDP 3	Prior to approval of any construction in the Plan area, contact should be made with the Native American Heritage Commission to obtain the names of individuals who may have knowledge regarding areas of concern in or near the Parkway Plan area such as familial villages, gathering areas, power places, or other sites with heritage values for Native Americans. These individuals should be contacted, and information solicited on traditional cultural properties that may be present within the study area. Mitigation measures shall be developed and implemented to reduce any impact to any traditional cultural properties to a less than significant level before construction begins
Recreation Area Goals	
RA1	Preserve and manage the natural and cultural resources in the Parkway, including archaeological and Native American sites, to meet current and future recreational and educational needs
RA2	Provide recreational and educational opportunities to all segments of the population
RA3	Manage recreational uses to reduce or eliminate indiscriminate activities, trespass on private lands, and human impacts on sensitive habitat areas.
RA4	Evaluate all Parkway facilities and features from the perspective of their potential for education or interpretation.
Recreation Area Objectives	
RO1	Locate intensive recreational activity sites away from sensitive natural resources and private residence
RO2	Prevent and control undesirable activities and unlawful conduct in the Parkway

Interim San Joaquin River Parkway Master Plan Goals, Objectives and Policies[1]	
RO3	Link all recreation areas and natural reserves between Highway 99 and Friant Dam with a continuous, multipurpose trail on land and with canoe-put-in, take-out, and rest areas along the river to create a recreation system with a variety of recreational opportunities within the Parkway. Connect the multipurpose trail with other local and regional trails and bikeways originating in surrounding areas. Do not construct a trail or canoe facilities downstream of Highway 99 unless warranted by recreational demand and in response to identify needs in managing indiscriminate activities.
RO4	Unify Parkway elements into a recognizable unit and a visually integrated park system.
Recreation Area Sitting Policies	
RPS1	The Parkway shall consider proposed Parkway facilities sites to avoid areas that were formerly riparian forest, or have high potential for restoration to this threatened habitat
RPS2	To the extent feasible, any new access roadways associated with specific projects under the Plan should be located to reduce disturbance from intermittent vehicle passbys at the nearest noise-sensitive land uses
RPS3	At a minimum, avoid siting any recreational or educational facilities in any areas exposed to existing or projected future noise levels exceeding applicable ONC noise guidelines: • RPS3.1 75 dBA Ldn/ CNEL for golf courses, equestrian facilities, canoe put-out and take-in facilities and swimming areas. • RPS3.2 70 dBA Ldn/ CNEL for picnic areas, turf areas, and any other daytime gathering area. • RPS3.3 6- dBA Ldn/ CNEL for camping areas or indoor educational facilities, although noise exposure up to 70 dBA Ldn may be acceptable for the latter if adequate sound insulation can be demonstrated.
RPS4	Recreational activities will be evaluated for potential noise impacts on avian species and site to avoid noise impacts.
RPS5	Except for turf, use native plant species for landscaping and vegetation restoration.
RPS6	Physically control access with gates and collected user fees to support Parkway operations and deter indiscriminate activities. Manage high-demand Parkway uses through permits or additional fees as needed.
RPS7	Separate recreational areas form residences by a buffer at least 150 wide and if possible, screening vegetation as well.
RPS8	Have rangers and other Parkway personnel prevent and control undesirable activities and unlawful conduct as their most important responsibility.
RPS9	Whenever possible, avoid steep grades, environmentally sensitive areas, erodible soils, existing residences, agricultural operations, and hazards in the alignment and engineering of trails and bikeways. Provide separate surfaces for pedestrians, wheeled vehicles, and equestrians if feasible. Utilize existing trails and unimproved roads if appropriate. Make the multipurpose trail sufficiently wide to permit the passage of patrol, rescue, and maintenance vehicles. Provide a corridor for the multipurpose trail at least 100 feet wide and with vegetation planted as buffer/ screening, whenever feasible.
RPS10	Monitor all recreational activities that could have undesirable impacts on the river, wildlife, other visitors, and nearby residents and take action to minimize or control those impacts.
RPS11	Establish uniform Parkway facilities and sign standards
RPS12	Conduct interpretive programs as close as feasible to the site where the physical evidence of the theme is being interpreted is found.
RPS13	Use educational and interpretive curricula that will reach all segments of the community. Rely heavily on compatible programs already developed by volunteers, schools, and nonprofits organizations in the area.

Interim San Joaquin River Parkway Master Plan Goals, Objectives and Policies[1]	
RPS14	Pave areas selected for vehicle parking or access roads with asphalt or concrete, or use gravel or other permeable surfacing, depending on the potential risks or needs associated with soil erosion, water quality, or groundwater recharge.
RPS15	Recreation area development shall be consistent with statutory requirements and Resolutions 93-4 (Appendix A).
Recreation Traffic Policies	
RPT 1	To the extent needed and possible, schedule Parkway facility events to avoid peak traffic periods (e.g., major summer holidays) and to avoid concurrent events that would overload transportation access routes and/or Parkway parking facilities.
RTP 2	Monitor, regulate and maintain Parkway recreational visitation to various areas (through management techniques such as fees and permits as provided for in the Parkway Plan) to ensure acceptable levels of service on Friant Road and Herndon Avenue during peak periods of Parkway usage, in accordance with applicable Level of Service policies of the City of Fresno and County of Fresno.
RTP 3	At such time that plans are developed for the Wildwood site, Woodward Park expansion and development in the SR 99 vicinity, consider measures to provide efficient access to SR 41 and SR 99 so as to minimize impacts on lower Friant Road and Herndon Avenue
RTP 4	Develop operating plans for each Parkway segment, including access control locations, park hours, fees and enforcement provisions in conjunction with affected local jurisdiction(s)
RTP 5	Off-site improvements needed for access to and from Parkway facilities shall be designed in accordance with standards of the applicable local jurisdiction(s)
Recreation Parking Policies	
RPP 1	Develop sufficient on-site parking at each public recreational facility to provide adequate parking supply for the desired usage level during peak periods and to meet the parking requirements of the affected local jurisdiction, while avoiding excess parking which would increase environmental impacts of construction and promote overuse of the site. On-site parking design should consider harmony with the natural environment while ensuring safety and security for users
Recreation Circulation Policies	
RCP 1	Participate in and promote coordinated planning efforts by the Conservancy and affected jurisdictions to provide linkages to the regional bicycle and trail systems, and ensure safe conditions for bicyclists on those routes
RCP 2	At such time that individual improvements are planned, identify the need for bicyclist facilities, including separated bike paths (Class I) and striped bike lanes (Class II), and evaluate impacts of the Parkway improvements on existing and planned bicycle routes and trails in adjoining urbanized areas. Particular attention should be given to bicycle facilities needs and impacts on Friant Road and Herndon Avenue, both of which are high speed expressways along which bicycle routes are planned to be separated from the roadway
RCP 3	Design of bridge crossing along the Parkway trail, all of which are subject to project-level environment, be pleasing aesthetically, meet safety requirements for cyclists and other users and be designed in accordance with the 250-year flood event
RCP 4	Promote alternative transportation access to the Parkway by developing a Parkway access Program including development of a regional transit access map with linkages to Parkway recreational and educational/ outreach facilities and coordination with transit providers to facilitate Parkway access
Recreation Public Transit Policies	

Interim San Joaquin River Parkway Master Plan Goals, Objectives and Policies[1]	
RTPP 1	At such time that individual site improvements are planned, identify the need for transit facilities at railheads and Parkway staging areas, considering special events (such as the annual spring Parkway benefit fete)
RTPP 2	Participate in and promote planning efforts by Fresno Area Express and other public transit operators in the region to serve the Parkway, particularity during periods of high activity such as summer weekends. Also, promote and advertise available transit services and facilities among private and public event sponsors
Recreation Facilities Construction Policies	
RFP 1	Parkway development will be consistent with adopted local government PM10 emissions mitigation programs. Parkway operations should include the following standard construction provisions: • Restrict of ban intensive activities on dry soil on days of high winds (> 30 mph). • Limit the speed of construction-related vehicles to 25 miles per hour
RFP 2	Prior to final project design of any structures, all plan shall be reviewed for compliance with regulatory requirements for non-residential structures, as appropriate
RFP 3	Best Management Practices (BMPs), as identified by the responsible jurisdiction through an adopted ordinance or standard, shall be implemented to minimize potential effects from grading and construction-related erosion. The BMP's shall include site-specific erosion and sedimentation control plans to be prepared for each site to be developed prior to construction
RFP 4	A spill prevention and cleanup policy shall be prepared. Staging areas for heavy equipment and construction materials shall be established so that inadvertent spills of oil, grease, asphalt, other petroleum by-products, or other hazardous materials shall be properly maintained and cleaned to prevent spills and leaks
RFP 5	The Conservancy shall pursue a policy of avoiding the use of herbicides to the extent feasible to remove unwanted vegetation during construction activities. In the event there is not alternative way to remove unwanted vegetation, herbicide use shall be coordinated with the appropriate jurisdiction's Agricultural Commissioner's Office and shall be limited to the use of herbicides that are presently used for routine maintenance. Herbicides shall be applied in accordance with all applicable Agricultural Commissioner's Office requirements for the jurisdiction in which Parkway Plan features are implemented, and with the manufacturers recommendations
RFP 6	Implement a landscape maintenance program to integrate BMP's that eliminate, reduce, or minimize the use of pesticides and herbicides
RFP 7	Geotechnical investigations shall be performed by qualified personnel prior to approval of final design for each feature to identify geologic or soil characteristics that could result in adverse effects on water quality, for example, highly erodible soils or slope conditions. Siting of project features shall avoid areas where potential adverse impacts to water quality could occur through erosion control or slope instability.
RFP 8	Septic systems shall be installed in areas approved by local ordinance and shall be sited, designed, and operated in accordance with all applicable State and local laws.

Interim San Joaquin River Parkway Master Plan Goals, Objectives and Policies[1]	
RFP 9	Construction activities potentially impacting noise-sensitive land uses in Madera County shall comply with the most stringent of applicable provisions from the County and City of Fresno's noise ordinances. Specifically, any construction activities occurring outside of the hours between 7 a.m. and 9 p.m., Monday through Saturday, shall comply with the noise exposure limits for the most noise-sensitive land sues established in Fresno County's Noise Control Ordinance (see Table 5.8-3), and with the exposure limits for other (commercial and industrial) land uses established in the City of Fresno's Noise Regulation (see Table 5.8-4).
RFP 10	Incorporate requirements of state or federal law or any local ordinance prohibiting or restricting modification of cultural sites.
Park Operation Policies	
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RDP 12	In the event of the discovery of any subsurface archaeological artifact, feature or deposit during construction activities, work within 100 feet of the find shall be halted, and an archaeologist will be conducted for an in-field evaluation • If the resource is determined to be significant, an appropriate plan for resource preservation or site excavation must be developed and implemented • If bone is found that appears to be human, work within 100 feet of the find shall be halted, and the County Coroner must be contacted. If the remains are determined to be of Native American origin, the Coroner shall notify the Native American Heritage Commission (NAHC). The NAHC shall determine the “most likely descendent”, who will work to develop a plan for the area of the find. Construction work shall remain halted in the vicinity of the discovery until the plan can be implemented

Interim San Joaquin River Parkway Master Plan Goals, Objectives and Policies[1]	
RDP 3	Prior to approval of any construction in the Plan area, contact should be made with the Native American Heritage Commission to obtain the names of individuals who may have knowledge regarding areas of concern in or near the Parkway Plan area such as familial villages, gathering areas, power places, or other sites with heritage values for Native Americans. These individuals should be contacted, and information solicited on traditional cultural properties that may be present within the study area. Mitigation measures shall be developed and implemented to reduce any impact to any traditional cultural properties to a less than significant level before construction begins
Mineral Resource Goals	
MR1	Promote the reclamation of land after removal of sand and gravel deposits in ways that will enhance or complement the Parkway and its natural resources and recreational opportunities.
MR2	Assure that Parkway facilities are designed, constructed, and operated in such a way that sand and gravel mining operations are not adversely affected and that they will not preclude future extraction in all MRZ-2 designated areas.
Mineral Resource Objectives	
MRO1	Promote a consistent approach among the jurisdictions to permitting, reclamation plan requirements, and reclamation monitoring such that owners of sand and gravel resources maintain the ability to mine them, if they choose.
MRO2	Cooperate with local land use control agencies in the development of standards concerning mining operations, processing sites, and haul routes proposed within the Parkway
Mineral Resource Policies	
MRP1	Site Parkway structures with long economic life (e.g., a restroom) where they will not preclude or interfere with future mining operations. As needed, pending the future initiation of mining operations, construct temporary facilities that do not represent a significant economic commitment and can be readily relocated, such as unpaved trails.
MRP2	Site trails/bikeways and other recreational areas at least 300 feet from the edge of the active mining operations and separate them by physical barriers; avoid trail/bikeway crossings of active haul routes whenever possible; if crossings of haul routes are necessary, separate where feasible.
MRP3	Augment state reclamation guidelines as needed for the Parkway to protect existing riparian woodlands, enhance or complement the revegetation of the wildlife corridor and adjacent areas, improve lakes as parkway features by providing for specific wildlife habitat needs or replication of natural landscapes and reflect public safety needs.
MRP4	Public access facilities on lands containing sand and gravel operations may be developed where temporary access is feasible in areas containing natural mineral resources that have yet to be extracted.
Mineral Design Policy	
MDP1	No intensive public use areas should be sited near mineral resource processing plants. Temporary berms, a minimum 10’ height, with signed fencing should be used to separate publicly accessible trails and use areas from mining activities. Where trails cross haul routes, considerations should be given to using bridges to segregate use or to opening trails for public use only when mining is not active.

SAN JOAQUIN RIVER PARKWAY INTERIM MASTER PLAN MITIGATION MEASURES[1]

Number	Mitigation Measure
5.2-l(a)	To the extent needed and possible, schedule Parkway facility events to avoid peak traffic periods (e.g., major summer holidays) and to avoid concurrent events that would overload transportation access routes and/or Parkway parking facilities.
5.2-1(b)	Monitor, regulate and maintain Parkway recreational visitation to various areas (through management techniques such as fees and permits as provided for in the Parkway Plan) to ensure acceptable levels of service on Friant Road and Herndon Avenue during peak periods of Parkway usage, in accordance with applicable Level of Service policies of the City of Fresno and County of Fresno.
5.2-1(c)	At such time that plans are developed for the Wildwood site, Woodward Park expansion and development in the SR 99 vicinity, consider measures to provide efficient access to SR 41 and SR 99 so as to minimize impacts on lower Friant Road and Herndon Avenue.
5.2-l(d)	Develop operating plans for each Parkway segment, including access control locations, park hours, fees and enforcement provisions in conjunction with affected local jurisdiction(s).
5.2-l(e)	Off-site improvements needed for access to and from Parkway facilities shall be designed in accordance with standards of the applicable local jurisdiction(s).
5.2-2(a)	Develop sufficient on-site parking at each public recreational facility to provide adequate parking supply for the desired usage level during peak periods and to meet the parking requirements of the affected local jurisdiction, while avoiding excess parking which would increase environmental impacts of construction and promote overuse of the site. On-site parking design should consider harmony with the natural environment while ensuring safety and security for users.
5.2-3(b)	At such time that individual site improvements are planned, identify the need for bicyclist facilities, including separated bike paths (Class I) and striped bike lanes (Class II), and evaluate impacts of the Parkway improvements on existing and planned bicycle routes and trails in the adjoining urbanized areas. Particular attention should be given to bicycle facility needs and impacts on Friant Road and Herndon Avenue, both of which are high speed expressways along which bicycle routes are planned to be separated from the roadway.
5.2-3(c)	Design of bridge crossings along the Parkway trail, all of which are subject to project-level environmental review, should minimize impacts on the natural environment, be pleasing aesthetically, meet safety requirements for cyclists and other users and be designed in accordance with the 250-year flood event.
5.2-4(a)	At such time that individual site improvements are planned, identify the need for transit facilities at railheads and Parkway staging areas, considering special events (such as the annual spring Parkway benefit fete).
5.2-4(b)	Participate in and promote planning efforts by Fresno Area Express and other public transit operators in the region to serve the Parkway, particularly during periods of high activity such as summer weekends. Also, promote and advertise available transit services and facilities among private and public event sponsors.
5.2-5(a)	Parkway trail development and riparian restoration projects may adversely affect flood maintenance and public safety access.
5.2-5(b)	Parkway trail alignment, recreational facility siting and riparian restoration projects shall coordinate with local flood control maintenance and public safety agencies to avoid conflicts with access for maintenance and public safety.
5.3-l(a)	Parkway development will be consistent with adopted local government PM_{10} emissions mitigation programs. Parkway operations should include the following standard construction provision: (i) Restrict or ban intensive construction activities on dry soil on days of high winds (> 30 mph); (ii) Limit the speed of construction-related vehicles to 25 miles per hour.
5.3-2(a)	Promote alternative transportation access to the Parkway by developing a Parkway access Program including development of a regional transit access map with linkages to Parkway recreational and educational/outreach facilities and coordination with transit providers to facilitate Parkway access.
5.3-2(b)	Provide adequate bicycle locking facilities at key "fixed" recreational and educational facilities for planning area recreational users who may not have a car parked on site for stowing their bicycles.
5.3-2(c)	Unpaved parking areas and internal driveways for Parkway facilities will be treated to reduce dust generation.
5.4-1(a)	Prior to final project design of any structures, all plans shall be reviewed to ensure that adequate

[1] Final Program Environmental Impact Report San Joaquin River Parkway Interim Master Plan, October 1997.

Number	Mitigation Measure
	drainage has been incorporated into project design to reduce post-project runoff to pre-project levels or direct such runoff to a planned system of public facilities designed to receive such runoff. Such measures could include, but would not be limited to: (i) The construction or expansion of storm detention basins, drainage pipes, drains or pumps. (ii) Natural drainage swales incorporated into Parkway design to the extent feasible. (iii) Natural drainage swales should be used to the extent feasible, because runoff flows in the direction of the natural topography due to gravity, and little additional energy (pumping) would be required. In addition, natural drainage swales could be incorporated into the Parkway design.
5.4-2(a)	Prior to final project design of any structures, all plans shall be reviewed for compliance with regulatory requirements for non-residential structures, as appropriate.
5.4-2(b)	The local jurisdiction shall take into consideration the presence of the regulatory floodway, FEMA-designated 100- year floodplain, estimated 250-year floodplain, and the FMFCD Riverine Floodplain Policy in determining the location of future development within the Parkway. Any development sited in a designated 100-year floodplain shall comply with regulatory requirements at a minimum and with the FMFCD Riverine Floodplain Policy criteria, where applicable.
5.4-2(c)	Structures and amenities associated with anticipated uses within the Parkway shall be designed and sited to ensure that such features do not obstruct flood flows, do not create a public safety hazard, or result in a substantial increase in off-site water surface elevations. For permanent structures, such as bridge overcrossings, the minimum level of design flood protection shall be the Standard Project Flood (which is roughly equivalent to a 250-year event) to ensure flood flows are not dammed and to prevent flooding on surrounding properties. Amenities such as picnic tables, litter containers, interpretive displays, and vault toilets shall be designed, placed, and securely fastened to allow for water to easily flow through or around them and so that they do not become dislodged during flood events. Fences, if any, shall be sized, placed, and securely anchored to minimize the potential to impact the flow, location or depth of floodwaters.
5.4-2(d)	Flood warning alert and evacuation procedures shall be developed and implemented with the Counties of Madera and Fresno, the City of Fresno, and FMFCD to ensure evacuation of visitors from the Parkway during event with high flow risks, and to prevent public access into the Parkway during such events.
5.4-3(a)	Develop flood evacuation procedures including removal of vault toilets.
5.4-3(b)	Install signage at regular intervals at and near river access points to educate Parkway visitors and workers regarding the potential for dam failure and evacuation routes. Information regarding potential effects, safety precautions, notification, and emergency evacuation shall be included as part of the educational and interpretive programs.
5.5-l(a)	Best Management Practices (BMPs), as identified by the responsible jurisdiction through an adopted ordinance or standard, shall be implemented to minimize potential effects from grading and construction-related erosion. The BMPs shall include site-specific erosion and sedimentation control plans to be prepared for each site to be developed prior to construction.
5.5-l(b)	A spill prevention and cleanup policy shall be prepared. Staging areas for heavy equipment and construction materials shall be established so that inadvertent spills of oil, grease, asphalt, other petroleum by-products, or other hazardous materials shall not be discharged into the stream course. All machinery shall be properly maintained and cleaned to prevent spills and leaks.
5.5-l(c)	The Conservancy shall pursue a policy of avoiding the use of herbicides to the extent feasible to remove unwanted vegetation during construction activities. In the event there is no alternative way to remove unwanted vegetation, herbicide use shall be coordinated with the appropriate jurisdiction's Agricultural Commissioner's Office and shall be limited to the use of herbicides that are presently used for routine maintenance. Herbicides shall be applied in accordance with all applicable Agricultural Commissioner's Office requirements for the jurisdiction in which Parkway Plan features are implemented, and with the manufacturers recommendations.
5.5-2(a)	Parkway projects, recreational amenities and resource restoration shall be developed consistent with the responsible jurisdiction's standards for Stormwater Pollution Prevention Plan (SWPPP) and maintenance program. The Conservancy shall include as part of final project design appropriate BMPs, consistent with recommendations of the Stormwater Quality Task Force's California Stormwater Best Management Practices Handbook, that could include a combination of the following BMPs, or equally effective measures:

Number	Mitigation Measure
	(i) incorporation of peak flow reduction and infiltration practices, such as grass swales, infiltration trenches and grass filter strips; (ii) Labeling of storm drain inlets, if any, to educate the public of the adverse impacts associated with dumping on receiving waters (i.e., "Don't dump! Drains to River!"); (iii) use of warm-season grasses and drought-tolerant vegetation wherever feasible in landscape areas (if any), including borders to reduce demand for irrigation and thereby reduce irrigation runoff; and (iv) Installation of efficient irrigation systems in landscaped areas, if any, to minimize runoff and evaporation and maximize the water that will reach plant roots. Such irrigation systems include drip irrigation and automatic irrigation systems.
5.5-2(b)	Implement a landscape maintenance program to integrate BMPs that eliminate, reduce, or minimize the use of pesticides and herbicides.
5.5-2(c)	Install signage at regular intervals at and near river access points to educate users of the importance of protecting water quality. Information regarding adverse effects of illicit dumping of such materials as automotive fluids or other household-type liquid wastes on water quality and wildlife shall be included as part of the educational and interpretive programs.
5.5-2(d)	Reduce impervious land coverage associated with parking areas and boat ramps. Such measures could include, but would not be limited to: (i) construct parking stalls of more permeable material than aisles, for example, gravel, open-celled unit pavers, porous asphalt, or porous concrete; (ii) use trees and bollards spaced 20 feet apart in parking areas. As an added benefit, stall width would be slightly greater than in conventional lots, parked cars would be shaded, and open space would be more attractive when cars are absent; (iii) locate linear landscaped areas (grass swales) on the perimeter of the lot or as an internal island so that pollutants can settle and runoff velocities are slowed; (iv) construct oil and grease separators to control parking lot contaminants; (v) clean or sweep parking lots on a regular basis; (vi) utilize gravel or other granular material for boat ramps; (vii) slope boat ramps to drain into adjacent permeable landscaping or natural or enhanced vegetation to allow pollutants to be dispersed and cleansed by soil.
5.5-3(a)	Geotechnical investigations shall be performed by qualified personnel prior to approval of final design for each feature to identify geologic or soil characteristics that could result in adverse effects on water quality, for example, highly erodible soils or slope conditions. Siting of project features shall avoid areas where potential adverse impacts to water quality could occur through erosion or slope instability.
5.5-3(b)	Establish and implement a Parkway management program to monitor trail conditions, canoe put-ins, and bridge overcrossing approaches and footings and for regular maintenance and repair of such features. Establish and implement a program to monitor these locations for regular maintenance and repair.
5.5-3(c)	Where feasible and appropriate, construct separate, parallel multipurpose trails, one with a firm granular or paved 12-foot-wide surface for cyclists, persons in wheelchairs, and other users preferring a hard surface; and one with a soft granular (e.g., decomposed granite or crushed quarry fines) or native soil 8-foot-wide surface for equestrians and hikers. Where separate trails are not appropriate or feasible, provide an extra-wide single corridor trail constructed of a 12-foot-wide firm granular or asphalt section and an 8-foot-wide soft granular or native soil shoulders on one side. The trail width and surface shall be suitable for use by patrol, maintenance, and emergency vehicles.
5.5-3(d)	In the event there is not sufficient width to construct a trail as described above, implement restrictions on vehicular, horse, bicycle and foot traffic to reduce potential effects from heavy use. Control measures shall include, but would not be limited to, proper trail siting, seasonal trail closures, signage, barriers, and enforcement.

Number	Mitigation Measure
5.5-3(e)	Asphalt paving shall be considered for segments of the multipurpose trail that are expected to receive heavy traffic within two to three years after being opened to such use (e.g., the segment along Woodward Bluffs between Woodward Park and East Copper Avenue.)
5.5-3(f)	Internal trails that provide access to natural reserves or trail loops within the multipurpose trail shall consist of low-impact footpaths that are a minimum of 24 inches wide and constructed of soft granular material, such as decomposed granite or crushed quarry fines, or native soil.
5.5-3(g)	Equestrian facilities and connections to the multipurpose trail system shall be sited, graded, and constructed of suitable materials resistant to the effects of wind and water erosion to minimize the potential for sediments to be carried into adjacent waterways. A program to monitor the effectiveness of such controls shall be established, including implementation of a maintenance and repair plan.
5.5-3(h)	For buildings that do not use a gutter system, landscape planting around the base shall provide increased opportunities for stormwater infiltration and protect the soil from erosion caused by concentrated runoff volumes
5.5-4(a)	Participate, promote or organize community-based litter removal programs for the Parkway.
5.5-4(b)	Trash receptacles including recycling bins sufficient to handle waste generated by Parkway users shall be determined and shall be placed in easily accessible and numerous locations. Frequent and regular monitoring and trash collection to prevent container overflow shall be implemented, particularly during periods of heavy Parkway use.
5.5-4(c)	In public use areas, install signage to educate users of the importance of proper litter disposal and to designate locations of trash containers. Information regarding adverse effects of litter on water quality and wildlife shall be included as part of the educational and interpretive programs.
5.5-5(a)	Septic systems shall only be installed in areas approved by local ordinance and shall be sited, designed, and operated in accordance with all applicable State and local laws and regulations.
5.5-5(b)	In areas where septic systems are prohibited, vault toilets sufficient to handle wastes generated by Parkway users shall be determined and shall be placed in easily accessible and numerous locations. Frequent and regular monitoring and removal of wastes to prevent overflows shall be implemented, particularly during periods of heavy Parkway use.
5.5-5(c)	In public use areas, designate locations of the sanitary facilities.
5.6-l(a)	The Conservancy should facilitate preparation of a habitat preservation and restoration strategy (HPS) among wildlife agencies and resource managers within the Parkway planning area for its lands and member lands within the Parkway planning area. The plan should include the following elements: (i) A survey, either compiled from existing sources, or conducted as necessary to determine the extent and condition of riparian habitat on these lands in the Parkway. Conservation biological criteria shall be used for such determination. (ii) Identification of sites on these lands within the Parkway planning areas which are suitable for restoration and subsequent designation of such sites as Proposed Public Lands Natural Reserve. (iii) Incorporate all relevant policies, mitigation measures, and design policies into the (HPR).
5.6-l(b)	The Conservancy shall include the following design policies for future Parkway development activities: (i) New facilities shall be sited in restored or previously developed areas. Visitor overlooks and viewing areas shall be located so as to avoid intrusion into sensitive habitat areas and to avoid habitat fragmentation. (ii) Whenever feasible, trails shall be routed on the outside edges of habitat areas, rather than through the center of mature riparian stands. (iii) Areas suitable for habitat restoration shall be restored by replanting or habitat management to encourage the establishment and growth of natural vegetation. Selection of restoration species shall be made primarily based on the hydrologic, climatic, and soil conditions, and secondarily on the objectives for recreational uses. Native indigenous riparian species shall be used to the greatest extent possible. Areas damaged by facilities placement shall be mitigated on a no-net-loss basis by restoring habitat in the immediate or adjacent vicinity. (iv) The Parkway shall seek to re-establish cottonwoods and sycamore in areas where there is

Number	Mitigation Measure
	evidence that they previously were present, but are now gone. The Parkway shall protect cottonwoods and sycamores from destruction by beaver by the placement of wire mesh or similar around the base of trunks. (v) The Parkway shall seek to re-establish a continuous corridor of riparian vegetation on both sides of the river to provide for the movement and migration of wildlife, as well as the restoration and improvement of instream shaded habitat.
5.6-2(a)	Avoid intensive recreational or other uses within 500 yards of the rookery, and actively encourage uses for natural preserve in this area.
5.6-2(b	To allow visitors to observe the rookery without causing disturbance, an observation point and trail shall be designed to pass no closer than 250 yards from the existing rookery. The observation point should be designed such that the approach to the point and most of the observation area are visually shielded from the rookery. Informative signage and information at the observation point will provide basic biological information about the rookery and appropriate behavior and actions to avoid disturbing birds during nesting.
5.6-2(c)	Signage, trails and barriers shall be used to channel public access through an area at a distance of at least 250 yards from the rookery. Trails and barriers should visually shield to greater than 80%, the trail from the rookery during the active nesting season.
5.6-2(d)	Regular maintenance and monitoring of the observation point and trails shall be implemented to ensure that barriers and signage are performing the desired function and that the birds are not being disturbed. In the event that substantial disturbance occurs, despite the above mitigation measures, the trail shall be closed until herons have fledged from the rookery.
5.6-2(e)	Additional visual screening shall be developed between the river's edge and the rookery, to minimize potential disturbance from canoe and kayak recreationists within 250 yards of the rookery. Such visual screening shall consist of sandbar willow or similar vegetation planted adjacent to the water course.
5.6-2(f)	Informative signage shall be placed at a distance of 250 yards upstream from the rookery indicating the area as a natural preserve and off-limits to landing for at least the following 500 yards and signage to indicate a "quiet zone" for river users to observe.
5.6-2(g)	In order to protect heron rookery consistent with its authority, the Conservancy shall prohibit motorized vessels (motor boats, jet boats, jet skis) from accessing the area between Friant Dam and the Highway 99 during the months of November through July.
5.6-3(a)	Designated areas of a minimum 100 acres in size shall be preserved, with the goal of minimizing human presence, to provide areas for bald eagle foraging. Such areas will not include trails or recreational facilities within the 100 acre area, to provide sufficient buffer zones between recreational uses and wildlife uses.
5.6-3(b)	In order to protect bald eagles using their wintering habitat, consistent with its authority, the Conservancy shall prohibit motorized vessels (motor boats, jet boats, jet skis) from accessing the area between Friant Dam and Highway 99 during the months of November through March.
5.6-3(c)	In preparing restoration plans, the Parkway will include as an element in each restored area provision for large open snags, suitable for use by foraging bald eagles.
5.6-4(a)	The Conservancy shall implement a policy requiring a continuous strip of riparian vegetation with an average width of 200 feet throughout be developed and maintained throughout the parkway. "Continuous" shall include for these purposes, gaps of no greater than 200 feet or the minimum necessary to allow infrastructure (such as roads or bridges) to cross the Parkway.
5.6-4(b)	The Conservancy shall implement a Parkway plan that includes not less than 3 areas of greater than 100 acres of continuous habitat for the purposes of conserving and supporting those species that require refuge in relatively large blocks of habitat.
5.6-4(c)	Whenever construction of project features is proposed within 300 feet of the riparian corridor, construction supervisors shall be made aware of the biological resources, and shall implement mitigation measures to avoid adversely impacting the riparian corridor.
5.6-5(a)	Whenever construction of project features is proposed within 100 feet of the riparian corridor, construction supervisors shall be made aware of the biological value of elderberry shrubs, and shall implement mitigation measures to avoid adversely affecting this species.
5 .6-5(b)	The Conservancy shall implement a Parkway plan that includes a goal of restoring a continuous distribution of elderberry shrubs throughout the Parkway. Continuous for these purposes shall mean a distance of not greater than 0.25 mile between suitable VELB host plants.
5.6-5(c)	The Conservancy shall require that all elderberry shrubs removed as a part of a project shall be mitigated within the parkway at a ratio and density equivalent to that expressed in the most current USFWS guidelines.

Number	Mitigation Measure
5.6-6(a)	The Parkway shall consider proposed Parkway facilitating sites to avoid areas that were formerly riparian forest, or have high potential for restoration to this threatened habitat type.
5.6-6(b)	The Conservancy shall develop and implement guidelines to guide restoration of riparian habitat within suitable land use designations within the Parkway. Areas suitable for restoration shall be determined on the following criteria: (i) Evidence of historical existence of climax riparian forest, consisting of old tree trunks, presence on historical aerial photographs or historical records with adequate location data. (ii) Soils determined to be suitable for the long-term support of a riparian community, as determined by a qualified restoration biologist. (iii) Hydrological and geomorphological regimes determined to be suitable for the long-term support of a riparian community, as determined by a qualified restoration ecologist and geomorphologist. (iv) Mitigations as stated for Mitigation Measures VII-1(2) C, D, E.
5.7-2(a)	Public access facilities on lands containing sand and gravel operation may be developed where temporary access is feasible in areas containing mineral resources that have yet to be extracted.
5.7-2(b)	No intensive public use areas should be sited near mineral resource processing plants. Temporary berms, a minimum 10' height, with signed fencing should be used to separate publicly accessible trails and use areas from mining activities. Where trails cross haul routes, consideration should be given to using bridges to segregate use or to opening trails for public use only when mining is not active.
5.8-l(a)	Construction activities potentially impacting noise-sensitive land uses in Madera County shall comply with the most stringent of the applicable provisions from the County and City of Fresno's noise ordinances. Specifically, any construction activities occurring outside of the hours between 7 a.m. and 9 p.m., Monday through Saturday, shall comply with the noise exposure limits for the most noise-sensitive land uses established in Fresno County's Noise Control Ordinance (see Table 5.8-3), and with the exposure limits for other (commercial and industrial) land uses established in the City of Fresno's Noise Regulations (see Table 5.8-4).
5.8-2(a)	The Parkway shall develop and implement Parkway guidelines to include elements addressing public education regarding appropriate behavior while on Parkway property.
5.8-2(b	To the extent feasible, any new access roadways associated with specific projects under the Plan should be located to reduce disturbance from intermittent vehicle passbys at the nearest noise-sensitive land uses.
5.8-2(c)	Any use of recreational areas within the Planning Area, aside from camping, shall be limited to the hours between sunrise and sunset. Access to these areas shall be limited to these hours.
5.8-2(d)	A minimum buffer of 300 feet shall be required between any existing, occupied residential property or residential structure and any turf areas, picnic areas, dog play areas or permanent outdoor education areas where large groups of people and/or pets may gather.
5.8-3(a)	At a minimum, avoid siting any recreational or educational facilities in any areas exposed to existing or projected future noise levels exceeding applicable ONC noise guidelines: (i) 75 dBA LdjCNEL for golf courses, equestrian facilities, canoe put-out and take-in facilities and swimming areas. (ii) 70 dBA LmfCNEL for picnic areas, turf and other play areas, and any other daytime gathering areas. (iii) 60 dBA LdjCNEL for camping areas or indoor educational facilities, although noise exposure up to 70 dBA Ldn may be acceptable for the latter if adequate sound insulation can be demonstrated.
5.9-l(a)	Incorporate requirements of state or federal law or any local ordinance prohibiting or restricting modification of cultural sites.
5.9-1(b)	Prior to approval of any construction in the Plan area, a records search shall be conducted to determine whether cultural resources have been recorded in or near the project development area, or are likely to occur. The study area should include areas to be directly affected as well as any areas of increased ingress in which cultural resources could be located. An on-the-ground field survey shall also be conducted by a qualified archeologist of all potentially affected areas, with all resources

Number	Mitigation Measure
	inventoried and evaluations made to determine the significance of any resources present. Mitigation measures shall be developed and implemented to reduce any impact to any cultural resources to a less than significant level before construction begins.
5.9-I(c)	In the event of the discovery of any subsurface archeological artifact, feature or deposit during construction activities, work within 100 feet of the find shall be halted, and an archeologist will be contacted for an in-field evaluation. (i) If the resource is determined to be significant, an appropriate plan for resource preservation or site excavation must be developed and implemented. (ii) If bone is found that appears to be human, work within I00 feet of the find shall be halted, and the County Coroner must be contacted. If the remains are determined to be of Native American origin, the Coroner shall notify the Native American Heritage Commission (NAHC). The NAHC shall determine the "most likely descendant", who will work to develop a plan for the area of the find. Construction work shall remain halted in the vicinity of the discovery until the plan can be implemented.
5.9-2(a)	Prior to approval of any construction in the Plan area, contact should be made with the Native American Heritage Commission to obtain the names of individuals who may have knowledge regarding areas of concern in or near the Parkway Plan area such as familial villages, gathering areas, power places, or other sites with heritage values for Native Americans. These individuals should be contacted, and information solicited on traditional cultural properties that may be present within the study area. Mitigation measures shall be developed and implemented to reduce any impact to any traditional cultural properties to a less than significant level before construction begins.
5.9-3(a)	Develop Parkway manual for park staff and wardens instructing them on cultural sites and their sensitivity.
5.9-3(b)	Develop educational materials readily available at key locations instructing the public on value of cultural heritage and the need to not disturb sites. Information should include what to do in the event a cultural site is disturbed or an artifact discovered.

Appendix C
Emissions Modeling

SJRC - River West Eaton Trail Extension Project (Perrin Ave Parking Lot)

San Joaquin Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	2.23	Acre	2.23	97,055.00	0
City Park	0.02	Acre	0.02	1,000.00	0
User Defined Recreational	1.00	User Defined Unit	6.67	290,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Trail = 6.67 acres; Perrin Ave Parking Lot = 2.23 acres; Recreational Amenities including restroom facility assume 1,000 sq. ft.

Construction Phase - Construction phases specific to project.

Off-road Equipment -

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Trips and VMT - Trips and distance specific to project.

Grading - 2.5 miles x 22 feet x 4 inches = 3585 cu yds. of decomposed granite.

Vehicle Trips - 318 average daily trips.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	230.00	66.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	PhaseEndDate	8/29/2019	9/30/2019
tblConstructionPhase	PhaseEndDate	10/31/2019	7/31/2019
tblConstructionPhase	PhaseEndDate	6/28/2019	6/30/2019
tblConstructionPhase	PhaseStartDate	8/1/2019	9/1/2019
tblConstructionPhase	PhaseStartDate	10/1/2019	7/1/2019
tblGrading	AcresOfGrading	11.50	10.00
tblGrading	MaterialImported	0.00	3,585.00
tblLandUse	LandUseSquareFeet	97,138.80	97,055.00
tblLandUse	LandUseSquareFeet	871.20	1,000.00
tblLandUse	LandUseSquareFeet	0.00	290,400.00

tblLandUse	LotAcreage	0.00	6.67
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripNumber	448.00	230.00
tblTripsAndVMT	VendorTripNumber	64.00	0.00
tblTripsAndVMT	WorkerTripNumber	25.00	40.00
tblTripsAndVMT	WorkerTripNumber	28.00	40.00
tblTripsAndVMT	WorkerTripNumber	163.00	40.00
tblTripsAndVMT	WorkerTripNumber	20.00	40.00
tblTripsAndVMT	WorkerTripNumber	33.00	40.00
tblVehicleTrips	ST_TR	1.59	15,900.00
tblVehicleTrips	SU_TR	1.59	15,900.00
tblVehicleTrips	WD_TR	1.59	15,900.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	2.1955	1.4822	1.0147	2.2100e-003	0.0305	0.0692	0.0997	7.2500e-003	0.0638	0.0710	0.0000	190.6043	190.6043	0.0534	0.0000	191.7266
Total	**2.1955**	**1.4822**	**1.0147**	**2.2100e-003**	**0.0305**	**0.0692**	**0.0997**	**7.2500e-003**	**0.0638**	**0.0710**	**0.0000**	**190.6043**	**190.6043**	**0.0534**	**0.0000**	**191.7266**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	2.1955	1.4822	1.0147	2.2100e-003	0.0305	0.0692	0.0997	7.2500e-003	0.0638	0.0710	0.0000	190.6041	190.6041	0.0534	0.0000	191.7264
Total	**2.1955**	**1.4822**	**1.0147**	**2.2100e-003**	**0.0305**	**0.0692**	**0.0997**	**7.2500e-003**	**0.0638**	**0.0710**	**0.0000**	**190.6041**	**190.6041**	**0.0534**	**0.0000**	**191.7264**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.7217	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	0.0000	6.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	24.8463	24.8463	1.1200e-003	2.3000e-004	24.9419
Mobile	0.1986	0.6051	2.2839	4.6500e-003	0.2583	9.4700e-003	0.2677	0.0694	8.7300e-003	0.0781	0.0000	340.4551	340.4551	0.0101	0.0000	340.6670
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0243	0.0243	0.0000	0.0000	0.0244
Total	**1.9203**	**0.6051**	**2.2839**	**4.6500e-003**	**0.2583**	**9.4700e-003**	**0.2677**	**0.0694**	**8.7300e-003**	**0.0781**	**0.0000**	**365.3257**	**365.3257**	**0.0112**	**2.3000e-004**	**365.6333**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.7217	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	0.0000	6.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	24.8463	24.8463	1.1200e-003	2.3000e-004	24.9419
Mobile	0.1986	0.6051	2.2839	4.6500e-003	0.2583	9.4700e-003	0.2677	0.0694	8.7300e-003	0.0781	0.0000	340.4551	340.4551	0.0101	0.0000	340.6670
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0243	0.0243	0.0000	0.0000	0.0244
Total	**1.9203**	**0.6051**	**2.2839**	**4.6500e-003**	**0.2583**	**9.4700e-003**	**0.2677**	**0.0694**	**8.7300e-003**	**0.0781**	**0.0000**	**365.3257**	**365.3257**	**0.0112**	**2.3000e-004**	**365.6333**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	5/1/2019	5/31/2019	5	23	
2	Trenching	Trenching	6/1/2019	6/30/2019	5	20	
3	Building Construction & Landscaping	Building Construction	7/1/2019	9/30/2019	5	66	
4	Paving	Paving	7/1/2019	7/31/2019	5	23	
5	Architectural Coating	Architectural Coating	9/1/2019	9/30/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 441,467; Non-Residential Outdoor: 147,156 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	0	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	1	8.00	400	0.38
Grading	Other Construction Equipment	1	8.00	171	0.42
Grading	Plate Compactors	2	8.00	8	0.43
Grading	Rubber Tired Dozers	0	8.00	255	0.40
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Trenching	Graders	1	8.00	174	0.41
Trenching	Off-Highway Trucks	1	8.00	400	0.38
Trenching	Other Construction Equipment	1	8.00	171	0.42
Trenching	Plate Compactors	2	8.00	8	0.43
Trenching	Rubber Tired Loaders	2	8.00	199	0.36
Trenching	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction & Landscaping	Cranes	0	7.00	226	0.29
Building Construction & Landscaping	Forklifts	1	8.00	89	0.20
Building Construction & Landscaping	Generator Sets	0	8.00	84	0.74
Building Construction & Landscaping	Rubber Tired Loaders	2	8.00	199	0.36
Building Construction & Landscaping	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction & Landscaping	Welders	0	8.00	46	0.45
Paving	Other Construction Equipment	1	8.00	171	0.42
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Rollers	2	8.00	80	0.38
Paving	Rubber Tired Loaders	2	8.00	199	0.36
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	10	40.00	0.00	230.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Trenching	11	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Building Construction & Landscaping	3	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Paving	8	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.5700e-003	0.0000	5.5700e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0391	0.4016	0.2758	5.2000e-004		0.0205	0.0205		0.0189	0.0189	0.0000	46.2256	46.2256	0.0145	0.0000	46.5295
Total	**0.0391**	**0.4016**	**0.2758**	**5.2000e-004**	**5.5700e-003**	**0.0205**	**0.0261**	**6.1000e-004**	**0.0189**	**0.0195**	**0.0000**	**46.2256**	**46.2256**	**0.0145**	**0.0000**	**46.5295**

3.2 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-003	7.0500e-003	0.0214	2.0000e-005	4.9000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9882	1.9882	2.0000e-005	0.0000	1.9886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**2.4200e-003**	**8.6200e-003**	**0.0367**	**6.0000e-005**	**4.1700e-003**	**1.3000e-004**	**4.3000e-003**	**1.1200e-003**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**4.9289**	**4.9289**	**1.6000e-004**	**0.0000**	**4.9322**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.5700e-003	0.0000	5.5700e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0391	0.4016	0.2758	5.2000e-004		0.0205	0.0205		0.0189	0.0189	0.0000	46.2256	46.2256	0.0145	0.0000	46.5295
Total	**0.0391**	**0.4016**	**0.2758**	**5.2000e-004**	**5.5700e-003**	**0.0205**	**0.0261**	**6.1000e-004**	**0.0189**	**0.0195**	**0.0000**	**46.2256**	**46.2256**	**0.0145**	**0.0000**	**46.5295**

3.2 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-003	7.0500e-003	0.0214	2.0000e-005	4.9000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9882	1.9882	2.0000e-005	0.0000	1.9886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**2.4200e-003**	**8.6200e-003**	**0.0367**	**6.0000e-005**	**4.1700e-003**	**1.3000e-004**	**4.3000e-003**	**1.1200e-003**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**4.9289**	**4.9289**	**1.6000e-004**	**0.0000**	**4.9322**

3.3 Trenching - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0379	0.3965	0.2562	5.1000e-004		0.0194	0.0194		0.0179	0.0179	0.0000	45.6993	45.6993	0.0143	0.0000	46.0001
Total	**0.0379**	**0.3965**	**0.2562**	**5.1000e-004**		**0.0194**	**0.0194**		**0.0179**	**0.0179**	**0.0000**	**45.6993**	**45.6993**	**0.0143**	**0.0000**	**46.0001**

3.3 Trenching - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0379	0.3965	0.2562	5.1000e-004		0.0194	0.0194		0.0179	0.0179	0.0000	45.6992	45.6992	0.0143	0.0000	46.0001
Total	**0.0379**	**0.3965**	**0.2562**	**5.1000e-004**		**0.0194**	**0.0194**		**0.0179**	**0.0179**	**0.0000**	**45.6992**	**45.6992**	**0.0143**	**0.0000**	**46.0001**

3.3 Trenching - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

3.4 Building Construction & Landscaping - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0311	0.3594	0.1480	4.5000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	40.8505	40.8505	0.0129	0.0000	41.1219
Total	**0.0311**	**0.3594**	**0.1480**	**4.5000e-004**		**0.0141**	**0.0141**		**0.0130**	**0.0130**	**0.0000**	**40.8505**	**40.8505**	**0.0129**	**0.0000**	**41.1219**

3.4 Building Construction & Landscaping - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4900e-003	4.5200e-003	0.0439	1.3000e-004	0.0106	8.0000e-005	0.0106	2.8000e-003	7.0000e-005	2.8800e-003	0.0000	8.4385	8.4385	4.0000e-004	0.0000	8.4468
Total	**3.4900e-003**	**4.5200e-003**	**0.0439**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0106**	**2.8000e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**8.4385**	**8.4385**	**4.0000e-004**	**0.0000**	**8.4468**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0311	0.3594	0.1480	4.5000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	40.8505	40.8505	0.0129	0.0000	41.1219
Total	**0.0311**	**0.3594**	**0.1480**	**4.5000e-004**		**0.0141**	**0.0141**		**0.0130**	**0.0130**	**0.0000**	**40.8505**	**40.8505**	**0.0129**	**0.0000**	**41.1219**

3.4 Building Construction & Landscaping - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4900e-003	4.5200e-003	0.0439	1.3000e-004	0.0106	8.0000e-005	0.0106	2.8000e-003	7.0000e-005	2.8800e-003	0.0000	8.4385	8.4385	4.0000e-004	0.0000	8.4468
Total	**3.4900e-003**	**4.5200e-003**	**0.0439**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0106**	**2.8000e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**8.4385**	**8.4385**	**4.0000e-004**	**0.0000**	**8.4468**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0263	0.2879	0.1922	3.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	33.5978	33.5978	0.0106	0.0000	33.8194
Paving	2.9200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0292**	**0.2879**	**0.1922**	**3.8000e-004**		**0.0135**	**0.0135**		**0.0124**	**0.0124**	**0.0000**	**33.5978**	**33.5978**	**0.0106**	**0.0000**	**33.8194**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0263	0.2879	0.1922	3.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	33.5978	33.5978	0.0106	0.0000	33.8194
Paving	2.9200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0292**	**0.2879**	**0.1922**	**3.8000e-004**		**0.0135**	**0.0135**		**0.0124**	**0.0124**	**0.0000**	**33.5978**	**33.5978**	**0.0106**	**0.0000**	**33.8194**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0462					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8000e-003	0.0193	0.0193	3.0000e-005		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	2.6809	2.6809	2.3000e-004	0.0000	2.6857
Total	**2.0490**	**0.0193**	**0.0193**	**3.0000e-005**		**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**2.6809**	**2.6809**	**2.3000e-004**	**0.0000**	**2.6857**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.4400e-003	0.0140	4.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.6850	2.6850	1.3000e-004	0.0000	2.6876
Total	**1.1100e-003**	**1.4400e-003**	**0.0140**	**4.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.6850**	**2.6850**	**1.3000e-004**	**0.0000**	**2.6876**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0462					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8000e-003	0.0193	0.0193	3.0000e-005		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	2.6809	2.6809	2.3000e-004	0.0000	2.6857
Total	**2.0490**	**0.0193**	**0.0193**	**3.0000e-005**		**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**2.6809**	**2.6809**	**2.3000e-004**	**0.0000**	**2.6857**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.4400e-003	0.0140	4.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.6850	2.6850	1.3000e-004	0.0000	2.6876
Total	**1.1100e-003**	**1.4400e-003**	**0.0140**	**4.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.6850**	**2.6850**	**1.3000e-004**	**0.0000**	**2.6876**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1986	0.6051	2.2839	4.6500e-003	0.2583	9.4700e-003	0.2677	0.0694	8.7300e-003	0.0781	0.0000	340.4551	340.4551	0.0101	0.0000	340.6670
Unmitigated	0.1986	0.6051	2.2839	4.6500e-003	0.2583	9.4700e-003	0.2677	0.0694	8.7300e-003	0.0781	0.0000	340.4551	340.4551	0.0101	0.0000	340.6670

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	318.00	318.00	318.00	678,883	678,883
Parking Lot	0.00	0.00	0.00		
User Defined Recreational	0.00	0.00	0.00		
Total	318.00	318.00	318.00	678,883	678,883

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.409687	0.062677	0.156376	0.176111	0.050971	0.007837	0.019872	0.103412	0.001778	0.001574	0.006496	0.000897	0.002312

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	24.8463	24.8463	1.1200e-003	2.3000e-004	24.9419
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	24.8463	24.8463	1.1200e-003	2.3000e-004	24.9419
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	85408.4	24.8463	1.1200e-003	2.3000e-004	24.9419
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**24.8463**	**1.1200e-003**	**2.3000e-004**	**24.9419**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	85408.4	24.8463	1.1200e-003	2.3000e-004	24.9419
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**24.8463**	**1.1200e-003**	**2.3000e-004**	**24.9419**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.7217	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	0.0000	6.0000e-005
Unmitigated	1.7217	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	0.0000	6.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2046					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5171					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	0.0000	6.0000e-005
Total	**1.7217**	**0.0000**	**3.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.0000**	**6.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2046					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5171					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	0.0000	6.0000e-005
Total	**1.7217**	**0.0000**	**3.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.0000**	**6.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0243	0.0000	0.0000	0.0244
Unmitigated	0.0243	0.0000	0.0000	0.0244

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0238296	0.0243	0.0000	0.0000	0.0244
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0243**	**0.0000**	**0.0000**	**0.0244**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0238296	0.0243	0.0000	0.0000	0.0244
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0243**	**0.0000**	**0.0000**	**0.0244**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

SJRC - River West Eaton Trail Extension Project (Perrin Ave & Additional Parking Lot)

San Joaquin Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	3.87	Acre	3.87	168,577.20	0
City Park	0.02	Acre	0.02	1,000.00	0
User Defined Recreational	1.00	User Defined Unit	6.67	290,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Trail = 6.67 acres; Perrin Ave + Additional Parking Lot = 3.87 acres; Recreational Amenities including restroom facility assume 1,000 sq. ft.

Construction Phase - Construction phases specific to project.

Off-road Equipment -

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Trips and VMT - Trips and distance specific to project.

Grading - 2.5 miles x 22 feet x 4 in = 3585 cu yds. of decomposed granite.

Vehicle Trips - 558 average daily trips.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	148,229.00	147,156.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	444,686.00	441,467.00
tblAreaCoating	Area_Nonresidential_Interior	444686	441467
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	300.00	66.00
tblConstructionPhase	NumDays	30.00	23.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	PhaseEndDate	8/29/2019	9/30/2019
tblConstructionPhase	PhaseEndDate	10/31/2019	7/31/2019
tblConstructionPhase	PhaseEndDate	6/28/2019	6/30/2019
tblConstructionPhase	PhaseStartDate	8/1/2019	9/1/2019
tblConstructionPhase	PhaseStartDate	10/1/2019	7/1/2019
tblGrading	AcresOfGrading	11.50	10.00
tblGrading	MaterialImported	0.00	3,585.00

tblLandUse	LandUseSquareFeet	871.20	1,000.00
tblLandUse	LandUseSquareFeet	0.00	290,400.00
tblLandUse	LotAcreage	0.00	6.67
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripNumber	448.00	230.00
tblTripsAndVMT	VendorTripNumber	75.00	0.00
tblTripsAndVMT	WorkerTripNumber	25.00	40.00
tblTripsAndVMT	WorkerTripNumber	28.00	40.00
tblTripsAndVMT	WorkerTripNumber	193.00	40.00
tblTripsAndVMT	WorkerTripNumber	20.00	40.00
tblTripsAndVMT	WorkerTripNumber	39.00	40.00
tblVehicleTrips	ST_TR	1.59	27,900.00
tblVehicleTrips	SU_TR	1.59	27,900.00

tblVehicleTrips	WD_TR	1.59	27,900.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	2.1976	1.4822	1.0147	2.2100e-003	0.0305	0.0692	0.0997	7.2500e-003	0.0638	0.0710	0.0000	190.6043	190.6043	0.0534	0.0000	191.7266
Total	**2.1976**	**1.4822**	**1.0147**	**2.2100e-003**	**0.0305**	**0.0692**	**0.0997**	**7.2500e-003**	**0.0638**	**0.0710**	**0.0000**	**190.6043**	**190.6043**	**0.0534**	**0.0000**	**191.7266**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	2.1976	1.4822	1.0147	2.2100e-003	0.0305	0.0692	0.0997	7.2500e-003	0.0638	0.0710	0.0000	190.6041	190.6041	0.0534	0.0000	191.7264
Total	**2.1976**	**1.4822**	**1.0147**	**2.2100e-003**	**0.0305**	**0.0692**	**0.0997**	**7.2500e-003**	**0.0638**	**0.0710**	**0.0000**	**190.6041**	**190.6041**	**0.0534**	**0.0000**	**191.7264**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.0014	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	43.1561	43.1561	1.9500e-003	4.0000e-004	43.3223
Mobile	0.3484	1.0619	4.0076	8.1600e-003	0.4532	0.0166	0.4698	0.1218	0.0153	0.1371	0.0000	597.4024	597.4024	0.0177	0.0000	597.7741
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0243	0.0243	0.0000	0.0000	0.0244
Total	**2.3499**	**1.0619**	**4.0077**	**8.1600e-003**	**0.4532**	**0.0166**	**0.4698**	**0.1218**	**0.0153**	**0.1371**	**0.0000**	**640.5829**	**640.5829**	**0.0197**	**4.0000e-004**	**641.1208**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.0014	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	43.1561	43.1561	1.9500e-003	4.0000e-004	43.3223
Mobile	0.3484	1.0619	4.0076	8.1600e-003	0.4532	0.0166	0.4698	0.1218	0.0153	0.1371	0.0000	597.4024	597.4024	0.0177	0.0000	597.7741
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0243	0.0243	0.0000	0.0000	0.0244
Total	**2.3499**	**1.0619**	**4.0077**	**8.1600e-003**	**0.4532**	**0.0166**	**0.4698**	**0.1218**	**0.0153**	**0.1371**	**0.0000**	**640.5829**	**640.5829**	**0.0197**	**4.0000e-004**	**641.1208**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	5/1/2019	5/31/2019	5	23	
2	Trenching	Trenching	6/1/2019	6/30/2019	5	20	
3	Building Construction & Landscaping	Building Construction	7/1/2019	9/30/2019	5	66	
4	Paving	Paving	7/1/2019	7/31/2019	5	23	
5	Architectural Coating	Architectural Coating	9/1/2019	9/30/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 441,467; Non-Residential Outdoor: 147,156 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	0	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	1	8.00	400	0.38
Grading	Other Construction Equipment	1	8.00	171	0.42
Grading	Plate Compactors	2	8.00	8	0.43
Grading	Rubber Tired Dozers	0	8.00	255	0.40
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Trenching	Graders	1	8.00	174	0.41
Trenching	Off-Highway Trucks	1	8.00	400	0.38
Trenching	Other Construction Equipment	1	8.00	171	0.42
Trenching	Plate Compactors	2	8.00	8	0.43
Trenching	Rubber Tired Loaders	2	8.00	199	0.36
Trenching	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction & Landscaping	Cranes	0	7.00	226	0.29
Building Construction & Landscaping	Forklifts	1	8.00	89	0.20
Building Construction & Landscaping	Generator Sets	0	8.00	84	0.74
Building Construction & Landscaping	Rubber Tired Loaders	2	8.00	199	0.36
Building Construction & Landscaping	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction & Landscaping	Welders	0	8.00	46	0.45
Paving	Other Construction Equipment	1	8.00	171	0.42
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Rollers	2	8.00	80	0.38
Paving	Rubber Tired Loaders	2	8.00	199	0.36
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	10	40.00	0.00	230.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Trenching	11	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Building Construction & Landscaping	3	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Paving	8	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.5700e-003	0.0000	5.5700e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0391	0.4016	0.2758	5.2000e-004		0.0205	0.0205		0.0189	0.0189	0.0000	46.2256	46.2256	0.0145	0.0000	46.5295
Total	**0.0391**	**0.4016**	**0.2758**	**5.2000e-004**	**5.5700e-003**	**0.0205**	**0.0261**	**6.1000e-004**	**0.0189**	**0.0195**	**0.0000**	**46.2256**	**46.2256**	**0.0145**	**0.0000**	**46.5295**

3.2 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-003	7.0500e-003	0.0214	2.0000e-005	4.9000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9882	1.9882	2.0000e-005	0.0000	1.9886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**2.4200e-003**	**8.6200e-003**	**0.0367**	**6.0000e-005**	**4.1700e-003**	**1.3000e-004**	**4.3000e-003**	**1.1200e-003**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**4.9289**	**4.9289**	**1.6000e-004**	**0.0000**	**4.9322**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.5700e-003	0.0000	5.5700e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0391	0.4016	0.2758	5.2000e-004		0.0205	0.0205		0.0189	0.0189	0.0000	46.2256	46.2256	0.0145	0.0000	46.5295
Total	**0.0391**	**0.4016**	**0.2758**	**5.2000e-004**	**5.5700e-003**	**0.0205**	**0.0261**	**6.1000e-004**	**0.0189**	**0.0195**	**0.0000**	**46.2256**	**46.2256**	**0.0145**	**0.0000**	**46.5295**

3.2 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-003	7.0500e-003	0.0214	2.0000e-005	4.9000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9882	1.9882	2.0000e-005	0.0000	1.9886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**2.4200e-003**	**8.6200e-003**	**0.0367**	**6.0000e-005**	**4.1700e-003**	**1.3000e-004**	**4.3000e-003**	**1.1200e-003**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**4.9289**	**4.9289**	**1.6000e-004**	**0.0000**	**4.9322**

3.3 Trenching - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0379	0.3965	0.2562	5.1000e-004		0.0194	0.0194		0.0179	0.0179	0.0000	45.6993	45.6993	0.0143	0.0000	46.0001
Total	**0.0379**	**0.3965**	**0.2562**	**5.1000e-004**		**0.0194**	**0.0194**		**0.0179**	**0.0179**	**0.0000**	**45.6993**	**45.6993**	**0.0143**	**0.0000**	**46.0001**

3.3 Trenching - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0379	0.3965	0.2562	5.1000e-004		0.0194	0.0194		0.0179	0.0179	0.0000	45.6992	45.6992	0.0143	0.0000	46.0001
Total	**0.0379**	**0.3965**	**0.2562**	**5.1000e-004**		**0.0194**	**0.0194**		**0.0179**	**0.0179**	**0.0000**	**45.6992**	**45.6992**	**0.0143**	**0.0000**	**46.0001**

3.3 Trenching - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

3.4 Building Construction & Landscaping - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0311	0.3594	0.1480	4.5000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	40.8505	40.8505	0.0129	0.0000	41.1219
Total	**0.0311**	**0.3594**	**0.1480**	**4.5000e-004**		**0.0141**	**0.0141**		**0.0130**	**0.0130**	**0.0000**	**40.8505**	**40.8505**	**0.0129**	**0.0000**	**41.1219**

3.4 Building Construction & Landscaping - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4900e-003	4.5200e-003	0.0439	1.3000e-004	0.0106	8.0000e-005	0.0106	2.8000e-003	7.0000e-005	2.8800e-003	0.0000	8.4385	8.4385	4.0000e-004	0.0000	8.4468
Total	**3.4900e-003**	**4.5200e-003**	**0.0439**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0106**	**2.8000e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**8.4385**	**8.4385**	**4.0000e-004**	**0.0000**	**8.4468**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0311	0.3594	0.1480	4.5000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	40.8505	40.8505	0.0129	0.0000	41.1219
Total	**0.0311**	**0.3594**	**0.1480**	**4.5000e-004**		**0.0141**	**0.0141**		**0.0130**	**0.0130**	**0.0000**	**40.8505**	**40.8505**	**0.0129**	**0.0000**	**41.1219**

3.4 Building Construction & Landscaping - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4900e-003	4.5200e-003	0.0439	1.3000e-004	0.0106	8.0000e-005	0.0106	2.8000e-003	7.0000e-005	2.8800e-003	0.0000	8.4385	8.4385	4.0000e-004	0.0000	8.4468
Total	**3.4900e-003**	**4.5200e-003**	**0.0439**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0106**	**2.8000e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**8.4385**	**8.4385**	**4.0000e-004**	**0.0000**	**8.4468**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0263	0.2879	0.1922	3.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	33.5978	33.5978	0.0106	0.0000	33.8194
Paving	5.0700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0313**	**0.2879**	**0.1922**	**3.8000e-004**		**0.0135**	**0.0135**		**0.0124**	**0.0124**	**0.0000**	**33.5978**	**33.5978**	**0.0106**	**0.0000**	**33.8194**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0263	0.2879	0.1922	3.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	33.5978	33.5978	0.0106	0.0000	33.8194
Paving	5.0700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0313**	**0.2879**	**0.1922**	**3.8000e-004**		**0.0135**	**0.0135**		**0.0124**	**0.0124**	**0.0000**	**33.5978**	**33.5978**	**0.0106**	**0.0000**	**33.8194**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0462					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8000e-003	0.0193	0.0193	3.0000e-005		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	2.6809	2.6809	2.3000e-004	0.0000	2.6857
Total	**2.0490**	**0.0193**	**0.0193**	**3.0000e-005**		**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**2.6809**	**2.6809**	**2.3000e-004**	**0.0000**	**2.6857**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.4400e-003	0.0140	4.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.6850	2.6850	1.3000e-004	0.0000	2.6876
Total	**1.1100e-003**	**1.4400e-003**	**0.0140**	**4.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.6850**	**2.6850**	**1.3000e-004**	**0.0000**	**2.6876**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0462					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8000e-003	0.0193	0.0193	3.0000e-005		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	2.6809	2.6809	2.3000e-004	0.0000	2.6857
Total	**2.0490**	**0.0193**	**0.0193**	**3.0000e-005**		**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**2.6809**	**2.6809**	**2.3000e-004**	**0.0000**	**2.6857**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.4400e-003	0.0140	4.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.6850	2.6850	1.3000e-004	0.0000	2.6876
Total	**1.1100e-003**	**1.4400e-003**	**0.0140**	**4.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.6850**	**2.6850**	**1.3000e-004**	**0.0000**	**2.6876**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3484	1.0619	4.0076	8.1600e-003	0.4532	0.0166	0.4698	0.1218	0.0153	0.1371	0.0000	597.4024	597.4024	0.0177	0.0000	597.7741
Unmitigated	0.3484	1.0619	4.0076	8.1600e-003	0.4532	0.0166	0.4698	0.1218	0.0153	0.1371	0.0000	597.4024	597.4024	0.0177	0.0000	597.7741

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	558.00	558.00	558.00	1,191,248	1,191,248
Parking Lot	0.00	0.00	0.00		
User Defined Recreational	0.00	0.00	0.00		
Total	558.00	558.00	558.00	1,191,248	1,191,248

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.409687	0.062677	0.156376	0.176111	0.050971	0.007837	0.019872	0.103412	0.001778	0.001574	0.006496	0.000897	0.002312

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	43.1561	43.1561	1.9500e-003	4.0000e-004	43.3223
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	43.1561	43.1561	1.9500e-003	4.0000e-004	43.3223
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	148348	43.1561	1.9500e-003	4.0000e-004	43.3223
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**43.1561**	**1.9500e-003**	**4.0000e-004**	**43.3223**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	148348	43.1561	1.9500e-003	4.0000e-004	43.3223
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**43.1561**	**1.9500e-003**	**4.0000e-004**	**43.3223**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.0014	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Unmitigated	2.0014	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2050					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7964					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Total	**2.0014**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.0000**	**9.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2050					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7964					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Total	**2.0014**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.0000**	**9.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0243	0.0000	0.0000	0.0244
Unmitigated	0.0243	0.0000	0.0000	0.0244

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0238296	0.0243	0.0000	0.0000	0.0244
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0243**	**0.0000**	**0.0000**	**0.0244**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0238296	0.0243	0.0000	0.0000	0.0244
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0243**	**0.0000**	**0.0000**	**0.0244**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

SJRC - River West Eaton Trail Extension Project (No Parking Lot)

San Joaquin Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	1.00	User Defined Unit	6.67	290,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Trail = 6.67 acres

Construction Phase - Construction phases spcific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Trips and VMT - Trips and distance spcific to project.

Grading - 2.5 miles x 22 feet x 4 inches = 3585 cu yds. of decomposed granite.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	PhaseEndDate	6/28/2019	6/30/2019
tblGrading	AcresOfGrading	11.50	10.00
tblGrading	MaterialImported	0.00	3,585.00
tblLandUse	LandUseSquareFeet	0.00	290,400.00
tblLandUse	LotAcreage	0.00	6.67
tblOffRoadEquipment	HorsePower	171.00	400.00
tblOffRoadEquipment	LoadFactor	0.42	0.38
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripNumber	448.00	230.00
tblTripsAndVMT	WorkerTripNumber	25.00	40.00
tblTripsAndVMT	WorkerTripNumber	28.00	40.00
tblTripsAndVMT	WorkerTripNumber	20.00	40.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1055	1.0932	0.7667	1.5600e-003	0.0166	0.0522	0.0688	3.5500e-003	0.0480	0.0516	0.0000	135.9297	135.9297	0.0398	0.0000	136.7647
Total	**0.1055**	**1.0932**	**0.7667**	**1.5600e-003**	**0.0166**	**0.0522**	**0.0688**	**3.5500e-003**	**0.0480**	**0.0516**	**0.0000**	**135.9297**	**135.9297**	**0.0398**	**0.0000**	**136.7647**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1055	1.0932	0.7667	1.5600e-003	0.0166	0.0522	0.0688	3.5500e-003	0.0480	0.0516	0.0000	135.9295	135.9295	0.0398	0.0000	136.7645
Total	**0.1055**	**1.0932**	**0.7667**	**1.5600e-003**	**0.0166**	**0.0522**	**0.0688**	**3.5500e-003**	**0.0480**	**0.0516**	**0.0000**	**135.9295**	**135.9295**	**0.0398**	**0.0000**	**136.7645**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.3361	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.3361**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.3361	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.3361**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	5/1/2019	5/31/2019	5	23	
2	Trenching	Trenching	6/1/2019	6/30/2019	5	20	
3	Paving	Paving	7/1/2019	7/31/2019	5	23	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	0	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Other Construction Equipment	1	8.00	400	0.38
Grading	Plate Compactors	2	8.00	8	0.43
Grading	Rubber Tired Dozers	0	8.00	255	0.40
Grading	Rubber Tired Loaders	2	8.00	199	0.36
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Trenching	Graders	1	8.00	174	0.41
Trenching	Off-Highway Trucks	1	8.00	400	0.38
Trenching	Other Construction Equipment	1	8.00	171	0.42
Trenching	Plate Compactors	2	8.00	8	0.43
Trenching	Rubber Tired Loaders	2	8.00	199	0.36
Trenching	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Paving	Other Construction Equipment	1	8.00	171	0.42
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Rollers	2	8.00	80	0.38
Paving	Rubber Tired Loaders	2	8.00	199	0.36

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	10	40.00	0.00	230.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Trenching	11	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Paving	8	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.5700e-003	0.0000	5.5700e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0366	0.3972	0.2529	5.2000e-004		0.0191	0.0191		0.0176	0.0176	0.0000	46.2059	46.2059	0.0145	0.0000	46.5097
Total	**0.0366**	**0.3972**	**0.2529**	**5.2000e-004**	**5.5700e-003**	**0.0191**	**0.0247**	**6.1000e-004**	**0.0176**	**0.0182**	**0.0000**	**46.2059**	**46.2059**	**0.0145**	**0.0000**	**46.5097**

3.2 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-003	7.0500e-003	0.0214	2.0000e-005	4.9000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9882	1.9882	2.0000e-005	0.0000	1.9886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**2.4200e-003**	**8.6200e-003**	**0.0367**	**6.0000e-005**	**4.1700e-003**	**1.3000e-004**	**4.3000e-003**	**1.1200e-003**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**4.9289**	**4.9289**	**1.6000e-004**	**0.0000**	**4.9322**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.5700e-003	0.0000	5.5700e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0366	0.3972	0.2529	5.2000e-004		0.0191	0.0191		0.0176	0.0176	0.0000	46.2058	46.2058	0.0145	0.0000	46.5096
Total	**0.0366**	**0.3972**	**0.2529**	**5.2000e-004**	**5.5700e-003**	**0.0191**	**0.0247**	**6.1000e-004**	**0.0176**	**0.0182**	**0.0000**	**46.2058**	**46.2058**	**0.0145**	**0.0000**	**46.5096**

3.2 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-003	7.0500e-003	0.0214	2.0000e-005	4.9000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9882	1.9882	2.0000e-005	0.0000	1.9886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**2.4200e-003**	**8.6200e-003**	**0.0367**	**6.0000e-005**	**4.1700e-003**	**1.3000e-004**	**4.3000e-003**	**1.1200e-003**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**4.9289**	**4.9289**	**1.6000e-004**	**0.0000**	**4.9322**

3.3 Trenching - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0379	0.3965	0.2562	5.1000e-004		0.0194	0.0194		0.0179	0.0179	0.0000	45.6993	45.6993	0.0143	0.0000	46.0001
Total	**0.0379**	**0.3965**	**0.2562**	**5.1000e-004**		**0.0194**	**0.0194**		**0.0179**	**0.0179**	**0.0000**	**45.6993**	**45.6993**	**0.0143**	**0.0000**	**46.0001**

3.3 Trenching - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0379	0.3965	0.2562	5.1000e-004		0.0194	0.0194		0.0179	0.0179	0.0000	45.6992	45.6992	0.0143	0.0000	46.0001
Total	**0.0379**	**0.3965**	**0.2562**	**5.1000e-004**		**0.0194**	**0.0194**		**0.0179**	**0.0179**	**0.0000**	**45.6992**	**45.6992**	**0.0143**	**0.0000**	**46.0001**

3.3 Trenching - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

3.4 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0263	0.2879	0.1922	3.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	33.5978	33.5978	0.0106	0.0000	33.8194
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0263**	**0.2879**	**0.1922**	**3.8000e-004**		**0.0135**	**0.0135**		**0.0124**	**0.0124**	**0.0000**	**33.5978**	**33.5978**	**0.0106**	**0.0000**	**33.8194**

3.4 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0263	0.2879	0.1922	3.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	33.5978	33.5978	0.0106	0.0000	33.8194
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0263**	**0.2879**	**0.1922**	**3.8000e-004**		**0.0135**	**0.0135**		**0.0124**	**0.0124**	**0.0000**	**33.5978**	**33.5978**	**0.0106**	**0.0000**	**33.8194**

3.4 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.409687	0.062677	0.156376	0.176111	0.050971	0.007837	0.019872	0.103412	0.001778	0.001574	0.006496	0.000897	0.002312

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

5.2 Energy by Land Use - NaturalGas

Mitigated

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.3361	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	1.3361	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2019					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1342					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**1.3361**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2019					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1342					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**1.3361**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

SJRC - River West Eaton Trail Extension Project (Perrin Ave + Palm & Nees Parking Lot)

San Joaquin Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	3.41	Acre	3.41	148,495.00	0
City Park	0.02	Acre	0.02	1,000.00	0
User Defined Recreational	1.00	User Defined Unit	6.67	290,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Trail = 6.67 acres; Perrin Ave + Palm & Nees Parking Lot = 3.41 acres; Recreational Amenities including restroom facility assume 1,000 sq. ft.

Construction Phase - Construction phases specific to project.

Off-road Equipment -

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Trips and VMT - Trips and distance specific to project.

Grading - 2.5 miles x 22 feet x 4 in = 3585 cu yds. of decomposed granite.

Vehicle Trips - 558 average daily trips.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	147,927.00	147,156.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	443,782.00	441,467.00
tblAreaCoating	Area_Nonresidential_Interior	443782	441467
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	300.00	66.00
tblConstructionPhase	NumDays	30.00	23.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	PhaseEndDate	8/29/2019	9/30/2019
tblConstructionPhase	PhaseEndDate	10/31/2019	7/31/2019
tblConstructionPhase	PhaseEndDate	6/28/2019	6/30/2019
tblConstructionPhase	PhaseStartDate	8/1/2019	9/1/2019
tblConstructionPhase	PhaseStartDate	10/1/2019	7/1/2019
tblGrading	AcresOfGrading	11.50	10.00
tblGrading	MaterialImported	0.00	3,585.00

tblLandUse	LandUseSquareFeet	148,539.60	148,495.00
tblLandUse	LandUseSquareFeet	871.20	1,000.00
tblLandUse	LandUseSquareFeet	0.00	290,400.00
tblLandUse	LotAcreage	0.00	6.67
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripNumber	448.00	230.00
tblTripsAndVMT	VendorTripNumber	72.00	0.00
tblTripsAndVMT	WorkerTripNumber	25.00	40.00
tblTripsAndVMT	WorkerTripNumber	28.00	40.00
tblTripsAndVMT	WorkerTripNumber	185.00	40.00
tblTripsAndVMT	WorkerTripNumber	20.00	40.00
tblTripsAndVMT	WorkerTripNumber	37.00	40.00
tblVehicleTrips	ST_TR	1.59	27,900.00

tblVehicleTrips	SU_TR	1.59	27,900.00
tblVehicleTrips	WD_TR	1.59	27,900.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	2.1970	1.4822	1.0147	2.2100e-003	0.0305	0.0692	0.0997	7.2500e-003	0.0638	0.0710	0.0000	190.6043	190.6043	0.0534	0.0000	191.7266
Total	**2.1970**	**1.4822**	**1.0147**	**2.2100e-003**	**0.0305**	**0.0692**	**0.0997**	**7.2500e-003**	**0.0638**	**0.0710**	**0.0000**	**190.6043**	**190.6043**	**0.0534**	**0.0000**	**191.7266**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	2.1970	1.4822	1.0147	2.2100e-003	0.0305	0.0692	0.0997	7.2500e-003	0.0638	0.0710	0.0000	190.6041	190.6041	0.0534	0.0000	191.7264
Total	**2.1970**	**1.4822**	**1.0147**	**2.2100e-003**	**0.0305**	**0.0692**	**0.0997**	**7.2500e-003**	**0.0638**	**0.0710**	**0.0000**	**190.6041**	**190.6041**	**0.0534**	**0.0000**	**191.7264**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.9229	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	38.0150	38.0150	1.7200e-003	3.6000e-004	38.1614
Mobile	0.3484	1.0619	4.0076	8.1600e-003	0.4532	0.0166	0.4698	0.1218	0.0153	0.1371	0.0000	597.4024	597.4024	0.0177	0.0000	597.7741
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0243	0.0243	0.0000	0.0000	0.0244
Total	**2.2713**	**1.0619**	**4.0077**	**8.1600e-003**	**0.4532**	**0.0166**	**0.4698**	**0.1218**	**0.0153**	**0.1371**	**0.0000**	**635.4418**	**635.4418**	**0.0194**	**3.6000e-004**	**635.9599**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.9229	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	38.0150	38.0150	1.7200e-003	3.6000e-004	38.1614
Mobile	0.3484	1.0619	4.0076	8.1600e-003	0.4532	0.0166	0.4698	0.1218	0.0153	0.1371	0.0000	597.4024	597.4024	0.0177	0.0000	597.7741
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0243	0.0243	0.0000	0.0000	0.0244
Total	**2.2713**	**1.0619**	**4.0077**	**8.1600e-003**	**0.4532**	**0.0166**	**0.4698**	**0.1218**	**0.0153**	**0.1371**	**0.0000**	**635.4418**	**635.4418**	**0.0194**	**3.6000e-004**	**635.9599**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	5/1/2019	5/31/2019	5	23	
2	Trenching	Trenching	6/1/2019	6/30/2019	5	20	
3	Building Construction & Landscaping	Building Construction	7/1/2019	9/30/2019	5	66	
4	Paving	Paving	7/1/2019	7/31/2019	5	23	
5	Architectural Coating	Architectural Coating	9/1/2019	9/30/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 441,467; Non-Residential Outdoor: 147,156 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	0	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	1	8.00	400	0.38
Grading	Other Construction Equipment	1	8.00	171	0.42
Grading	Plate Compactors	2	8.00	8	0.43
Grading	Rubber Tired Dozers	0	8.00	255	0.40
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Trenching	Graders	1	8.00	174	0.41
Trenching	Off-Highway Trucks	1	8.00	400	0.38
Trenching	Other Construction Equipment	1	8.00	171	0.42
Trenching	Plate Compactors	2	8.00	8	0.43
Trenching	Rubber Tired Loaders	2	8.00	199	0.36
Trenching	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction & Landscaping	Cranes	0	7.00	226	0.29
Building Construction & Landscaping	Forklifts	1	8.00	89	0.20
Building Construction & Landscaping	Generator Sets	0	8.00	84	0.74
Building Construction & Landscaping	Rubber Tired Loaders	2	8.00	199	0.36
Building Construction & Landscaping	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction & Landscaping	Welders	0	8.00	46	0.45
Paving	Other Construction Equipment	1	8.00	171	0.42
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Rollers	2	8.00	80	0.38
Paving	Rubber Tired Loaders	2	8.00	199	0.36
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	10	40.00	0.00	230.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Trenching	11	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Building Construction & Landscaping	3	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Paving	8	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.5700e-003	0.0000	5.5700e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0391	0.4016	0.2758	5.2000e-004		0.0205	0.0205		0.0189	0.0189	0.0000	46.2256	46.2256	0.0145	0.0000	46.5295
Total	**0.0391**	**0.4016**	**0.2758**	**5.2000e-004**	**5.5700e-003**	**0.0205**	**0.0261**	**6.1000e-004**	**0.0189**	**0.0195**	**0.0000**	**46.2256**	**46.2256**	**0.0145**	**0.0000**	**46.5295**

3.2 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-003	7.0500e-003	0.0214	2.0000e-005	4.9000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9882	1.9882	2.0000e-005	0.0000	1.9886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**2.4200e-003**	**8.6200e-003**	**0.0367**	**6.0000e-005**	**4.1700e-003**	**1.3000e-004**	**4.3000e-003**	**1.1200e-003**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**4.9289**	**4.9289**	**1.6000e-004**	**0.0000**	**4.9322**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.5700e-003	0.0000	5.5700e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0391	0.4016	0.2758	5.2000e-004		0.0205	0.0205		0.0189	0.0189	0.0000	46.2256	46.2256	0.0145	0.0000	46.5295
Total	**0.0391**	**0.4016**	**0.2758**	**5.2000e-004**	**5.5700e-003**	**0.0205**	**0.0261**	**6.1000e-004**	**0.0189**	**0.0195**	**0.0000**	**46.2256**	**46.2256**	**0.0145**	**0.0000**	**46.5295**

3.2 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-003	7.0500e-003	0.0214	2.0000e-005	4.9000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9882	1.9882	2.0000e-005	0.0000	1.9886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**2.4200e-003**	**8.6200e-003**	**0.0367**	**6.0000e-005**	**4.1700e-003**	**1.3000e-004**	**4.3000e-003**	**1.1200e-003**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**4.9289**	**4.9289**	**1.6000e-004**	**0.0000**	**4.9322**

3.3 Trenching - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0379	0.3965	0.2562	5.1000e-004		0.0194	0.0194		0.0179	0.0179	0.0000	45.6993	45.6993	0.0143	0.0000	46.0001
Total	**0.0379**	**0.3965**	**0.2562**	**5.1000e-004**		**0.0194**	**0.0194**		**0.0179**	**0.0179**	**0.0000**	**45.6993**	**45.6993**	**0.0143**	**0.0000**	**46.0001**

3.3 Trenching - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0379	0.3965	0.2562	5.1000e-004		0.0194	0.0194		0.0179	0.0179	0.0000	45.6992	45.6992	0.0143	0.0000	46.0001
Total	**0.0379**	**0.3965**	**0.2562**	**5.1000e-004**		**0.0194**	**0.0194**		**0.0179**	**0.0179**	**0.0000**	**45.6992**	**45.6992**	**0.0143**	**0.0000**	**46.0001**

3.3 Trenching - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

3.4 Building Construction & Landscaping - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0311	0.3594	0.1480	4.5000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	40.8505	40.8505	0.0129	0.0000	41.1219
Total	**0.0311**	**0.3594**	**0.1480**	**4.5000e-004**		**0.0141**	**0.0141**		**0.0130**	**0.0130**	**0.0000**	**40.8505**	**40.8505**	**0.0129**	**0.0000**	**41.1219**

3.4 Building Construction & Landscaping - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4900e-003	4.5200e-003	0.0439	1.3000e-004	0.0106	8.0000e-005	0.0106	2.8000e-003	7.0000e-005	2.8800e-003	0.0000	8.4385	8.4385	4.0000e-004	0.0000	8.4468
Total	**3.4900e-003**	**4.5200e-003**	**0.0439**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0106**	**2.8000e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**8.4385**	**8.4385**	**4.0000e-004**	**0.0000**	**8.4468**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0311	0.3594	0.1480	4.5000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	40.8505	40.8505	0.0129	0.0000	41.1219
Total	**0.0311**	**0.3594**	**0.1480**	**4.5000e-004**		**0.0141**	**0.0141**		**0.0130**	**0.0130**	**0.0000**	**40.8505**	**40.8505**	**0.0129**	**0.0000**	**41.1219**

3.4 Building Construction & Landscaping - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4900e-003	4.5200e-003	0.0439	1.3000e-004	0.0106	8.0000e-005	0.0106	2.8000e-003	7.0000e-005	2.8800e-003	0.0000	8.4385	8.4385	4.0000e-004	0.0000	8.4468
Total	**3.4900e-003**	**4.5200e-003**	**0.0439**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0106**	**2.8000e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**8.4385**	**8.4385**	**4.0000e-004**	**0.0000**	**8.4468**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0263	0.2879	0.1922	3.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	33.5978	33.5978	0.0106	0.0000	33.8194
Paving	4.4700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0307**	**0.2879**	**0.1922**	**3.8000e-004**		**0.0135**	**0.0135**		**0.0124**	**0.0124**	**0.0000**	**33.5978**	**33.5978**	**0.0106**	**0.0000**	**33.8194**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0263	0.2879	0.1922	3.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	33.5978	33.5978	0.0106	0.0000	33.8194
Paving	4.4700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0307**	**0.2879**	**0.1922**	**3.8000e-004**		**0.0135**	**0.0135**		**0.0124**	**0.0124**	**0.0000**	**33.5978**	**33.5978**	**0.0106**	**0.0000**	**33.8194**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0462					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8000e-003	0.0193	0.0193	3.0000e-005		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	2.6809	2.6809	2.3000e-004	0.0000	2.6857
Total	**2.0490**	**0.0193**	**0.0193**	**3.0000e-005**		**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**2.6809**	**2.6809**	**2.3000e-004**	**0.0000**	**2.6857**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.4400e-003	0.0140	4.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.6850	2.6850	1.3000e-004	0.0000	2.6876
Total	**1.1100e-003**	**1.4400e-003**	**0.0140**	**4.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.6850**	**2.6850**	**1.3000e-004**	**0.0000**	**2.6876**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0462					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8000e-003	0.0193	0.0193	3.0000e-005		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	2.6809	2.6809	2.3000e-004	0.0000	2.6857
Total	**2.0490**	**0.0193**	**0.0193**	**3.0000e-005**		**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**2.6809**	**2.6809**	**2.3000e-004**	**0.0000**	**2.6857**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.4400e-003	0.0140	4.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.6850	2.6850	1.3000e-004	0.0000	2.6876
Total	**1.1100e-003**	**1.4400e-003**	**0.0140**	**4.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.6850**	**2.6850**	**1.3000e-004**	**0.0000**	**2.6876**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3484	1.0619	4.0076	8.1600e-003	0.4532	0.0166	0.4698	0.1218	0.0153	0.1371	0.0000	597.4024	597.4024	0.0177	0.0000	597.7741
Unmitigated	0.3484	1.0619	4.0076	8.1600e-003	0.4532	0.0166	0.4698	0.1218	0.0153	0.1371	0.0000	597.4024	597.4024	0.0177	0.0000	597.7741

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	558.00	558.00	558.00	1,191,248	1,191,248
Parking Lot	0.00	0.00	0.00		
User Defined Recreational	0.00	0.00	0.00		
Total	558.00	558.00	558.00	1,191,248	1,191,248

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.409687	0.062677	0.156376	0.176111	0.050971	0.007837	0.019872	0.103412	0.001778	0.001574	0.006496	0.000897	0.002312

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	38.0150	38.0150	1.7200e-003	3.6000e-004	38.1614
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	38.0150	38.0150	1.7200e-003	3.6000e-004	38.1614
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	130676	38.0150	1.7200e-003	3.6000e-004	38.1614
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**38.0150**	**1.7200e-003**	**3.6000e-004**	**38.1614**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	130676	38.0150	1.7200e-003	3.6000e-004	38.1614
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**38.0150**	**1.7200e-003**	**3.6000e-004**	**38.1614**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.9229	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005
Unmitigated	1.9229	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2049					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7180					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005
Total	**1.9229**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.0000e-005**	**8.0000e-005**	**0.0000**	**0.0000**	**8.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2049					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7180					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005
Total	**1.9229**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.0000e-005**	**8.0000e-005**	**0.0000**	**0.0000**	**8.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0243	0.0000	0.0000	0.0244
Unmitigated	0.0243	0.0000	0.0000	0.0244

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0238296	0.0243	0.0000	0.0000	0.0244
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0243**	**0.0000**	**0.0000**	**0.0244**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0238296	0.0243	0.0000	0.0000	0.0244
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0243**	**0.0000**	**0.0000**	**0.0244**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

Appendix D
2011 Lewis Eaton Trail Biotic Study and the 2014 Biological Resources Report Update Technical Reports

H.T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

CITY OF FRESNO
LEWIS EATON TRAIL PROJECT
BIOTIC STUDY

EXISTING CONDITIONS SECTION

Prepared by:

H. T. HARVEY & ASSOCIATES

Prepared for:

URS Corporation
30 River Park Place West, Suite 180
Fresno CA 93720
Attention: Mr. Eric VonBerg

24 June 2011

Project # 2952-01

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Contributors:

Brian Boroski, Ph.D., Vice President, Principal, Senior Wildlife Ecologist

Patrick Boursier, Ph.D., Principal, Senior Plant Ecologist

Max Busnardo, M.S., Project Manager, Senior Restoration Ecologist

Darren Newman, B.A., Wildlife Ecologist

Ethan Barnes, M.S., Plant Ecologist

INTRODUCTION

PROJECT DESCRIPTION

The City of Fresno (City), and San Joaquin River Conservancy (SJRC) are preparing plans for the extension of the Lewis S. Eaton Multi-Purpose Trail west of Freeway 41 with a connection to Spano Park. The trail is to be constructed on Conservancy/State owned property known as the Spano property. The trail extension will comprise a new, approximately 2.5 mile (mi) trail connecting to the existing Eaton Trail and Woodward Park via the existing underpass of Freeway 41, and old Highway 41. Figure 1 shows the location of the approximately 400 acre project site. The project site is bounded by the San Joaquin River to the north and west, residential development to the south and east, and Freeway 41 to the east.

The project site is being designed to provide the following amenities:

- A paved extension of the multi-use Lewis S. Eaton Trail;
- Unpaved hiking trails/river access spurs, and a stair ascent to Spano Park;
- On-site parking with landscaping to shield parking from the neighboring view;
- ADA-compliant access, and use of the multi-use trail;
- One or more vehicle entrance features;
- One or more restrooms, and interpretive signage.

GENERAL PROJECT SITE DESCRIPTION

The project site is located on an alluvial floodplain terrace along the east side of the San Joaquin River, approximately 10.5 mi downstream from Friant Dam. Elevations on the project site range from approximately 260 feet (ft) to 280 ft above sea level. The mean annual precipitation is 8-12 inches, and the mean annual temperature is 61-63 degrees Fahrenheit (°F) (NRCS 2011). The project site is underlain by the following 10 soil types: 1) Grangeville fine sandy loam, 2) Grangeville fine sandy loam, saline alkali, 3) Grangeville soils, channeled, 4) Hanford fine sandy loam, 5) Hesperia sandy loam, 6) Hesperia fine sandy loam, 7) Pollasky fine sandy loam, 9 to 15 percent slopes, 8) Riverwash, 9) Terrace escarpments, and 10) Tujunga soils, channeled, 0 to 9 percent slopes (NRCS 2011). Grangeville soils consist of very deep, somewhat poorly drained soils derived from moderately coarse textured alluvium primarily from granitic sources on alluvial fans and floodplains. Hanford soils are very deep, well drained soils formed in moderately coarse textured granitic alluvium on stream bottoms, floodplains, and alluvial fans. Hesperia soils are very deep, well drained soils that formed in alluvium derived primarily from granite, and related rocks on alluvial fans, valley plains, and stream terraces. Pollasky soils are moderately deep, well drained, and moderately coarse textured soils that occur on dissected terraces under annual grasses, and forbs. Riverwash is excessively drained coarse sand with some cobbles formed on flood plains. Terrace escarpments consist of well drained silty and sandy stratified material located along small streams and where terraces meet the bottom lands and floodplains along major streams and rivers. Tujunga soils are very deep, somewhat excessively drained soils formed in granitic alluvium and occur on alluvial fans and flood plains.

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H. T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

Figure 1: Vicinity Map

Lewis Eaton Trail Biotic Study (2952-01)

June 2011

EXISTING BIOTIC CONDITIONS

SURVEY METHODS

Reconnaissance-level field surveys were completed on 18 May and 5 June 2011 by H. T. Harvey & Associates ecologists. Survey personnel included wildlife ecologist Darren Newman, B.A. and plant ecologist Ethan Barnes, M.S. Our reconnaissance survey consisted of walking and visually assessing the project site to characterize existing biotic conditions. Figure 2 shows the boundary of the approximately 400 acre biotic project site which was provided to H. T. Harvey & Associates by URS Corporation.

Specifically, surveys were conducted to 1) characterize and map the dominant existing biotic habitats; 2) assess the potential for the project site to support special-status species and their habitats; 3) identify sensitive habitats including wetland and riparian habitat; and 4) identify potential jurisdictional habitats, including those regulated by the United States Army Corps of Engineers (USACE), the Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Game (CDFG). A formal wetland delineation to precisely determine the extent of USACE jurisdiction using the 1987 Manual methods (Environmental Laboratories 1987) was not an aspect of this effort. The dominant biotic habitats and locations of blue elderberry shrubs *(Sambucus mexicana)* were mapped onto a recent, rectified color aerial photograph of the site.

In addition to site reconnaissance surveys, background information was reviewed to determine the potential for state and federal-listed special-status species to occur on the project site. The information reviewed included the following:

- The California Natural Diversity Database (CNDDB 2011);
- The California Native Plant Society's (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California (CNPS 2011);
- The Jepson Manual (Hickman 1993); and
- Previous environmental documents for parkway development.

The California Natural Diversity Database (CNDDB 2011) was queried for information on the local distribution of special-status species occurring within the U.S. Geological Survey (USGS) 7.5-minute Fresno North Quadrangle in which the project site is located and within the following 8 quadrangles surrounding the project site: Gregg, Lanes Bridge, Friant, Clovis, Malaga, Fresno South, Kearney Park, and Herndon.

LEGEND

Survey Area

Elderberry Location

Habitat Types

Disturbed Annual Grassland/ Herbaceous (261.3 ac)

Aquatic (97.3 ac)

Riparian (25.1 ac)

Developed/ Landscaped (11.5 ac)

Stormwater Detention Basin (5.0 ac)

N 600 300 0 600

Feet

N:\Projects\2952-01\Reports\Biotic Study

H. T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

Figure 2: Habitat Map

Lewis Eaton Trail Biotic Study (2952-01)

June 2011

USGS topographic maps and recent aerial photographs of the area were also reviewed to locate habitat features, including wetlands, on or near the site that could potentially support sensitive wildlife. Additionally, soils mapping data (described above from the NRCS) was used to identify soils on-site with the capacity to support special-status plants with specific edaphic requirements, and the National Wetland Inventory (NWI) was queried to further focus efforts to locate potential wetlands (NWI 2011). Dominant plant species observed were identified using Hickman (1993).

BIOTIC HABITATS

Figure 2 shows the distribution of dominant biotic habitats within the project site based upon our reconnaissance-level survey. Table 1 provides the surface area for each habitat type.

Table 1. Biotic Habitat Types and Surface Areas at the Project Site.

Biotic Habitat Types	Surface Area (acres)
Disturbed Annual Grassland	261.3
Aquatic	97.3
Riparian	25.1
Developed/Landscaped	11.5
Stormwater Detention Basins	5.0
Total Surface Area	**400.2**

DISTURBED ANNUAL GRASSLAND

Vegetation

Disturbed annual grassland habitat comprises the majority of the project site. Approximately 261.3 acres (~65 %) of the site consists of disturbed annual grassland habitat. Most of this habitat has been disturbed by previous sand/gravel mining activities and ongoing disturbance due to recreational use. The disturbed annual grassland is dominated by non-native, upland grass species such as ripgut brome (*Bromus diandrus*), wild oat (*Avena fatua*), soft brome (*Bromus hordeaceus*), black mustard (*Brassica nigra*), and filaree (*Erodium cicutarium*).

Wildlife

Desert cottontail *(Sylvilagus audubonii)* sign (pellet droppings and resting forms) was observed throughout the disturbed foothill grassland, and many California ground squirrel *(Otospermophilus beecheyi)* burrows were noted. None of the ground squirrel burrows showed sign of use or occupancy by burrowing owl (*Athene cunicularia*). Red-tailed hawks (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and common raven (*Corvus corax*) were observed soaring over grasslands. Reptiles including side-blotched lizard (*Uta stansburiana*) and western fence lizard (*Sceloperus occidentalis*) were observed. The disturbed grassland associated with the proposed project site contains a seed base for foraging small mammals. Many small mammal burrows occur on the site, and are likely occupied by deermice (*Peromyscus maniculatus)* and western harvest mice (*Reithrodontomys megalotis*). California horned larks (*Eremophila alpestris actia*) and burrowing owls may use disturbed grassland

habitat for foraging and nesting in addition to gopher snake (*Pituophis catenifer*) and southern pacific rattlesnake (*Crotalis oreganus helleri*).

AQUATIC

Vegetation

Aquatic habitat is the second most abundant habitat at the site (97.3 acres) comprising approximately 24 % of the project site. The majority of the aquatic habitat on the site occurs within previously mined areas which are now ponds. Mosquito fern (*Azolla sp.*) is common in slow flowing areas such as the ponds and protected pools. In the past year, the San Joaquin River has altered its course through the northern portion of the survey area near Freeway 41. This is reflected on the habitat map (Figure 2), but not on the underlying aerial photo.

Wildlife

A number of wildlife species will utilize the aquatic habitat on site including bullfrog (*Lithobates catesbeiana*), various shorebirds, killdeer (*Charadrius vociferus*), mosquitofish (*Gambusia affinis*), garter snakes (*Thamnophis spp.),* and bass (*Micropterus spp.*). Additionally, bats *(Pipistrellus hesperus, Myotis sp.)* and swallows (*Quiscalus mexicanus*) forage over the open water.

RIPARIAN

Vegetation

Riparian habitat occupies a relatively small portion of the project site (25.1 acres, 6 %). Historically, the project site likely consisted of riparian vegetation. However, disturbances including alteration of the hydrologic regime and mining have altered the landscape and reduced the extent of riparian vegetation. Riparian habitat is currently restricted to narrow margins around the quarry pond perimeters and river (Figure 2).

The riparian vegetation consists of intergradations of the following three plant associations: willow riparian, exotic rattlebox *(Sesbania punicea)* dominated habitat, and mixed riparian. The willow riparian association contains a mix of Gooding's willow *(Salix gooddingii),* red willow *(S. laevigata),* arroyo willow *(S. lasiolepis),* and narrowleaf willow *(S. exigua).* A common riparian plant association is dominated by the exotic rattlebox which is rated as highly invasive by the California Invasive Plant Council. The mixed riparian plant association contains species such as the above mentioned willows and rattlebox, as well as primarily California native riparian species including valley oak *(Quercus lobata),* mugwort *(Artemisia douglasiana),* and common buttonbush *(Cephalanthus occidentalis*). Black walnut *(Juglans nigra)* is also present in this plant association. The black walnut trees do not represent native stands of this species since these trees have become established within this reach of the river after cessation of mining activities.

Wildlife

Within the riparian area, exit holes from valley elderberry longhorn beetle (VELB) (*Desmocerus californicus dimorphus*) were observed in two stems of a blue elderberry shrub located near the river in the western portion of the survey area. Numerous blue elderberry shrubs providing suitable habitat for the VELB occur within the survey area (Figure 2). Desert cottontail sign and individuals were observed in addition to barn swallows (*Hirundo rustica*), mourning dove (*Zenaida macroura*), great blue heron (*Ardea herodius*), and turkey vulture (*Cathartes aura*). This habitat also provides nesting opportunities for riparian-associated bird species including bald eagle (*Haliaeetus leucocephalus*), California yellow warbler (*Dendroica petechia brewsteri*), yellow-breasted chat (*Icteria virens*), and tricolored blackbird (*Agelaius tricolor*). In the sandy areas with leaf litter, silvery legless lizard (*Anniella pulchra*) and shrews (*Sorex* spp.) may occur, and in moist areas with decaying vegetation and logs, the California slender salamander (*Batrachoseps attenuatus*) may be found.

DEVELOPED/LANDSCAPED

Vegetation

Approximately 11.5 acres (~3 %) of the project site is developed and consists of dirt roads and trails, a house with associated landscaping, and a separate section of residential landscape. The dirt roads and trails are sparsely vegetated with scattered ruderal species such as ripgut brome and filaree.

Wildlife

Developed areas have limited resources for wildlife species, although several common species may use these areas for foraging. California ground squirrels and their burrows were observed on the site. Desert cottontail sign (pellet droppings) was also observed. Several avian species including rock dove *(Columba livia)*, common raven, and mourning dove were observed in the trees near the home, and over and within developed areas. Along the existing road, scats of domestic dogs (*Canis familiaris*) and coyote (C. *latrans*) were observed.

STORMWATER DETENTION BASINS

Vegetation

Two stormwater detention basins, associated with the adjacent residential developments, are present within the project site (Figure 2). The stormwater detention basins comprise approximately 5 acres of the project site (~ 1 %). These unlined basins are actively maintained and support primarily non-native, seasonal wetland vegetation. The southern basin was inundated and colonized by Bermuda grass (*Cynodon dactylon*), mosquito fern, and curly dock (*Rumex crispus*). The northern basin was dry and dominated by Bermuda grass.

Wildlife

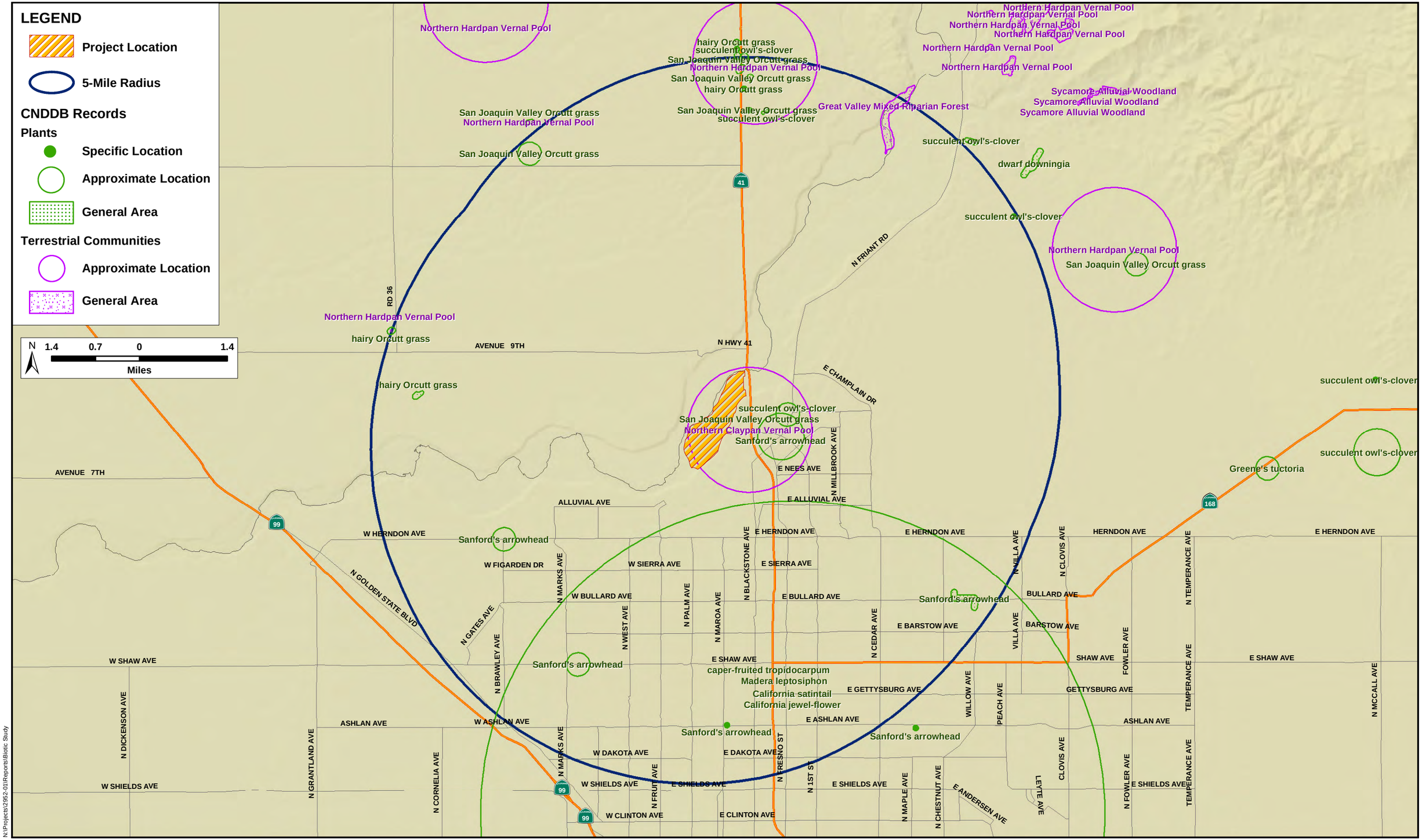
The northern basin provides habitat for small mammals including deermice, California voles *(Microtus californicus)* and desert cottontails. Coyotes, domestic dogs, and domestic cats also likely forage in and around the basin. The southern basin appears to be perennially inundated but also provides limited opportunities for wildlife given that the water that drains into the basin is likely contaminated with petroleum from roadways. Various shorebirds, bullfrogs, and garter snakes may utilize this basin infrequently.

SPECIAL-STATUS PLANT AND ANIMAL SPECIES

The potential for the site to support special-status plant and wildlife species is discussed below. The legal status and likelihood of occurrence of these species is presented in Table 2. Figures 3 and 4 show the CNDDB records for special-status plants and animals within a 5 mi radius of the project site. An overview of special-status species regulations is provided in Appendix A.

Special-status Plant Species

As noted in the Methods section above, a query of special-status plants in the CNDDB was first performed for the USGS Fresno North topographical quadrangle in which the project site occurs, as well as the 8 quadrangles surrounding the project site. The CNPS Inventory was then queried to produce a similar list for Fresno County, as well as the 8 quadrangles surrounding the project site. Additionally, we graphically reviewed the CNDDB records for special-status plant species within a 5 mi radius of the project site (Figure 3). This provided an initial list of 12 special-status plants with potential to occur at the project site.



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H. T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

Figure 3: CNDDB Plant Records

Lewis Eaton Trail Biotic Study (2952-01)
June 2011

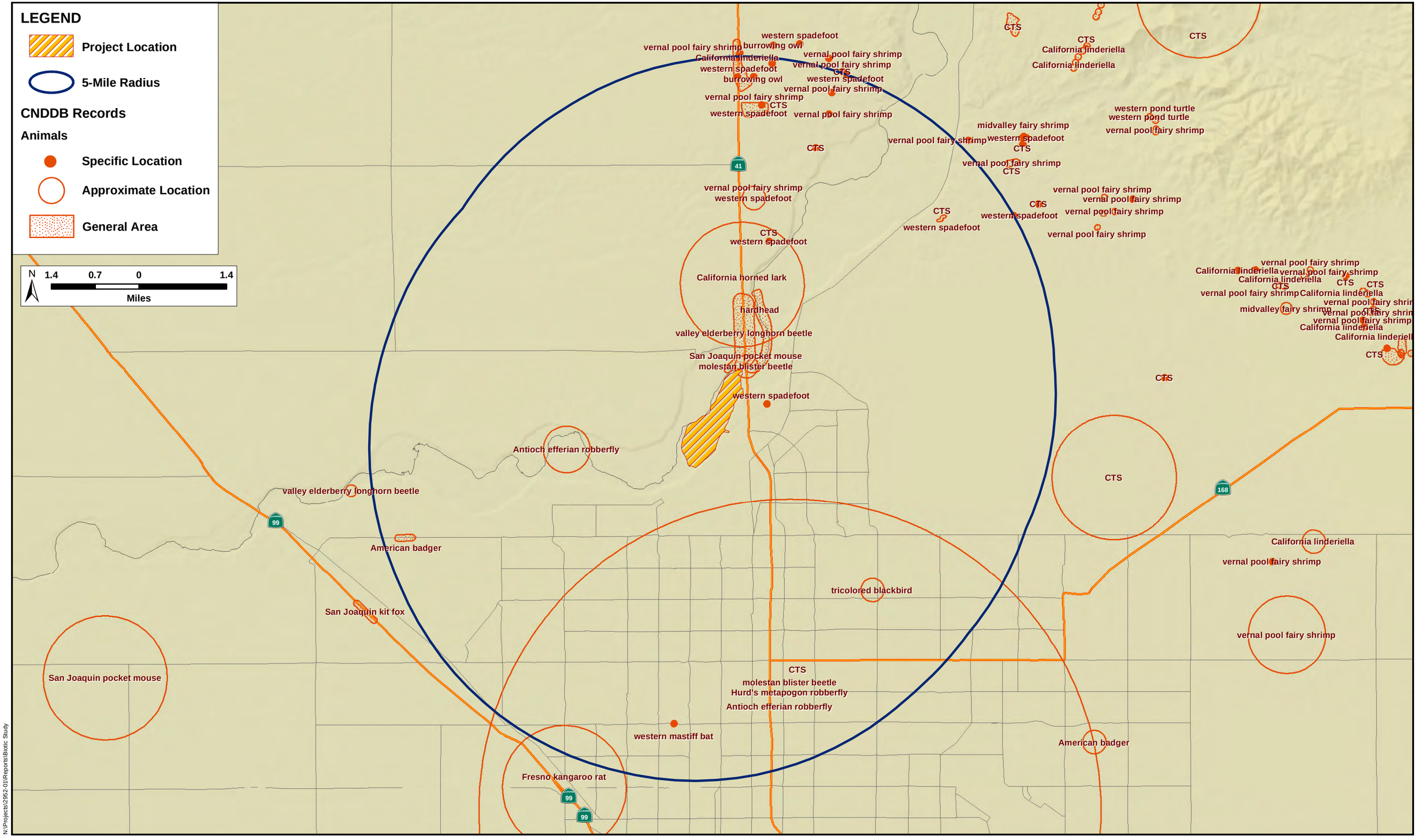

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Figure 4: CNDDB Animal Records

Lewis Eaton Trail Biotic Study (2952-01)

June 2011

After a consideration of the habitat preferences and site-specific conditions it was determined that most of the special-status plant species that occur in the project vicinity are associated with habitat or soil types that did not occur on the project site historically or no longer occur on the project site due to extensive land disturbance.

No federal or state-listed endangered/threatened plant species have the potential to occur on the project site. Below and in Table 2 we discuss the potential for occurrence of 2 CNPS-listed special-status plant species known to occur in the project vicinity, or for which potentially suitable habitat occurs on site.

A query of sensitive habitats in Rarefind (CNDDB 2011) performed for the project site identified northern claypan vernal pool, northern hardpan vernal pool, sycamore alluvial woodland, and great valley mixed riparian forest as occurring within the project vicinity. None of these sensitive habitats were encountered on site.

Table 2. Special-status Plant Species, Their Status, and Potential Occurrence at the Lewis Eaton Trail Project Site

NAME	*STATUS	HABITATS UTILIZED ON SITE	POTENTIAL FOR OCCURRENCE ON SITE
Federal or State Endangered or Threatened Species			
succulent owl's clover *(Castilleja campestris ssp. succulenta)*	FT, SE CNPS 1B.2	Vernal pools in valley and foothill grasslands	Absent, suitable habitat not observed on site
California jewel-flower (*Caulanthus californicus*)	FE, SE CNPS 1B.1	Chenopod scrub, California annual grassland, pinyon-juniper woodland	Absent, suitable habitat not observed on site.
San Joaquin Valley orcutt grass (*Orcuttia inaequalis*)	FT, SE CNPS 1B.1	Vernal pools	Absent, suitable habitat not observed on site.
hairy orcutt grass (*Orcuttia pilosa*)	FE, SE CNPS 1B.1	Vernal pools	Absent, suitable habitat not observed on site
Hartweg's golden sunburst (*Pseudobahia bahiifolia*)	FE, SE CNPS 1B.1	Clay soils in valley and foothill grassland, cismontane woodland	Absent, suitable soils not present on site.
Greene's tuctoria (*Tuctoria greenei*)	FE, SR CNPS 1B.1	Vernal pools	Absent, suitable habitat not present on site.
CNPS Species			
dwarf dowingia (*Downingia pusilla*)	CNPS 2.2	Valley and foothill grasslands (mesic sites), vernal pools	Absent, suitable habitat not present on site.
spiny-sepaled button-celery *(Eryngium spinosepalum)*	CNPS 1B.2	Vernal pools and valley and foothill grasslands sometimes on clay soil of granitic origin	Absent, suitable habitat not present on site.
California satintail *(Imperata brevifolia)*	CNPS 2.1	Riparian scrub, coastal scrub, Mojavean scrub, meadows and seeps	Possible. Suitable habitat present. CNDDB record (from 1893) located in vicinity of "Fresno".
Madera leptosiphon *(Leptosiphon serrulatus)*	CNPS 1B.2	Cismontane woodland, lower montane coniferous forest	Absent. Suitable habitat is not present. CNDDB record (from 1967) located at Millerton Lake.
Sanford's arrowhead *(Sagittaria sanfordii)*	CNPS 1B.2	Marshes, swamps, and slow-moving freshwater ponds, marshes, and ditches	Possible. Suitable habitat is present. Nearest CNDDB record (from 1958) located northwest of Pinedale, less than 1.5 mi south of the project site, although population is likely extirpated.
caper-fruited tropidocarpum *(Tropidocarpum capparideum)*	CNPS 1B.1	Valley and foothill grassland on alkaline and clay soils.	Absent, suitable soils not present.

SPECIAL STATUS SPECIES CODE DESIGNATIONS

FE =	Federally listed Endangered
FT =	Federally listed Threatened
SE =	State listed Endangered
SR=	State listed Rare
CSSC =	California Species of Special Concern
SP =	State Protected Species
CNPS 1B=	Plants considered by CNPS to be rare, threatened, or endangered in California, and elsewhere
CNPS 2=	Plants considered by CNPS to be rare, threatened, or endangered in California, but more common elsewhere
CNPS 4=	Plants of a limited distribution-a watch list

CNPS Threat Code Extensions: .1=seriously endangered in California; .2=fairly endangered in California; .3=not very endangered in California.

DEFINITIONS REGARDING POTENTIAL OCCURRENCE

Present:	Species or sign of their presence observed on the site
Likely:	Species or sign not observed on the site, but reasonably certain to occur on the site
Possible:	Species or sign not observed on the site, but conditions suitable for occurrence
Unlikely:	Species or sign not observed on the site, conditions marginal for occurrence
Absent:	Species or sign not observed on the site, conditions unsuitable for occurrence

Federal or State Listed Plant Species

Succulent owl's-clover (*Castilleja campestris* ssp. *succulenta*). Federal Status: Threatened; State Status: Endangered; CNPS List 1B.2. Succulent owl's-clover is an annual, hemiparasitic herb in the figwort family (Scrophlariaceae) that blooms between April and May. The herb often grows in acidic vernal pool habitat at elevations between 164 and 2,461 ft. The range for this species lies in 22 USGS quadrangles in Fresno, Madera, Merced, Mariposa, San Joaquin, and Stanislaus counties. Threats to this California endemic include: urbanization, agriculture, flood control, grazing, and trampling (CNPS 2011). While a historic CNDDB record (1938) documents the species near the project site, this species is absent because of the absence of vernal pool habitat.

California jewelflower (*Caulanthus californicus*). Federal Listing Status: Endangered; State Listing Status: Endangered; CNPS List 1B.1. California jewelflower is an annual herb belonging to the mustard family (Brassicaceae) that blooms from February to May. This plant occurs in chenopod scrub, valley and foothill grassland, and pinyon and juniper woodland on sandy soils, at elevations between 200 and 3281 ft. This species is found in Fresno, Kern, Santa Barbara, and San Luis Obispo counties. Over 35 historical occurrences are extirpated, including those in Kings and Tulare counties. Experimental reintroductions have occurred in Kern, Santa Barbara, and Tulare counties, but all have failed (CNPS 2011). While a historic CNDDB record (undated) documents the species in the Fresno area, this species is determined to be absent because the project site does not contain suitable habitat.

San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*). Federal Status: Threatened; State Status: Endangered; CNPS List: 1B.1. San Joaquin Valley orcutt grass is a tufted annual herb that grows to heights from 2 to 4 in. This taxon is placed in the tribe Orcuttieae of the grass (Poaceae) family. San Joaquin Valley orcutt grass represents one of the rarest grasses in California because it is systematically isolated and narrowly restricted to vernal pools habitat at elevations from 33 to 2477 ft. Once believed to be more widespread throughout the Great Valley, San Joaquin Valley orcutt grass is now rare due to conversion of most of California's vernal pool habitat to agriculture and housing developments. The species is currently found in 21 USGS 7.5 minute quadrangles within the San Joaquin Valley in Fresno, Madera, Merced, Solano, and Tulare counties (CNDDB 2011). Historically, San Joaquin Valley orcutt grass was also found in Stanislaus County but has since been extirpated from that area. The species is seriously threatened by agriculture, development, overgrazing, channelization, and non-native plant species (CNPS 2011). While a historic CNDDB record documents the species near the project site, this species is determined to be absent because the project site does not contain suitable vernal pool habitat.

Hairy Orcutt grass (*Orcuttia pilosa*). Federal Listing Status: Endangered; State Listing Status: Endangered; CNPS List 1B.1. Hairy orcutt grass is an annual herb belonging to the grass family (Poaceae) that blooms from May to September. The species occurs in northern basalt flow, northern claypan, and northern hardpan vernal pools on high or low stream terraces or alluvial fans at elevations ranging from 151 to 656 ft. This California endemic species is found in Butte, Glenn, Madera, Merced, Stanislaus, and Tehama counties. The primary threats to hairy orcutt grass are agriculture, urbanization, overgrazing, non-native plants, and trampling

(CNPS 2011). This species is absent because the project site lacks vernal pool habitat.

Hartweg's golden sunburst (*Pseudobahia bahiafolia*). Federal Listing Status: Endangered; State Listing Status: Endangered; CNPS List 1B.1. Hartweg's golden sunburst is an annual shrub belonging to the sunflower family (Asteraceae) that blooms from March to April. This plant occurs in cismontane woodland and valley and foothill grassland communities. It requires clay (often acidic) soil, and is found at elevations between 49 and 492 ft. This species is found in El Dorado, Fresno, Madera, Merced, Stanislaus, and Tuolumne counties. Hartweg's golden sunburst is extirpated from Yuba County. Many occurrences are very small and are threatened by development, agriculture, overgrazing, and trampling (CNPS 2011). While the CNDDB documents the species within the 9 quadrangle area surrounding the project site, this species is absent because suitable clay soils are absent from the project site..

Green's tuctoria (*Tuctoria greenei*). Federal Listing Status: Endangered; State Listing Status: Rare; CNPS List 1B.1. Green's tuctoria is an annual herb belonging to the grass family (Poaceae) that blooms from March to July and sometimes as late as September depending on timing of rainfall events. This plant occurs in the dry bottoms of vernal pools in open valley and foothill grasslands at elevations between 98 and 3510 ft. This species is reported from Butte, Colusa, Fresno, Glenn, Madera, Merced, Shasta, San Joaquin, Stanislaus, Tehama, and Tulare counties. It is presumed extirpated from Fresno, Madera, San Joaquin, Stanislaus, and Tulare counties. Green's tuctoria is threatened by agriculture, urbanization, and overgrazing (CNDDB 2011, CNPS 2011). While a historic CNDDB record (1937) documents the species near the project site, this species is be absent because vernal pools do not occur onsite.

CNPS Listed Plant Species

California satintail (*Imperata brevifolia*). Federal Listing Status: None; State Listing Status: None; CNPS List 2.1. California satintail is a rhizomatous herb belonging to the grass family (Poaceae) that blooms from September to May. This plant occurs in coastal scrub, chaparral, riparian scrub, mojavean scrub, and meadows and sinks on mesic, alkaline soils, at elevations between 0 and 1640 ft. This species is found in Butte, Fresno, Imperial, Inyo, Kern, Lake, Los Angeles, Orange, Riverside, San Bernardino, Tehama, Tulare, and Ventura counties, and ranges into Arizona, Baja California, New Mexico (where it is possibly extirpated), Nevada, Texas, and Utah. The Butte, Tehama, and Lake County records may represent escaped ornamentals. This species is threatened by development and agriculture, and was mistakenly classified as a noxious weed in California from 1960 to 2004 (CNPS 2011). A historic CNDDB record (1893) documents the species in the vicinity of "Fresno", and suitable habitat occurs on the project site. This species may occur on the project site.

Sanford's arrowhead (*Sagittaria sanfordii*). Federal Listing Status: None; State Listing Status: None; CNPS List 1B.2. Sanford's arrowhead is an emergent rhizomatous herb belonging to the water plantain family (Alismataceae) that blooms from May to October. This plant occurs in standing or slow-moving freshwater ponds, marshes, and ditches at elevations between 0 and 2133 ft. This species has been reported from Butte, Del Norte, El Dorado, Fresno, Merced, Mariposa, Orange, Placer, Sacramento, Shasta, San Joaquin, Tehama, and Ventura counties. Sanford's arrowhead is extirpated from southern California (Orange and

Ventura counties) and is mostly extirpated from its historical range in the Central Valley. The species is threatened by grazing, development, recreational activities, non-native plants, road widening, and channel alteration (CNPS 2011). The nearest CNDDB record (1958) documents the species northwest of Pinedale, less than 1.5 mi south of the project site, and suitable habitat occurs on the project site. This species may occur on the project site.

Dwarf downingia (*Downingia pusilla*). Federal Listing Status: None; State Listing Status: None; CNPS List Status: 2.2. Dwarf downingia is an annual herb in the bellflower family (Campanulaceae) found in vernal pool and other mesic areas in valley and foothill grassland habitats. The blooming period extends from March through May. Populations have been recorded in Fresno, Merced, Napa, Placer, Sacramento, San Joaquin, Solano, Sonoma, Stanislaus, Tehama, and Yuba counties at elevations up to 1460 ft (CNPS 2011). Dwarf downingia may be threatened by factors such as urbanization, development, agriculture, grazing, vehicles, and industrial forestry (CNPS 2011). While a CNDDB record (1979) documents the species within the 9 quadrangle area, this species is determined to be absent because the project site lacks suitable vernal pool or mesic habitat.

Spiny-sepaled button-celery (Eryngium spinosepalum) Federal Listing Status: None; State Listing Status: None; CNPS List Status: 1B.2. Spiny-sepaled button-celery is an annual/perennial herb in the carrot family (Apiaceae) occuring in vernal pools in valley and foothill grassland habitats. The blooming period extends from April through May. Populations have been recorded in Fresno, Kern, Madera, Merced, Stanislaus, Tulare and Tuolumne counties at elevations between 262 and 837 ft (CNPS 2011). Spiny-sepaled button-celery is threatened by factors such as development, grazing, road maintenance, hydrological alterations, and agriculture (CNPS 2011). While a historic CNDDB record (1928) documents the species within the 9 quadrangle area, this species is determined to be absent because onsite habitat does not contain vernal pools or clay soils.

Madera leptosiphon (*Leptosiphon serrulatus*). Federal Listing Status: None; State Listing Status: None; CNPS List 1B.2. Madera leptosiphon is an annual herb belonging to the phlox family (Polemoniaceae) that blooms from April to May. The species occurs in cismontane woodland and lower montane coniferous forest on dry slopes often on decomposed granite at elevations ranging from 990 to 4300 ft. This California endemic species been documented in Fresno, Kern, Madera, Mariposa, and Tulare counties (CNPS 2011). While a historic CNDDB record (1967) documents the species at Millerton Lake, this species is absent because suitable habitat is not present on the project site.

Caper-fruited tropidocarpum (*Tropidocarpum capparideum*). Federal Listing Status: None; State Listing Status: None; CNPS List 1B.1. Caper-fruited tropidocarpum is an annual herb belonging to the mustard family (Brassicaceae) that blooms from March to April. This plant occurs in alkaline clay soils in valley and foothill grasslands, at elevations between 3 and 1493 ft. Caper-fruited tropidocarpum was thought to be extinct, but in 2000 was rediscovered on Ft. Hunter Liggett. Historic occurrences are reported from Alameda, Contra Costa, Fresno, Glenn, Monterey, Santa Clara, San Joaquin, and San Luis Obispo counties. The species is possibly threatened by grazing, military activities, trampling, and non-native plants (CNPS 2011). While a historic CNDDB record (1930) documents the species in the Fresno area, this species is absent because the project site does not contain suitable alkaline or clay soils.

Special-status Animal Species

A number of special-status wildlife species occur in Fresno and Madera counties and the project vicinity, but were judged to be absent from the project site because the site is outside of the known range of the species, no suitable habitat occurs on the project site, and/or recent species occurrence records are lacking in the site vicinity.

The vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardi*), California tiger salamander (*Ambystoma californiense*) and western spadefoot toad (*Scaphiopus hammondi*) are all considered absent given that the soils and substrate are not conducive to the persistance of long-lived pools necessary for hatching of invertebrates and metamorphosis of vertebrates. Two ponded basins are present on the site. However, the southern pond is connected to the San Joaquin River and it is likely that largemouth bass (*Micropterus salmoides*) and other predatory fish forage in the pond precluding reproduction of toads and environmental conditions are not within requisite values for the occurrence of branchiopod species. The northern pond does not appear to provide appropriate habitat for the occurrence of listed invertebrates but may pool long enough for reproduction by toads in higher than normal rain years. There are CNDDB records of vernal pool fairy shrimp, California tiger salamander, and western spadefoot within 5 mi of the project site (CNDDB 2011), however, these records are from areas that contain soils that are underlain by an impermeable layer of hardpan that allow for vernal pool formation and persistance. The bank swallow (*Riparia riparia*) and willow flycatcher (*Empidonax traillii*) are considered absent due to the low quality of riparian habitat on site which is not conducive to nesting for these species. These two species may occur in the survey area during migration, but are not likely to nest near the San Joaquin River; there are no records to indicate otherwise. The Buena Vista Lake shrew (*Sorex ornatus relictus*) and ringtail (*Bassariscus astutus*) are considered absent as the project site is not within the known range of the susbspecies and species. The blunt-nosed leopard lizard (*Gambelia sila*), Fresno kangaroo rat (*Dipodomys nitratoides exilis*) San Joaquin antelope ground squirrel (*Ammospermophilus nelsoni*), and San Joaquin kit fox (*Vulpes macrotis mutica*) are also considered absent due to lack of appropriate salt bush/scrub habitats and isolation of the project site from known populations.

Other special-status species may occasionally forage in or disperse through the project site but they are not expected to breed or roost on the site or to use the site in large numbers; these include the merlin (*Falco columbarius*), western mastiff bat (*Eumops perotis*) and pallid bat (*Antrozous pallidus*).

Expanded discussions are provided below for special-status animal species that could breed on the site or for which the resource agencies have expressed particular concern in the general vicinity of the site.

Table 3. Special-status Wildlife Species, Status, and Potential Occurrence at the Lewis Eaton Trail Project Site.

NAME	*STATUS	HABITATS UTILIZED	POTENTIAL FOR OCCURRENCE ON SITE
Federal or State Endangered or Threatened Species			
Vernal pool fairy shrimp *(Branchinecta lynchi)*	**FT**	Annual grassland (requires vernal pools)	Absent. Vernal pools not observed on site. Substrate not conducive to vernal pool formation.
Vernal pool tadpole shrimp *(Lepidurus packardi)*	**FT**	Annual grassland (requires vernal pools)	Absent. Vernal pools not observed on site. Substrate not conducive to vernal pool formation.
Valley elderberry longhorn beetle *(Desmocerus californicus dimorphus)*	**FT**	Valley Foothill Riparian and Valley Oak Woodland. Requires mature elderberry shrubs stem dia >1" and <3,000 ft.	Present. Two exit holes of appropriate size and shape observed in an elderberry shrub near river.
California Tiger Salamander *(Ambystoma californiense)*	**FT, ST**	Vernal or temporary pools in annual grasslands or open woodlands with upland aestivation habitat (eg. CA ground squirrel burrows).	Absent. Pooled areas temporally present on site provide less than optimal breeding habitat.
Blunt-nosed leopard lizard (*Gambelia sila*)	**FE, SE**	Sparse grassland and alkali habitats, especially southwestern portion of San Joaquin Valley. Requires burrow systems for thermoregulation and cover.	Absent. Appropriate habitat not present on project site.
Swainson's Hawk (*Buteo swainsoni*)	**ST**	Open grasslands with large trees for nesting. Alfalfa fields often utilized for availability of California voles (*Microtis californicus*)	Likely. Upland grassland habitats on upper terraces of river and adjacent to river north of project site provide cover for CA voles and pocket gophers. Also, large cottonwood and oak trees provide potential nesting habitat. However, overall low quality of breeding habitat, and interspecific competition precludes more than occasional use, as during migration.
Bald Eagle (*Haliaeetus leucocephalus*)	**FD, SE**	Riverine, Lacustrine, Valley Foothill Riparian, and Annual grasslands	Present. Known to occur on site during winter. Most commonly uses river corridor as flyway, but also may forage along margins and within river bottom.
Bank Swallow (*Riparia riparia*)	**ST**	Steep sandy and stabilized banks devoid of vegetation along large rivers.	Absent. Riverbanks of appropriate soils, size and shape in upper reaches of area, no bank swallows or colonies observed.

NAME	*STATUS	HABITATS UTILIZED	POTENTIAL FOR OCCURRENCE ON SITE
Willow Flycatcher *(Empidonax traillii)*	**FE, SE**	Breeds locally in riparian habitats in mountains and southern deserts.	Absent. Riparian habitat on the site not of sufficient quality for nesting by this species. Not known to nest along project reaches of San Joaquin River. May be present as a migrant. Any individuals occurring on site are probably not of the listed races.
Buena Vista Lake shrew (*Sorex ornatus relictus*)	**FE, CSSC**	Riparian and grassland, wet areas with leaf litter cover especially near bodies of permanent water.	Absent. Known from southwestern portion of valley; nearest record approximately 100 mi. to southwest.
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	**FE, SE**	Clayish soils in saltbush and saltscrub habitats.	Absent. Appropriate habitat not present on project site.
San Joaquin antelope ground squirrel (*Ammospermophilus nelsoni*)	**ST**	Saltbush and saltscrub habitats, and grasslands.	Absent. Appropriate habitat not present on project site.
California Species of Special Concern			
Hardhead (*Mylopharadon conocephalus*)	**CSSC**	Riverine systems of the San Joaquin River.	Absent. CNDDB record from 1981 "west of Ft. Washington". This species is absent from the project site because the project site does not include the river channel.
Western spadefoot *(Scaphiopus hammondi)*	**CSSC**	Vernal or temporary pools in annual grasslands or open woodlands.	Unlikely. Aquatic habitat present on the site is not conducive to reproduction by the species although in high rain years the northern pond may contain contain water long enough for metamorphosis. There are records of the species within 5 mi of the site but occurrence is limited to higher-quality habitat including vernal pools located in native habitat.
Silvery legless lizard (*Anniella pulchra pulchra*)	**CSSC**	Sandy areas that contain leaf litter and/or fairly high moisture.	Possible. Appropriate habitat occurs near river, especially in higher elevation channels.
Western Pond Turtle *(Actinemys marmorata*)	**CSSC**	Permanent or nearly permanent water in a variety of habitats.	Present on the project site.
Burrowing Owl (*Athene cunicularia*)	**CSSC**	Flat grasslands and ruderal habitats. Requires California ground squirrel burrows for nesting and cover.	Likely. Suitable nesting and foraging habitat is present on the site. Many CA ground squirrel burrows of appropriate size and shape occur on the site, but evidence of use or occupation not observed.

NAME	*STATUS	HABITATS UTILIZED	POTENTIAL FOR OCCURRENCE ON SITE
Loggerhead Shrike (*Lanius ludovicianus*)	**CSSC**	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats.	Present. Occurs and nests on the site.
Golden Eagle (*Aquila chrysaetos*)	**BGEPA, SPE**	Grassland habitats with abundance of small mammal prey. Often uses cliff and rocky faces adjacent to canyons for nesting.	Unlikely. Upland grassland habitats observed on upper terraces of river and adjacent to river north of project site are of low quality and no nesting cliffs. Therefore little more than transitory use would be expected.
California Yellow Warbler (*Dendroica petechia brewsteri*)	**CSSC**	Breeds in riparian woodlands, particularly those dominated by willows and cottonwoods.	Unlikely. Riparian habitat on the site not of sufficient quality for nesting by this species. Not known to nest along project reaches of San Joaquin River. May be present as a migrant.
Yellow-breasted Chat (*Icteria virens*)	**CSSC**	Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.	Unlikely. Riparian habitat on the site not of sufficient quality for nesting by this species. Not known to nest along project reaches of San Joaquin River. May be present as a migrant.
Tricolored Blackbird (*Agelaius tricolor*)	**CSSC**	Freshwater Emergent Wetland, Annual grassland, Agriculture, and Valley Foothill Riparian	Possible. Suitable nesting and foraging habitat is present on the site. No nesting colonies observed.
American badger (*Taxidea taxus*)	**CSSC**	Expansive grasslands with sufficient prey base including ground squirrels and small mammals.	Present. Excavated den observed onsite, roadkilled individuals on SR 41 at bridge within last 2 years.
Pallid Bat (*Antrozous pallidus*)	**CSSC**	Forages over many habitats; roosts in buildings, rocky outcrops and rocky crevices in mines and caves.	Unlikely. Potentially may forage over site, most grassland ground cover too thatchy for suitable foraging and roosting sites absent.
State Protected Species			
White-tailed Kite *(Elanus caeruleus)*	**SFP**	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats.	Present. Known to occur and likely nests on the site.
Ringtail (*Bassariscus astutus*)	**SFP**	Occurs in riparian habitats generally within 1km of permanent water, nests in logs, stumps and rocky areas.	Absent. Outside known range of occurrence.

SPECIAL STATUS CODE DESIGNATIONS

FE =	Federally listed Endangered
FT =	Federally listed Threatened
FD =	Federally Delisted
SE =	State listed Endangered
ST =	State listed Threatened
PFE =	Proposed for Federal listing as Endangered
PFT =	Proposed for Federal listing as Threatened
FC =	Federal Candidate. Sufficient biological information to support a proposal to list the species as Endangered or Threatened
CSSC =	California Species of Special Concern
SFP =	State Fully-Protected Species

DEFINITIONS REGARDING POTENTIAL OCCURRENCE

Present:	Species or sign of their presence observed on the site
Likely:	Species or sign not observed on the site, but reasonably certain to occur on the site
Possible:	Species or sign not observed on the site, but conditions suitable for occurrence
Unlikely:	Species or sign not observed on the site, conditions marginal for occurrence
Absent:	Species or sign not observed on the site, conditions unsuitable for occurrence

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*). Federal status: Threatened; State status: none. The VELB is an insect endemic to the Central Valley of California that inhabits riparian and associated upland habitats where elderberry, its host plant, grows. Specifically, its range includes the upper Sacramento Valley to the central San Joaquin Valley (USFWS 1991). The beetle's habitat consists of riparian forests whose dominant plant species include cottonwood, sycamore, valley oak, and willow, with an understory of elderberry shrubs (USFWS 1991). Blue elderberry shrubs in the Central Valley with basal stem diameters larger than 1 inch are considered by the USFWS as potential VELB habitat. The VELB life cycle is intimately connected to its habitat, elderberry shrubs. Following mating, the female lays her eggs in crevices in the elderberry bark. Upon hatching (after about 10 days), the larvae bore into the pith of the shrub and feed inside stems larger than 1 inch in diameter for 1 to 2 years until they mature. They emerge during the spring as adults through exit holes chewed through the bark. The adult beetles feed on the elderberry foliage until they mate, completing the cycle.

Two exit holes were observed in an elderberry bush during surveys conducted on 18 May 2011 and there are CNDDB records of VELB along Freeway 41 (CNDDB 2011)

Silvery Legless Lizard (*Anniella pulchra pulchra*). Federal Status: None; State Status: Species of Special Concern. This unusual lizard is found in sandy or loose loamy soils under the sparse vegetation of beaches, chaparral, pine-oak woodland, or under sycamores, cottonwoods, or oaks that grow on stream terraces. Legless lizards forage for insects and spiders underneath leaf litter or underneath sandy soil, usually at the base of shrubs or other vegetation (Jennings and Hayes 1994). Their adaptation for burrowing, which requires soils with a high sand fraction, makes legless lizards vulnerable to ground disturbing activities such as agriculture.

There are a few records for silvery legless lizard within the however it is possible that they may persist in the upland portions along river and vicinity streambeds such as the habitat present within the survey area. Therefore, it is possible that the silvery legless lizard could occur at the project site.

Western Pond Turtle (*Actinemys marmorata*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The western pond turtle occurs in ponds, streams, and other wetland habitats in the Pacific slope drainages of California and northern Baja California, Mexico (Bury and Germano 2008). The central California population was historically present in most drainages on the Pacific slope (Jennings and Hayes 1994), but streambed alterations and other sources of habitat destruction, exacerbated by frequent drought events, have caused substantial population declines throughout most of the species' range (Stebbins 2003). Ponds or slack-water pools with suitable basking sites (such as logs) are an important habitat component for this species, and western pond turtles do not occur commonly along high-gradient streams. Females lay eggs in upland habitats, in clay or silty soils in unshaded (often south-facing) areas up to 0.25 mi from aquatic habitat (Jennings and Hayes 1994). Juveniles feed and grow in shallow aquatic habitats (often creeks) with emergent vegetation and ample invertebrate prey. Nesting habitat is typically found within 600 ft of aquatic habitat (Jennings and Hayes 1994), but if no suitable nesting habitat can be found close by, adults may travel overland considerable distances to nest. Threats to the western pond turtle include impacts to nesting habitat from

agricultural and grazing activities, human development of habitat, and increased predation pressure from native and non-native predators as a result of human-induced landscape changes.

Western pond turtles are common and widespread through the San Joaquin River system and are known to occur in the survey area.

Burrowing Owl (*Athene cunicularia*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The burrowing owl is a small, terrestrial owl of open country. These owls prefer annual and perennial grasslands, typically with sparse or nonexistent tree or shrub canopies. In California, burrowing owls are found in close association with California ground squirrels; owls use the abandoned burrows of ground squirrels for shelter and nesting. The nesting season as recognized by the CDFG (1995) runs from February 1 through August 31. After nesting is completed, adult owls may remain in their nesting burrows or in nearby burrows, or they may migrate (Gorman et al. 2003); young birds disperse across the landscape from 0.1 mi to 35 mi from their natal burrows (Rosier et al. 2006). Burrowing owl populations have declined substantially in the portions of their range in recent years, with declines estimated at 4-6% annually (DeSante et al. in press, in Rosenberg et al. 2007).

The project site provides suitable annual grassland habitat for the burrowing owl and California ground squirrels are widespread and common on the project site. No evidence of habitation by burrowing owls was noted during the reconnaisance survey conducted on 18 May 2011. Protocol-level surveys for this species, which would entail a series of site visits in accordance with the CDFG's protocol to determine presence/absence of this species have not been conducted. Therefore, the burrowing owl could potentially occur on the project site.

Loggerhead Shrike (*Lanius ludovicianus*). Federal Status: None; State Status: Species of Special Concern (Nesting). The loggerhead shrike is distributed throughout much of California, except in higher-elevation and heavily forested areas including the Coast Ranges, the Sierra Nevada, the southern Cascades, the Klamath and Siskiyou ranges, and the highest parts of the Transverse Ranges (Humple 2008). While the species range in California has remained stable over time, populations have declined steadily (Cade and Woods 1997) elsewhere. Loggerhead shrikes establish breeding territories in open habitats with relatively short vegetation that allows for visibility of prey; they can be found in grasslands, scrub habitats, riparian areas, other open woodlands, ruderal habitats, and developed areas including golf courses and agricultural fields (Yosef 1996). They require the presence of structures for impaling their prey; these most often take the form of thorny or sharp-stemmed shrubs, or barbed wire (Humple 2008). Ideal breeding habitat for loggerhead shrikes comprises short grass habitat with many perches, shrubs or trees for nesting, and sharp branches or barbed wire fences for impaling prey. Shrikes nest earlier than most other passerines, especially in the west where populations are sedentary. The breeding season may begin as early as late February, and lasts through July (Yosef 1996). Nests are typically established in shrubs and low trees including sagebrush, willow, and mesquite, though brush piles may also be used when shrubs are not available. Loss and degradation of breeding habitat, as well as possible negative impacts of pesticides, are considered to be the major contributors to the population declines exhibited by this species (Cade and Woods 1997).

This species is fairly widespread and common in the area and has been observed on the site.

White-tailed Kite (*Elanus leucurus*). Federal Status: None; State Status: Fully Protected. The white-tailed kite ranges throughout the western states and Florida where suitable habitat occurs. In California, white-tailed kites can be found in the Central Valley and along the coast, in grasslands, agricultural fields, cismontane woodlands, and other open habitats (Polite et al 1990, Dunk 1995, Erichsen et al 1996). Although the species rallied impressively after marked reductions during the early 20th century, populations may be exhibiting new declines as a result of recent increases in habitat loss and disturbance (Dunk 1995, Erichsen et al 1996). White-tailed kites are year-round residents of the state, establishing breeding territories that encompass open areas with healthy prey populations, and snags, shrubs, trees, or other nesting substrates (Dunk 1995). Nonbreeding birds typically remain in the same area over the winter, although some movements do occur (Polite et al 1990). The presence of white-tailed kites is closely tied to the presence of prey species, particularly voles, and prey base may be the most important factor in determining habitat quality for white-tailed kites (Dunk and Cooper 1994, Skonieczny and Dunk 1997).

Prey species including California voles are abundant on the project site and the species has been observed foraging throughout the year. It is likely that the white-tailed kite nests onsite.

Swainson's Hawk (*Buteo swainsoni*). Federal Listing Status: None; State Listing Status: Threatened. Swainson's hawk was listed as threatened by the State of California in 1983 due to population declines likely precipitated by significant losses of riparian habitat and conversion of open foraging habitats to developed lands (Woodbridge 1998, England et al. 1997). Swainson's hawks are distributed throughout western North America during the breeding season, but in California they are primarily limited to the Central Valley and the southeastern Great Basin region (Woodbridge 1998). Swainson's hawks in California are strongly associated with riparian habitats, though they are also found in oak woodlands and other open habitats (Woodbridge 1988, Smallwood 1995, England et al. 1997). Prime breeding habitat for Swainson's hawk encompasses riparian draws or clumps of trees surrounded by open grassland or oak savannah for foraging (England et al. 1997, Woodbridge 1998). Swainson's hawks build sturdy stick nests in low willows, box elders, oaks, or other trees, breeding from early March though July (England et al. 1997). Swainson's hawks are neotropical migratory birds, flying south after the breeding season to spend their winter months on the Pampas of Argentina (England et al. 1997, Canavelli et al. 2003). Stresses on winter populations, including pesticide poisoning, on the winter grounds have contributed to declines in North American breeding populations.

Swainson's hawks have been observed foraging over the project site and prey species including California voles and pocket gopher are abundant. Although there are no records of nesting by this species in the vicinity, appropriate nesting habitat, including large cottonwood trees, occurs throughout the site and the species may utilize the site for reproduction. No evidence of nesting by Swainson's hawk was observed during the survey conducted 18 May 2011.

Bald Eagle (*Haliaeetus leucocephalus*). Federal Listing Status: None; State Listing Status: Endangered, Fully Protected. Bald eagle populations exhibited precipitous declines in the early part of the 20th century primarily as a result of pesticide poisoning, which severely impacted reproductive rates (Buehler 2000). DDT was the most debilitating of these chemicals, and since its use was banned in the United States in 1972, eagle populations have recovered rapidly

(Buehler 2000). The bald eagle was removed from the federal endangered species list in 2008 (U.S. Fish and Wildlife Service and California Department of Fish and Game 2003) but remains listed as both endangered and fully protected by the State of California. Bald eagles are distributed throughout North America along waterways and coasts (Buehler 2000). In California, bald eagle populations remain low, although their numbers are increasing steadily (Peeters and Peeters 2005). Bald eagles can be found nesting in a number of locations in the Sierra Nevada range and southern California, and they nest in a few scattered locations in central California as well (Buehler 2000, CDFG 2008). Ideal habitat for bald eagles is comprised of remote, forested landscape with old-growth or mature trees and easy access to an extensive and diverse prey base (Buehler 2000). Bald eagles forage in fresh and salt water where their prey species (fish) are abundant. They build nests in tall, sturdy trees at sites that are in relatively close proximity to aquatic foraging areas and isolated from human activities (Buehler 2000). In California, the eagle breeding season extends from January through August (Buehler 2000), and clutch size is typically two eggs. Bald eagles are known to be intolerant of human disturbance, particularly during the breeding season (USFWS 1986).

Bald eagles are commonly observed in the San Joaquin River bottomlands and nesting is known to occur at Millerton Lake approximately 5 mi upstream.

Tricolored Blackbird (*Agelaius tricolor*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting Colony). Tricolored blackbirds are found primarily in the Central Valley and in central and southern coastal areas of California. This species is considered a California species of special concern (at its nesting colonies) due to concerns over the loss of wetland habitats in the state. The tricolored blackbird is highly colonial in its nesting habits, and forms dense breeding colonies that, in some parts of the Central Valley, may consist of up to tens of thousands of pairs. This species typically nests in tall, dense, stands of cattails or tules, but also nests in blackberry, wild rose bushes, and tall herbs. Nesting colonies are usually located near fresh water. Tricolored blackbirds form large, often multi-species flocks during the non-breeding period and range more widely than during the breeding season. Tricolored blackbirds likely occur on the project site during regional migration and potentially nest in riparian habitat around the large ponds onsite. However, no nesting colonies were observed during the survey conducted on 18 May 2011.

American Badger (*Taxidea taxus*). Federal Status: None; State Status: Species of Special Concern. American badgers are highly specialized fossorial (adapted for burrowing or digging) mammals that occur in grassland habitats throughout California, except in the northwestern corner of the state (Zeiner et al. 1990). They can have large territories of up to 21,000 acres, with territory size varying by sex and by season. In central California, American badgers typically occur in annual grasslands, oak woodland savannas, semi-arid shrub/scrublands, and any habitats with friable soils and stable prey populations (Zeiner et al. 1990). They occur to a lesser extent in agricultural areas, where intensive cultivation inhibits den establishment and reduces prey abundance. Badgers are strong diggers, digging burrows both in pursuit of prey and to create dens for cover and raising of young. They are primarily nocturnal, though they are often active during the day. Badgers breed during late summer, and females give birth to a litter of young the following spring.

A collapsed badger den was observed on the project site during the reconnaissance survey conducted on 18 May 2011, and H. T. Harvey & Associates personnel have observed 2 road killed individuals on Freeway 41 during the last two years. However, given the extremely large range and territoriality of the species, it is unlikely that more than one individual occurs in the area at any given time except during the breeding season.

Nesting Migratory Birds. In addition to the special-status species described above, all native non-game birds are protected under the federal Migratory Bird Treaty Act (MBTA), and most are protected by the California Fish and Game Code. This protection prohibits direct take of birds and the destruction of nests or eggs. A variety of common birds, such as black phoebes, northern mockingbirds, American robins, and house finches could potentially nest within the project site. Although take of these relatively common species would not be considered a significant impact under the California Environmental Quality Act (CEQA), it would be in violation of federal and state laws. Appendix A provides an overview of the MBTA and recommended compliance measures.

IDENTIFICATION OF REGULATED HABITATS

Sensitive and Regulated Habitats

U. S. Army Corps of Engineers Jurisdictional Habitats. Areas meeting the regulatory definition of "Waters of the U.S." (jurisdictional waters) are subject to the jurisdiction of the USACE under provisions of Section 404 of the Clean Water Act (CWA, 1972) and Section 10 of the Rivers and Harbors Act (RHA, 1899). Appendix A provides a more detailed regulatory overview for USACE jurisdiction.

Survey Results. Potential USACE jurisdictional waters and wetlands are present on the project site within the bed of the San Joaquin River and the associated ponds. Therefore, proposed project improvements that would place fill within the ponds or within the bed of the San Joaquin River would likely require a Section 404 Permit from the USACE.

California Department of Fish and Game Jurisdiction. A Streambed Alteration Agreement with the CDFG under section 1602 of the California Fish and Game Code is typically required for project activities that result in the diversion or obstruction of the natural flow of a stream; substantially change its bed, channel or bank; or utilize any materials (including vegetation) from the streambed. Appendix A provides a more detailed regulatory overview for CDFG jurisdiction.

Survey Results. The bed and banks of the San Joaquin River and on site floodplain ponds as well as the associated riparian habitat are likely within the jurisdiction of the CDFG. The project will likely require a Streambed Alteration Agreement from the CDFG under section 1602 of the California Fish and Game Code, for any proposed improvements that would impact CDFG jurisdictional areas.

State Water Quality Control Board Jurisdiction. The RWQCB is responsible for protecting surface, ground, and coastal waters within its boundaries, pursuant to the Clean Water Act, and

Porter-Cologne Water Quality Control Act of the California Water Code. The RWQCB, thus, has both federal and state jurisdiction. Federal authority is exercised whenever a proposed project requires a Section 404 permit from the USACE, in this instance the RWQCB would issue a Section 401 Water Quality Certification. State Authority is exercised when a proposed project is not subject to a Section 404 permit, in this instance a Waste Discharge Requirement may be issued for activities that may impact waters of the State. Appendix A provides a more detailed regulatory overview for RWQCB jurisdiction.

Survey Results. The bed of the San Joaquin River up to approximately the ordinary high water mark or upslope extent of wetland vegetation and on site floodplain ponds are likely within RWQCB jurisdiction. Therefore, a Section 401 Water Quality Certification may be required.

BIOTIC RESOURCE IMPACTS AND MITIGATION

H. T. Harvey & Associates will assess the project's biotic impacts and complete this section of the Biotic Study report upon receipt of the preferred trail alignment from URS Corporation.

CEQA THRESHOLDS OF SIGNIFICANCE

The following is a summary of the thresholds of significance that we utilized in the below biotic impact assessment for the project. The CEQA and its Guidelines provide direction in evaluating project impacts and determining which impacts will be significant (Remy et al. 1999). CEQA defines "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." Under CEQA Guidelines section 15065 (Mandatory Findings of Significance), a project's impacts on biotic resources are deemed significant where the project would:

- "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, threatened, or rare species"

In addition to the section 15065 criteria that trigger mandatory findings of significance, Appendix G of the CEQA Guidelines provides a checklist of other potential impacts to consider when analyzing the significance of project impacts. The impacts listed in Appendix G may or may not be significant, depending on the level of the impact. For biological resources, these impacts include whether the project would:

- "have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service"
- "have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service"
- "have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means"
- "interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites"

- "conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance"

- "conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan."

IMPACT ASSESSMENT ASSUMPTIONS

The below biotic impact assessment was based, in part, on the following assumptions regarding project construction: (To be completed)

IMPACTS FOUND TO BE LESS THAN SIGNIFICANT

This section addresses potential impacts to biotic resources resulting from the proposed project that were found to be less than significant. (To be completed)

SIGNIFICANT IMPACTS THAT CAN BE MITIGATED TO A LESS-THAN-SIGNIFICANT LEVEL

(To be completed)

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APPENDIX A.
REGULATORY OVERVIEW AND APPLICABILITY OF FEDERAL MIGRATORY BIRD TREATY ACT, STATE FISH AND GAME CODE

REGULATORY OVERVIEW

SPECIAL-STATUS SPECIES REGULATIONS OVERVIEW

Federal and state endangered species legislation gives several plant and animal species known to occur in the vicinity of the site special status. In addition, state resource agencies and professional organizations, whose lists are recognized by agencies when reviewing environmental documents, have identified as sensitive some species occurring in the vicinity of the site. Such species are referred to collectively as "species of special status" and include: plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA), animals listed as "fully protected" under the California Fish and Game Code, animals designated as "Species of Special Concern" by the CDFG, and plants listed as rare or endangered by the CNPS in the *Inventory of Rare and Endangered Plants of California* (2001).

Federal Endangered Species Act provisions protect federally listed threatened and endangered species and their habitats from unlawful take. "Take" under FESA includes activities such as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct." The U.S. Fish & Wildlife Service's (USFWS) regulations define harm to mean "an act which actually kills or injures wildlife." Such an act "may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR § 17.3). Activities that may result in "take" of individuals are regulated by the USFWS. The USFWS produced an updated list of candidate species September 19, 1997 (USFWS 1997; 50 CFR Part 17). Candidate species are not afforded any legal protection under FESA; however, candidate species typically receive special attention from federal and state agencies during the environmental review process.

Provisions of CESA protect state-listed threatened and endangered species. CDFG regulates activities that may result in "take" of individuals (i.e., "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under the California Fish and Game Code. The CDFG, however, has interpreted "take" to include the "killing of a member of a species which is the proximate result of habitat modification . . . " Additionally, the California Fish and Game Code contains lists of vertebrate species designated as "fully protected" (California Fish & Game Code §§ 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], 5515 [fish]). Such species may not be taken or possessed without a permit.

The CDFG has also produced 3 lists (amphibians and reptiles, birds, and mammals) of "species of special concern" that serve as "watch lists." Species on these lists are either of limited distribution, or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Thus, their populations should be monitored. They may receive special attention during environmental review.

Plants listed as rare or endangered by the CNPS (2001), but which have no designated status under state endangered species legislation, are defined as follows:

- List 1A. Plants considered by the CNPS to be extinct in California.
- List 1B. Plants rare, threatened, or endangered in California and elsewhere.
- List 2. Plants rare, threatened, or endangered in California, but more numerous elsewhere.
- List 3. Plants about which we need more information - A review list.
- List 4. Plants of limited distribution - A watch list.

U.S. ARMY CORPS OF ENGINEERS JURISDICTION

Areas meeting the regulatory definition of "Waters of the U.S." (jurisdictional waters) are subject to the jurisdiction of the USACE under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as "Waters of the U.S.," tributaries of waters otherwise defined as "Waters of the U.S.," the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to "Waters of the U.S." (33 CFR, Part 328, Section 328.3). Wetlands on non-agricultural lands are identified using the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). In addition, the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Regional Supplement; USACE 2006) was followed to document site conditions relative to hydrophytic vegetation, hydric soils and wetland hydrology. The Regional Supplement is designed to be used with the current version of the Corps Manual; where differences in the 2 documents occur; the Regional Supplement takes precedence over the Corps 1987 Manual.

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act. The State Water Resources Control Board is the state agency (together with the Regional Water Quality Control Boards) charged with implementing water quality certification in California.

CALIFORNIA DEPARTMENT OF FISH AND GAME

The California Fish and Game (CDFG) Code includes regulations governing the use of, or impacts to, many of the state's fish, wildlife, and sensitive habitats. The CDFG exerts jurisdiction over the bed and banks of rivers, lakes, and streams according to provisions of §§1601-1603 of the CDFG Code. The CDFG Code requires a Streambed Alteration Agreement for the fill or removal of material within the bed and banks of a watercourse or waterbody and for the removal of riparian vegetation.

Certain sections of the CDFG Code describe regulations pertaining to certain wildlife species. For example, CDFG Code §§3503, 2513, and 3800 (and other sections and subsections) protects

native birds, including their nests and eggs, from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFG. Raptors (i.e., eagles, hawks, and owls) and their nests are specifically protected in California under CDFG Code §3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." CDFG Code §4150 protects non-game mammals.

REGIONAL WATER QUALITY CONTROL BOARD

The RWQCB is responsible for protecting surface, ground, and coastal waters within its boundaries, pursuant to the Porter-Cologne Water Quality Control Act of the California Water Code. The RWQCB also has both federal and state jurisdiction under Section 401 of the Clean Water Act, for activities that could result in a discharge of dredged or fill material to a water body. Federal authority is exercised whenever a proposed project requires a Clean Water Act Section 404 permit from the USACE in the form of a Section 401 Water Quality Certification. State authority is exercised when a proposed project is not subject to federal authority, in the form of a Notice of Coverage, Waiver of Waste Discharge Requirements. Many wetlands fall into RWQCB jurisdiction, including some wetlands that are not subject to USACE jurisdiction. RWQCB jurisdiction of other waters, such as streams and lakes, extends below the ordinary high water mark.

The RWQCB has no formal technical manual or expanded regulations to help in identifying their jurisdiction. The only guidance can be found in Porter-Cologne Water Quality Control Act, Chapter 2 (Definitions), which states, "'waters of the State' means any surface water or ground water, including saline waters, within the boundaries of the state."

APPLICABILITY OF FEDERAL MIGRATORY BIRD TREATY ACT, STATE FISH AND GAME CODE

The federal Migratory Bird Treaty Act and the State Fish and Game Code apply to biotic resources present on the project site, and have the potential to affect project activities. Below is an outline of these laws, their applicability to project activities, and recommended measures to ensure that project activities comply with these laws.

The federal Migratory Bird Treaty Act (MBTA; 16 U.S.C., §703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment, a violation of the MBTA.

Migratory birds are also protected in California. The State Fish and Game Code §3503 emulates the MBTA and protects birds' nests and eggs from all forms of take. Disturbance that causes nest abandonment resulting in the loss of eggs or young may be considered "take" by the CDFG. Nesting raptors (birds of prey) are specifically protected under CDFG Code §3503.5.

Raptors (e.g., eagles, hawks, and owls) and their nests are protected under both federal and state laws and regulations. The federal Migratory Bird Treaty Act prohibits killing, possessing, or trading in raptors except in accordance with regulations prescribed by the Secretary of the Interior. Birds of prey are protected in California under Fish and Game Code section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered a "taking" by the CDFG. Any loss of fertile raptor eggs or nesting raptors, or any activities resulting in raptor nest abandonment, would constitute a violation of federal and state law.

Project Applicability

All native birds found on the site are protected under the MBTA and state Fish and Game Code. project construction has the potential to take nests, eggs, young, or individuals of protected bird species. Construction disturbance during the breeding season could result in the incidental loss of fertile bird eggs or nestlings. To mitigate the risk of impacts to protected birds, we recommend that the following measures be implemented.

Compliance Measures for Nesting Birds

Recommended Measure 1. Avoid Construction during the Nesting Season. Grading and other construction activities could be scheduled to avoid the nesting season to the extent possible. The nesting season for most birds in Fresno County extends from 1 January through 31 August.

Recommended Measure 2. Pre-construction/Pre-disturbance Surveys. If construction is to occur during the breeding season, preconstruction surveys should be conducted by a qualified ornithologist no more than 15 days prior to the initiation of construction in any given area. Pre-construction surveys should be used to ensure that no nests of species protected by the MBTA or State Code will be disturbed during project implementation.

Recommended Measure 3. Inhibiting Nesting. If vegetation is to be removed by the project site, and all necessary approvals have been obtained, potential nesting substrate (e.g., bushes, trees, grass, buildings, burrows) that will be removed by the project should be removed in October – December before nesting season to help preclude nesting. Pre-removal surveys should be conducted by a qualified ornithologist.

Recommended Measure 4. Buffer Zones. If an active nest is found during pre-construction surveys and is greater than half completed, a qualified ornithologist, in consultation with CDFG, will determine the spatial extent and duration of a construction-free buffer zone to be established around the nest.

APPENDIX B.
SPECIAL-STATUS PLANT SPECIES CONSIDERED
BUT REJECTED FOR OCCURRENCE

Appendix B. Special-Status Plant Species Considered but Rejected for Occurrence at the City of Fresno Lewis Eaton Trail Project Site.							
SCIENTIFIC NAME	**COMMON NAME**	**Lack of Serpentine Soils**	**Lack of Suitable Habitat Type**	**Other Edaphic Requirements**	**Outside the Elevation Range**	**Extirpated/absent from County**	**Habitat on site too degraded to support species.**
Castilleja campestris ssp. succulenta	Succulent owl's clover		X				
Caulanthus californicus	California jewel-flower		X				
Downingia pusilla	Dwarf Downingia		X				
Imperata brevifolia	California satintail		X				
Leptosiphon serrulatus	Madera Leptosiphon		X				
Orcuttia inaequalis	San Joaquin Valley orcutt grass		X				
Orcuttia pilosa	Hairy orcutt grass		X				
Pseudobahia bahiifolia	Hartweg's golden sunburst		X	X			
Tropidocarpum capparideum	Caper-fruited Tropidocarpum		X				
Tuctoria greenei	Greene's Tuctoria		X				

River West Eaton Trail Extension Project

2014 Biological Resources Report Update

Prepared by URS Corporation, May 2014

Summary

In June 2011 a biotic study of existing conditions of the extension of the Lewis S. Eaton Multi-Purpose Trail was conducted by H.T. Harvey and Associates for the URS Corporation. This study conducted two reconnaissance-level field surveys on May 18th and June 5th, 2011. These surveys consisted of walking and visually assessing the project site to characterize existing biotic conditions. In addition to site reconnaissance surveys, background information was reviewed to determine the potential for state and federal-listed special-status species to occur on the project site. The results of this study can be found in *City of Fresno Lewis Eaton Trail Project Biotic Study; Existing Conditions Section* prepared by H.T. Harvey and Associates, June 24th 2011.

This memo serves as an update to the June 2011 report. On April 16th, 2014, URS Biologist Rachel Avila and Landscape Ecologist Chris Hargreaves conducted a reconnaissance-level field survey of the proposed project area. This survey consisted of assessing the five biotic habitats identified in the earlier surveys and recording current conditions and changes to the previous reported conditions and special status species. The five biotic habitats are disturbed annual grassland, aquatic, riparian, developed landscape, and stormwater detention basins.

There have been no changes to the project boundaries or the characterization of the habitats present or any new conditions that would significantly impact the previous report. Noteworthy changes to riparian, aquatic, and developed/landscaped habitats include:

- Riparian habitat surrounding on-site ponds and along the banks of the San Joaquin River was undergoing eradication of invasive vegetation.
- The San Joaquin River Restoration Program has installed a fish wall across the span of the San Joaquin River and is currently conducting a fish study.
- The developed/landscaped area now includes a second home, currently under construction, to the north of the existing home.

The most significant special status species observed was Red-tailed hawks (*Buteo jamaicensis*) observed entering and exiting a nest located on the Developed/Landscaped property.

Current Conditions of the Project Site

Disturbed Annual Grassland

Disturbed annual grassland, defined as dominated by non-native, annual upland grass species (Photo 1), occupies approximately 261.3 acres (~65 %) of the project site. During the 2011 survey, multiple desert cottontail (*Sylvilagus audubonii*) were spotted as well as many California ground squirrel (*Otospermophilus beecheyi*) burrows. Red-tailed hawks (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and common raven (*Corvus corax*) were observed soaring over grasslands.

There have been no changes to the acreage of grassland. During the 2014 survey three desert cottontails were observed and fresh scat and hollows were present indicating that there is still a significant presence on the site. Multiple ground squirrel burrows were observed. Red-tailed hawks (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and Northern Harrier (*Circus cyaneus*) were seen flying above the site, as well as Cliff Swallows (*Petrochelidon pyrrhonota*), Black Phoebe (*Sayornis nigricans*), and Mourning Doves (*Zenaida macroura*). A Great Egret (*Ardea alba*) was also observed stalking prey in the grassland.

While no issues that would affect trail construction were observed the ground squirrel burrows provide potential nesting habitat for burrowing owls. No burrowing owls occurrences are currently recorded within 5 miles of the site, however this project is within the burrowing owl California range and habitat is present.

Aquatic

Aquatic habitat occupies approximately 97.3 acres (24 %) of the project site. The majority of this habitat consists of ponds from previous mining activity. The area of the ponds has not changed since the 2011 report. During the 2014 survey, riparian habitat surrounding these ponds was undergoing restoration activity that involved invasive species eradication (Photo 2). This disruption could potentially have an impact on observed species. In addition, the San Joaquin River Restoration Program has installed a fish wall across the span of the San Joaquin River, to the northwest of the developed/landscaped area, and is currently conducting a fish study to trap and transport Chinook salmon. This is also a temporary impact and should be noted that river access to this installation may be an issue at a later time (Photo 3).

Species observed include Canada Goose (*Branta canadensis*), Forster's Tern (*Sterna forsteri*), American Coot (*Fulica americana*), Mallards (*Anas platyrhynchos*), Lesser Yellowlegs (*Tringa*

flavipes), wood ducks (*Aix sponsa*), snowy egret (*Egretta thula*), Double-crested cormorant (*Phalacrocorax auritus*), Pied-billed Grebe (*Podilymbus podiceps*), Green Heron (*Butorides virescens*), and Tree Swallows (*Tachycineta bicolor*).

Riparian

Riparian habitat occupies approximately, 25.1 acres, 6 % of the project site. There have been no changes to this acreage. This habitat was determined to be the most heavily impacted area of the site during the 2014 survey. Multiple work crews with the San Joaquin River Parkway and Conservation Trust Inc. were actively eradicating invasive vegetation within riparian habitat surrounding ponds and along the banks of the San Joaquin River. Discussion with the work crews indicate the focus is to eradicate the most critical invasive plant species which have proven to be most detrimental to riparian habitat in this area. Species include: rattlebox (*Sesbania punicea*), Chinese tallow (*Triadica sebifera*), and giant reedgrass (*Arundo* donax). The eradication method employed is known as the cut and paint method where invasive tree/shrub stems are cut close to ground and sprayed or painted with pesticide to discourage further growth. Although eradication efforts may not completely eliminate invasive plant species in the area, the goal is to give native vegetation an opportunity to establish and compete without being choked out by invasive species. A large, healthy stand of buttonbush (*Cephalanthus occidentalis*) interspersed with Baltic rush (*Juncus balticus*) and saltgrass (*Distichlis spicata*) was observed along the right bank of the San Joaquin River within an area where rattlebox was recently removed (Photo 4). Previously mapped blue elderberry shrubs (*Sambucus nigra subsp. caerulea*) are intact.

A variety of species were observed in the riparian area; despite it occupying 6 % of the project site it shelters the most abundant diversity of species (Photo 4). Species observed included Western Scrub Jay (*Aphelocoma californica*), Anna's Hummingbird (*Calypte anna*), House Finch (*Haemorhous mexicanus*), Northern Mockingbird (*Mimus polyglottos*), Great-tailed Grackle (*Quiscalus mexicanus*), Tree Swallows (*Tachycineta bicolor*), Cliff Swallow (*Petrochelidon pyrrhonota*), Red-winged Blackbird (*Agelaius phoeniceus*), Red-tailed hawks (*Buteo jamaicensis*), California Quail (*Callipepla californica*), Yellow-rumped Warbler (*Setophaga coronata*), Great Egret (*Ardea alba*), Killdeer (*Charadrius vociferus*), European starling (*Sturnus vulgaris*), Cedar Waxwing (*Bombycilla cedrorum*), and Bewick's Wren (*Thryomanes bewickii*). There are ample nesting opportunities for riparian species, a Canada Goose (*Branta canadensis*) was observed on a nest on a small island in one of the ponds. Scat from coyote and desert cottontail was also observed.

West of the site across the San Joaquin River is a diverse riparian area with ample nesting opportunities.

Developed/Landscaped

This habitat consists of approximately 97.3 acres, 24 % of the project site; it includes dirt roads and trails, and residence with associated landscaping. While the acreage has not changed since

the 2011 survey a second home is currently being constructed on the site which reduces the area of residential landscaping.

Species observed included Red-winged Blackbird (*Agelaius phoeniceus*), Northern Mockingbird (*Mimus polyglottos*), Mourning Dove (*Zenaida macroura*), and Brewers Blackbird (*Euphagus cyanocephalus*). Multiple ground squirrel burrows were observed on the residential landscape. A pine tree on the west side of the developed area has a large stick nest that a Red-tailed Hawk (*Buteo jamaicensis*) was observed flying to and from during the survey, indicating there is an active nest (Figure 1).

Stormwater Detention Basins

Two stormwater detention basins, associated with the adjacent residential developments, occupy approximately 5 acres of the project site, ~ 1 %. There have been no changes to these basins. Wetland vegetation at the edges and multiple aquatic species were observed, included Canada Goose (*Branta canadensis*), Mallards (*Anas platyrhynchos*), and a pair of Cinnamon Teals (*Anas cyanoptera*).

Special-Status Plant and Animal Species

The 2011 report determined no federal or state-listed endangered/threatened plant species have the potential to occur on the project site. A number of special-status wildlife species occur in Fresno and Madera counties and the project vicinity, but were determined to be absent from the project site because the site is outside of the known range of the species, no suitable habitat occurs on the project site, and/or recent species occurrence records are lacking in the site vicinity. There have been no changes to the site or the species observed that would affect this determination.

There are nesting raptors in vicinity of the site. In addition to the Red-tailed hawk nest near the developed area there is an established Osprey (*Pandion haliaetus*) nest west of the site. During the survey an Osprey was observed in the nest. Raptors are protected under the migratory bird act and could impact work at this site.

Special-status Plant Species

There have been no changes to the status of special-status plant species.

Special-status Animal Species

The status of the following wildlife species has changed since 2011 and has been updated in the table below.

NAME	STATUS	HABITAT UTILIZED	POTENTIAL FOR OCCURRENCE ON SITE
Vernal pool tadpole shrimp *(Lepidurus packardi)*	~~FT~~ FE	Annual grassland (requires vernal pools)	Absent. Vernal pools not observed on site. Substrate not conducive to vernal pool formation.
Willow Flycatcher *(Empidonax traillii)*	~~FE~~ SE	Breeds locally in riparian habitats in mountains and southern deserts.	Absent. Riparian habitat on the site not of sufficient quality for nesting by this species. Not known to nest along project reaches of San Joaquin River. May be present as a migrant. Any individuals occurring on site are probably not of the listed species.
Buena Vista Lake ornate shrew (*Sorex ornatus relictus*)	FE, CSSC	Riparian and grassland, wet areas with leaf litter cover especially near bodies of permanent water.	Absent. Known from southwestern portion of valley; nearest record approximately 100 mi. to southwest.
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	~~FE~~ **SE**	Clayish soils in saltbush and saltscrub habitats.	Absent. Appropriate habitat not present on project site.

Photos

Photo 1: Disturbed annual grassland

Photo 2: Aquatic pond during invasive species removal

Photo 3: Fish Study on the left bank of San Joaquin River

Photo 4: Riparian area

Figures

Figure 1: Red-tailed hawk nest near private residence

River West Eaton Trail Extension Project

2015 Biological Resources Report Update

Prepared by AECOM Corporation, September 2015

Summary

In June 2011 a biotic study of existing conditions of the extension of the Lewis S. Eaton Multi-Purpose Trail was conducted by H.T. Harvey and Associates for the URS Corporation (now AECOM). This study conducted two reconnaissance-level field surveys on May 18th and June 5th, 2011. These surveys consisted of walking and visually assessing the project site to characterize existing biotic conditions. In addition to site reconnaissance surveys, background information was reviewed to determine the potential for state and federal-listed special-status species to occur on the project site. The results of this study can be found in City of Fresno Lewis Eaton Trail Project Biotic Study; Existing Conditions Section prepared by H.T. Harvey and Associates, June 24th 2011. In May 2014 the River West Eaton Trail Extension Project 2014 Biological Resources Report Update was prepared by AECOM biologists conducting a reconnaissance-level field survey of the proposed project area to document the projects sites current conditions.

On September 17, 2014 the San Joaquin River Conservancy board approved an off-site alternative public access point near the vicinity of Palm and Nees avenues to the River West Fresno, Eaton Trail Extension project site. This area is not as an independent alternative but an optional, integral part of the Eaton Trial Extension project. This 35.77 acre area adjacent to the Eaton Trial Extension site has not previously been part of the biological surveys. This memo documents the projects sites current conditions and is an update to the May 2014 site resources report. On September 22nd, 2015, AECOM Biologist Rachel Avila and Project Landscape Architect George Strnad conducted a reconnaissance-level field survey of Alternative 5 project area. This survey consisted of assessing habitats and recording current conditions. .

The Alternative 5 project area surveyed did not have any marked characterization differences from the previously surveyed project area. It consisted of disturbed annual grassland, aquatic, and riparian area as well as a road.

Proposed Alternative 5 Project Description

In Alternative 5 the multi-use trail would be extended downriver for about xx feet from the end of the proposed trail near the Fresno Metropolitan Flood Control District flood control basin. Trail design would remain the same as described for the proposed project. In addition public access to the river and the multi-use trail would be provided from the intersection of Palm and Nees Avenues to a 40 stall parking lot using the existing paved road (outmost road). The parking lot would be constructed on the river bottom and vehicle access would be provided by the two lane paved road. A physically separated pedestrian path and or bikeway would parallel the paved road. The paved road would connect with a turn-around near the parking lot. The turn-around would be designed to accommodate the turning radius of a Fresno Fire Department fire truck. Recreational amenities such as two vault ADA compliant toilets, landscaping, lighting and picnic tables would be added near the parking lot. The multi-use trail would end at the turn-around. Access to the parking lot would be managed by a vehicle control gate, or traffic bollards and a fee entrance station. It is an off-site alternative and along with the Proposed Project would provide public access to the river for recreational use along a multi-used trail commonly referred as the Eaton Trail.

On September 22nd, 2015, a reconnaissance-level biological field survey was performed on about 62 acres of land adjacent to the San Joaquin River near the intersection of Palm and Neese Avenues, Fresno, California. The area, referred to as Alternative 5, is adjacent to the Proposed Project. A complete description of the Proposed Project and Alternative 5 is provided in the River West Fresno Eaton Trail Extension Project EIR. It is an off-site alternative and along with the Proposed Project would provide public access to the river for recreational use along a multi-used trail commonly referred as the Eaton Trail.

Current Conditions of the Project Site

This section describes the habitat conditions and species observed on the date of survey for Alternative 5. On September 22nd, 2015, a reconnaissance-level biological field survey was performed on about 62 acres of land adjacent to the San Joaquin River near the intersection of Palm and Neese Avenues, Fresno, California. Prior to this survey this area had not been surveyed for biological resources. However, two previous surveys have been conducted on the adjacent Proposed Project. Results of those surveys are provided in Appendix B of the EIR.

Disturbed Annual Grassland

Disturbed annual grassland, defined as dominated by non-native, annual upland grass species (Photo 1), occupies on approximately 30 acres (84 %) of the project site (Photo 1). This grassland included a highly disturbed area which has been recently burned, exposing an extensive ground squirrel burrow system. The grassland also included scattered woody vegetation, including: tobacco brush (*Ceanothus velutinus*), blue elderberry shrubs (*Sambucus nigra subsp. caerulea*), and willow (*Salix*). During the survey, evidence of desert cottontail (*Sylvilagus audubonii*) was spotted as well as many California ground squirrel (*Otospermophilus beecheyi*) burrows. Red-tailed hawks (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), Black Phoebe (*Sayornis nigricans*), Mourning Doves (*Zenaida macroura*), and common raven (*Corvus corax*) were observed over grasslands. Red-tailed hawks (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), Osprey (*Pandion haliaetus*), and Northern Harrier (*Circus cyaneus*) were seen flying above the site, as well as Cliff Swallows (*Petrochelidon pyrrhonota*), Black Phoebe (*Sayornis nigricans*), and Mourning Doves (*Zenaida macroura*).

Large sections of the grassland had been recently burned (Photo 2), exposing a network of burrows along the hillside (Photo 3). While no issues that would affect trail construction or use, ground squirrel burrows provide potential nesting habitat for burrowing owls. No burrowing owls occurrences have been observed within 5 miles of the site. Some burrows were the correct size for foxes and coyotes, although no tracks or scat was found that would indicate an active burrow.

Aquatic

Aquatic habitat, the San Joaquin River, occupies approximately 3 acres (7%) of the project site (Photo 4).

Species observed include Canada Goose (*Branta canadensis*), American Coot (*Fulica americana*), Mallards (*Anas platyrhynchos* Pied-billed Grebe (*Podilymbus podiceps*), and Tree Swallows (*Tachycineta bicolor*).

Riparian

Riparian habitat occupies approximately, 2 acres, 6% of the project site (Photo 5). The vegetation is a mix of native and none native species. Species include: rattlebox (*Sesbania punicea*), sandbar willow (*Salix exigua*), buttonbush (*Cephalanthus occidentalis*) and blue elderberry shrubs (*Sambucus nigra subsp. caerulea*).

A variety of species were observed in the riparian area; despite it occupying less than 6 % of the project site it shelters the most abundant diversity of species. Species observed included: Western Scrub Jay (*Aphelocoma californica*), Anna's Hummingbird (*Calypte anna*), House Finch (*Haemorhous mexicanus*), Northern Mockingbird (*Mimus polyglottos*), Tree Swallows (*Tachycineta bicolor*), White-crown Sparrow *(Zonotrichia leucophrys*), Red-winged Blackbird (*Agelaius phoeniceus*), Red-tailed hawks (*Buteo jamaicensis*), California Quail (*Callipepla*

californica), European starling (*Sturnus vulgaris*), Cedar Waxwing (*Bombycilla cedrorum*), and Bewick's Wren (*Thryomanes bewickii*). Scat from desert cottontail was also observed.

North of the site across the San Joaquin River (in Madera County) is a diverse riparian area with ample nesting opportunities. California quail (*Callipepla californica*) could be heard and waterfowl was seen moving in and out of this area.

Special-Status Plant and Animal Species

The 2011 report determined no federal or state-listed endangered/threatened plant species have the potential to occur on the project site. A number of special-status wildlife species occur in Fresno and Madera counties and the project vicinity, but were determined to be absent from the project site because the site is outside of the known range of the species, no suitable habitat occurs on the project site, and/or recent species occurrence records are lacking in the site vicinity. There have been no changes to the site or the species observed that would affect this determination.

The 2014 survey found no changes to this finding and updated the status of four species.

The Alternative 5 area being adjacent to areas previously surveyed has plant species that do not differ from area covered in earlier reports. The Alternative 5 area has no federal or state-listed endangered/threatened plant species with the potential to occur on the project site. There are special-status wildlife species occurring within five miles of the site, but were determined to be absent from the project site because the site is outside of the known range of the species, no suitable habitat occurs on the project site, and/or recent species occurrence records are lacking in the site vicinity.

While there is currently no special-status wildlife species at the site there is potential for some of these species to be present at a future time. All native non-game birds are protected under the federal Migratory Bird Treaty Act (MBTA), which prohibits the take of birds and destruction of their nest and eggs. There are nesting raptors in vicinity of the site. Previous surveys have identified Red-tailed hawks (*Buteo jamaicensis*), and an Osprey (*Pandion haliaetus*), nesting within a mile of the site. During the survey an Osprey and Red-tailed hawk was observed flying over the site. Raptors are protected under the migratory bird act and could impact work at this site.

No burrowing owls occurrences are currently recorded within 5 miles of the site, however this project is within the burrowing owl (*Athene cunicularia*) California range and habitat is present. Some burrows were the correct size for foxes and coyotes, although no tracks or scat was found that would indicate an active burrow. San Joaquin kit fox (*Vulpes macrotis mutica*) is currently absent from the site however the area is within its range.

Special-status Plant Species

The potential for the site to support special-status plant and wildlife species is discussed in the table below as well as the legal status and likelihood of occurrence.

Previous reports for this project created special status plant species list using the CNDDB and the CNPS Inventory. Both these databases were consulted, as well at the US Fish and Wildlife Service IPaC.

Table 1. Potential Occurrence Special Status Plant Species

Scientific Name	Common Name	Federal Status State Status	CA Rare Plant Rank	Habitat Utilized	Potential For Occurrence On Site
Castilleja campestris var. succulenta	Succulent owl's-clover	FT SE	1B.2	Vernal pools	Absent. Vernal pools not observed on site. Substrate not conducive to vernal pool formation. There are records of the species within 5 mi of the site but this plant was last observed at nearest in 1938, area was completely disked in 1981
Caulanthus californicus	California jewel-flower	FE SE	1B.1	Sandy soils. Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland.	Absent. Habitat not present, presumed extirpated.
Downingia pusilla	Dwarf downingia	None	2B.2	vernal pools	Absent. Vernal pools not observed on site. Substrate not conducive to vernal pool formation.
Eryngium spinosepalum	Spiny-sepaled button-celery	None	1B.2	vernal pools	Absent. Vernal pools not observed on site. Substrate not conducive to vernal pool formation.
Imperata brevifolia	California satintail	None	2B.1	Chaparral, Coastal Sage Scrub, Creosote Bush Scrub, wetland-riparian	Unlikely. Habitat suitable but poor, last record from 1893.
Leptosiphon serrulatus	Madera leptosiphon	None	1B.2	Foothill Woodland, Yellow Pine Forest	Absent. Habitat not present, presumed extant.
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	FT SE	1B.1	Vernal pools.	Absent. Vernal pools not observed on site. Substrate not conducive to vernal pool formation.
Orcuttia pilosa	Hairy Orcutt grass	FE SE	1B.1	Vernal pools, valley and foothill grassland.	Absent. Vernal pools not observed on site. Substrate not conducive to vernal pool formation.

Scientific Name	Common Name	Federal Status State Status	CA Rare Plant Rank	Habitat Utilized	Potential For Occurrence On Site
Pseudobahia bahiifolia	Hartweg's golden sunburst	FE SE	1B.1	Valley and foothill grassland, cismontane woodland and clay soils	Absent. Habitat not present, presumed extant.
Sagittaria sanfordii	Sanford's arrowhead	None	1B.2	Freshwater Wetlands, wetland-riparian	Unlikely. Requires shallow water, small riparian area for tit to occur at this site. There are records of the species within 5 mi of the site however it was last observed at nearest in 1953, survey in 1980 found no plants.
Tropidocarpum capparideum	caper-fruited tropidocarpum	None	1B.1	Valley Grassland	Absent. Habitat not present, presumed extant.
Tuctoria greenei	Greene's tuctoria	FE SR	1B.1	Dry bottoms of vernal pools in open grasslands	Absent. Vernal pools not observed on site. Substrate not conducive to vernal pool formation.

SPECIAL STATUS SPECIES CODE DESIGNATIONS
FE = Federally listed Endangered
FT = Federally listed Threatened
SE = State listed Endangered
SR= State listed Rare
CNPS 1B= Plants considered by CNPS to be rare, threatened, or endangered in California, and elsewhere
CNPS Threat Code Extensions: .1=seriously endangered in California; .2=fairly endangered in California; .3=not very endangered in California.
DEFINITIONS REGARDING POTENTIAL OCCURRENCE
Present: Species or sign of their presence observed on the site
Likely: Species or sign not observed on the site, but reasonably certain to occur on the site
Possible: Species or sign not observed on the site, but conditions suitable for occurrence
Unlikely: Species or sign not observed on the site, conditions marginal for occurrence
Absent: Species or sign not observed on the site, conditions unsuitable for occurrence

Succulent owl's-clover (*Castilleja campestris var. succulent*). Federal Status: Threatened; State Status: Endangered; CNPS List 1B.2. Succulent owl's-clover is an annual, hemiparasitic herb in the broomrapes family (Orobanchaceae) that blooms between April and May. The herb often grows in acidic vernal pool habitat at elevations between 164 and 2,461 ft. The range for this species lies in 22 USGS quadrangles in Fresno, Madera, Merced, Mariposa, San Joaquin, and Stanislaus counties. Threats to this California endemic include: urbanization, agriculture, flood control, grazing, and trampling (CNPS 2015). While a historic CNDDB record (1938) documents the species near the project site, the area it was recorded in was disked in 1983. This species is absent because of the absence of vernal pool habitat.

California jewel-flower (*Caulanthus californicus*). Federal Listing Status: Endangered; State Listing Status: Endangered; CNPS List 1B.1. California jewelflower is an annual herb belonging to the mustard family (Brassicaceae) that blooms from February to May. This plant occurs in chenopod scrub, valley and foothill grassland, and pinyon and juniper woodland on sandy soils, at elevations between 200 and 3281 ft. This species is found in Fresno, Kern, Santa Barbara, and San Luis Obispo counties. Over 35 historical occurrences are extirpated, including those in Kings and Tulare counties. Experimental reintroductions have occurred in Kern, Santa Barbara, and Tulare counties, but all have failed (CNPS 2015). While a historic CNDDB record (undated) documents the species in the Fresno area, this species is determined to be absent because the project site does not contain suitable habitat.

Dwarf downingia (*Downingia pusilla*). Federal Listing Status: None; State Listing Status: None; CNPS List Status: 2B.2. Dwarf downingia is an annual herb in the bellflower family (Campanulaceae) found in vernal pool and other mesic areas in valley and foothill grassland habitats. The blooming period extends from March through May. Populations have been recorded in Amador, Fresno, Merced, Napa, Placer, Sacramento, San Joaquin, Solano, Sonoma, Stanislaus, Tehama, and Yuba counties at elevations up to 1460 ft. (CNPS 2015). Dwarf downingia may be threatened by factors such as urbanization, development, agriculture, grazing, vehicles, and industrial forestry (CNPS 2015). While a CNDDB record (1979) documents the species within the 9 quadrangle area, this species is determined to be absent because the project site lacks suitable vernal pool or mesic habitat.

Spiny-sepaled button-celery (*Eryngium spinosepalum*). Federal Listing Status: None; State Listing Status: None; CNPS List 1B.2. Eryngium spinosepalum is an annual herb belonging to the phlox family (Apiaceae) that blooms from April to June. The species occurs valley and foothill grassland vernal pools at elevations ranging from 262 to 3199 ft. This California endemic species been documented in Contra Costa, Fresno, Kern, Madera, Mariposa, Merced, San Luis Obispo, Stanislaus, Tulare, and Tuolumne counties (CNPS 2015). While a historic CNDDB record (1967) documents the species at Millerton Lake, this species is absent because suitable habitat is not present on the project site.

California satintail (*Imperata brevifolia*). Federal Listing Status: None; State Listing Status: None; CNPS List 2.1. California satintail is a rhizomatous herb belonging to the grass family (Poaceae) that blooms from September to May. This plant occurs in coastal scrub, chaparral, riparian scrub, mojavean scrub, and meadows and seeps on mesic, alkaline soils, at elevations between 0 and 3986 ft. This species is found in Butte, Fresno, Imperial, Inyo, Kern, Lake, Los Angeles, Orange, Riverside, San Bernardino, Tehama, Tulare, and Ventura counties, and ranges into Arizona, Baja California, New Mexico (where it is possibly extirpated), Nevada, Texas, and Utah. The Butte, Tehama, and Lake County records may represent escaped ornamentals. This species is threatened by development and agriculture, and was mistakenly classified as a noxious weed in California from 1960 to 2004 (CNPS 2015). A historic CNDDB record (1893)

documents the species in the vicinity of “Fresno”, and suitable habitat occurs on the project site. This species is unlikely to occur on the project site.

Madera leptosiphon (*Leptosiphon serrulatus*). Federal Listing Status: None; State Listing Status: None; CNPS List 1B.2. Madera leptosiphon is an annual herb belonging to the phlox family (Polemoniaceae) that blooms from April to May. The species occurs in cismontane woodland and lower montane coniferous forest at elevations ranging from 984 to 4265 ft. This California endemic species been documented in Fresno, Kern, Madera, Mariposa, and Tulare counties (CNPS 2015). While a historic CNDDB record (1967) documents the species at Millerton Lake, this species is absent because suitable habitat is not present on the project site.

San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*). Federal Status: Threatened; State Status: Endangered; CNPS List: 1B.1. San Joaquin Valley orcutt grass is an annual herb belonging to the (Poaceae) family. The species occurs in vernal pools at elevations ranging from 33 to 2477 ft. The species is seriously threatened by agriculture, development, overgrazing, channelization, and non-native plant species. This California endemic species been documented in Fresno, Madera, Merced, Solano, Stanislaus, and Tulare counties (CNPS 2015). While a historic CNDDB record document the species near the project site, this species is determined to be absent because the project site does not contain suitable vernal pool habitat.

Hairy Orcutt grass (*Orcuttia pilosa*). Federal Listing Status: Endangered; State Listing Status: Endangered; CNPS List 1B.1. Hairy orcutt grass is an annual herb belonging to the grass family (Poaceae) that blooms from May to September. The species occurs in vernal at elevations ranging from 151 to 656 ft. This California endemic species is found in Butte, Glenn, Madera, Merced, Stanislaus, and Tehama counties. The primary threats to hairy orcutt grass are agriculture, urbanization, overgrazing, non-native plants, and trampling (CNPS 2015). This species is absent because the project site lacks vernal pool habitat.

Hartweg's golden sunburst (*Pseudobahia bahiifolia*). Federal Listing Status: Endangered; State Listing Status: Endangered; CNPS List 1B.1. Hartweg’s golden sunburst is an annual herb belonging to the sunflower family (Asteraceae) that blooms from March to April. This plant occurs in cismontane woodland and valley and foothill grassland communities. It requires clay (often acidic) soil, and is found at elevations between 49 and 492 ft. This species is found in Fresno, Madera, Merced, Stanislaus, Tuolumne, and Yuba counties. Hartweg’s golden sunburst is presumed extirpated from Yuba County. Many occurrences are very small and are threatened by development, agriculture, overgrazing, and trampling (CNPS 2015). While the CNDDB documents the species within the 9 quadrangle area surrounding the project site, this species is absent because suitable clay soils are absent from the project site.

Sanford's arrowhead (*Sagittaria sanfordii*). Federal Listing Status: None; State Listing Status: None; CNPS List 1B.2. Sanford’s arrowhead is an emergent rhizomatous herb belonging to the water plantain family (Alismataceae) that blooms from May to November. This

plant occurs in standing or slow-moving freshwater ponds, marshes, and ditches at elevations between 0 and 2133 ft. This species has been reported from Butte, Del Norte, El Dorado, Fresno, Merced, Mariposa, Orange, Placer, Sacramento, San Bernardino, Shasta, San Joaquin, Solano, Tehama, Ventura, and Yuba counties. Sanford's arrowhead is presumed extirpated from southern California (Orange and Ventura counties) and is mostly extirpated from its historical range in the Central Valley. The species is threatened by grazing, development, recreational activities, non-native plants, road widening, and channel alteration (CNPS 2015). The nearest CNDDB record (1958) documents the species northwest of Pinedale, less than 1.5 mi south of the project site and suitable habitat occurs on the project site. There are records of the species within 5 mi of the site however the nearest was last observed in 1953, survey in 1980 found no plants. This species is unlikely to occur on the project site.

Caper-fruited tropidocarpum (*Tropidocarpum capparideum*). Federal Listing Status: None; State Listing Status: None; CNPS List 1B.1. Caper-fruited tropidocarpum is an annual herb belonging to the mustard family (Brassicaceae) that blooms from March to April. This plant occurs in alkaline clay soils in valley and foothill grasslands, at elevations between 3 and 1493 ft. Caper-fruited tropidocarpum was thought to be extinct, but in 2000 was rediscovered on Ft. Hunter Liggett. Historic occurrences are reported from Alameda, Contra Costa, Fresno, Glenn, Monterey, Santa Clara, San Joaquin, and San Luis Obispo counties. The species is possibly threatened by grazing, military activities, trampling, and non-native plants (CNPS 2015). While a historic CNDDB record (1930) documents the species in the Fresno area, this species is absent because the project site does not contain suitable alkaline or clay soils.

Green's tuctoria (*Tuctoria greenei*). Federal Listing Status: Endangered; State Listing Status: Rare; CNPS List 1B.1. Green's tuctoria is an annual herb belonging to the grass family (Poaceae) that blooms from March to September. This plant occurs in vernal pools at elevations between 98 and 3510 ft. This species is reported from Butte, Colusa, Fresno, Glenn, Madera, Merced, Modoc, Shasta, San Joaquin, Stanislaus, Tehama, and Tulare counties. It is presumed extirpated from Fresno, Madera, San Joaquin, Stanislaus, and Tulare counties. Green's tuctoria is threatened by agriculture, urbanization, overgrazing, habitat fragmentation and loss (CNDDB 2015). While a historic CNDDB record (1937) documents the species near the project site, this species is be absent because vernal pools do not occur onsite.

Special-status Animal Species

Special-status animal species present with five miles of the project site are listed in the following table. Due to the increased urbanization of the project site as well as the range of different environments a five mile range includes many of the special-status species listed below are either unlikely to be present or absent from this site.

Any species dependent on pools or vernal pools such as vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardi*), Conservancy Fairy Shrimp (*Branchinecta conservation*), California tiger salamander (*Ambystoma californiense*), California

Red-legged Frog (*Rana draytonii*) and western spadefoot toad (*Scaphiopus hammondi*) will as there are no pools unconnected to the San Joaquin River. The Giant Garter Snake (*Thamnophis gigas)* requires marshes or a low gradient stream; this site would be poor habitat and does not connect to any existing populations. Listed aquatic species such as Hardhead (*Mylopharodon conocephalus*), Steelhead (*Oncorhynchus (=Salmo) mykiss*), and Delta Smelt (*Hypomesus transpacificus*) have not been recorded in river channel. The disturbed annual grasslands do not provide habitat for Blunt-nosed Leopard Lizard (*Gambelia sila*) or coast horned lizard (*Phrynosoma blainvillii*) which require sparser grassland or a less disturbed area. The Buena Vista Lake shrew (*Sorex ornatus relictus*) would be found near permanent bodies of water, but the nearest known population is 100 miles away. The San Joaquin antelope ground squirrel (*Ammospermophilus nelsoni*), San Joaquin kit fox (*Vulpes macrotis mutica*) and Fresno kangaroo rat (*Dipodomys nitratoides exilis*) requires a less disturbed area or saltbrush and saltscrub, also there is no connection to known populations.

There are several special-status birds that habitat range overlaps with the project site and may forage within the project boundaries but are unlikely to nest on the site due to poor habitat. This includes the western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), Willow Flycatcher (*Empidonax traillii*), California horned lark (*Eremophila alpestris actia*), Yellow-breasted Chat (*Icteria virens*), Bank Swallow (*Riparia riparia*) and the least Bell's vireo (*Vireo bellii pusillus*).

There are multiple bats that may forage at the site, Pallid Bat (*Antrozous pallidus*), spotted bat (*Euderma maculatum*), and western mastiff bat (*Eumops perotis californicus*) but there is no suitable crevices or dense trees that would be suitable for roosting.

Species that could likely be found on site are discussed in more detail after the table.

Table 2. Potential Occurrence Special Status Animal Species

Scientific Name	Common Name	Federal Status State Status	CDF W	Habitat Utilized	Potential For Occurrence On Site
Agelaius tricolor	tricolored blackbird	None	SSC	Freshwater Emergent Wetland, Annual grassland, Agriculture, and Valley Foothill Riparian	Likely. Suitable foraging habitat is present on the site.
Ambystoma californiense	California tiger salamander	FT ST	SSC	Vernal or temporary pools in annual grasslands or open woodlands with upland aestivation habitat (e.g. CA ground squirrel burrows).	Absent. Pooled areas temporally present on site provide less than optimal breeding habitat.
Ammospermophilus nelsoni	San Joaquin antelope ground squirrel	None ST		Saltbush and saltscrub habitats and grasslands.	Absent. Appropriate habitat not present on project site.
Anniella pulchra pulchra	Silvery legless lizard (California Legless Lizard)	None	SSC	Sandy areas that contain leaf litter and/or fairly high moisture.	Possible. Appropriate habitat occurs near river.

Scientific Name	Common Name	Federal Status State Status	CDF W	Habitat Utilized	Potential For Occurrence On Site
Antrozous pallidus	Pallid Bat	None	SSC	Forages over many habitats; roosts in buildings, rocky outcrops and rocky crevices in mines and caves.	Unlikely. Potentially may forage over site, no suitable roosting sites.
Aquila chrysaetos	golden eagle	None	FP ; WL	Woodlands, Grasslands	Likely. Suitable foraging habitat is present on the site.
Athene cunicularia	burrowing owl	None	SSC	Flat grasslands and ruderal habitats. Requires California ground squirrel burrows for nesting and cover.	Possible. Suitable nesting and foraging habitat is present on the site. Many CA ground squirrel burrows of appropriate size and shape occur on the site, but evidence of owl use or occupation not observed.
Branchinecta conservatio	Conservancy Fairy Shrimp	FE		Annual grassland (requires vernal pools)	Absent. Vernal pools not observed on site. Substrate not conducive to vernal pool formation.
Branchinecta lynchi	vernal pool fairy shrimp	FT		Annual grassland (requires vernal pools)	Absent. Vernal pools not observed on site. Substrate not conducive to vernal pool formation.
Buteo swainsoni	Swainson's hawk	ST	SSC	Open grasslands with large trees for nesting. Alfalfa fields often utilized for availability of California voles (*Microtis californicus*)	Likely. Large complex of burrowing small mammals is present, suitable foraging habitat. Also, large cottonwood and oak trees provide potential nesting habitat.
Coccyzus americanus occidentalis	western yellow-billed cuckoo	FT SE		Densely foliaged, deciduous trees and shrubs, especially willows, required for roosting sites	Absent. Species has not been recorded with five mile radius since 1883, presumed extirpated
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT		Valley Foothill Riparian and Valley Oak Woodland. Requires mature elderberry shrubs stem dia >1" and <3,000 ft.	Likely, 19 elderberry shrubs present.
Dipodomys nitratoides exilis	Fresno kangaroo rat	FE SE		Clayish soils in saltbush and saltscrub habitats.	Absent. Appropriate habitat not present on project site.
Elanus leucurus	White-tailed Kite	None	FP	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats.	Present. Known to occur at adjacent Lewis Eaton site.
Empidonax traillii	Willow Flycatcher	SE	S	Breeds locally in riparian habitats in mountains and southern deserts.	Absent. Riparian habitat on the site not of sufficient quality for nesting by this species. Not known to nest along project reaches of San Joaquin River.
Emys marmorata	western pond turtle	None	SSC	Permanent or nearly permanent water in a variety of habitats.	Likely. Present on adjacent project site.

Scientific Name	Common Name	Federal Status State Status	CDF W	Habitat Utilized	Potential For Occurrence On Site
Eremophila alpestris actia	California horned lark	None	WL	Open country with very short or no vegetation	Unlikely. Habitat present on site not conductive to nesting, potential for some foraging.
Euderma maculatum	spotted bat	None	SSC	Rock crevices, Cliffs provide optimal roosting habitat.	Unlikely. Roosting habitat is not present at site.
Eumops perotis californicus	western mastiff bat	None	SSC	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland. Roosts in crevices, trees and tunnels.	Unlikely. May forage or disperse through site but roosting habitat is not present at site.
Gambelia sila	Blunt-nosed Leopard Lizard	FE SE	FP	Sparse grassland and alkali habitats, especially southwestern portion of San Joaquin Valley. Requires burrow systems for thermoregulation and cover.	Absent. Appropriate habitat not present on project site.
Haliaeetus leucocephalus	bald eagle	FD SE	FP	Riverine, Lacustrine, Valley Foothill Riparian, and Annual grasslands	Likely. Known to occur on adjacent Lewis Eaton site during winter. Most commonly uses river corridor as flyway, but also may forage along margins and within river bottom.
Hypomesus transpacificus	Delta Smelt	FT SE		Riverine systems of the San Joaquin River.	Absent. Not recorded in the river channel.
Icteria virens	Yellow-breasted Chat	None	SSC	Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.	Unlikely. Riparian habitat on the site not of sufficient quality for nesting by this species. Not known to nest along project reaches of San Joaquin River. May be present as a migrant.
Lanius ludovicianus	Loggerhead Shrike	None	SSC	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats.	Likely. Occurs and nests on the site adjacent Lewis Eaton site.
Lepidurus packardi	Vernal pool tadpole shrimp	FE		Annual grassland (requires vernal pools)	Absent. Vernal pools not observed on site. Substrate not conducive to vernal pool formation.
Mylopharodon conocephalus	hardhead	None	SSC	Riverine systems of the San Joaquin River.	Absent. CNDDB record from 1981 “west of Ft. Washington”. This species is absent from the project site because the project site does not include the river channel.
Oncorhynchus (=Salmo) mykiss	Steelhead	FT		Riverine systems of the San Joaquin River.	Absent. Not recorded in the river channel.

Scientific Name	Common Name	Federal Status State Status	CDF W	Habitat Utilized	Potential For Occurrence On Site
Pandion haliaetus	osprey	None	WL	Large trees, Requires open, clear waters for foraging. Uses rivers, lakes, reservoirs, bays, estuaries, and surf zones.	Present. Known to forage at site, observed during 2015 survey.
Phalacrocorax auritus	double-crested cormorant	None	WL	Rests in daytime and roosts overnight beside water on offshore rocks, islands, steep cliffs, dead branches of trees, wharfs, jetties, or even transmission lines.	Likely. Suitable foraging habitat is present on the site.
Phrynosoma blainvillii	coast horned lizard	None	SSC	Occurs in valley foothill hardwood, conifer and riparian habitats, as well as in pine-cypress, juniper and annual grassland habitats.	Absent. Appropriate habitat not present on project site.
Rana draytonii	California Red-legged Frog	FT	SSC	Quiet pools of streams, marshes, and occasionally ponds	Unlikely. Habitat is present is poor for this species and area in unconnected to known populations.
Riparia riparia	Bank Swallow	ST		Steep sandy and stabilized banks devoid of vegetation along large rivers.	Absent. Riverbanks of appropriate soils, size and shape are not present at this site.
Sorex ornatus relictus	Buena Vista Lake shrew	FE	SSC	Riparian and grassland, wet areas with leaf litter cover especially near bodies of permanent water.	Absent. Known from southwestern portion of valley; nearest record approximately 100 mi. to southwest.
Spea hammondii	western spadefoot	None	SSC	Vernal or temporary pools in annual grasslands or open woodlands.	Unlikely. Aquatic habitat present on the site is not conducive to reproduction by the species although in high rain years the northern pond may contain water long enough for metamorphosis. There are records of the species within 5 mi of the site but occurrence is limited to higher-quality habitat including vernal pools located in native habitat.
Taxidea taxus	American badger	None	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	Unlikely. Habitat is present however area is disturbed, no suitable burrow observed during survey.
Thamnophis gigas	Giant Garter Snake	FT ST		Marsh and swamp. Prefers freshwater marsh and low gradient streams.	Absent. Habitat is present is poor for this species and area in unconnected to known populations.

Scientific Name	Common Name	Federal Status State Status	CDF W	Habitat Utilized	Potential For Occurrence On Site
Vireo bellii pusillus	least Bell's vireo	FE SE		Dense, low, shrubby vegetation, scrub oak, coastal chaparral, and mesquite brushlands, often near water in arid regions.	Absent. Habitat on the site not of sufficient quality for nesting by this species.
Vulpes macrotis mutica	San Joaquin kit fox	FE ST		Arid-land-adapted and typically occur in desert-like habitats.	Absent. Lack of appropriate salt bush/scrub habitats and isolation of the project site from known populations.
Xanthocephalus xanthocephalus	yellow-headed blackbird	None	SSC	Nests in fresh emergent wetland with dense vegetation and deep water. Forages in emergent wetland.	Likely. Suitable foraging habitat is present on the site.

SPECIAL STATUS CODE DESIGNATIONS
FE = Federally listed Endangered
FT = Federally listed Threatened
FD = Federally Delisted
SE = State listed Endangered
ST = State listed Threatened
SSC = California Species of Special Concern
FP = State Fully-Protected Species
WL= Watch List
DEFINITIONS REGARDING POTENTIAL OCCURRENCE
Present: Species or sign of their presence observed on the site
Likely: Species or sign not observed on the site, but reasonably certain to occur on the site
Possible: Species or sign not observed on the site, but conditions suitable for occurrence
Unlikely: Species or sign not observed on the site, conditions marginal for occurrence
Absent: Species or sign not observed on the site, conditions unsuitable for occurrence

Tricolored Blackbird (*Agelaius tricolor*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting Colony). Tricolored blackbirds are found primarily in the Central Valley southern coastal areas of California. This species is considered a California species of special concern (at its nesting colonies) due to concerns over the loss of wetland habitats in the state. The tricolored blackbird is highly colonial in its nesting habits, and forms dense breeding colonies that have at minimum 50 pairs. This species typically nests in tall, dense, stands of cattails or tulles, but also nests in willow thickets, blackberry, wild rose bushes, and tall herbs. Nesting colonies are usually located near fresh water (Granholm, S. 1990, updated 2008).

While there is suitable foraging habitat on at this site there is not habitat for a nesting colony.

Silvery Legless Lizard (*Anniella pulchra pulchra*). Federal Status: None; State Status: Species of Special Concern. This lizard is found in sandy or loose soils under the sparse vegetation, often hiding in leaf litter or under rocks. They forage for insects and spiders and little is known about their water needs. Breeding season begins late spring and early summer, live young born in the fall (Morey, S. 1990, updated 2000).

There are a few records for silvery legless lizard within the Lewis Eaton Trail Area, although not in the Alternative 5 site, however it is possible that they may persist in the upland portions along river and vicinity streambeds such as the habitat present within the survey area. Therefore, it is possible that the silvery legless lizard could occur at the project site.

Golden Eagle (*Aquila chrysaetos*) Federal Listing Status: None; State Listing Status: State Fully-Protected Species and on the Watch List Watch List. A permanent resident and migrant found throughout California. The golden eagle is found in rolling foothills, mountain areas, sage-juniper flats, and desert. It requires open terrain for hunting; often soars above ground but occasionally hunts from perches. The golden eagle preys on small mammals, can capture prey up to the size of a calf. It nests on cliffs and large trees in open areas, reusing nests from past years. It prefers rugged open habitats with canyons and escarpments for nesting (Polite, C.; Pratt, J. 1990).

While nesting habitat at Alternative 5 is poor there is suitable foraging habitat onsite.

Burrowing Owl (*Athene cunicularia*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The burrowing owl is a small, terrestrial owl of open grassland and desert country. These owls prefer annual and perennial grasslands, with perches and burrows. They nest in old mammal burrows; in California ground squirrel burrows are commonly used. The nesting season as recognized by the CDFG (2012) runs from February 1 through August 31 (Polite, C. 1990, updated 1999).

The project site provides suitable annual grassland habitat for the burrowing owl and California ground squirrels are widespread and common on the project site. No evidence of habitation by burrowing owls was noted during the reconnaissance survey conducted on 17 September 2015.

Protocol-level surveys for this species, which would entail a series of site visits in accordance with the CDFG's protocol to determine presence/absence of this species, have not been conducted. Therefore, the burrowing owl could potentially occur on the project site.

Swainson's Hawk (*Buteo swainsoni*). Federal Listing Status: None; State Listing Status: Threatened. Swainson's hawks are both migrants and residents to the California Central Valley, Klamath Basin, Northeastern Plateau, Lassen Co., and Mojave Desert. It forages in grasslands for small mammals, large arthropods, amphibians, reptiles, birds, and occasionally fish if water is nearby. This hawk nests in small tree stands or on man-made structures often in riparian areas. While a resident species some individuals fly south in September and October to Central and South America, returning in May (Polite, C. 1990, updated 2006).

Swainson's hawks have been observed foraging near the project site and evidence of prey species is abundant. Although there are no records of nesting by this species in the vicinity, the site does feature trees that could be utilized for nesting.

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*). Federal status: Threatened; State status: none. The VELB is an insect endemic to the Central Valley of California that inhabits riparian and associated upland habitats where elderberry, its host plant, grows. Specifically, its range includes the upper Sacramento Valley to the central San Joaquin Valley (USFWS 1991). The beetle's habitat consists of riparian forests whose dominant plant species include cottonwood, sycamore, valley oak, and willow, with an understory of elderberry shrubs (USFWS 1991). Blue elderberry shrubs in the Central Valley with basal stem diameters larger than 1 inch are considered by the USFWS as potential VELB habitat. The VELB life cycle is intimately connected to its habitat, elderberry shrubs. Following mating, the female lays her eggs in crevices in the elderberry bark. Upon hatching (after about 10 days), the larvae bore into the pith of the shrub and feed inside stems larger than 1 inch in diameter for 1 to 2 years until they mature. They emerge during the spring as adults through exit holes chewed through the bark. The adult beetles feed on the elderberry foliage until they mate, completing the cycle.

Nineteen elderberry shrubs were observed within the Alternative 5 site during the September 17 2015 survey.

White-tailed Kite (*Elanus leucurus*). Federal Status: None; State Status: Fully Protected. In California white-tailed kites can be found year round in costal and valley lowlands, mostly commonly near agricultural areas. It prefers to forage in undisturbed, open grasslands, meadows, farmlands and emergent wetlands, often hoovering roughly 100 feet in the air then descending vertically down onto prey. They nest in dense tree stands near foraging areas. The presence of white-tailed kites is closely tied to the presence of prey species, particularly voles, and prey base may be the most important factor in determining habitat quality for white-tailed kites (Polite, C. 1990, updated 2005).

Prey species including California voles are abundant on the project site and the species has been observed foraging throughout the year. 2011 survey concluded that it is likely that the white-tailed kite nests within the Lewis Eaton project area.

Western Pond Turtle (*Actinemys marmorata*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The western pond turtle occurs in permanent or nearly permeant ponds, streams, and other wetland habitats throughout California west of the Sierra-Cascade crest. In addition to water they require basking sites, partially submerged logs, rocks, which they can slip from into water when approached by potential predators. The species is omnivorous; diet includes aquatic plant material and invertebrates as well as s fishes, frogs, and carrion. In colder areas they will hibernate in the mud at the bottom of their aquatic habitat. Eggs are laid in nests four inches deep anywhere from on the banks of the rivers to 325 feet away (Morey, S. 1990, updated March 2000).

Western pond turtles are common and widespread through the San Joaquin River system.

Bald Eagle (*Haliaeetus leucocephalus*). Federal Listing Status: None; State Listing Status: Endangered, Fully Protected. The bald eagle is a permanent resident and uncommon winter migrant of California. It requires a large body of water with a healthy population of fish as well as perches to hunt from. Also may hunt in mammals in flooded field. Nest sites a chosen in large tree's where a stick platform nest is built, often near a large body of water (Polite, C.; Pratt, J. 1990, updated 1999).

Bald eagles are commonly observed in the San Joaquin River bottomlands and nesting is known to occur at Millerton Lake approximately 5 mi upstream.

Loggerhead Shrike (*Lanius ludovicianus*). Federal Status: None; State Status: Species of Special Concern (Nesting). The loggerhead shrike is a common resident throughout California, found mainly in the lowlands and foothills. Its preferred environment is open areas with scattered shrubs and trees or man-made structures such as fences for perching. It's less common in urban areas. It preys mostly on large insects but will also prey on small birds, mammals, fish, reptiles, and amphibians. It's noted for skewering its prey on sharp objects such as thrones or barbed wire and caching to eat later. It nests in dense trees or shrubs (Granholm 1990).

This species is fairly widespread and common in the area.

Osprey (*Pandion haliaetus*) Federal Status: None; State Status: Wait List. Associated with fish bearing waters, primarily preys of fish but will also take mammals, birds, amphibians and invertebrates. Preferred habitat is ponderosa pine and mixed conifer habitats. Migrates in October to Central and South America, returns to breeding ground in California mid-March to early April. Ospreys use large trees, snags, human made structures and dead topped trees as nesting platforms. Nest may be over five to six miles from large bodies of water (Polite, C. 1990).

2014 survey observed a nesting osprey within a mile of the project site.

Double-crested cormorant (*Phalacrocorax auritus*) Federal Status: None; State Status: Wait List. Yearlong California resident that can be found along coast, lakes, and rare to fairly common in lacustrine and riverine habitats of the Central Valley and coastal slope lowlands. Feeds mainly on fish, crustaceans and amphibians. It prefers water less than 30 feet deep and may feed cooperatively in flocks. Nest beside water in undisturbed areas with cliff, rugged slopes, and in trees (Granholm, S. 1990. Double-Crested Cormorant).

This species is likely to forage on the site, although optimal nesting habitat is not present.

American Badger (*Taxidea taxus*). Federal Status: None; State Status: Species of Special Concern. American badgers are an uncommon resident of California, found throughout all but the northern North Coast area of the state. They are a carnivorous species whose diet mainly consist of mammals but will also eat reptiles, insects, earthworms, eggs, birds, and carrion

depending on what is seasonally available. They dig burrows in friable soil, often reusing old burrows. When breeding burrows are usually in areas with a sparse over story cover (Ahlborn, G. 1990).

The adjunct project area has a recorded collapsed badger den in 2011, no badger dens were recorded on Alternative 5.

Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*) Federal Status: None; State Status: Species of Special Concern. Found at selected locations in the coast ranges west of the Central Valley and east of the Sierra Nevada and the Cascade Range. Nest in large wetlands with dense vegetation and deep water, often along borders of lakes or ponds. Forages for seeds, grans, and insects in emergent wetland and moist open areas (Granholm, S. 1990, updated 2005 and 2008).

Due to preference of large wetlands optimal nesting habitat is not present, but suitable foraging habitat can be found on site.

Biotic Resource Impacts and Mitigation

While there are currently no species within the Alternative 5 boundaries that would be impacted by this project there is potential for multiple special status species to be present within the time frame for this project to be undertaken. The largest potential impact is to nesting birds protected under the Migratory Bird Treaty Act and the State Fish and Game Code. Mitigation recommendations from the 2011 report Appendix A Regulatory Overview are applicable to this project and summarized here.

Compliance Measures for Nesting Birds

Recommended Measure 1. Avoid Construction during the Nesting Season. Grading and other construction activities could be scheduled to avoid the nesting season to the extent possible. The nesting season for most birds in Fresno County extends from 1 January through 31 August.

Recommended Measure 2. Pre-construction/Pre-disturbance Surveys. If construction is to occur during the breeding season, preconstruction surveys should be conducted by a qualified ornithologist no more than 15 days prior to the initiation of construction in any given area. Pre-construction surveys should be used to ensure that no nests of species protected by the MBTA or State Code will be disturbed during project implementation.

Recommended Measure 3. Inhibiting Nesting. If vegetation is to be removed by the project site, and all necessary approvals have been obtained, potential nesting substrate (e.g., bushes, trees, grass, buildings, burrows) that will be removed by the project should be removed in October – December before nesting season to help preclude nesting. Pre-removal surveys should be conducted by a qualified ornithologist.

Recommended Measure 4. Buffer Zones. If an active nest is found during pre-construction surveys and is greater than half completed, a qualified ornithologist, in consultation with CDFG, will determine the spatial extent and duration of a construction-free buffer zone to be established around the nest.

There are not currently any burrowing owls on site, however there is habitat present and these species could be present at a later time. Before any ground disturbing activities a USFWS/CDFW-approved biologist should conduct a preconstruction survey in areas with burrow owl habitat to establish presence or absence of this species in accordance with CDFW survey guidelines (California Department of Fish and Wildlife 1993).

Photos

Photo 1, Disturbed Grassland

Photo 2, Burned Area

Photo 3, Burrow Network

Photo 4, Aquatic

Photo 5, Riparian Area

Citations

Ahlborn, G. 1990. **American Badger** Taxidea taxus. *In* California's Wildlife, Vol II: Birds. D. C. Zeiner, W. F. Laudenslayer Jr, K.E. Mayer, and M. White, Eds. California Department of Fish and Game, California Statewide Wildlife Habitat Relationships System.

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Polite, C. 1990. **Osprey** *Pandion haliaetus*. *In* California's Wildlife, Vol II: Birds. D. C. Zeiner, W. F. Laudenslayer Jr, K.E. Mayer, and M. White, Eds. California Department of Fish and Game, California Statewide Wildlife Habitat Relationships System.

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Polite, C. 1990, updated 2005. **White-tailed Kite** *Elanus leucurus*. *In* California's Wildlife, Vol II: Birds. D. C. Zeiner, W. F. Laudenslayer Jr, K.E. Mayer, and M. White, Eds. California Department of Fish and Game, California Statewide Wildlife Habitat Relationships System.

Polite, C.; Pratt, J. 1990, updated 1999. **Bald Eagle** *Haliaeetus leucocephalus*. *In* California's Wildlife, Vol II: Birds. D. C. Zeiner, W. F. Laudenslayer Jr, K.E. Mayer, and M. White, Eds. California Department of Fish and Game, California Statewide Wildlife Habitat Relationships System.

Polite, C. 1990, updated 2006. **Swainson's Hawk** *Buteo swainsoni*. *In* California's Wildlife, Vol II: Birds. D. C. Zeiner, W. F. Laudenslayer Jr, K.E. Mayer, and M. White, Eds. California Department of Fish and Game, California Statewide Wildlife Habitat Relationships System.

Polite, C.; Pratt, J. 1990. **Golden Eagle** *Aquila chrysaetos*. *In* California's Wildlife, Vol II: Birds. D. C. Zeiner, W. F. Laudenslayer Jr, K.E. Mayer, and M. White, Eds. California Department of Fish and Game, California Statewide Wildlife Habitat Relationships System.

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Appendix E
Phase I Archaeological Survey Report and Phase II Archaeological Survey Report

Appendix E
Phase I Archaeological Survey Report and Phase II Archaeological Survey Report

PHASE I ARCHAEOLOGICAL SURVEY REPORT
FOR THE
RIVER WEST, LEWIS S. EATON TRAIL EXTENSION PROJECT
FRESNO COUNTY, CALIFORNA

Submitted To:
David K. Young
Senior Project Planner
URS Corporation
Planning and Environmental Department
30 River Park Place West, Suite 80
Fresno, CA 93720

Submitted By:
Sarah E. Johnston, M.A.
J&R Environmental Services
17900 Auberry Road
Clovis, CA 93619

August 28, 2014

Approximately 300 acres
USGS Fresno North 7.5′ Quadrangle
T.12S R.20E, Sections 21, 28, 29, Mount Diablo Baseline and Meridian
CA-FRE-980

SUMMARY OF FINDINGS

J&R Environmental Services personnel conducted a Phase I Archaeological Investigation for the proposed River West-Lewis S. Eaton Trail Extension Project, located on land administered by the San Joaquin River Conservancy in Fresno County, California. The investigation was undertaken to comply with the California Environmental Quality Act (CEQA), which mandates that public agencies determine whether a project will have a significant impact on important historical resources (Title 14 CCR §15064). The investigation consisted of archival research and an archaeological pedestrian field survey of approximately 300 acres on the south bank of the San Joaquin River between Spano Park and Highway 41. The study area encompasses the project area for the Proposed Project, and four project alternatives that offer variations in trail routes and parking facilities (Marks June 4, 2014). The proposed construction for all alternatives will involve minimal excavation (< one meter deep).

The pre-survey archival research resulted in the identification of one previously recorded archaeological site (CA-FRE-980) within the study boundaries. The 1979 site record describes the site as "Remnants of a probable permanently occupied village consisting of surface debris that includes, a light obsidian waste flake scatter, fire cracked rock, burned bone, and shell…Subsurface artifacts and features may exist below the plow zone" (Peck and Crist, 1979). Dense grass cover and years of agricultural disturbance obscured the surface archaeological evidence and prevented the relocation of the site during the 2014 pedestrian survey.

In order to relocate and protect site CA-FRE-980 from potential disturbance related to project implementation, limited vegetation removal and subsurface testing is recommended. If site CA-FRE-980 is relocated within the project's area of direct impact (ADI) and found to qualify as a historical resource (Title 14 CCR §15064.5[a][1]-[3])), then mitigation measures need to be devised to bring project impacts below the level of significance (Title 14 CCR §15126.4).

Aside from the recommended treatment for site CA-FRE-980, no further cultural resources investigation is recommended for this undertaking unless project plans undergo changes that include any area not previously surveyed for cultural resources. If unanticipated buried cultural resources are encountered during any ground-disturbing activities (e.g., trail construction, excavation), work should be halted or diverted in that area until a qualified archaeologist can evaluate the nature and significance of the find.

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I INTRODUCTION

Between June 25-27, 2014 archaeologist Sarah Johnston and archaeological technician Justin Brady of J&R Environmental conducted a Phase I Archaeological Survey within the project limits located on the south bank of the San Joaquin River between State Route 41 and Spano Park (Figure 1). The area surveyed encompasses the entire project study area (excluding ponds) for the proposed River West Eaton Trail Extension Project (Figure 2).

The project involves extending the Lewis S. Eaton Trail, a multiple use trail, by 2.5 miles, and building ancillary features such as picnic tables, parking lots, landscaping, and restrooms. The project will provide for low impact recreation on the site, primarily consisting of hiking, bicycling, fishing and nature observation, consistent with the San Joaquin River Parkway Master Plan (Marks, June 4, 2014). The purpose of the archaeological investigation was to determine the presence or absence of cultural material within the project study area.

Prior to the field survey, J&R Environmental conducted a records search (RS#14-236) and literature review at the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resource Information System, located at California State University, Bakersfield. The record search encompassed a ½ mile buffer around the project area to identify previous archeological investigations and archaeological resources within the project vicinity. A summary of the records search findings is provided within the report under "Sources Consulted."

J&R Environmental contacted the Native American Heritage Commission (NAHC) in Sacramento to determine if sacred sites occurred in the project vicinity and to obtain a list of potentially affected Native American Tribal Communities and individuals. The commission provided a list of 12 tribal contacts, whom were contacted by letter, in addition to email (when address provided) and follow-up phone calls. A summary of contacts with the Native American community is provided within the report under "Sources Consulted" and in Appendix D--Native American Correspondence and Log.

One previously recorded prehistoric site (CA-FRE-980), a habitation site with sparse surface evidence including fire cracked rock, obsidian flakes, shell, and carbon flecks was identified in the course of the record search portion of the investigation. The pedestrian survey of the location provided in the 1979 site record failed to relocate the site. It is likely that subsurface archaeological deposits associated with site CA-FRE-980 still exist within the project area, but are hidden by dense grass growth and prior agricultural disturbance. If construction is proposed in the vicinity of the recorded site (within 100 feet), limited vegetation removal and subsurface testing is recommended to aid in the relocation and protection of the site. Cultural Resources findings and recommendations are provided in the report under "Study Findings and Conclusions."

II REGUATORY CONTEXT

CEQA requires public agencies to consider project impacts on archaeological or historical sites deemed to be "historical resources." Under CEQA, a substantial adverse change in the significant qualities of a historical resource is considered a significant effect on the environment. For the purposes of CEQA, a "historical resource" is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (Title14 CCR §15064.5[a][1]-[3]). Historical resources may include, but are not limited to, "any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC §5020.1[j]).

The eligibility criteria for the California Register are the definitive criteria for assessing the significance of historical resources for the purposes of CEQA (Office of Historic Preservation n.d.). Generally, a resource is considered "historically significant" if it meets one or more of the following criteria for listing on the California Register:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

(2) Is associated with the lives of persons important in our past.

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

(4) Has yielded, or may be likely to yield, information important in prehistory or history (PRC §5024.1[c]).

III PROJECT LOCATION/DESCRIPTION

PROJECT LOCATION

The project is located in Fresno County, California within portions of sections 21, 28, and 29 of Township 12S, Range 20E, Mount Diablo Baseline and Meridian. The project area is depicted on the USGS Fresno North 7.5 minute series Topographic Map (Figure 1). The project study area encompasses approximately 300 acres on the south side of the San Joaquin River west of the State Route 41 crossing. Survey acreage excluded the extensive ponds that cover much of the south half of the project area. The entire project area, excluding the ponds was examined at 20-30 meter transect intervals (Figure 3).

PROJECT STUDY AREA DESCRIPTION

The Project Study Area (PSA) encompasses approximately 300 acres on the Fresno side of the San Joaquin River between SR 41 and Spano Park. The PSA is delineated on the

west by the San Joaquin River channel and on the east by the steep river bluff (west of Audubon Drive). Most of the study area consists of open space that includes agricultural fields and several large manmade ponds formed from past gravel mining operations. A private parcel of 20 acres labeled on the Fresno North USGS map as the Circle M Ranch, is situated within the project area, but is segregated on the site by barbed wire fencing. The PSA includes all of the areas of direct impact (ADI) for the proposed project and four proposed alternatives, as of the date of this report. Based on the description of the proposed project, most construction and project activities will be confined to the upper three feet of the ground surface (Marks June 4 2014). The PSA is depicted in Figure 2.

Project Description

The San Joaquin River Conservancy is proposing to extend the existing Lewis S. Eaton Trail from State Route 41 downstream to Spano Park, within approximately 300 acres of the San Joaquin River Parkway. The multi-use trail would be extended on the south side of the San Joaquin River by 2.5 miles. The 22-foot-wide trail would consist of a 12-foot wide paved surface, a parallel 8-foot wide hard natural surface for equestrian use and a 2-foot buffer. The route of the trail extension will follow the alignment as seen in **Figure 4** "Proposed Project." Other trail alignments including a "commuter trail alignment" and a "river's edge trail alignment" are considered in the four Alternatives to the Proposed Project. The trail would provide opportunities for hiking, equestrian use, bicycling, fishing, and nature observation, consistent with the 1997 San Joaquin River Parkway Master Plan.

The proposed improvements of the project are described below. A complete description of the Proposed Project and Alternatives is provided in two memoranda by Melinda Marks, Executive Officer of the San Joaquin River Conservancy dated June 4, 2014 and June 17, 2014.

There will be a controlled vehicle entrance and a 50-stall parking lot adjacent to SR 41. Access to the parking lot will be provided by the Perrin Avenue freeway under-crossing. The parking lot will include up to 3 horse trailer stalls, potable water and a two-vault accessible restroom. A second single vault accessible restroom will be provided along the trail extension near the Spano Park stairway.

A wide staircase with bicycle guides may be constructed from Spano Park to the trail below. Pedestrian and bicycle access to the proposed trail would be provided at three locations: Spano Park, West Riverview Drive, and Churchill Avenue.

The Bluff Trail, an existing neighborhood trail is located on the Perrin Canal Bench, along the eastern edge of the project area. A proposed 12-foot wide trail will connect the Bluff Trail to the proposed Eaton Trail extension. The connecting trail will be constructed on the steep bluff slope

The trail will be landscaped at intervals with native vegetation for habitat enhancement and shade. Vegetation creating shade and visual buffers will be established at the parking

lot. Landscaping will be irrigated until vegetation is permanently established. Picnic tables, benches, and wildlife observation areas will be provided along the trail at various locations. Unimproved hiking paths to the river bank will be connected to the main trail. The paths may be widened to 6 feet and overlaid with gravel. These paths would not be landscaped. No structures would be constructed within the State Designated Floodway.

Project Alternatives

In addition to the proposed project described above, The San Joaquin River Conservancy will be evaluating four alternatives. The alternatives are:

1. Added Parking: In this alternative an additional controlled vehicle entrance and a public 40-stall parking lot between the H pond and E pond will be provided. A paved road from W. Riverview Drive to the parking lot will provide access. This parking area would not accommodate horse trailers. The added parking could be approved in combination with the proposed or alternative trail alignments.

2. Commuter Trail Alignment: In this alternative, the multi-use trail would be aligned about 300 feet from the base of the bluff. The trail alignment as described in the proposed project description would not be constructed; however, all other amenities described in the proposed project, including the proposed parking lot, landscaping and restrooms will be provided, and the additional parking as described in Alternative 1 may be provided.

3. River's Edge Trail Alignment: In this alternative the multi-use Trail would be aligned on the river's edge in the more southerly portion of the site, and remain as proposed in the northerly portion of the site. All other amenities described in the proposed project, including the parking lot, landscaping and restrooms will be provided, and the additional parking as described in Alternative 1 may be provided.

4. No Parking: In this alternative no public parking or trailering would be provided on-site. The Trail would be constructed on the proposed or alternative trail alignments. All 4 entrances would be walk-in/bicycle-in only. All amenities other than the entrance station and parking landscaping described in the proposed project would be provided.

IV SOURCES CONSULTED

RECORDS SEARCH

A Records Search (RS#14-236) covering a half-mile radius surrounding the project area was conducted at the Southern San Joaquin Valley Information Center (SSJVIC) Part of the California Historical Resource Information System, located at California State

University, Bakersfield on June 24, 2014. Review of SSJVIC holdings included archaeological survey reports and site records, listings of the National Register of Historic Places (NRHP), California Register of Historic Places (CRHP), California Historical Landmarks, and California Points of Historical Interest.

The record search indicated that several studies were conducted in and adjacent to the project area over the past 40 years (Appendix E). The study area was completely surveyed for archaeological resources approximately 35 years ago (Peck and Crist, 1979) and had been partially surveyed in the past two years (Brady, 2013). Two previously recorded cultural resources (prehistoric Site CA-FRE-980 and the Perrin Ditch) were identified in the project APE.

NATIVE AMERICAN CONTACTS

In July, 2014 J&R Environmental contacted Mr. Dave Singleton of the Native America Heritage Commission in Sacramento to conduct a sacred lands inventory and to request a list of Native American contacts with traditional ties to the project area. Mr. Singleton replied that a search of the NAHC Sacred Lands Inventory failed to indicate the presence of Native American traditional sites/places within the project study area. He provided a list of 12 Native American tribal contacts that may have knowledge of cultural resources in or near the project area (Singleton July 1, 2014). The 12 tribal contacts were written via letter and email (where email addresses were available) to elicit general concerns regarding the proposed project and to identify specific sites that may hold special concerns for them. Follow up telephone calls were placed with messages left if the contact was not reached. These contacts do not constitute formal consultation under CEQA or NEPA. Appendix D contains a log of contacts and responses.

V BACKGROUND

NATURAL SETTING

[The following sections on vegetation and fauna are adapted from Brady (2011)]

The project area lies within the Lower Sonoran Zone, which is west and not part of the Sierra Nevada. The Greater Central Valley (mainly the Lower Sonoran Zone) community is characterized by flat terrain with elevations ranging from 300-400 feet at the north and south ends and 50 feet at the center (Storer and Usinger 1963:26).

The Lower Sonoran plant community is part of the California biotic province (Munz and Keck 1959:11) The dominant species of tree are the Fremont cottonwood (Populous fremontii), Calfornia sycamore (Platanus racemosa), valley oak (Quercus lobata), and willow (Salix), which is found along stream beds or near springs (Chesemore and Latimer 180). Scott Larsen, a biologist noted that along the San Joaquin River and most ponds is scarlet wisteria (Sesbania punicea), a very aggressive invasive shrub (Personal Communication 2011).

Fauna common to the area include wood duck (Aix sponsa), coyote (Canis latrans), and California quail (Lophortyx californicus). Other fauna common to the project area include Stellar's jay (Cyanocitta stellern), the horned lark (Eremophila alpestris), the yellow-tailed magpie (Pica nutalli), and the Desert Cottontail rabbit (Sylvilagus audubonii) (Ingles 1965, Storer and Usinger 1963, Verner and Boss 1980).

SOILS

The University of California Davis Agriculture and Natural Resources Soilweb (2014) (http://casoilresource.lawr.ucdavis.edu/gmap/) lists the two main soils types in the project area as Grangeville Series Soils in the north half of the project area and Hesperia Series Soils in the south half of the project area. Grangeville Series Soils are classified as Mollisols and Hesperia Soils are classified as Entisols:

> " ***Mollisols*** *(from Latin* mollis, *"soft") are the soils of grassland ecosystems. They are characterized by a thick, dark surface horizon. This fertile surface horizon, known as a mollic epipedon, results from the long-term addition of organic materials derived from plant roots.*
> ***Entisols*** *are soils of recent origin. The central concept is soils developed in unconsolidated parent material with usually no genetic horizons except an A horizon. All soils that do not fit into one of the other 11 orders are Entisols. Thus, they are characterized by great diversity, both in environmental setting and land use."*

Given the nature of these soils, it is possible that cultural resources have become buried in the past. Meyer et al (2010) confirms the potential for buried archaeological deposits in the project area. Meyer analyzed the Archaeological Sensitivity for the San Joaquin Valley based on 1) the distribution and age of geological deposits present on the modern ground surface, 2) distance to water, and 3) landform slope. The soils in the project area date between 2000 years to 150 years B.P. and have a very high to moderately high likelihood of having buried deposits.

ETHNOHISTORY

The Yokuts occupied virtually all of the San Joaquin Valley and the surrounding foothills. Kroeber (1976) classified the Yokuts into 12 groups and two divisions: Foothill and Valley (Brady 2011). Their homeland included the entire San Joaquin Valley from the mouth of the San Joaquin River to the foot of Tehachapi Pass. In addition, they occupied adjacent lower slopes or foothills of the Sierra Nevada, up to an altitude of a few thousand feet, from Fresno River south, but "nowhere to the north of that stream" (Kroeber 1976:475).

During the prehistoric period a number of Yokuts groups occupied the floodplains south of the San Joaquin River from Little Dry Creek to Herndon (Sycamore). These groups

included the Pitkachi and Wakichi Yokuts. The Hoyima and Dumna inhabited the north side of the San Joaquin River opposite the project area (Kroeber 1976:484).

The project area was principally occupied by the Pitkachi, whom Kroeber (1976:484) said "received their appellation from an evil-smelling salt or alkali of the same name that they used to gather or prepare." The Pitkachi occupied villages at Kohuou, near Herndon, at Weshiu, on a slough, and at Gewachiu downstream from Herndon (Kroeber 1976: 484, Plate 47). No occupation sites are mentioned in the immediate vicinity of the project area.

Yokuts groups were organized politically into small tribes, each with its own distinctive name, dialect, settlements, and recognized territories. Permanent wintering areas often occurred around major watercourses, such as the San Joaquin or Kings River. Away from these areas, they used temporary campsites to take advantage of the seasonal resource procurement cycle (Brady 2011).

According to Kipps (1982):

> *"Foothill Yokuts settlements were noted for their lack of organization or patterned layout, contrasting with the highly structured Valley Yokuts villages...The kinds of structures built by Foothill Yokuts included two kind so conical dwellings, a flat shaded or ramada, a sweat house and a hemispherical shade (grinding booth).*
>
> *The major unit of social organization was the patrilineal lineage. Each lineage had its own symbol or totem which was believed to impart to the members of the lineage strength and wisdom (Gayton 1945:415). Some examples of totems were Eagle, Falcon, Dove, Crow, Bear, and Rattlesnake...The tribal offices, especially that of chief and messenger, were passed within the same lineage from father to son. Chiefs were the preeminent officials. Each tribe had several chiefs, usually one per village. Tribal policies were made by a council of chiefs. A chief was obliged to contribute to the seasonal round of ceremonies, feed the poor, and offer hospitality to visitors. The messenger was the right-hand-man of the chief, and saw to the execution of the chief's orders (Spier 1978:482).*
>
> *In the euphemistic jargon of that age, the Northern Foothill Yokuts were "dislocated drastically by the Mariposa Battalion in 1851" (Gayton 1948:153). Today, although some Foothill Yokuts may be residents of the Tule River Indian Reservation, most live in hamlets or isolated dwellings scattered throughout their traditional territories (Spier 1978:483). The closest Native American community to the project area is the Table Mountain Rancheria..."*

PREHISTORY

(This section is adapted from a report authored by Lloyd, Baloian, and Baloian [2005:6-7]).

In contrast to the numerous archaeological excavations in the south-central Sierra Nevada and adjacent foothills, there has been little archaeological work done in the central San Joaquin Valley generally or in the project vicinity specifically. The closest excavations to the project area include investigations at Hidden Reservoir (Fenenga 1973), approximately13 miles northwest; Buchanan Reservoir (Eastman Lake) (King 1976; Moratto 1972), 25 miles northwest; and along Highway 168 at CA-FRE-1671 (Moratto 1988), approximately 20 miles east. Prehistoric sequences developed from these excavations provide a fairly clear understanding of culture change during the last 2,000 to 3,000 years; however, archaeological investigations in the Tulare Lake and Buena Vista Lake localities, south of the Project vicinity, suggest the people occupied the San Joaquin Valley as early as 11,000-12,000 years ago (Fredrickson and Grossman 1977; Riddell and Olson 1969).

Because there has been very little archaeological excavation in the immediate project vicinity, it is unclear whether the cultural phases identified in the adjacent foothills or southern valley extend[s] to this area.

Archaeological evidence suggests that the valley's initial occupants settled mostly in lakeshore and streamside environments and used the foothills seasonally. Early ("Paleoindian") sites are typified by fluted points, stemmed dart points, and flaked stone crescents. The Middle and late Holocene witnessed mobile hunters and gatherers. As compared with their predecessors, Archaic groups utilized a broad resource base, including both large and small game and hard seeds. Manos, milling slabs, mortars, and pestles are common in Archaic assemblages, as are atlatl dart points. Favorable climatic conditions between 3000 and 3500 years ago instigated widespread settlement along the Sierran west slope. The late Holocene witnessed various technological and social changes, including the adoption of the bow and arrow, expansion of trade, increasing use of acorns, and improved food storage techniques. As populations grew, social relations became more complex. Violence among many Sierran and foothill groups was common as economic stress and social instability became more pronounced during a period of xeric climates between A.D. 450 and 1250. Thereafter, new levels of population growth were achieved resulting in part from movement of new Sierran groups. By circa 1600-1700 most groups claimed the territories that would identify them ethnographically.

These late Holocene (circa 1000 B.C. and A.D. 1850) adaptations occurred at various times throughout the south-central Sierra and foothill regions. The prehistoric sequence developed from careful excavations at Eastman Lake divides these events into three phases:

> *"the Chowchilla Phase (circa 800 B.C.-A.D. 550), the Raymond Phase (A.D. 550-1500), and the Madera Phase (A.D. 1500-1850) (Moratto 1972). To summarize: Chowchilla Phase occupation (now dated circa 800 B.C.-A.D. 550) of the*

> *Buchanan Reservoir locality was centered at a few main villages along the Chowchilla River. Large, socially complex populations exploited local resources and actively traded with their neighbors. After circa A.D. 550, however, both population size and social complexity diminished; local Raymond Phase settlement was sporadic, violence was common and trade was disrupted. Then, after circa A.D. 1500, scores of small settlements were established, and these maintained social ties with the revitalized older centers. The Madera Phase, with its village community organization and distinctive economic patterns, represents the late prehistory of the Southern Sierra Miwok"(King 1976) [Moratto 1984:323].*

Several archaeological sites have been recorded in the immediate Project vicinity. In addition to sites located along the San Joaquin River, many small processing stations and temporary camps have been found along seasonal channels near the lower foothills (Meighan and Dillion 1987) suggesting a pattern of widespread use of this area during the late Holocene (McGuire et al. 1992). The San Joaquin River supplied an abundance of salmon during the fall and spring (Baumhoff 1963:169, 174, Table 5) and the numerous granite outcroppings along the river and smaller tributaries provided grinding surfaces to process acorns, a staple of the California Indian diet. Until more extensive archaeological work can be done, interpretations regarding prehistoric land use in the project vicinity are speculative.

HISTORY

Early History

[The following section is adapted from Brady (2011)]

José Joaquin Moraga made the earliest documented Spanish colonial-era visit to what is now Madera County in 1776, when he was dispatched to evaluate California's interior. Upon entering the San Joaquin Valley from the north, Moraga traveled as far south as Madera County. Thirteen years later, Color Sergeant Gabriel Moraga, the son of José Joaquin Moraga, crossed the San Joaquin River and explored what became the Dos Palos and Chowchilla areas of Madera County. Eventually Moraga turned east toward the Sierra Nevada, reaching the Mariposa area (Clough 1968:9).

As early as 1820, explorers, trappers and soldiers traveled through parts of Madera County, continuing such activities through the Gold Rush period. However, it was John C. Fremont who provided the earliest record of trails through Madera County as part of his expedition into California. Between April 4-6, 1844, Fremont progressed through the valley from the north, with his party fording Bear Creek in Merced County by raft and from there proceeding southward. Eventually they followed the San Joaquin River and camped along its banks. On April 6, the Fremont expedition crossed the river at "Gravelly Ford, west of where SR 145 today crosses the river" (Hoover et. al. 1966).

The 1850 discovery of gold in what became eastern Madera County brought miners to the area. Communities such as Coarsegold, Fine Gold, and Cassidy's Bar, began to dot the

Sierra Nevada foothills. Population centers eventually shifted to the valley floor as gold played out and when railroad tracks were first laid, in the early 1870s. Families began to farm the fertile lands in southern Madera and Fresno Counties as irrigation colonies were established.

PROJECT AREA SPECIFIC HISTORY

F.M. Lane Ranch

[The following section on the F.M. Lane Ranch is adapted from Brady (2011)]

Joseph P. Lane parlayed the earnings from his Stockton liquor business in the 1850s to become one of the state's prominent stockmen. His family settled in southern Madera County in 1870 and acquired over 7,000 acres of San Joaquin River terrace near what is now known as Lane's Bridge, just east of the study area (Guinn 1905:1262-1263).

The earliest ownership of the property within the current project study area was by Frank M. Lane, one of five children of Joseph P. and Ann Mary Lane. According to one author Vandor 1919:834-38) Frank M. Lane owned 90 acres, of which the study area was part. Professionally, Mr. Lane was a teacher and later a principal at Washington Grammar School. He was interested in raising grain and alfalfa, which he presumably practiced on his farm in the project area, as well as 240 acre parcel approximately 1 mile east of the project area. Mr. Lane retained ownership of his 90-acre farm through 1935 (Brady 2011).

Spano River Ranch

[The following section on the Spano River Ranch is adapted from Brady (2013)]

In the 1960's the Lane Property was part of river bottom land purchased by Oscar Spano. According to Stan Spano, his late father Oscar purchased most of the land during the early 1960's. About ninety percent of the ranch was located on the Fresno side of the river. According to a 2003 Fresno Bee article by George Hostetter, the ranch was dedicated to cattle and cotton. Sparse evidence of Spano-era agriculture remains in the project area, including a wooden livestock chute, an abandoned mechanical grader, and portions of the irrigation system, which pumped water from the San Joaquin River.

Photo No. 1. Livestock Chute—Spano Ranch

During the later 1960s, Oscar Spano sought to develop a residential tract on the land, but met with great resistance from the County of Fresno. In 2003, Stan Spano sold two-thirds of the ranch to the San Joaquin River Conservancy. The California State Lands Commission purchased the remainder of the ranch. The total cost was approximately $10 million. The family retained ownership of a 20-acre parcel in the middle of the former ranch, designated on the USGS Fresno North Map as "The Circle M Ranch." The 20 acre parcel is currently dedicated to pasture land and a 1970s residence and ancillary buildings are located in the southwest corner of the property. In the summer of 2014, a new residential structure was being built on the property.

Photo No. 2. Farm Grader—Spano Ranch

Photo No. 3. Irrigation System—Spano Ranch

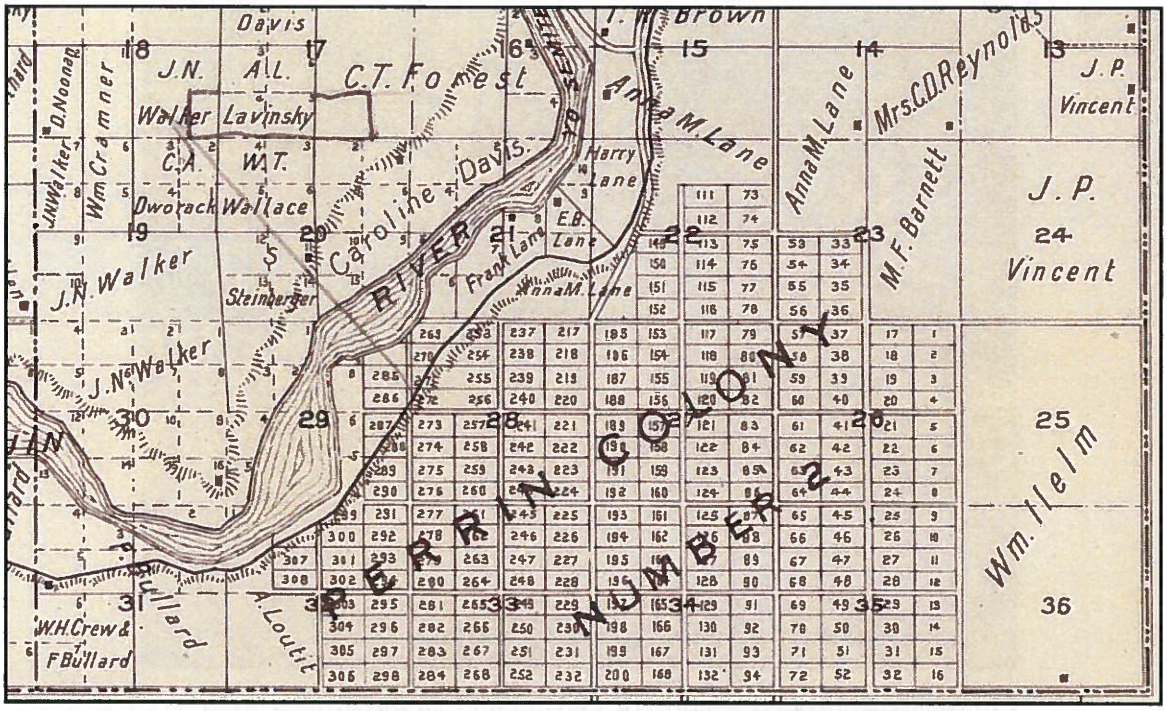
E.B. Perrin and the Perrin Canal

[This section is adapted from Mikesell (1995)]

Dr. Edward Burt (E.B.) Perrin was one of the most ambitious and successful land developers in California during the late 19th Century. He was born in Alabama in 1839 and served as a physician in the Confederate Army for the duration of the Civil War. After the war ended, he gave up medicine to pursue a career as an investor and land developer. In 1864, he married Anne Tremlet Herndon, for whom the community of Herndon is named.

Although E.B. Perrin bought and sold land throughout California and Arizona, his principle focus was on Fresno County between Fresno and the Fresno-Madera County line. According to H.H, Bancroft, Dr. Perrin came to California specifically to buy up land in advance of the railroad, which was most active in the San Joaquin Valley in the late 1860s, reaching what would be the city of Fresno in 1872. Perrin bought more than 130,000 acres in Fresno County, the bulk of it north and northwest of Fresno. Perrin sold much of this land in 1869 to Mr. Theo Kearney, a sale which gave Dr. Perrin the operating capital to make improvements to the rest of his land, including construction of the Perrin Ditch.

Perrin recognized the value of irrigation water as a prerequisite for large-scale land subdivision and sale. He organized the Upper San Joaquin Irrigating Canal Company in 1878 and began construction in 1882 of the Upper San Joaquin Canal or Perrin Ditch. The canal was designed to be about 16 miles long, extending from the massive headgates below Millerton, hung along the bluffs on the south side of the San Joaquin River, ending somewhere in the vicinity of Herndon, probably within the modern Riverside Country Club. The canal was designed to be 41/2-feet-deep, with a bed width of 25 feet and a top width of 42 feet, however, the actual dimensions of the canal were not uniform.



1891 Map of the Project Area, showing the Frank Lane Ranch and the Perrin Ditch (David Rumsey Map Collection).

The Perrin canal was large by the engineering standards of the day, but not the largest ditch in Fresno County in the 1880s. Its most notable engineering features were that it was fully artificial, without access to natural sloughs, and in fact required a weir across the full width (estimate 900 feet) of the San Joaquin River. These characteristics proved to be the undoing of the project, which was abandoned in 1887 because of problems with the weir and because the long artificial channel failed. The canal was never put into service, apparently because the system failed and because Perrin and his partners were either unwilling or unable to spend the money to fix it.

The remnants of the Perrin Ditch are still visible on the bluff, below the Bluffs housing subdivision on the southeastern periphery of the project area (Photo 4). In 1995, historian Steven Mikesell evaluated the Perrin Ditch's historic significance and assessed the condition of the ditch at five locations within the project area. Although the contours of the ditch bed can still be seen at several locations, the ditch has lost its integrity of design and setting to the extent that it is no longer eligible to the National Register of Historic Places (Mikesell 1995: 20-23).

Photo No. 4. Eroded Section of Perrin Ditch in the Project Area

Sand and Gravel Extraction

The following section on Sand and Gravel Extraction is adapted from Brady (2011)]

Stewart and Nuss, a concrete, paving and general construction firm, was founded in 1918 by Charles W. Stewart (1887-1984) and Claude Edward Nuss (1889-1957; Keeler 1993, *California Death Index, 1940-1997*). The firm helped build various public and private developments during its existence. Stewart and Nuss opened an excavation and processing plant in 1936, near the intersection of the San Joaquin River and Highway 99, where gravel, sand and rock was plentiful. At that time, the firm boasted:

> *"It is the most modern and up-to-date plant on the Pacific Coast...With our modern equipment and facilities we are capable of handling excavating, grading, and oiling jobs of any size and can furnish truck-mixed concrete in any quantities that will meet the most rigid specifications"* (Stewart and Nuss, 1936).

A year after Nuss died in 1957, Stewart sold the business to Rice Brothers Inc. of Marysville and Lodi, another concrete and gravel enterprise. Jesse Rice took over as principal of the business, reorganizing it but retaining the familiar corporate name ("The Fresno Bee," 1970). By 1961, the old deposits downstream had been mined out and the company began to work the areas west of the San Joaquin River-Highway 41 intersection, on the Fresno County side, within the project area (Coyle 1963).

Stewart and Nuss continued operations on Sycamore Island Ranch with little fanfare. In

1988, to meet new environmental regulations, it installed a closed-gravel-washing system to keep silt from building up in the river ("Water Recycling: A Wringing Success," 1991). Also, to comply with the California Mining and Reclamation Act of 1975, the company was further obligated to rebuild the island's foliage, and plant seven trees per acre in areas where excavations were complete (Lopez, 1989).

By the late 1990s, the Sycamore Island plant—like its downriver precursor—was playing out and winding down operations (Nax 1996). Major corporate changes came to Stewart and Nuss during the same era. Sold to the Monolith Portland Cement Company, Monolith was eventually purchased in turn by CBR Cement Corporation of San Mateo in 1989 (Morris-Versaw, 1989). CBR's parent firm, SA Cimenteries CBR of Belgium, was later acquired by Heidelberg Cement of Germany in stages during the 1990s ("Heidelberger Zement AG," n.d.). Though its ownership is now wholly foreign, and its immediate parent company is known as Calaveras Material Inc., Stewart and Nuss has retained the same local name it has used ever since its founding (Nax1997).

The Sycamore Island gravel works was purchased by the San Joaquin River Conservancy, a State of California agency, for $6.6 million (Fontana 2006). The acquisition was intended to help preserve and restore the San Joaquin River. Sycamore Island joined a series of properties set aside for that purpose, together forming a twenty two-mile-long parkway down the San Joaquin River which stretches from Friant Dam to Highway 99 (San Joaquin River Parkway and Conservation Trust, n.d.).

The traces left by Stewart and Nuss gravel extraction are now mostly apparent in the south half of the project area where large excavation-created ponds, introduced vegetation, and mounded earth dominate the landscape. The northern half of he property, although studied for gravel mining in 1979 (Peck and Crist, 1979) shows no evidence of gravel extraction. The predominant impacts in the northern half of the project area are from agricultural plowing and grading.

FIELD METHODS

Prior to the field work, a survey strategy was developed based on the culturally-modified landscape within the project study area (refer to Figure 3). The natural landscape has been heavily modified as a result of farming and gravel extraction. Over the last 100-plus years, the land has been graded, plowed, dredged and leveled as a result of gravel and sand extraction. Large ponds and seasonally dry pits are scattered throughout the project area. According to the Records Search, the entire project area was previously surveyed for cultural resources in 1979 by Peck and Crist. In the intervening 35 years, many changes to the landscape and the cultural resources it contains have occurred. In order to make an accurate assessment of the project area, a new pedestrian survey was completed to update the 1979 survey.

Between June 25 and 27, 2014, a pedestrian survey of the project study area was conducted by staff of J&R Environmental Services to determine if cultural resources were present. The land surface was carefully searched for any evidence of aboriginal

utilization or habitation, soil discoloration, artifacts and features (bedrock mortars, rock rings, hunting blinds, etc.), or remnants of human activities dating to the historic period (can and bottle scatters, house foundations, machinery, etc.).

Survey methods included complete, intensive-level coverage with parallel transects at intervals of 20-30 meters and a reconnaissance-level sampling strategy. Complete coverage was employed throughout the entire project study area. In addition, portions of the San Joaquin River's south bank, just outside the periphery of the project area were sampled, due to potential sensitivity for prehistoric sites. Areas most likely to be associated with historic activities, such as ranching, were also closely examined in the study area. Anticipated evidence of historic activity included can dumps, backfilled privies, and collapsed wood structures.

Ground visibility throughout the entire project area was poor due to dense grasses and heavy brush. The only areas where ground visibility was excellent were on roads, trails and disturbed areas devoid of dense vegetation. At frequent intervals during the survey, grasses were pushed aside to expose the surface area. Numerous animal burrows and ground squirrel dens offered some of the best views of the ground surface and immediate subsurface.

STUDY FINDINGS AND CONCLUSIONS

STUDY FINDINGS

The archaeological investigation identified two previously recorded cultural resources—the historic Perrin Ditch and a prehistoric habitation site (CA-FRE-980). Both cultural resources were identified by the archival records search. The Perrin Ditch was previously evaluated and is ineligible to the California Register of Historic Resources. Prehistoric site CA-FRE-980 was originally recorded by Peck and Crist in 1979, but due to dense grass cover and prior agricultural disturbance, the 2014 pedestrian survey failed to relocate the site. Both the Perrin Ditch and site CA-FRE-980 are discussed below.

Aside from a few small fragments of historic ceramic and metal that lacked association or context, no cultural resources were found in the course of the pedestrian survey. More recent evidence of farming—an abandoned grader, a wooden livestock chute, and irrigation system most likely associated with the 1960s Spano Ranch are noted above in "Project Area Specific History."

The Perrin Ditch

The historic Perrin Ditch was recorded along the eastern edge of the project area by historian Stephen Mikesell in 1995. The Perrin ditch was built in the 1880's to bring water for irrigation and development from the San Joaquin River below Millerton to the community of Herndon. Portions of the ditch are still visible on the bluff on the east side of the project area (Photo 5). Mikesell evaluated the ditch for listing in the National Register of Historic Places, under the most applicable criteria B and C., but found that the

ditch no longer retains sufficient integrity to warrant National Register listing (Mikesell 1995:20). National Register criteria B and C correspond with two criteria for the California Register of Historical Resources-- (2) *Is associated with the lives of persons important in our past.* and (3) *Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.* The Perrin Ditch does not qualify as a Historical Resource under (Title14 CCR §15064.5[a][1]-[3]), and requires no further treatment prior to project approval.

Photo No. 5 The Perrin Ditch Cut looking Northeast in Project Area (June 2014)

Prehistoric Site CA-FRE-980

Site CA-FRE-980 is a small (20 meter x 20 meter) prehistoric habitation site that was described in the original 1979 site record as consisting of fire cracked rock, obsidian flakes, shell, and carbon flecks. The 1979 site location map shows the site very close to the area of direct impact (ADI) of the proposed Eaton Trail route as depicted in the plans for the "Proposed Project" and the "River's Edge Trail Alignment" (Figures 5 and 7, and Appendix C). The 1979 site record also noted dense vegetation, disturbance of the upper 40 centimeters of soil, and the likelihood of buried cultural deposits based on soils and topography (Peck and Crist 1979). Recent excavations in similar San Joaquin Valley contexts (Holocene floodplains adjacent to stream courses) show that prehistoric sites with sparse surface evidence can extend as much as 1–3 meters below the surface and date to 7000 years B.P. (Becker 2003; Bethard and Basgall et al. 2000).

Although the 2014 pedestrian survey did not relocate archaeological site CA-FRE-980, it is likely that subsurface archaeological deposits associated with the site still exist in the project area, but are obscured by dense grass growth and prior agricultural disturbance. If site CA-FRE-980 has integrity and research potential, it may be a historical resource and would require protection and/or mitigation of significant effects as described in Title 14 CCR 15064.5. In order to determine if site CA-FRE-980 still exists and would be affected by the proposed project, subsurface archaeological testing is recommended.

If subsurface testing shows that site CA-FRE-980 is within the project's ADI and qualifies as a historical resource, then mitigation measures should be devised to bring project impacts below the level of significance. Preservation-in-place is the preferred manner of mitigating impacts to archaeological sites (Title 14 CCR §15126.4).

Potential Impacts by Alternative (Table 1)

The trail alignments in the Proposed Project and three of the four project alternatives (Alternatives 1, 3, and 4) potentially conflict with site CA-FRE-980. Construction and use of the 22-foot wide trail and buffer in these alignments could impact buried archaeological deposits in the upper three feet of the site (Figures 5, 6, 8, and 9). Only the trail alignment in Alternative 2—Bluff Trail (Figure 7) is sufficiently distant from the documented location of site CA-FRE-980 to minimize the possibility of impacts resulting from construction and use of the trail. Although the Alternative 2 trail alignment is adjacent to the historic Perrin Ditch, the Ditch was previously determined to be ineligible to the California Register of Historic Places and does not require protection under CEQA.

The project description provides for different combinations of the four alternatives and trail alignments. A summary of conflicts by Alternative and Trail Alignment is provided in Table 1.

RECOMMENDATIONS

If a project alternative that conflicts with site CA-FRE-980 is selected in the EIR process, then subsurface testing (Extended Phase I) is recommended to determine the presence or absence of archaeological deposits in the area of direct impact (ADI). A summary of site conflicts and recommended actions by Alternative and Trail Alignment is provided in Table 1. If subsurface testing shows that site CA-FRE-980 is within the project's ADI and qualifies as a historical resource, then mitigation measures should be devised to bring project impacts below the level of significance. Preservation-in-place is the preferred manner of mitigating impacts to archaeological sites (Title 14 CCR §15126.4). A flowchart for identifying and resolving cultural resources impacts and typical mitigation measures for CEQA projects is provided in Appendix F.

Aside from the subsurface testing recommended for site CA-FRE-980, no further cultural resources investigation is required for the undertaking unless project plans undergo changes that include any area not previously surveyed for cultural resources. If unanticipated buried cultural resources are encountered during any project-related

ground-disturbing activities (e.g., trail construction, excavation), work should be halted or diverted in that area until a qualified archaeologist can evaluate the nature and significance of the find.

TABLE 1 IMPACTS AND RECOMMENDATIONS BY ALTERNATIVE AND TRAIL ALIGNMENT

Alternative	Trail Alignment	Historical Resource Conflict	Finding	Potential Adverse Impacts	Recommended Action
Proposed Project	Proposed Trail Route	CA-FRE-980	Site is Potentially Significant/boundaries unknown	Trail Construction and Use	Conduct subsurface testing to determine boundaries of site; Re-design trail to avoid site by min.100ft
Alt 1 (Added Parking)	Proposed or River's Edge Trail Route	CA-FRE-980	Site is Potentially Significant/boundaries unknown	Trail Construction and Use	Conduct subsurface testing to determine boundaries of site; Re-design trail to avoid site by min.100ft
Alt 1 (Added Parking)	Bluff Trail	None	N/A	None	None
Alt 2	Bluff trail	None	N/A	None	None
Alt 3	River's Edge Trail	CA-FRE-980	Site is Potentially Significant/boundaries unknown	Trail Construction and Use	Conduct subsurface testing to determine boundaries of site; Re-design trail to avoid site by min.100ft
Alt 4 (No Parking)	Proposed or River's Edge Trail Route	CA-FRE-980	Site is Potentially Significant/boundaries unknown	Trail Construction and Use	Conduct subsurface testing to determine boundaries of site; Re-design trail to avoid site by min.100ft
Alt 4 (No Parking)	Bluff Trail	None	N/A	None	None

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APPENDIX A

STAFF QUALIFICATIONS

Sarah Johnston meets the Secretary of Interior's Guidelines for Archaeology. She has over 25 years experience leading archaeological investigations under the National Historic Preservation Act of 1969 and the California Environmental Quality Act of 1970 for federal, state, and private agencies in California and Nevada. She holds an M.A., from California State University, Fresno and a B.A. in Anthropology from California State University, Sacramento.

Justin Brady has 10 years experience as an archaeological research assistant and field technician for J&R Environmental Services and other archaeological consulting firms in Central California. He graduated from the Willow International Center (Reedly College) and will be attending CSU-Fresno in Spring 2015, working on his B.A. in Anthropology.

APPENDIX B

MAPS

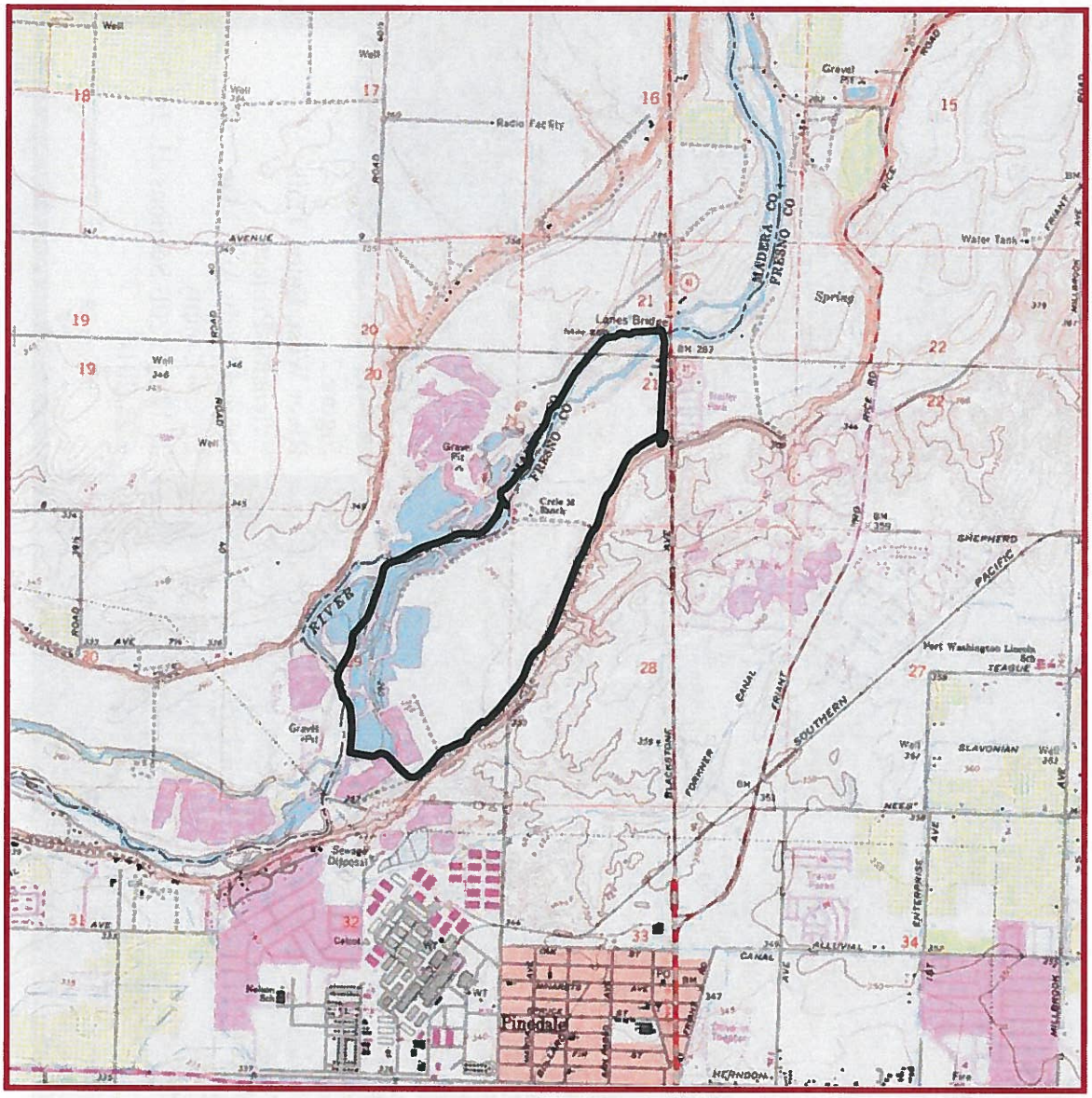


FIGURE 1

River West Eaton Trail Extension Project
T 12S R. 20 E Sections 21, 28, 29
Fresno County, CA
USGS Fresno North Quadrangle

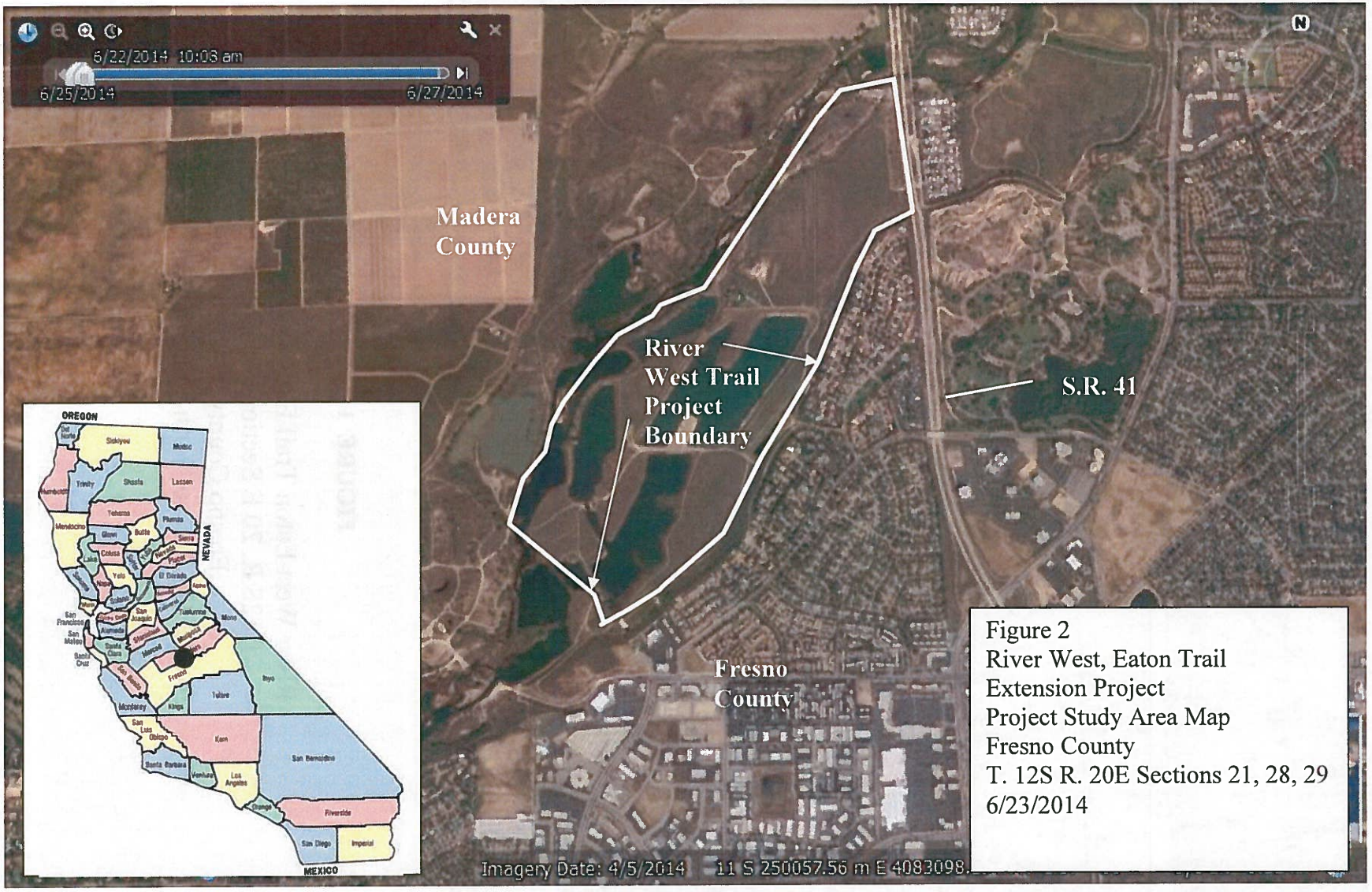


Figure 2
River West, Eaton Trail
Extension Project
Project Study Area Map
Fresno County
T. 12S R. 20E Sections 21, 28, 29
6/23/2014

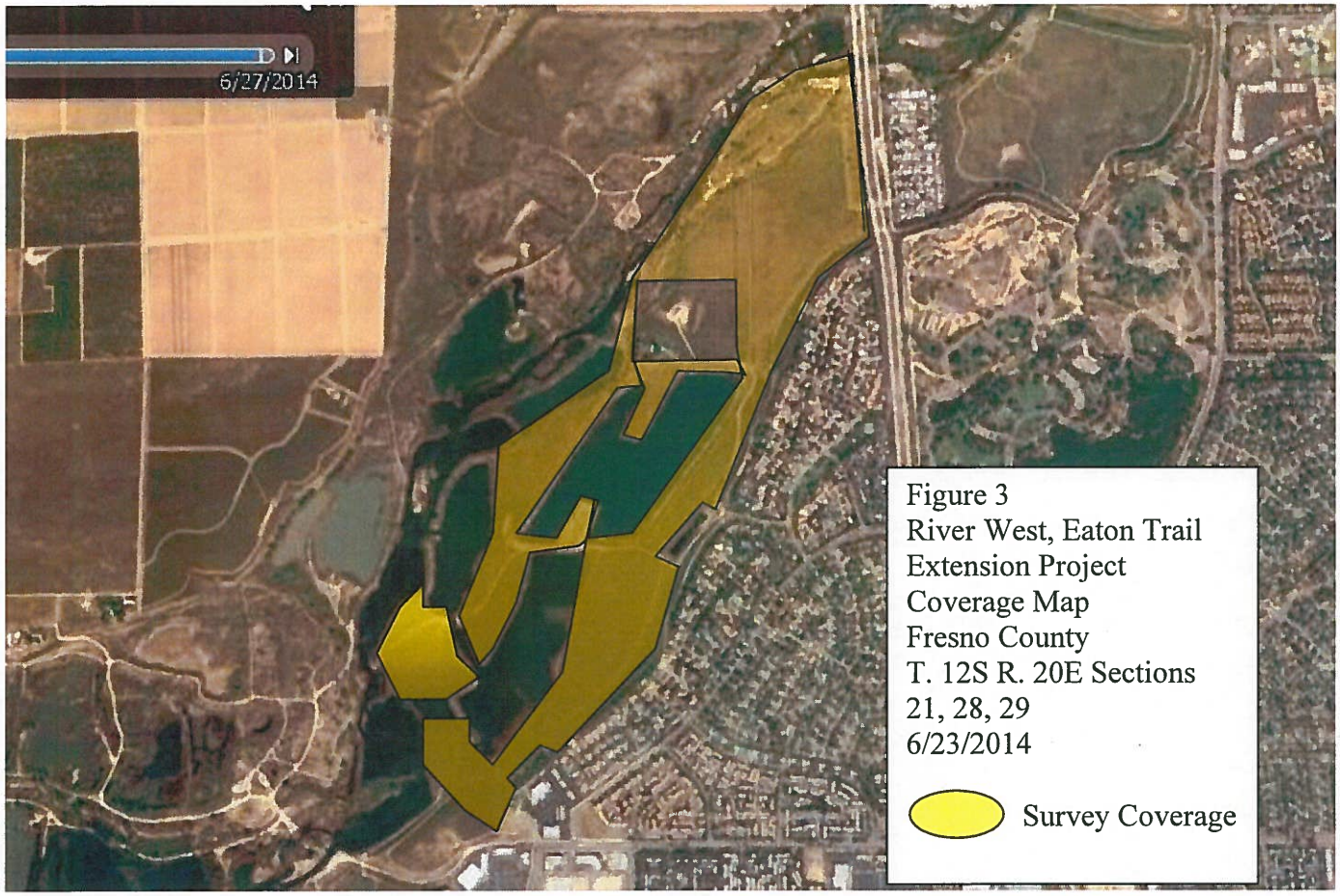


FIGURE 3 Project Study Area and Coverage Map.

Figure 4 has been removed.

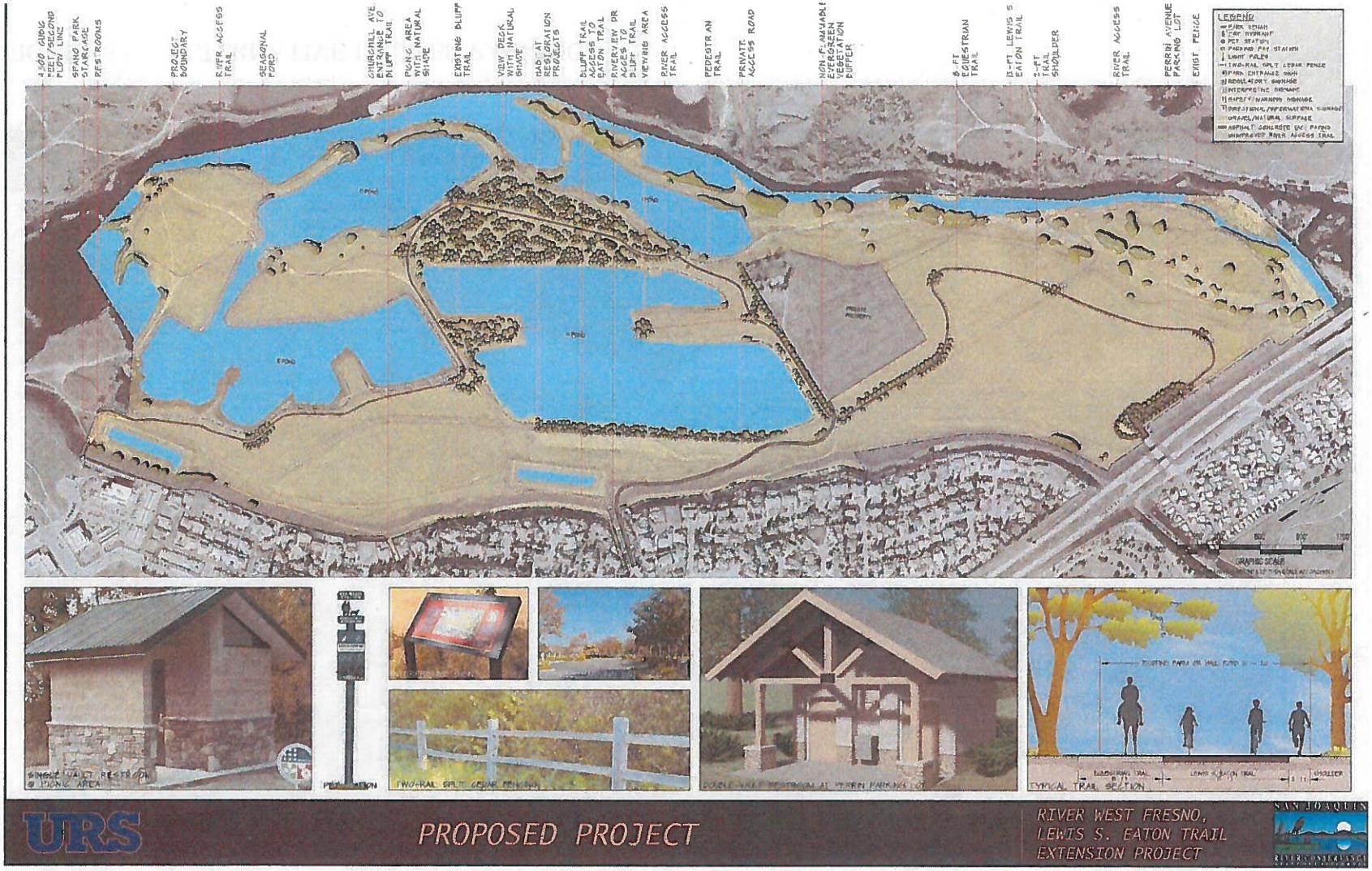


FIGURE 5 PROPOSED PROJECT

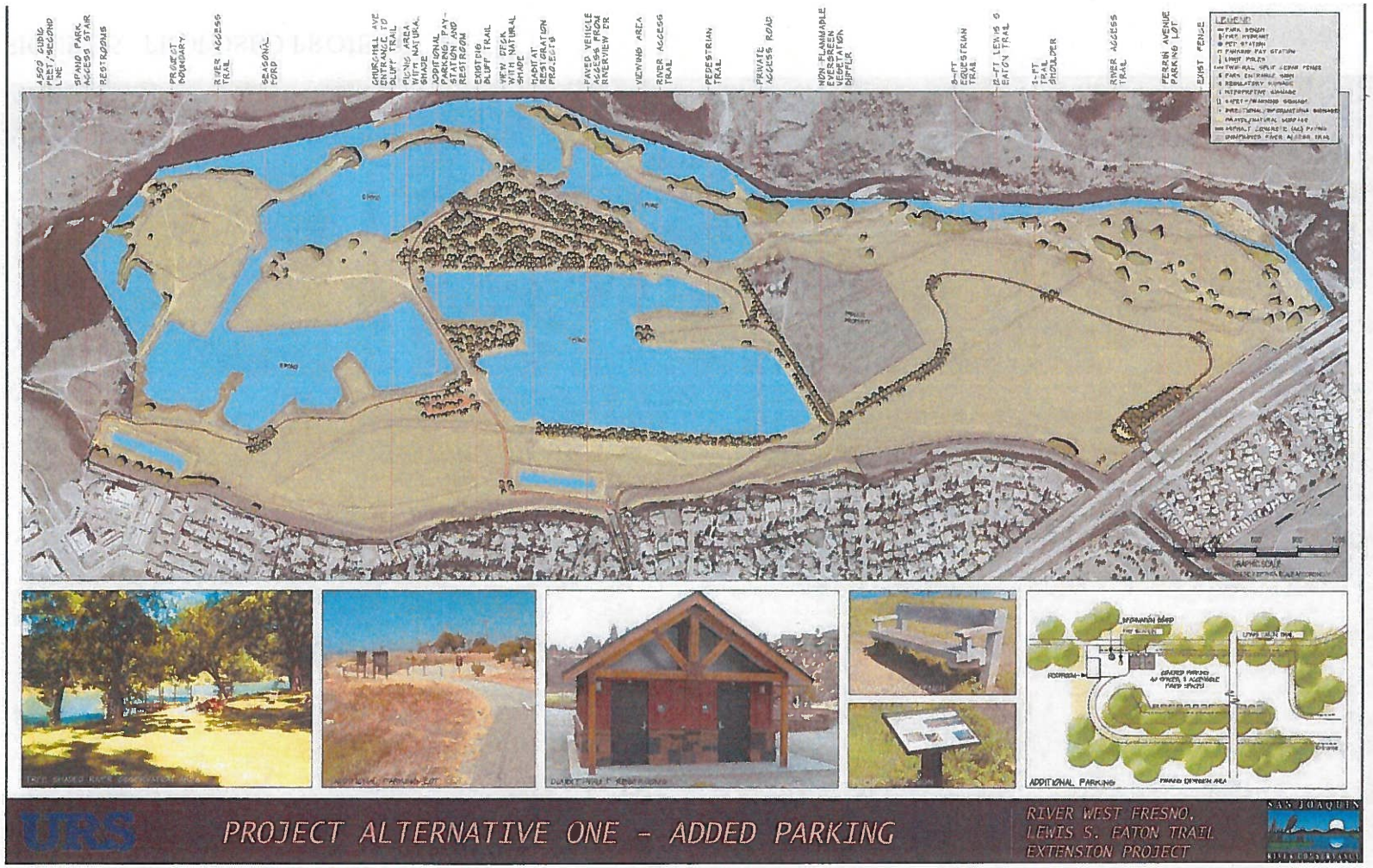


FIGURE 6 ALTERNATIVE 1 ADDED PARKING

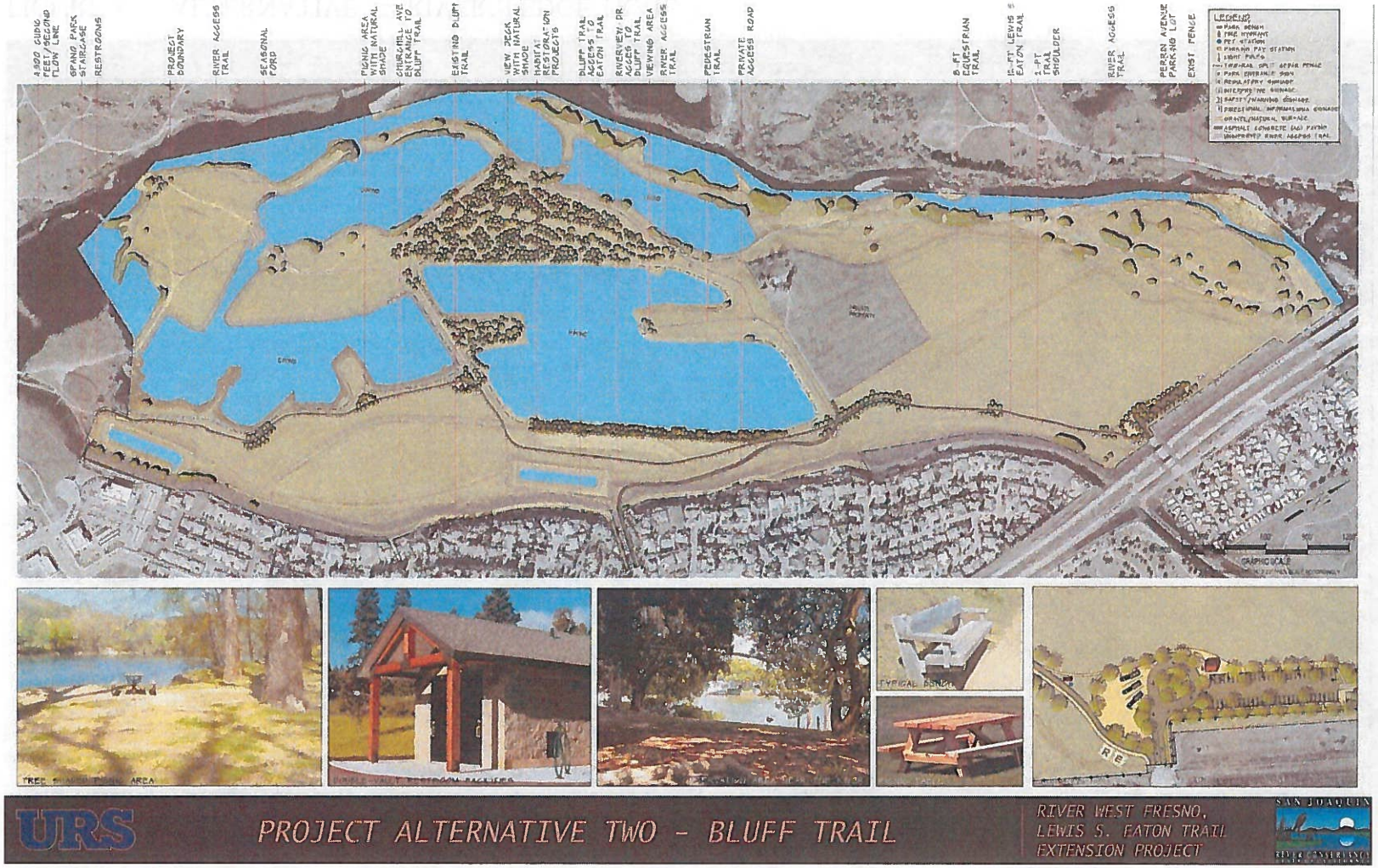


FIGURE 7 ALTERNATIVE 2--BLUFF TRAIL

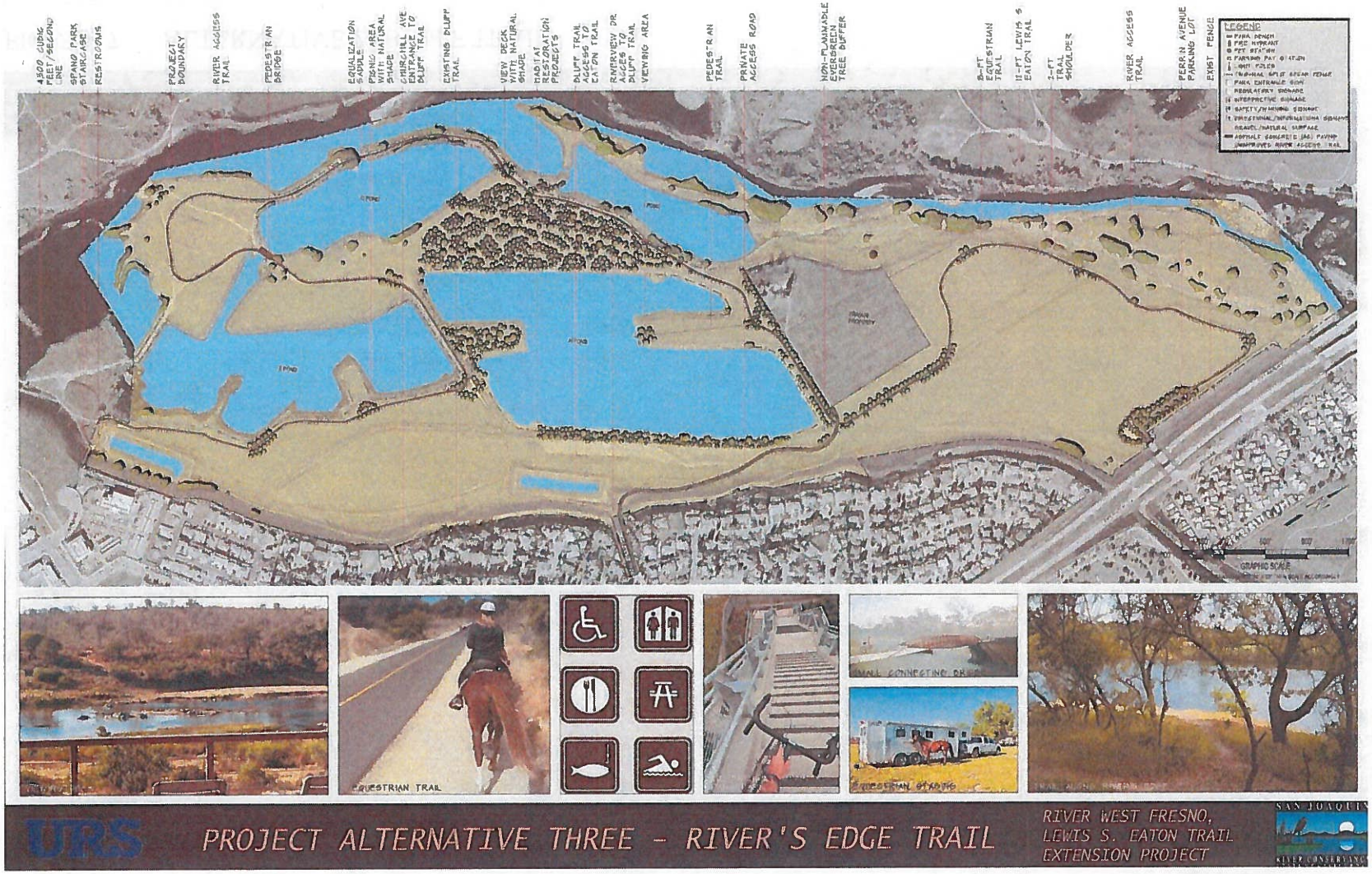


FIGURE 8 ALTERNATIVE 3—RIVER'S EDGE TRAIL

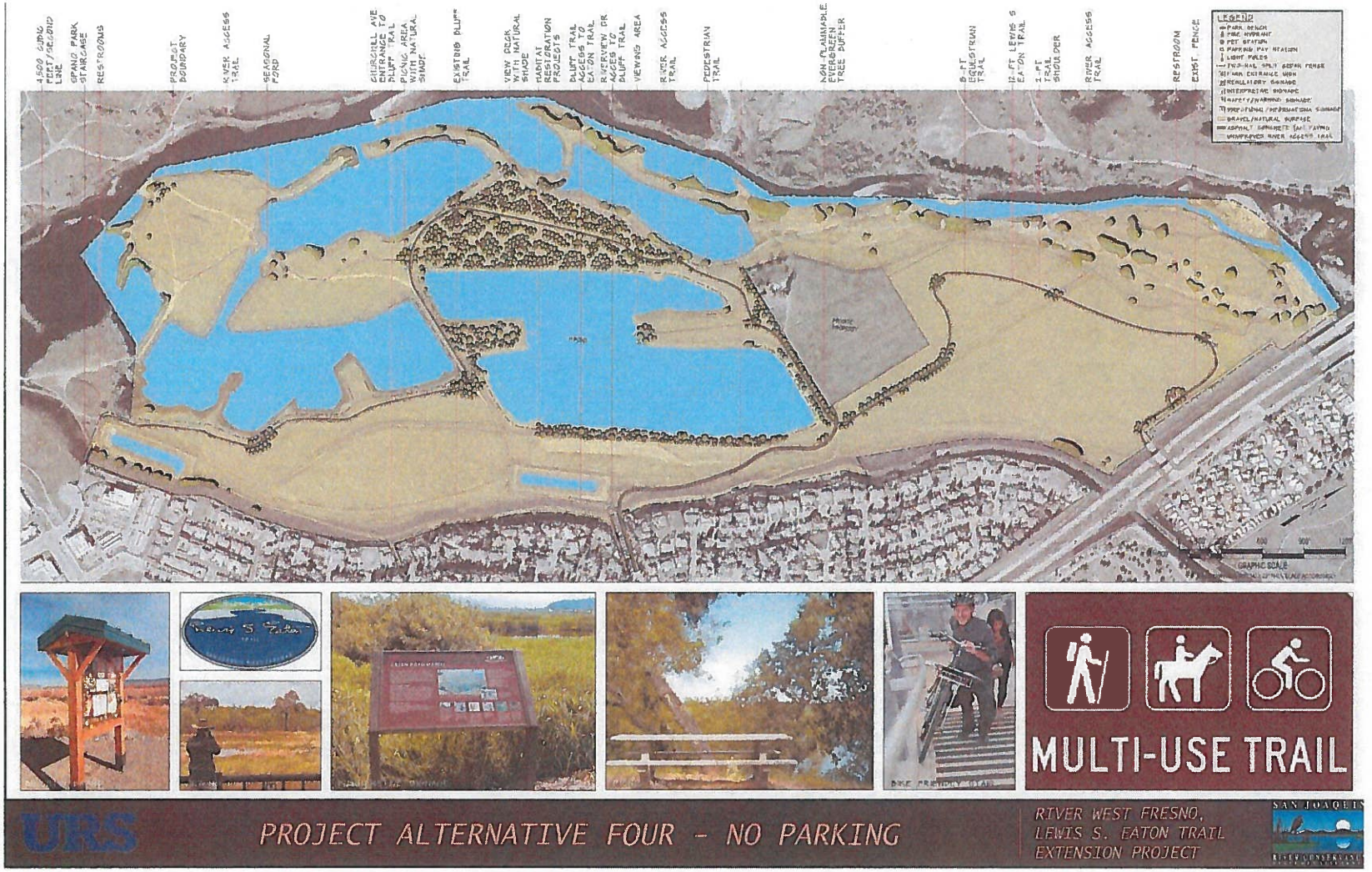
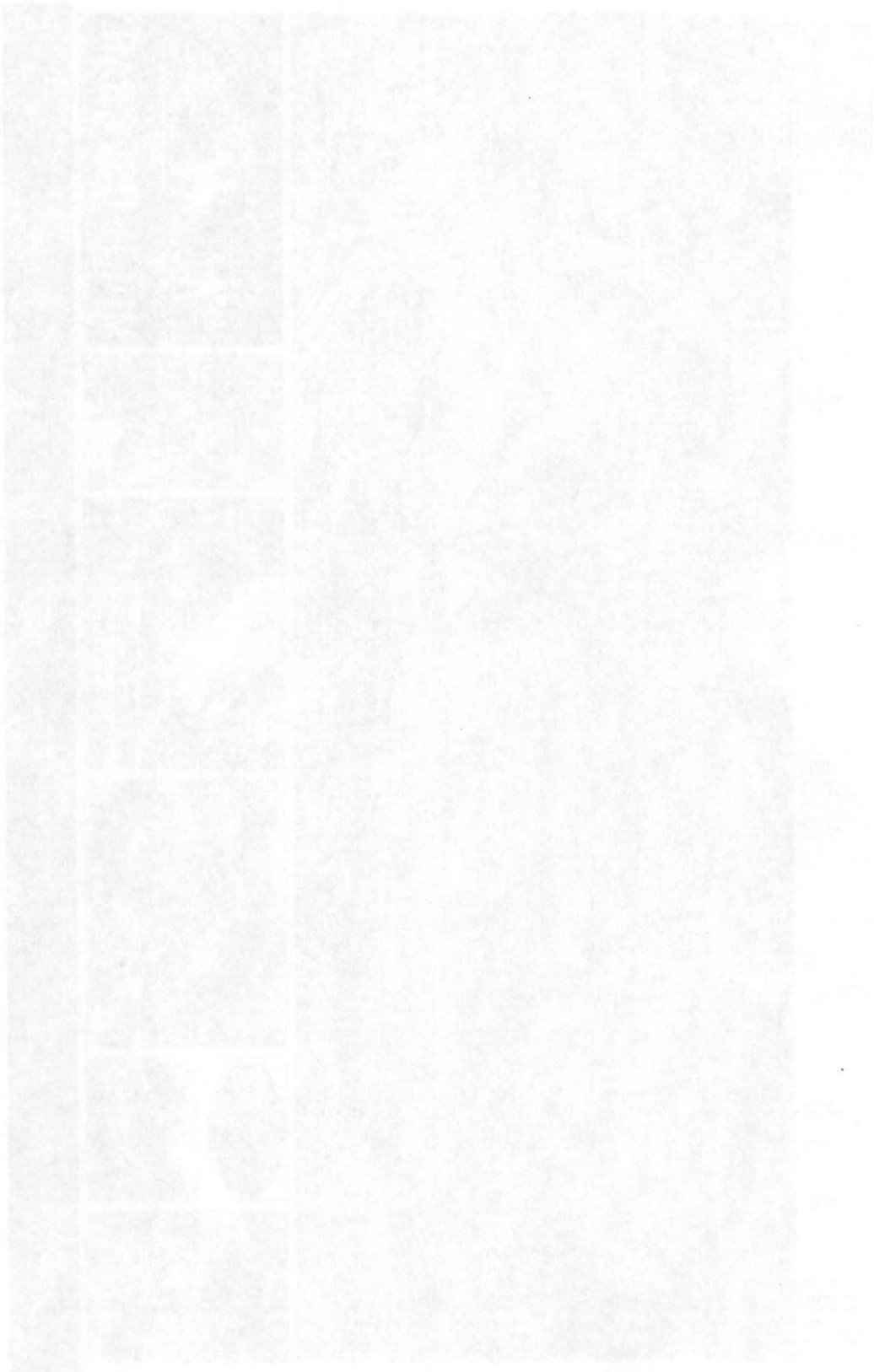


FIGURE 9 ALTERNATIVE 4—NO PARKING



Appendix C has been removed.

APPENDIX E

RECORD SEARCH RESULTS—SSJVIC RS#14-236

Previous Historic Property Studies within ½ mile of the Project Area

CCIC NO.	Author	Title	Date
--	Jon L. Brady, J&R Environmental Services	Phase I Archaeological Investigation Site Plan for a 20-acre parcel APN 401-021-27S, City of Fresno, Fresno County, CA	2013
--	Jon L. Brady, J&R Environmental Services	Historic Property Survey Report for the River-West Madera Master Plan Project, Madera County, CA	2011
00384	Kathleen L. Cursi, B.A.	Archaeological Reconnaissance for the Riverpark Properties, Fresno County, CA	
00629	Billy J. Peck and Michael Crist	An Archaeological Reconnaissance for Stewart and Nuss, Inc. Sand and Gravel Expansion—Fresno County, CA	1979
00630	Ann S. Peak	Archaeological Assessment of the Stewart & Nuss, Inc. Sand and Gravel Plant Expansion, Fresno County, CA	1975
00805	Lawrence E. Weigel	Archaeological Survey Report for a Proposed Route Adoption Study Audubon Drive to Route 145.	1985
00851	Don Wren, R.W. Greenwood, Associates	Strachan Reconnaissance P.M. No 4900 (Leland McCarthy Property)	1979
01572	California Department of Transportation, District 6	Corridor Study and Route Adoption in Northern Fresno County and Southern Madera County	1994
01573	Stephen D. Mikesell	Historic Resource Evaluation Report: Perrin Ditch and Madera Canal	n.d
01819	Jones and Stokes	Cultural Resources inventory and Evaluation Report for the San Joaquin River Parkway and Conservation Trust Jensen River Ranch Restoration Project, Fresno County, CA	2000
02473	Archaeological Resources Technology	Cultural Resources Investigation for Clearwire CA-FNO2022 "Pinedale Water Tank" 685 West Alluvial Avenue, Fresno City and County, CA 93711	2010
02592	Margaret Kress	San Joaquin River Parkway, Sycamore Island Pond Isolation (PIT 46E) Project	2014

From: Liz Kipp <LKipp@bsrnation.com>
To: sdernhelm <sdernhelm@aol.com>; Council <Council@bsrnation.com>
Subject: Re: Consultation_River West Eaton Trail Extension Project in Fresno_San Joaquin River
Date: Tue, Jul 22, 2014 3:41 pm

Sarah, thank you for contacting Big Sandy Rancheria on the Phase I Historic Property Survey of the River West, Eaton Trail Extension Project for the San Joaquin River Conservancy in Central Fresno County, CA. Currently, BSR has no information which we can provide to this project. We do request that if at anytime, there is any cultural resources identified or disturbed, that BSR be notified immediately.

Respectfully,

Elizabeth D. Hutchins-Kipp
Big Sandy Rancheria-**Band of Western Mono Indians**
Tribal Chairperson
559-374-0066
Sent from my iPad

On Jul 17, 2014, at 11:53 PM, "sdernhelm@aol.com" <sdernhelm@aol.com> wrote:

July 16, 2014

To: Ms. Elizabeth Hutchins Kipp, Chairperson
Big Sand Rancheria of Mono Indians
P.O. Box 337/37302
Auberry, CA 93602

From: Sarah E Johnston,
Cultural Resources Manager
J & R Environmental Services
7126 N Carruth Ave.
Fresno, CA 93711

Re: Phase I Historic Property Survey of the River West, Eaton Trail Extension Project for the San Joaquin River Conservancy in Central Fresno County, CA. T12S, R.20E Sections 21, 28, 29. USGS Fresno North 7.5 Minute Quadrangle.

J & R ENVIRONMENTAL SERVICES

areas, picnic tables, unpaved access trails, and irrigated landscape plantings to provide shade within the project area.

J & R Environmental Services will conduct an historic/archaeological survey in the project area indicated on the enclosed map. If you have any questions or information about the trail project, please submit them to me by email sdernhelm@aol.com or by phone at 559-438-5330.

Sincerely,

Sarah E. Johnston, M.A.
Cultural Resource Management
J&R Environmental Sevices
Ph 559-438-5330

Enclosure (map)

KIPP CORRESPONDENCE

J & R ENVIRONMENTAL SERVICES

July 16, 2014

To: Ms. Elizabeth Hutchins Kipp, Chairperson
Big Sand Rancheria of Mono Indians
P.O. Box 337/37302
Auberry, CA 93602

From: Sarah E Johnston,
Cultural Resources Manager
J & R Environmental Services
7126 N Carruth Ave.
Fresno, CA 93711

Re: Historic Property Survey of the River West, Eaton Trail Extension Project for the San Joaquin River Conservancy in Central Fresno County, CA. T12S, R.20E Sections 21, 28, 29. USGS Fresno North 7.5 Minute Quadrangle.

Dear Chairman Kipp,

We are seeking your input regarding the development of a public recreational trail along the San Joaquin River in Fresno County. The Native American Heritage Commission gave us your name as the representative of a potentially affected tribal community.

The San Joaquin River Conservancy is proposing to extend the existing Lewis S. Eaton Trail from State Route 41 downstream to Spano Park, within a 400 acre portion of the San Joaquin River Parkway. The trail would be extended on the south side of the San Joaquin River by about 2.5 miles. The 22-foot-wide trail would consist of a 12-foot wide paved surface, a parallel 8-foot wide hard natural surface and a 2-foot buffer. The trail would provide opportunities for hiking, equestrian use, bicycling, fishing, and nature observation, consistent with the San Joaquin River Parkway Master Plan.

Depending on the selected alternative, the proposed project would also build one or two vehicle parking lots (up to 50 stalls), 2-3 accessible vault toilets, wildlife observation

Native American Contacts
Fresno County California
July 1, 2014

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

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

Cold Springs Rancheria of Mono Indians
Robert Marquez, Chairperson
P.O. Box 209 Mono
Tollhouse , CA 93667
(559) 855-5043
(559) 855-4445 Fax

Choinumni Tribe; Choinumni/Mono
Lorrie Planas
2736 Palo Alto Choinumni
Clovis , CA 93611 Mono

North Fork Mono Tribe
Ron Goode, Chairperson
13396 Tollhouse Road Mono
Clovis , CA 93619
rwgoode911@hotmail.com
(559) 299-3729 Home
(559) 355-1774 - cell

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

Dumna Wo-Wah Tribal Goverment
Robert Ledger SR., Tribal Chairperson
2216 East Hammond Street Dumna/Foothill
Fresno , CA 93703 Mono
ledgerrobert@ymail.com
(559) 519-1742 Office

Dunlap Band of Mono Historical Preservation Soc
Mandy Marine, Board Chairperson
P.O Box 18 Mono
Dunlap , CA 93621
mandy_marine@hotmail.com
(559) 274-1705

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list s only applicable for contacting locative Americans with regard to cultural resources for the proposed River West, Eaton Trail Extension Project (for the San Joaquin River Conservancy); located in Fresno County, California for which a Sacred Lands file search and Native American Contacts list were requested.

California Government Code Sections 65040.12(e) defines 'environmental justice' to provide "fair treatment of people...with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations and policies." Also, Executive Order B-10-11 requires that state agencies "consult with Native American tribes, their elected officials and other representatives of tribal governments in order to provide meaningful input into...the development of legislation, regulations; rules and policies on matter that may affect tribal communities."

If you have any questions or need additional information, please contact me at (916) 373-3715.

Sincerely,

Dave Singleton
Program Analyst

Attachments

STATE OF CALIFORNIA — Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691
(916) 373-3715
Fax (916) 373-5471
Web Site www.nahc.ca.gov
Ds_nahc@pacbell.net

July 1, 2014

Ms. Sarah E. Johnson, M.A.
J & R ENVIRONMENTAL SERVICES
7126 North Carruth Avenue
Fresno, CA 93711

Sent by U.S. Mail
No. of Pages: 4

RE: Sacred Lands File Search and Native American Contacts list for the **"River West, Eaton Trail Extension Project (for the San Joaquin River Conservancy);"** located in northern Fresno County, California

Dear Ms. Johnson:

A record search of the NAHC Sacred Lands Inventory **failed to indicate** the presence of Native American traditional sites/places of the Project site(s) or 'areas of Potential effect' (APEs), submitted to this office. However, there are Native American cultural resources in adjacent USGS sections. Note also hat the absence of archaeological features, Native American cultural resources does not preclude their existence at the subsurface level.

In the 1985 Appellate Court decision (170 Cal App 3rd 604), the Court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources impacted by proposed projects, including archaeological places of religious significance to Native Americans, and to Native American burial sites.

When the project becomes public, please inform the Native American contacts as to the nature of the project (e.g. residential, renewable energy, infrastructure or other appropriate type). Attached is a list of Native American tribes, Native American individuals or organizations that may have knowledge of cultural resources in or near the proposed project area (APE). As part of the consultation process, the NAHC recommends that local government and project developers contact the tribal governments and Native American individuals on the list in order to determine if the proposed action might impact any cultural places or sacred sites. If a response from those listed on the attachment is not received in two weeks of notification, the NAHC recommends that a follow-up telephone call be made to ensure the project information has been received.

trail would provide opportunities for hiking, equestrian use, bicycling, fishing, and nature observation, consistent with the San Joaquin River Parkway Master Plan.

Depending on the selected alternative, the proposed project would also build one or two vehicle parking lots (up to 50 stalls), 2-3 accessible vault toilets, wildlife observation areas, picnic tables, unpaved access trails, and irrigated landscape plantings to provide shade within the project area.

J & R Environmental Services will conduct an archaeological survey on the project area indicated on the enclosed map. We are requesting a Sacred Land Files Search and a list of Native American contacts with knowledge of or interest in the project area. If you have any questions or need further information regarding this project, please feel free to call me at 559-438-5330, or by email at sdernhelm@aol.com.

Sincerely,
Sarah E. Johnston, M.A.
Cultural Resource Management

2 Enclosures (maps)

NATIVE AMERICAN CORRESPONDENCE

To: ds_nahc <ds_nahc@pacbell.net>
Sent: Mon, Jun 30, 2014 6:07 pm
Subject: Sacred Files and Native American Contact List request:_River West, Eaton Trail Extension Project_Fresno County

Dear Mr. Singleton, below is my request for a Sacred Sites Files Search and Native American Contact List. Call me at 559-438-5330 if you have any questions. Thanks.

June 30, 2014

From: Sarah E Johnston
J & R Environmental Services
7126 N Carruth Ave.
Fresno, CA 93711

To: Mr. David Singleton
Native American Heritage Commission
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95619

Re: Phase I Archaeological Survey of the River West, Eaton Trail Extension Project for the San Joaquin River Conservancy

Project: River West, Eaton Trail Extension Project
Lead Agency: San Joaquin River Conservancy
County: Fresno
USGS 7.5 Min Quad: Fresno North
T. 12S R. 20E, Sections 21, 28, & 29 mdbm

Company: J & R Environmental
Contact Person: Sarah E Johnston, M.A. Project Archaeologist
Street Address: 7126 N. Carruth Ave, Fresno, C 93711
Phone: 559-438-5330
Email: sdernhelm@aol.com

Project Description:

The San Joaquin River Conservancy is proposing to extend the existing Lewis S. Eaton Trail from State Route 41 downstream to Spano Park, within a 300+ acre portion of the San Joaquin River Parkway. The trail would be extended on the south side of the San Joaquin River by about 2.5 miles. The 22-foot-wide trail would consist of a 12-foot wide paved surface, a parallel 8-foot wide hard natural surface and a 2-foot buffer. The

APPENDIX D

NATIVE AMERICAN CORRESPONDENCE AND LOG

Contact	Tribe	Contact Method	Response
Lorrie Planas,	Choinumni Tribe Yokuts/Mono	Mail	None to date
Jerry Brown	Chowchilla Tribe of Yokuts	Mail	"
Robert Marquez, Chairman	Cold Springs Rancheria of Mono	Mail/follow up phone call	"
Lalo Franco Cutlural Coordinator	Santa Rosa Tachi Rancheria	Mail/follow up phone call	"
Lawrence Bill, Chairman	Sierra Nevada Native American Coalition	Mail/phone call	Does not wish to consult
Bob Pennell, Cultural Resources Director	Table Mtn Rancheria	Mail	None date
Elizabeth Hutchins Kipp, Chairperson	Big Sandy Rancheria of Mono	Mail and Email	Requested to be informed if cultural resources were found.
Robert Ledger SR, Chairperson	Dumna Wo-Wah Tribal Government	Mail and Email/follow up phone call	None to date
Eric Smith, Cultural resource Manager	Dumna Wo-Wah Tribal Government	Mail and Email	"
John Ledger, Asst. Cultural resource Manager	Dumna Wo-Wah Tribal Government	Email	"
Mandy Marine, Board Chairperson	Dunlap Band of Mono Historical Preservation Society	Email and Mail/follow up phone call	"
Ron Goode, Chairperson	North Fork Mono Tribe	Email and Mail/follow up phone call	"

Map of previous survey has been removed.

APPENDIX F

CULTURAL RESOURCES FLOWCHART FOR CEQA PROJECT

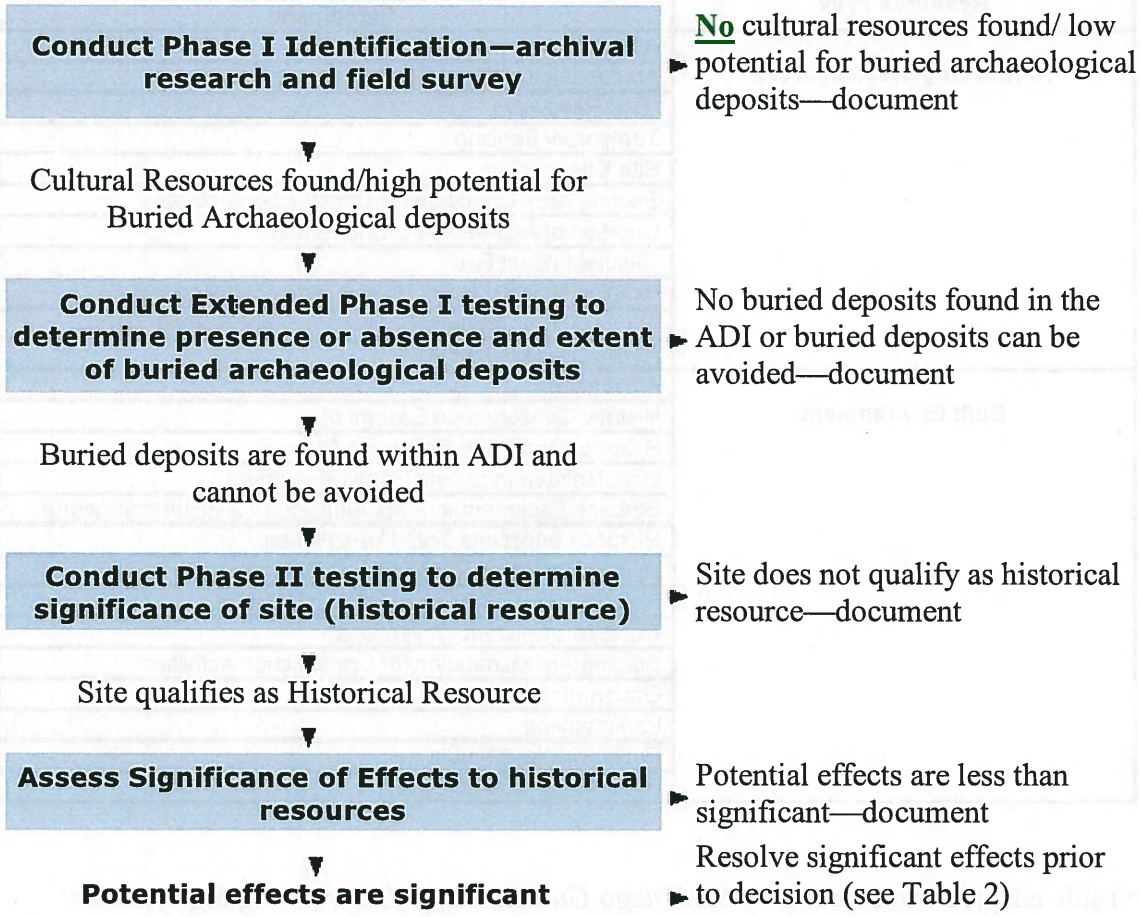


TABLE 2 TYPICAL MITIGATION MEASURES*

Resource Type	Typical Measures Applied to Reduce Impacts to Below Significant
Archaeological Resources	Avoidance
	Archaeological Open Space Easement
	Data Recovery
	Temporary Fencing
	Site Capping
	Staging Area Limitation for Construction Activities
	Curation of Archaeological Collections[13]
	Cultural Impact Fee
	Grading Monitoring (incl Native American Monitor)
	Excavation Agreement between developer and tribe(s)
	Public Displays/Media
Built Environment	Avoidance
	Historic Conservation Easement
	Historic Landscape Screening Plan
	Use, Maintenance, and Repair Easement
	Setback Easement for Lots Adjacent to a Historic Structure
	Historic Landscape Tree Preservation
	Historic Structure Rehabilitation Program
	Regulations of Uses in a Historic Structure
	Curation of Historic Collections[2]
	Staging Area Limitation for Construction Activities
	Grading Monitoring
	Landmarking
	Public Displays/Media
	HABS/HAER Documentation

*Table adapted from *County of San Diego Guidelines for Determining Significance: Cultural Resources--Archaeological and Historic Resources* (2007).Department of Planning and Land Use, Department of Public Works. (http://www.sdcounty.ca.gov/pds/docs/Cultural_Guidelines.pdf)

PALM BLUFFS RIVER ACCESS:

ADDENDUM TO THE

PHASE 1 ARCHAEOLOGICAL SURVEY REPORT FOR

THE RIVER WEST/LEWIS S. EATON TRAIL EXTENSION PROJECT

FRESNO COUNTY, CALIFORNA

View of San Joaquin River bluff looking northeast from project area

Submitted To:
David K. Young
AECOM
Planning and Environmental Department
1360 East Spruce Avenue #101
Fresno, CA 93720

Submitted By:
J&R Environmental Services
17900 Auberry Road
Clovis, CA 93619

November 15, 2015

USGS Fresno North 7.5′ Quadrangle
T.12S R.20E Section 29 & 32, Mount Diablo Baseline and Meridian

MANAGEMENT SUMMARY

J&R Environmental Services conducted a Phase I Archaeological Survey of the project study area (PSA) for the Palm Bluffs River Access Project at the intersection of Palm Avenue and Nees Avenue in northwest Fresno, California in October 2015. The new project is an addendum to the proposed River West/Lewis S. Eaton Trail Extension Project that was originally surveyed for historical resources in August 2014. Portions of 12 parcels have been added to the project to provide access for bicyclists and pedestrians (including access for adults with disabilities under ADA) to the proposed trail below the bluff on the San Joaquin River.

An archaeological investigation was undertaken to comply with the California Environmental Quality Act (CEQA), which mandates that public agencies determine whether a project will have a significant impact on important historical resources (Title 14 CCR §15064). The investigation for the additional PSA was conducted as an addendum to the original investigation entitled *Phase I Archaeological Survey Report: River West, Lewis S. Eaton Trail Extension Project, Fresno County, California* (August 28, 2014). The archival search was updated for the new PSA and a new Sacred Files inquiry was sent to the Native American Heritage Commission (NAHC), otherwise the background information provided in the original 2014 survey report has been incorporated by reference in this addendum.

The archaeological survey of the PSA was negative. No archaeological sites or built-environment resources with the potential for being historical resources were identified within the addendum study area. The project as proposed would not affect historical resources. No further cultural resources investigation is required for the undertaking unless project plans undergo changes that include any area not previously surveyed for cultural resources. If unanticipated buried cultural resources are encountered during any project-related ground-disturbing activities (e.g., trail construction, excavation), work should be halted or diverted in that area until a qualified archaeologist can evaluate the nature and significance of the find.

TABLE OF CONTENTS

I UNDERTAKING DESCRIPTION AND LOCATION

The City of Fresno is proposing to provide river access for pedestrians and bicyclists, as well as parking, restrooms and lighting at the Spano Landfill near the intersection of Palm and Nees in northwest Fresno, California. The new facilities would be an addendum to the original scope of work for the River West/Lewis S. Eaton Trail Extension Project, located on the San Joaquin River (Figures 1-3). The project study area (PSA) for the original Trail Extension Project was surveyed for historical resources by J&R Environmental Services in August 2014 (Figure 1).

The City of Fresno Department of Public works is considering five new alternatives for river access to the Lewis S. Eaton Trail as described in the May 2015 report titled *"Palm Bluffs River Access Feasibility Study Report"* (Blair, Church, & Flynn, 2015). The PSA is located in Township 12S Range 20 East, Sections 29 & 32, Mount Diablo Baseline and Meridian and encompasses portions of the twelve parcels listed in Table 1.

In October 2015 J&R Environmental conducted a Phase I Archaeological Survey of the PSA for the Palms Bluffs River Access project. The purpose of the archaeological investigation was to identify any historical resources within the PSA that would be affected by the proposed project.

Table 1. List of Parcels in Project Study Area

Parcel APN	Owner
402-030-63S	SOB Enterprises
402-030-67S	SOB Enterprises
405-340-18S	SOB Enterprises
405-340-19S	SOB Enterprises
405-340-17S	SOB Enterprises
402-030-64S	SOB Enterprises
402-030-43	SOB Enterprises
402-030-70	New Generation Group LP
405-530-85	Park Place Holdings LP
402-030-52ST	FMFCD
402-030-47ST	City of Fresno
405-340-04	C&A Farms LLC "Richter Site"

Prior to the 2014 field survey, J&R Environmental conducted a records search (RS#14-236) and literature review at the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resource Information System, located at California State University, Bakersfield. The record search encompassed a ½ mile buffer around the project area to identify previous archeological investigations and archaeological resources within the project vicinity. A summary of the records search findings is provided within the original report and below under Section IV Sources Consulted.

J&R Environmental contacted the Native American Heritage Commission (NAHC) in Sacramento to determine if known sacred sites occurred in the project vicinity and to obtain a list of potentially interested Native American Tribal Communities and individuals. The commission provided a list of 12 tribal contacts, whom were contacted by letter, in addition to email (when address provided) and follow-up phone calls. A summary of contacts with the Native American community was provided within the original report and in Appendix D--Native American Correspondence and Log. An updated sacred lands file request with a map of the new PSA for the Palm Bluffs River Access Addendum was sent to the NAHC in November 2015 (Attachment 2).

II REGUATORY CONTEXT

CEQA requires public agencies to consider project impacts on archaeological or historical sites deemed to be "historical resources." Under CEQA, a substantial adverse change in the significant qualities of a historical resource is considered a significant effect on the environment. For the purposes of CEQA, a "historical resource" is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (Title14 CCR §15064.5[a][1]-[3]). Historical resources may include, but are not limited to, "any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC §5020.1[j]).

The eligibility criteria for the California Register are the definitive criteria for assessing the significance of historical resources for the purposes of CEQA (Office of Historic Preservation, n.d.). Generally, a resource is considered "historically significant" if it meets one or more of the following criteria for listing on the California Register:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

(2) Is associated with the lives of persons important in our past.

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

(4) Has yielded, or may be likely to yield, information important in prehistory or history (PRC §5024.1[c]).

III PROJECT STUDY AREA

The Project Study Area (PSA) encompasses approximately 25 acres on the Fresno side of the San Joaquin River northwest of the intersection of Palm and Nees Avenues. The PSA is delineated on the north by the San Joaquin River channel and on the south by the parking lots and buildings of the Palm and Nees shopping center on the top of the San Joaquin River Bluff. Most of the PSA consists of open space with evidence of modern human activity—landfill, sand and gravel extraction, grading, and road construction. Two areas affected by an old underground fire are designated on the project maps. Based on the description of the five proposed project alternatives, most construction and project activities will be confined to the upper three feet of the ground surface (Blair, Church, & Flynn, 2015). The PSA is depicted in Figure 2.

Photo No. 1. View of project area looking south to shopping center.

PROJECT ALTERNATIVES

Five alternatives on four sites were considered. These alternatives are summarized in Table 2 (below) and in Appendix D of the May 2015 *"Palm Bluffs River Access Feasibility Study Report."*

Table 2. Project Alternatives and Effects to Historical Resources

Site Number	Alternative	Description of Proposed Construction	Parcel No.	Effects
Site 1	1	Access Road, Parking Lot, Retaining wall	402-030-63S 402-030-64S 402-030-67S 405-340-18S 402-030-43 402-030-70 405-530-85	No Historical Resources Affected
Site 1	2	Access Road, Parking Lot, Retaining wall	402-030-47ST 402-030-52ST 402-030-63S 402-030-70 402-030-43	No Historical Resources Affected
Site 2	3	Access and Parking Lot	405-530-85 405-340-19S 405-340-17S	No Historical Resources Affected
Site 3	4	Access Road, Parking Lot, Retaining wall	405-530-85 405-340-19S 405-340-17S	No Historical Resources Affected
Site 4	5	ADA Access Ramp and parking Lot	405-340-04 405-340-17S 405-340-19S	No Historical Resources Affected

IV SOURCES CONSULTED

RECORDS SEARCH

A Records Search (RS#14-236) covering a half-mile radius surrounding the project area was conducted at the Southern San Joaquin Valley Information Center (SSJVIC) Part of the California Historical Resource Information System, located at California State University, Bakersfield on June 24, 2014. Review of SSJVIC holdings included archaeological survey reports and site records, listings of the National Register of Historic Places (NRHP), California Register of Historic Places (CRHP), California Historical Landmarks, and California Points of Historical Interest.

The record search indicated that several studies were conducted in and adjacent to the project area over the past 40 years (Appendix E of original report). The study area was completely surveyed for archaeological resources approximately 35 years ago (Peck and Crist, 1979) and had been partially surveyed in the past three years (Brady, 2013). The only cultural resource identified within the PSA was the Perrin Ditch, built in 1882. The Perrin Ditch was evaluated by architectural historian Stephen Mikesell in 1995 and found to be ineligible to the California Register of Historical Resources or the National Register of Historic Places (see Section V, below).

NATIVE AMERICAN CONTACTS

In July, 2014 J&R Environmental contacted Mr. Dave Singleton of the Native America Heritage Commission in Sacramento to conduct a sacred lands inventory and to request a list of Native American contacts with traditional ties to the project area. Mr. Singleton replied that a search of the NAHC Sacred Lands Inventory failed to indicate the presence of Native American traditional sites/places within the project study area. He provided a list of 12 Native American tribal contacts that may have knowledge of cultural resources in or near the project area (Singleton July 1, 2014). The 12 tribal contacts were written via letter and email (where email addresses were available) to elicit general concerns regarding the proposed project and to identify specific sites that may hold special concerns for them. Follow up telephone calls were placed with messages left if the contact was not reached. These contacts do not constitute formal consultation under CEQA or NEPA.

An updated sacred lands file request with a map of the new PSA for the Palm Bluffs River Access Addendum was sent to the NAHC in November 2015. No response has been received to date.

V BACKGROUND

NATURAL AND CULTURAL SETTING [please refer to J & R Environmental (2014)]

HISTORY

E.B. Perrin and the Perrin Canal
[This section is adapted from Mikesell (1995)]

Dr. Edward Burt (E.B.) Perrin was one of the most ambitious and successful land developers in California during the late 19th Century. He was born in Alabama in 1839 and served as a physician in the Confederate Army for the duration of the Civil War. After the war ended, he gave up medicine to pursue a career as an investor and land developer. In 1864, he married Anne Tremlet Herndon, for whom the community of Herndon is named.

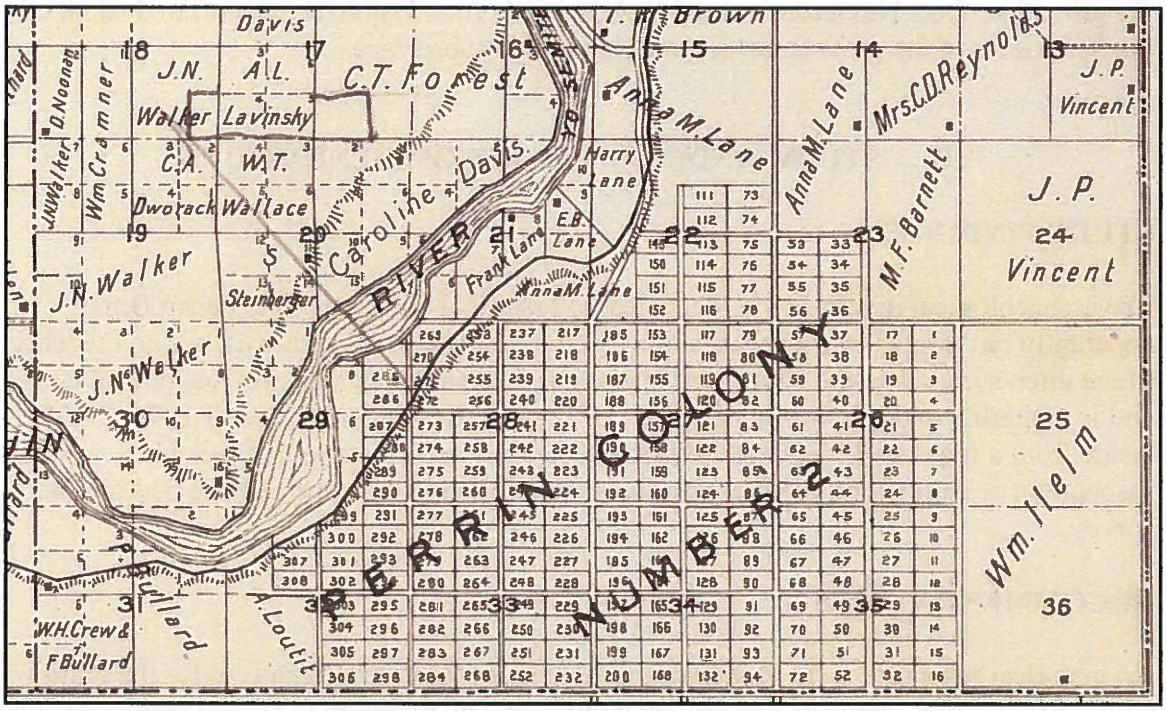
Although E.B. Perrin bought and sold land throughout California and Arizona, his principle focus was on Fresno County between Fresno and the Fresno-Madera County line. According to H.H, Bancroft, Dr. Perrin came to California specifically to buy up land in advance of the railroad, which was most active in the San Joaquin Valley in the late 1860s, reaching what would be the city of Fresno in 1872. Perrin bought more than 130,000 acres in Fresno County, the bulk of it north and northwest of Fresno. Perrin sold much of this land in 1869 to Mr. Theo Kearney, a sale which gave Dr. Perrin the operating capital to make improvements to the rest of his land, including construction of the Perrin Ditch.

Perrin recognized the value of irrigation water as a prerequisite for large-scale land subdivision and sale. He organized the Upper San Joaquin Irrigating Canal Company in 1878 and began construction in 1882 of the Upper San Joaquin Canal or Perrin Ditch. The canal was designed to be about 16 miles long, extending from the massive headgates below Millerton, hung along the bluffs on the south side of the San Joaquin River, ending somewhere in the vicinity of Herndon, probably within the modern Riverside Country Club. The canal was designed to be 41/2-feet-deep, with a bed width of 25 feet and a top width of 42 feet; however, the actual dimensions of the canal were not uniform.

The Perrin canal was large by the engineering standards of the day, but not the largest ditch in Fresno County in the 1880s. Its most notable engineering features were that it was fully artificial, without access to natural sloughs, and in fact required a weir across the full width (estimate 900 feet) of the San Joaquin River. These characteristics proved to be the undoing of the project, which was abandoned in 1887 because of problems with the weir and because the long artificial channel failed. The canal was never put into service, apparently because the system failed and because Perrin and his partners were either unwilling or unable to spend the money to fix it.

Photo No. 2. View of bluff at south end of PSA, below Spano landfill.

The remnants of the Perrin Ditch are still visible on the bluff, below the Bluffs housing subdivision east of the project area. In 1995, historian Steven Mikesell evaluated the Perrin Ditch's historic significance and assessed the condition of the ditch at five locations within the project area. Although the contours of the ditch bed can still be seen at several locations, the ditch has lost its integrity of design and setting to the extent that it is no longer eligible to the National Register of Historic Places (Mikesell 1995: 20-23).



1891 Map of the Project Area, showing the Perrin Ditch (David Rumsey Map Collection).

VI FIELD METHODS

Prior to the field work, a survey strategy was developed based on the culturally-modified landscape within the PSA (refer to Figure 3). The natural landscape has been heavily modified as a result refuse disposal and gravel extraction. Over the last 100-plus years, the land has been graded, plowed, dredged and leveled as a result of gravel and sand extraction. Large ponds and seasonally dry pits border the project area on the north.

In October 2015, a pedestrian survey of the project study area was conducted by staff of J&R Environmental Services to determine if historical resources were present. The land surface was carefully searched for any evidence of aboriginal utilization or habitation, soil discoloration, artifacts and features (bedrock mortars, rock rings, hunting blinds, etc.), or remnants of human activities dating to the historic period (can and bottle scatters, house foundations, machinery, etc.). GIS survey information was documented using a Garmin 62STC handheld gps device.

Survey methods included complete, intensive-level coverage with parallel transects spaced at intervals of 20-30 meters. Intensive coverage was employed in the portion of the project study area (Figure 2) that was not previously covered by the original 2014 River West/Lewis S Eaton Trail Extension Project, as well as the area of direct impact (ADI) of the five proposed alternatives. The survey coverage is depicted in Figure 3.

Ground visibility within the project area was good to moderate due to sparse grass cover and grading. At frequent intervals during the survey, grasses were pushed aside to expose the ground surface. Numerous animal burrows and ground squirrel dens offered some of the best views of the ground surface and immediate subsurface.

VII STUDY FINDINGS AND RECOMMENDATIONS

STUDY FINDINGS

The archaeological investigation identified no historical resources. The Perrin Ditch apparently ran through the project vicinity in the past (1891 map, above), but no evidence of the ditch survives in the PSA. Furthermore, the Perrin Ditch was previously evaluated and is ineligible to the California Register of Historic Resources (Mikesell 1995: 20-23). Aside from a few small fragments of historic ceramic and concrete that lacked association or context, no cultural resources were found in the course of the pedestrian survey.

RECOMMENDATIONS

No historical resources were found within the PSA of the five alternatives for the Palm Bluffs River Access project. The project would have no effect on historical resources. No further cultural resources investigation is required for the undertaking unless project plans undergo changes that include any area not previously surveyed for cultural resources. If unanticipated buried cultural resources are encountered during any project-related ground-disturbing activities (e.g., trail construction, excavation), work should be halted or diverted in that area until a qualified archaeologist can evaluate the nature and significance of the find.

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APPENDIX A

STAFF QUALIFICATIONS

Sarah E Johnston meets the Secretary of Interior's Guidelines for Archaeology. She has over 25 years experience leading archaeological investigations under the National Historic Preservation Act of 1969 and the California Environmental Quality Act of 1970 for federal, state, and private agencies in California and Nevada. She holds an M.A., from California State University, Fresno and a B.A. in Anthropology from California State University, Sacramento.

Jon L. Brady meets the Secretary of the Interior's Guidelines for archaeology and architectural history. Mr. Brady holds a B.A. in both Political Science and Anthropology and an M.A. in History (with an emphasis on Historical Archaeology) from California State University, Fresno. Mr. Brady has worked as a consulting archaeologist and historian over the last thirty-four years working with both Section 106 and CEQA compliance documents. He has also taught at the community college level in California over the last sixteen years as an adjunct instructor. Courses taught include Ancient Civilizations, Modern European History, U.S. History, Political Science, Cultural Anthropology, and Field Methods in Archaeology.

Justin Brady has 10 years experience as an archaeological research assistant and field technician for J&R Environmental Services and other archaeological consulting firms in Central California. He graduated from the Willow International Center (Reedly College) and will be attending CSU-Fresno in Spring 2015, working on his B.A. in Anthropology.

APPENDIX B

MAPS

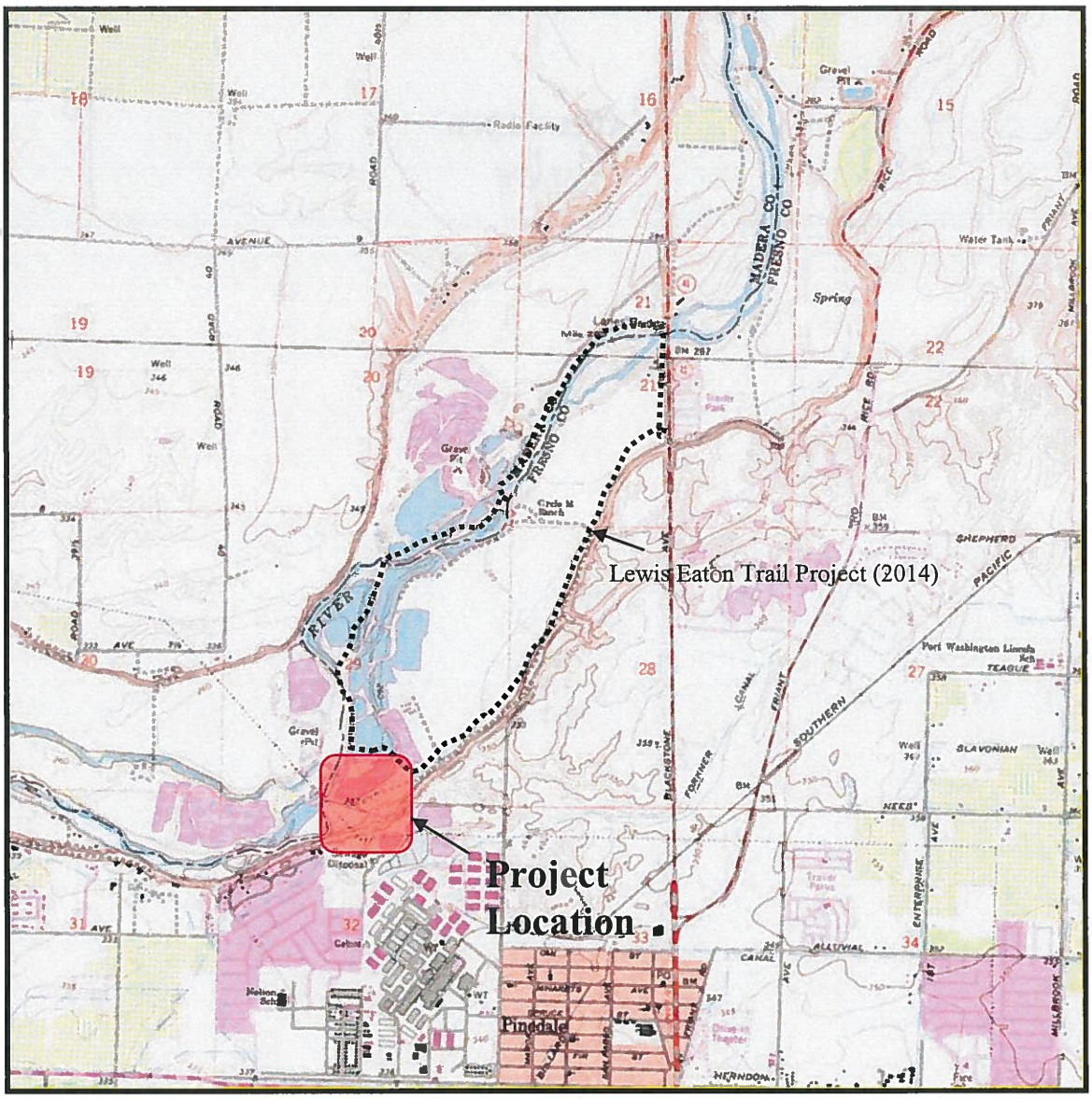

FIGURE 1
PROJECT LOCATION

Palm Bluffs River Access/River West, Lewis S Eaton Trail Extension Project (Addendum)
Archaeological Survey
T 12S R. 20 E Sections 29 & 32
Fresno County, CA
USGS Fresno North Quadrangle

11/15/2015

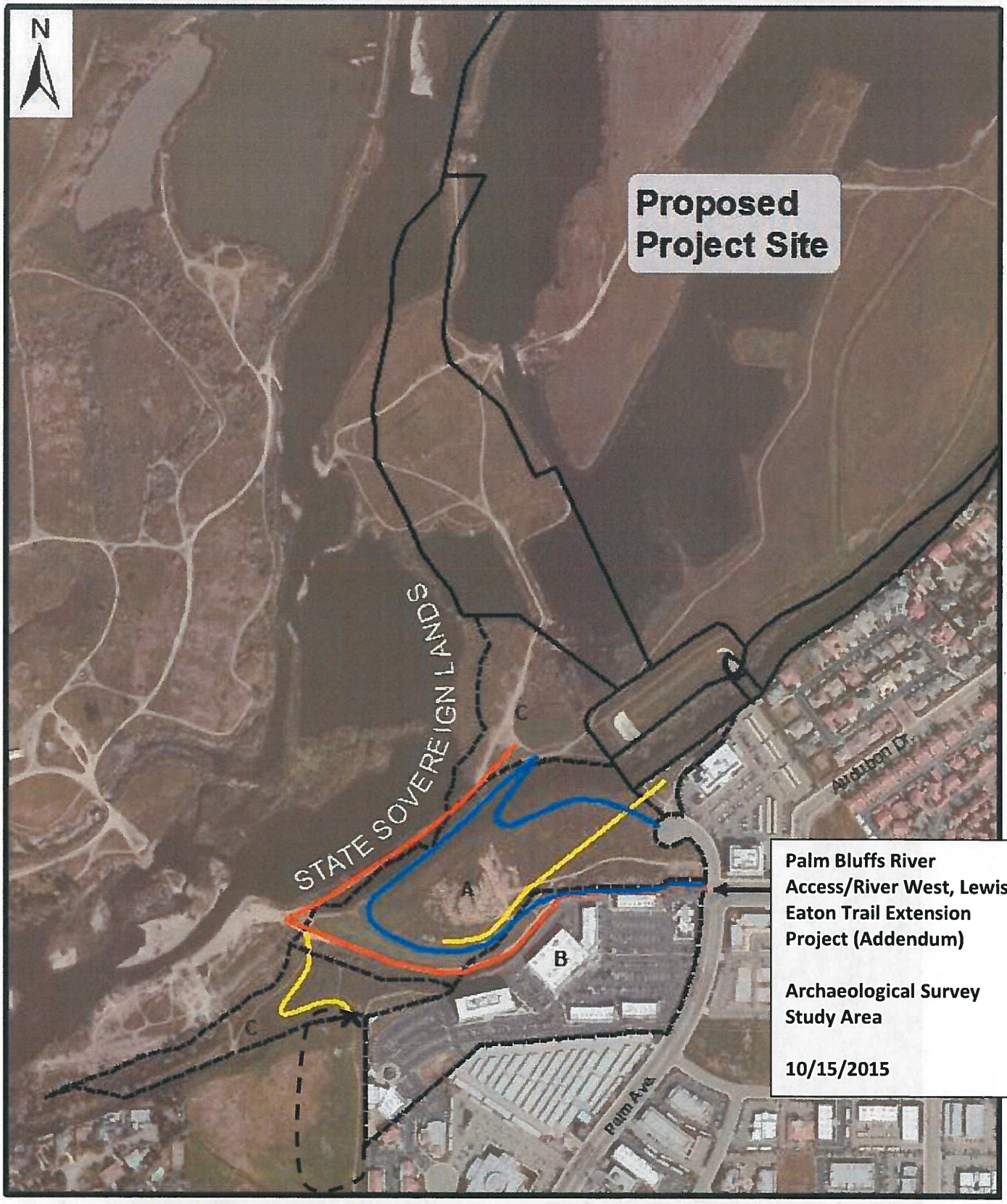

FIGURE 2—Project Study Area Map

Figure 3 Archaeological Survey Coverage Map

Palm Bluffs River Access/River West, Lewis S Eaton Trail Extension Project (Addendum)

October 10, 2015

APPENDIX C

NATIVE AMERICAN CORRESPONDENCE (2015)

Date: 11/1/2015

From: Sarah E Johnston
J & R Environmental Services
7126 N Carruth Ave.
Fresno, CA 93711

To: Katy Sanchez Associate Gov't Analyst
Native American Heritage Commission
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95619

Re: Addendum for Archaeological Survey of the River West, Eaton Trail Extension Project for the San Joaquin River Conservancy (lead agency for CEQA)

Project: River West, Eaton Trail Extension Project
Lead Agency: San Joaquin River Conservancy
County: Fresno
USGS 7.5 Min Quad: Fresno North
T. 12S R. 20E, NW ¼ of NE ¼ of Section 32 mdbm
CEQA ONLY PROJECT

Company: J & R Environmental
Contact Person: Sarah E Johnston, M.A. Project Archaeologist
Street Address: 7126 N. Carruth Ave, Fresno, C 93711
Phone: 559-438-5330
Email: sdernhelm@aol.com

Project Description:

The San Joaquin River Conservancy is proposing to amend the original scope of work for the Lewis S Eaton Trail to add ADA access and parking on a new area covering approximately 15 acres above the San Joaquin River in northwest Fresno, CA (Figures 1-3). We contacted the NAHC about the original project by email on June 30, 2014.

J & R Environmental Services will conduct an archaeological survey on the "new parcel" project area indicated on the enclosed maps. We are requesting a Sacred Land Files Search and a list of Native American contacts with knowledge of or interest in the project

area. If you have any questions or need further information regarding this project, please feel free to call me at 559-438-5330, or by email at sdernhelm@aol.com.

Sincerely,

Sarah E. Johnston, M.A.
Cultural Resource Management
J & R Environmental Services

3 Attachments (maps)

Appendix G
Water Quality Technical Report

T E C H N I C A L R E P O R T

WATER QUALITY REPORT
FOR
RIVER WEST FRESNO, EATON TRAIL EXTENSION PROJECT

FRESNO, CALIFORNIA

Prepared by:
URS Corporation
30 River Park Place West, Suite 180
Fresno, CA 93720

Prepared for:
San Joaquin River Conservancy
5964 E. Olive Avenue
Fresno, CA 93727

August 2016

URS

Table of Contents

Tables

Figures

1 Introduction

The purpose of this water quality technical report is to describe the existing environmental and regulatory setting of the proposed River West Fresno, Eaton Trail Extension Project (project). This report also evaluates the water quality impacts of the project and alternatives and proposes mitigation measures to avoid, reduce, or minimize those impacts.

1.1 Project Location

The project site is located along the San Joaquin River (River) between State Route (SR) 41 and Spano Park, within the Fresno city limits (Figure 1-1). It extends from the south side of the San Joaquin River south to the San Joaquin River Bluffs (Bluffs), and from SR 41 westward to Spano Park, located near the intersection of Nees and Palm Avenues. The project area occupies approximately 352 acres on the south side of the River.

1.2 Project Description

The San Joaquin River Conservancy (Conservancy) proposes to extend the Lewis S. Eaton Trail (Trail) via a multiple-use trail and include ancillary recreation support features. The project would provide for low-impact recreation on the site, primarily hiking, bicycling, horse riding, fishing, and nature observation, consistent with the *Interim San Joaquin River Parkway Master Plan* (Interim Master Plan).

Most of the project area consists of several large ponds formed from past gravel mining operations, as well as nonnative annual upland grasses. Riparian habitat is present around the ponds and along the River. The project would conserve the site's open space character and includes the establishment of native plants to enhance habitat and provide visual screening.

To extend the Trail, the Conservancy would construct a 22-foot-wide, approximately 2.4-mile-long multipurpose trail. The proposed trail would consist of a 12-foot-wide paved surface, a parallel 8-foot-wide hard natural surface for equestrian use, and a 2-foot buffer (opposite the natural surface area). The trail would generally follow the alignment shown in Figure 1-2. However, other trail alignments such as a "commuter trail alignment" and a "river's edge trail alignment" may be considered.

Pedestrian and bicycle access would be provided at four locations: Perrin Avenue, Spano Park, and the West Riverview Drive and Churchill Avenue entrances to the Bluff Trail. The Bluff Trail is an existing neighborhood trail located on land owned by the City of Fresno. A 12-foot-wide paved trail would be constructed to provide access from the Bluff Trail to the proposed trail extension near West Riverview Drive. A wide staircase with bicycle guides may be constructed from Spano Park to the proposed trail extension. The Spano Park access and Bluff Trail access would be constructed on the steep slope of the Bluffs. A pet station would be provided at the West Riverview Drive entrance.

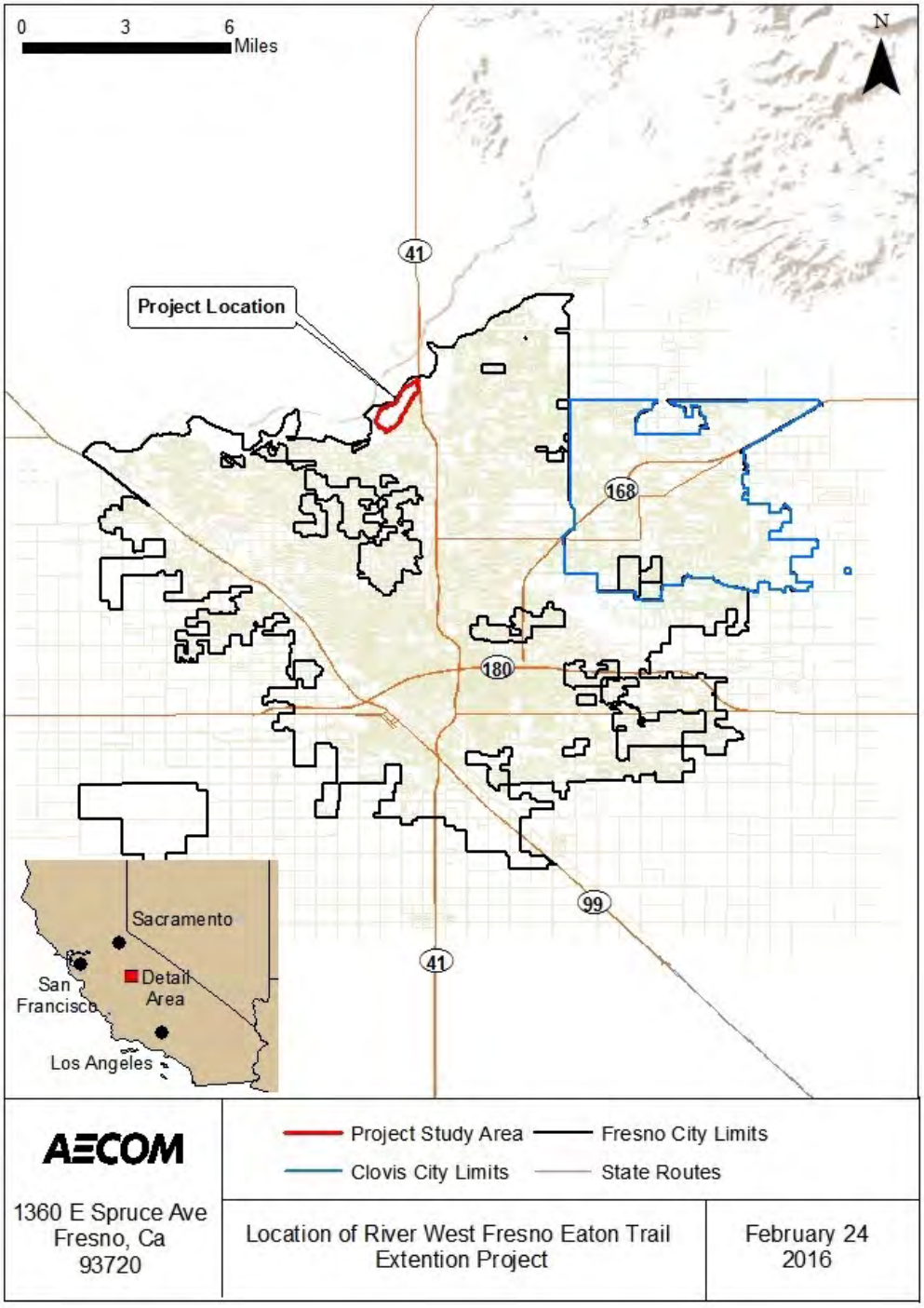

Figure 1-1 Project Location

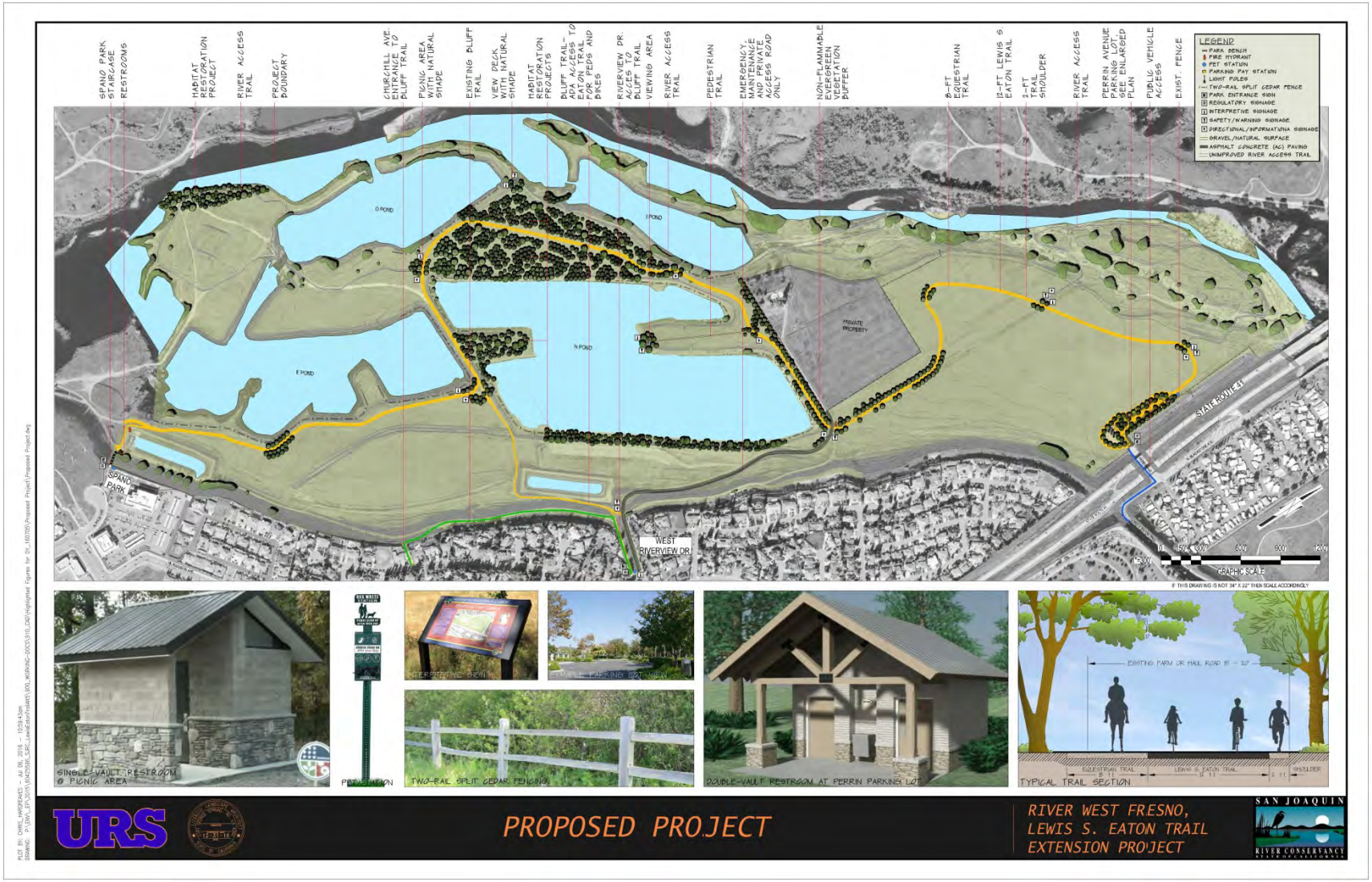

Figure 1-2 Proposed Project

A parking lot for 50 vehicles with a controlled vehicle entrance would be constructed adjacent to SR 41 (Figure 1-2). Access to the parking lot would be provided by the Perrin Avenue undercrossing of SR 41. A gate and an unmanned parking pay station would be included to manage vehicle access. The parking lot would accommodate up to three horse trailer stalls and would have a fire hydrant, a public information bulletin board, a small pet station, and a two-vault restroom. The restroom and parking lot would be Americans with Disabilities Act (ADA) accessible. The pet station would be located at the Perrin Avenue entrance. Light-emitting diode (LED) light sets with rechargeable batteries and a solar panel would be mounted on light poles, providing sufficient illumination for security and maintenance. The area surrounding the parking lot would be landscaped with native vegetation. An emergency/service gate would provide access to the trail extension for emergency first responders and maintenance staff.

The trail extension would be landscaped at intervals with native vegetation for habitat enhancement, visual screening, and shade. The landscaping would be irrigated until the vegetation is permanently established. Picnic areas, tables, benches, public safety and information signs, and wildlife observation areas would be provided along the trail extension at various locations. An ADA accessible vault restroom would be added near the toe of Spano Park. Existing unimproved hiking paths to the riverbank would be connected to the trail extension. These paths may be widened up to 6 feet and overlaid with permeable surface such decomposed gravel. These hiking paths would not be landscaped. Upon competition, the project would provide low-impact recreational activities along the River such as hiking, bicycling, horse riding, fishing, and nature observation consistent with the Interim Master Plan. Table 1-1 presents a summary of the project surface area for the project as proposed and the alternatives.

Table 1-1: Summary of Project Area by Alternative

Project Area	Proposed Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Paved Surfaces (Multipurpose Trail, Roads, Parking Lots)	4.26	5.93	3.45	5.46	3.90	5.26
Other Fill/Hard Packed Surfaces (Multipurpose Trail, Parking Lot, Granite, Gravel)	5.86	5.76	5.53	5.78	5.50	7.14
Total Surface Area (acres)	**10.12**	**11.69**	**8.98**	**11.24**	**9.40**	**12.40**

Note: Alt. = Alternative
Source: Data compiled by AECOM in 2016

1.3 Alternative 1: Additional Parking

Under Alternative 1, the trail extension alignment, parking lot, and associated recreation amenities would be constructed as described for the proposed project. In addition, a controlled vehicle entrance and a 40-stall parking lot would be constructed between the H Pond and the E Pond (Figure 1-3). This parking lot would not accommodate horse trailers. A two-vault ADA-accessible restroom, fire hydrant, and pet station would be located in the parking lot area. Access to the parking lot would be provided by a two-lane paved road from West Riverview Drive.

Figure 1-3 Alternative 1

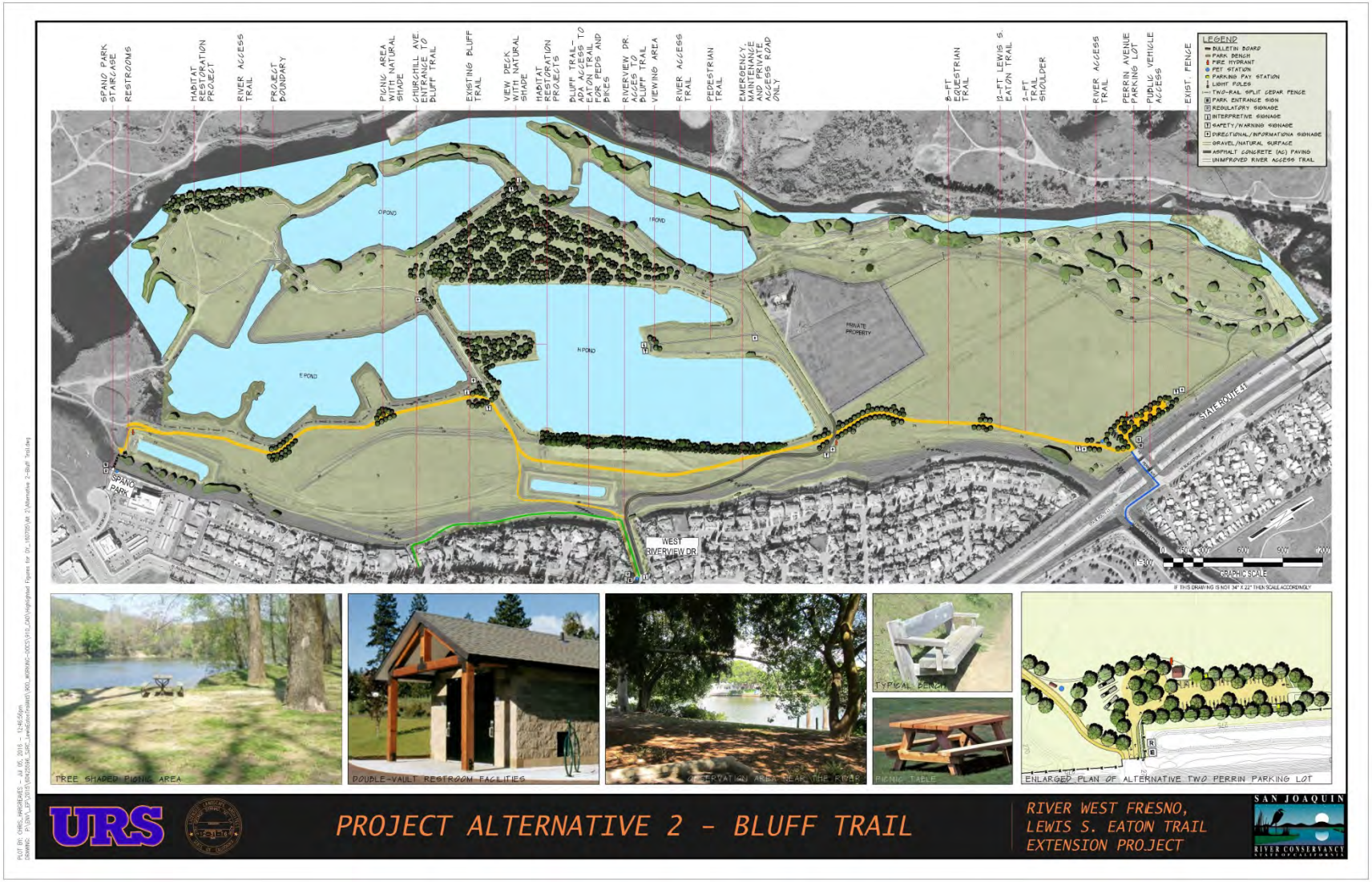

Figure 1-4 Alternative 2

Figure 1-5 Alternative 3

Figure 1-6 Alternative 4

Figure 1-7 Alternative 5

1.4 Alternative 2: Bluff Trail Alignment

Under Alternative 2, the 0.35 mile bluff trail extension would be aligned about 300 feet from the base of the Bluffs (Figure 1-4). The multiuse trail specifications would be the same as described for the proposed project. All other amenities, including the proposed parking lot, recreation facilities, landscaping, and restrooms, would be as described for the project.

1.5 Alternative 3: River's Edge Trail Alignment

Under Alternative 3, the trail extension would be aligned closer to the river's edge in the more southerly (downstream) portion of the site, and would remain as proposed in the northerly (upstream) portion of the site (Figure 1-5). All other amenities, including the proposed parking lot near Perrin Avenue, landscaping, and restrooms, would be as described for the proposed project.

1.6 Alternative 4: No Parking

Under Alternative 4, no public parking or trailering areas would be provided on-site. The trail extension would be constructed on the proposed trail alignment (Figure 1-6). At the northern end of the site, access to the trail extension would be provided at the Perrin Avenue undercrossing of SR 41. An emergency and service gate would provide access to the trail extension for first responders and maintenance staff. A two-vault ADA-accessible restroom, a drinking fountain, and a small pet station would be provided at both the Perrin Avenue entrance and near Spano Park. Three fire hydrants would be located along the trail extension: at the Perrin Avenue entrance, near a parcel of private property, and near the toe of Spano Park. The Spano Park access and bicycle guides may be constructed on the steep slope of the bluffs. Existing unimproved hiking paths to the river would be connected to the trail extension. These paths may be widened up to 6 feet and overlain with permeable material such as decomposed gravel.

1.7 Alternative 5: Palm and Nees Access

Under Alternative 5, the multiuse Trail would be extended downriver from the end of the proposed trail extension near the Fresno Metropolitan Flood Control District (FMFCD) flood control basin (Figure 1-7). Trail design would remain the same as described for the proposed project. Public vehicle access to the River would be provided from the intersection of Palm and Nees avenues via improvements constructed on the existing paved private road (outermost road). A 40-stall parking lot would be constructed on the River bottom, with two-way vehicle access provided by the paved road. A physically separated pedestrian path and/or bikeway would parallel the paved road. The paved road would lead to a turnaround near the parking lot. The turnaround would be designed to accommodate the turning radius of a Fresno Fire Department fire truck. Recreational amenities such as two-vault ADA-compliant toilets, landscaping, lighting, and picnic tables would be added near the parking lot. The trail extension would end at the turnaround. Access to the parking lot would be managed by a vehicle control gate, or traffic bollards and a fee entrance station.

1.8 Best Management Practices

The following best management practices (BMPs) are drawn from State and local ordinances, and from other statutory authorities or guidelines. They are incorporated into the project description and would be implemented during project construction and operation.

BMP HYDRO-1. Project construction will comply with all Phase II National Pollutant Discharge Elimination System (NPDES) Permit requirements for Storm Water Discharges Associated with Construction Activity. A notice of intent will be submitted to the State Water Resources Control Board (SWRCB) Division of Water Quality. The contractor will also be required to prepare and implement a site-specific storm water pollution prevention plan (SWPPP) for the project. The SWPPP will identify the timing of construction activities, as well as preconstruction and post construction BMPs to limit the discharge of pollutants in stormwater runoff. The BMPs will address all construction activities, including mud and gravel tracking on roadways; borrow material and stockpile management; refueling procedures; equipment controls and maintenance; hazardous materials and waste containment and disposal procedures; and spill prevention, response, and cleanup procedures. The plan also will describe BMP inspection, monitoring, and maintenance procedures. The BMPs will be implemented in accordance with the Conservancy's San Joaquin River Parkway Master Plan goals, objectives and policies including but not limited to RFP 3, RFP 4, and ROP2.

BMP HYDRO-2. Stormwater pollution prevention BMPs designed to prevent construction-related discharges into surface waters will be implemented. These BMPs must consider erosion, sedimentation, and pollutant controls during and after construction. The Conservancy will include as part of final project design appropriate BMPs, consistent with recommendations of the Stormwater Quality Task Force's California Stormwater Best Management Practices Handbook, that could include a combination of the following BMPs, or equally effective measures:

- requiring standard erosion control and slope stabilization measures in any area where erosion could lead to sedimentation of a water body;
- performing major vehicle maintenance, repair jobs, and equipment washing at appropriate off-site locations;
- regularly maintaining equipment to prevent fluid leaks, with any leaks captured in containers until the equipment is moved to a repair location and a spill prevention and response plan prepared before construction and implemented immediately for cleanup of fluid or hazardous materials spills;
- designating one area of the construction site, well away from streams or storm drain inlets, for auto and equipment parking and routine vehicle and equipment maintenance;
- cleaning up spilled dry materials immediately, and not "washing away" spills with water or burying them;
- using the minimum amount of water necessary for dust control;
- cleaning up liquid spills on paved or impermeable surfaces using "dry" cleanup methods (e.g., absorbent materials such as cat litter, and/or rags);
- cleaning up spills on dirt areas by removing and properly disposing of the contaminated soil;
- storing stockpiled materials, wastes, containers, and dumpsters under a temporary roof or secured plastic sheeting where they cannot enter into or be washed by rainfall or runoff into waters of the United States/State or aquatic habitat;

- properly storing containers of paints, chemicals, solvents, and other hazardous materials in garages or sheds with double containment during rainy periods;
- applying concrete, asphalt, and seal coat during dry weather, and keeping contaminants from fresh concrete and asphalt out of the storm drains and creeks by scheduling paving jobs during periods of dry weather and allowing new pavement to cure before stormwater flows across it;
- covering catch basins and manholes when applying seal coat, slurry seal, and fog seal; and
- operating no equipment in a live stream channel, unless unavoidable
- Incorporation of peak flow reduction and infiltration practices, such as grass swales, infiltration trenches and grass filter strips;
- Labeling of storm drain inlets, if any, to educate the public of the adverse impacts associated with dumping on receiving waters (i.e., "Don't dump! Drains to River!");
- Use of warm-season grasses and drought-tolerant vegetation wherever feasible in landscape areas (if any), including borders to reduce demand for irrigation and thereby reduce irrigation runoff; and
- Installation of efficient irrigation systems in landscaped areas, if any, to minimize runoff and evaporation and maximize the water that will reach plant roots. Such irrigation systems include drip irrigation and automatic irrigation systems.

Post-construction, all runoff from new improvements will be retained on-site. Engineered grading and drainage plans will be prepared to show how additional stormwater will be managed. BMPs for treating, detaining, and percolating stormwater runoff, such as bioswales, bioretention areas, and seasonal wetlands, will be implemented. The BMPs will be implemented in accordance with the Conservancy's San Joaquin River Parkway Master Plan goals, objectives and policies including but not limited to RFP 3, RFP 4, ROP1 and ROP2.

BMP HYDRO-3 An erosion and sediment control plan to manage sediment and prevent discharge of sediment from the project site to surface waterways, prevent wind and water erosion, and prevent pollution of site runoff from the beginning of construction through conclusion of construction activities and landscaping will be implemented. The plan will be prepared in coordination with the SWPPP and will describe erosion prevention procedures and temporary and permanent BMPs will include scheduling excavation and earth moving so that the smallest possible areas would be unprotected during construction activities. Construction equipment will be staged in a location and manner to minimize water pollution, and mulching will be used where applicable to provide temporary protection to soil surfaces from erosion. BMPs will include scheduling excavation and earth moving so that the smallest possible areas would be unprotected during construction activities. Construction equipment will be staged in a location and manner to minimize water pollution, and mulching will be used where applicable to provide temporary protection to soil surfaces from erosion. BMPs and structural controls to supplement erosion prevention practices, where needed. An inspection and maintenance schedule for erosion and sediment control facilities will be included in the plan. The BMPs will be implemented in accordance with the

Conservancy's San Joaquin River Parkway Master Plan goals, objectives and policies including but not limited to RPS14, RFP 3, RDP 11, RDP 12, and ROP2.

BMP HYDRO-4. Trails will be inspected periodically for erosion and damage adjacent vegetation landscaping will be performed and corrected, as needed. A maintenance and repair plan, in accordance with the Conservancy's San Joaquin River Parkway Master Plan policies RDP 11 will also be implementation, as necessary.

BMP HYDRO-5. Provisions for dewatering, in accordance with local and CVRWQCB requirements, during construction would be implemented in order to minimize the potential for adverse water quality impacts to surface water and groundwater. Provisions may include preparation of a dewatering plan that details procedures for removing groundwater, methods of temporary water treatment/retention facility, and water disposal procedures.

BMP HYDRO-6. Any work within designated flood zones will conform to provisions established in local ordinances, including the FMFCD Riverine Floodplain Policy. Any development sited in a designated 100-year floodplain shall comply with the regulatory requirements at a minimum and with the FMFCD Riverine Floodplain Policy criteria, where applicable. For permanent structures, such a bridge overcrossing, the minimum level of design flood protection shall be the Standard Project Flood (which is roughly equivalent to a 250-year event) to ensure flood flows are not dammed and to prevent flooding on surrounding properties.

BMP HYDRO-7. New water fixtures will be designed for low flow and high efficiency. Parkway landscaped areas will be designed to minimize water demand by using native and/or climate- appropriate plants where possible; limiting turf areas to areas that will be used as multiple-use meadows; and installing smart irrigation systems to avoid excessive water use.

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2 Environmental Setting

The project site is located in the San Joaquin Valley (Figure 1-1), the southern half of California's Central Valley. At approximately 400 miles long and an average of 50 miles wide, the San Joaquin Valley encompasses approximately 20,000 square miles. The Central Valley is bounded by the granitic Sierra Nevada to the east and the metamorphic Coast Ranges on the west and resembles a large asymmetric trough. Over time, this trough has been filled with sediments—as much as 30,000 feet in the San Joaquin Valley and 60,000 feet in the Sacramento Valley to the north. The sediments range in age from Jurassic to Holocene and consist of both marine and lacustrine deposits (CDMG 1965).

The project site is located within the low alluvial plains and fans of the central San Joaquin Valley. The area is typical of inland valleys in California, with hot, dry summers and cool, rainy winters characterized by dense tule fog. The average annual temperature for the city of Fresno is 64 degrees Fahrenheit (ºF), with annual average high and low temperatures of 79ºF and 53ºF, respectively. Average annual precipitation is approximately 11 inches in Fresno and increases eastward toward the Sierra Nevada (DWR 2006; WRCC2016a). Most of Fresno's precipitation falls in January, which is on average the coolest month; the warmest month of the year is July. On average, summer temperatures can exceed 90ºF for over 108 days per year. During the winter, the city experiences 39 days of dense fog with visibility of less than one-quarter mile (WRCC 2016b).

2.1 Regional and Local Setting

2.1.1 San Joaquin River Parkway

The regional setting for the draft environmental impact report (EIR) includes the San Joaquin River Parkway (Parkway). The Parkway was established by the California Legislature in the San Joaquin River Conservancy Act (Conservancy Act). This law (Public Resources Code [PRC] Section 32500 et seq.) established the statutory mission and authorities of the Conservancy. The introduction to the Conservancy Act (PRC Section 32501) states:

> The Legislature hereby finds and declares that the San Joaquin River, its broad corridors, and its prominent bluffs constitute a unique and important environmental, cultural, scientific, agricultural, educational, recreational, scenic, flood water conveyance, and wildlife resource that should be preserved for the enjoyment of, and appreciation by, present and future generations.

The Conservancy Act established the Conservancy as part of the Resources Agency (PRC Section 32510), which authorized it to acquire and manage public lands within the Parkway. Accordingly, the Parkway "consist[s] of the San Joaquin River and approximately 5,900 acres on both sides of the river between Friant Dam and the Highway 99 crossing. Approximately 1,900 acres of the parkway shall be located in Madera County and 4,000 acres shall be located in Fresno County" (PRC Section 32510).

The Parkway is approximately 22 miles long, extending from river mile 267.6 at the face of Friant Dam to the SR 99 crossing at river mile 243.2, and includes portions of Fresno and Madera counties and the city

of Fresno. The Parkway varies in width from a narrow wildlife corridor where the River bluff is steep and close to the River to extensive floodplains of several hundred acres.

2.1.2 River West Fresno, Lewis Eaton Trail

The project site is located on an alluvial floodplain terrace along the south side of the San Joaquin River, approximately 11 miles downstream of Friant Dam. The topography of the project area consists of a relatively flat floodplain with interspersed gravel mining pits and ponds surrounded by relatively steep river bluffs. The most prominent landforms in the project area are:

- the River channel, which runs from east to west through the project area;
- steep north- and south-facing bluffs that delineate the approximate boundaries of the River's floodplain; and
- numerous gravel mining pits and ponds that interrupt the otherwise relatively flat topography of the floodplain.

Ground surface levels in the project area and vicinity range from 249 feet above sea level at the River's low-water level to 330 feet above sea level at the top of the River bluff adjacent to SR 41. The bluff slope ranges between 60% and 80% grade on both the north and south sides of the River's floodplain. Elevations along the bluff top in Fresno County average 250 feet. The highly erodible face of the Bluffs and a small area of expansive clay in the northeastern portion of the sphere of influence are the only unstable soil conditions known to exist in the city of Fresno.

Five biotic habitats are present in the project area: disturbed annual grassland, aquatic, riparian, developed landscape, and stormwater detention basins. Disturbed annual grassland habitat composes the majority of the vegetation in the project area. Most of this habitat has been disturbed by previous sand/gravel mining activities and ongoing disturbance caused by recreational use.

The area analyzed in this technical report encompasses approximately 352 acres on the south side of the River. Most of this land is owned by the Conservancy. Two parcels owned by the City of Fresno are adjacent to Conservancy-owned land. A portion of the project may be implemented on these properties.

Three other parcels in the area are owned by others and would not be part of the project. One parcel, privately owned land located near the center of the project area, is occupied by two residences. Access to these residences is provided by a paved road from West Riverview Drive. The two other parcels, owned by FMFCD, contain stormwater detention basins. A residential subdivision is located on the Bluffs adjacent to the southern boundary of the project area.

2.2 Hydrology

The San Joaquin River flows in an east-west direction from the Sierra Nevada onto the valley floor near Fresno. Near the valley trough, the River abruptly turns north and then flows 100 miles to the Sacramento–San Joaquin Delta (Delta). At the point where it turns north, the River essentially divides the valley floor into east and west sides.

The Sierra Nevada is the primary source of both the valley's water supply and the alluvial material that forms the east side of the River and valley floor. The Coast Ranges provide the alluvial material for a major portion of the west side of the River.

The San Joaquin River Basin covers 15,880 square miles and includes the entire area drained by the River. It encompasses all tributary watersheds to the San Joaquin River and the Delta south of the Sacramento and American River watersheds. The Lower San Joaquin River watershed refers to the portion of the River downstream of Mendota Dam and upstream of Airport Way Bridge near Vernalis, and encompasses approximately 4,580 square miles in Merced, Fresno, Madera, San Joaquin, and Stanislaus counties (Central Valley RWQCB 2011).

2.3 Drainage

Two municipal stormwater detention basins are located adjacent to the project site and provide service to the adjacent residential and commercial developments. The unlined stormwater detention basins cover approximately 5 acres and are situated near the toe of the Bluffs. One is immediately north of the proposed staircase near Spano Park, and one is immediately west of the proposed paved access road from West Riverview Drive. Variable incised drainages are visible along the Bluffs, and several natural drainages and swales traverse the project area. On-site stormwater flows in the direction of the natural topography, from the Bluffs toward the River, and collects in the stormwater detention basins and the on-site gravel mining pits and ponds. A portion of the runoff likely directly enters the River channel.

2.4 Surface Water

The project site is located in the upper portion of the San Joaquin River watershed. The entire watershed encompasses 31,800 square miles. The River extends for 366 miles from its headwaters, at an elevation of approximately 7,500 feet on the western slope of the Sierra Nevada, to its mouth at Suisun Bay.

The portion of the River that is within the Parkway extends from Friant Dam to SR 99. The project site is situated along the Parkway, north of Fresno. The River emerges from the foothills and has cut through the topography, creating tall, steep bluffs that confine the riparian zone and floodplain in this reach. Flows in the River are controlled by releases from Millerton Lake via Friant Dam, with some contributions from agricultural and urban return flows. Water released from the dam generally is controlled to a maximum of 8,000 cubic feet per second (cfs) in the River. River flows in the project area fluctuate from season to season, but generally have a low flow of 350 cfs and a high flow of 8,000 cfs. Low-flow conditions typically occur in the summer and fall; high-flow conditions typically occur in the spring.

The project site is in an area along the River that is proposed reestablishment of an anadromous salmonid fishery under the San Joaquin River Restoration Program (SJRRP). The SJRRP Stipulation of Settlement sets forth agreed-on restoration releases from Friant Dam. The maximum SJRRP flows are 4,000 cfs for approximately 2 weeks in wet and normal years. These releases are estimated to occur on average every other year (50% probability in any given year). Project improvements would not be located in areas inundated as frequently as once every 2 years. Fall SJRRP releases are 400–700 cfs for 10 days and spring releases are 500–2,000 cfs for 8–16 weeks in all but the driest years, varying by water year. These lower flows are generally within the recognized bed and bank of the river.

2.5 Surface Water Quality

Water is generally of high quality, and the temperature of the water is dependent on the cold water released from Millerton Lake. The River is considered Essential Fish Habitat for Pacific Coast Salmon, and water quality is an essential component of maintaining this function of the River. The River is sampled annually by the U.S. Bureau of Reclamation in support of the SJRRP. Water quality constituents include total suspended solids, nutrients, total and dissolved solids, organic carbon, bacteria, cations, anions, and trace metals. Data from Appendix C of the San Joaquin River Restoration Program 2012 Mid-Year Technical Report indicate that few contaminants of concern exist in the River in the vicinity of Friant Dam (SJRRP 2012).

Receiving waters can assimilate a limited quantity of various constituent elements before they reach the maximum contaminant level (MCL) set by the U.S. Environmental Protection Agency (EPA) and State Water Resources Control Board (SWRCB); however, additional thresholds exist beyond which the pollutant may have toxic effects. Millerton Lake and the portion of the River from Friant Dam to Mendota Pool, which includes the project area, are listed on the SWRCB's 2008–2010 list of impaired waters under Clean Water Act (CWA) Section 303(d). Millerton Lake was listed for mercury; the SWRCB plans to establish a total maximum daily load (TMDL) by January 2021 (SWRCB 2016). The portion of the River that corresponds to the project area is listed for invasive species, with a TMDL planned for January 2019 (SWRCB 2010).

2.5.1 Turbidity

The Fourth Edition of the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (Basin Plan) provides turbidity limits for the project (Central Valley RWQCB 2011). The Basin Plan states that waters are to be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in turbidity attributable to controllable water quality factors cannot exceed the following limits:

- Where natural turbidity is less than 1 nephelometric turbidity unit (NTU), controllable factors shall not cause downstream turbidity to exceed 2 NTUs.
- Where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU.
- Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20%.
- Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs.
- Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10%.

Background turbidity levels are collected from two sites in the project area by the Central Valley Regional Water Quality Control Board (RWQCB) as part of the Surface Water Ambient Monitoring Program. The Wildwood Native Park sampling location is approximately 1 mile upstream and the Palm and Nees avenues sampling location is approximately 1 mile downstream of the project site. Average turbidity is 0.74 NTU at Wildwood Native Park and 1.03 NTUs at Palm and Nees avenues (Conservancy 2015).

2.5.2 Nutrients

Commonly measured nutrients are total nitrogen, organic nitrogen, total Kjeldahl nitrogen, nitrate, ammonia, total phosphate, and total organic carbon (TOC). Nutrients, especially available forms of phosphorus (P) and nitrogen (N), are a major concern for surface water quality. Nutrient loading can cause algal blooms and excessive growth of vegetation, which can lead to low dissolved oxygen (DO). In many water bodies, phosphorus is the nutrient that prevents additional biological activity from occurring. Therefore, adding phosphorus removes that growth limitation and causes large algal blooms and eutrophic conditions. This constituent generally originates from fertilizers and other industrial products that enter stormwater discharges. Orthophosphate from automobile emissions also contributes phosphorus in areas with heavy automotive traffic. Orthophosphate is soluble and biologically available for uptake. Because phosphorus strongly adsorbs to soil particles, is pH-dependent, and is a significant part of organic material, sedimentation and pH influences concentrations in water. The primary methods of measurement include detecting orthophosphate and total phosphorus.

Primary sources of nitrogen in stormwater are agricultural operations and atmospheric outfall. Automobile emissions contain large amounts of nitrogen-containing compounds that accumulate in the atmosphere and contribute substantially to dry deposition of nitrogen and acid rain in the form of nitric acid. Nitrogen occurs in many forms. Organic nitrogen breaks down into ammonia, which eventually becomes oxidized to nitrate-nitrogen, both of which are readily available for uptake by plants. Agriculture and home gardens use ammonia and nitrate heavily as fertilizers because they are primary macronutrients for plant growth. Excessive nitrogen in runoff can cause large algal blooms, growth of aquatic weeds, and eutrophic conditions in receiving waters. In the presence of excess phosphorus, approximately 0.30 milligram per liter (mg/L) of nitrate is needed for algal blooms. Some aquatic species can be affected when nitrate is lower than the MCL because dissolved nitrate (i.e., nitric acid) lowers pH.

There are several ways to measure the various forms of nitrogen, which include Kjeldahl nitrogen (organic nitrogen plus ammonia), ammonia, nitrate, nitrite plus nitrate, nitrite, and total nitrogen in plants. The principal water quality criteria for nitrogen focus on nitrate, for which the following state MCLs have been defined (SWRCB 2015):

- 45 mg/L nitrate (as NO3), with a detection limit for reporting (DLR) of 2 mg/L
- 1 mg/L nitrite (as N), with a DLR of 0.4 mg/L
- 10 mg/L nitrate + nitrite (as N), with a DLR of 0.4 mg/L

No MCL or water quality objective has been established for ammonia; however, the ammonium form of nitrogen also can have severe effects on surface water quality. Ammonium is converted to nitrate and nitrite through a process called nitrification. This process consumes large amounts of oxygen, which can impair the DO levels in water. Nitrate is very soluble and mobile in soil, and is found naturally at low levels in water. When nitrogen fertilizer is applied to lawns or other areas in excess of plant needs, nitrates can leach below the root zone, eventually reaching groundwater.

TOC is a broad measure of the amount of carbon present in organic compounds, and is a nonspecific indicator of water quality. This measurement excludes the inorganic carbon fraction, which typically is

composed of dissolved carbon dioxide and carbonic acid salts, such as bicarbonate ions. TOC is an indicator of organic pollutants in water, which often are a result of industrial processes or runoff of oil and gas products. The state DLR is 0.3 mg/L; no MCL is currently listed for TOC (SWRCB 2015).

Because nutrients can be adsorbed in the soil profile or consumed by bacteria, fungi, and plants, nutrient export is greatest from the development sites with the largest areas of impervious surfaces. Other problems resulting from excess nutrients are surface algal scums, water discolorations, odors, toxic releases, and overgrowth of plants.

2.5.3 Trace Metals

Trace metals are a concern primarily because of their potential to have toxic effects on aquatic life and contaminate drinking water supplies. The most common trace metals found in runoff are lead, zinc, and copper. Fallout from automobile emissions is also a major source of lead in urban areas. A large fraction of the trace metals in urban runoff are adsorbed to sediment, effectively reducing the availability of the trace metals for biological uptake and subsequent bioaccumulation. Metals associated with the sediment settle out rapidly and accumulate in the soils. Shorter duration storm events have limited exposure, which could be toxic to the aquatic environment.

The availability and toxicity of trace metals in runoff varies with the hardness of the receiving water and the oxidation-reduction status in soils and wetlands. As the water's total hardness increases, the threshold concentration level for adverse effects increases. This is because alkalinity is typically associated with hardness and high pH. The pH affects oxidation-reduction reactions, such that oxidation occurs at higher pH conditions, which reduces the availability of many trace metals. Metals tend to be reduced under acidic conditions, which make them more available.

2.5.4 Dissolved Oxygen

Dissolved oxygen in water has a pronounced effect on aquatic organisms and chemical reactions, making it one of the most biologically important water quality characteristics. The DO concentration of a water body is determined by the solubility of oxygen, which is inversely related to water temperature, pressure, carbon dioxide concentrations, and biological activity. DO is a transient property that can fluctuate rapidly in time and space, and represents the status of the water system at a particular point and time of sampling.

The Basin Plan's water quality objectives for DO require that the monthly median of average daily DO concentrations not fall below 85% of saturation in the main water mass, and that the 95th percentile concentration not fall below 75% of saturation. DO concentrations must not be reduced below the following minimum levels in waters with the designated beneficial uses of warmwater (WARM) and coldwater (COLD) fish habitats and spawning (SPWN) habitat (Central Valley RWQCB 2011):

- Waters designated WARM, 5.0 mg/L
- Waters designated COLD, 7.0 mg/L
- Waters designated SPWN, 7.0 mg/L

2.5.5 Oxygen-Demanding Substances

Aquatic life is dependent on DO in the water. When organic matter is consumed by microorganisms, DO is consumed, and carbon dioxide is released in the process. Carbon dioxide is a byproduct of respiration and is much more soluble in water than oxygen, which compounds the effect of DO consumption and leads to hypoxic conditions for aquatic organisms. Hypoxic conditions occur when DO levels are low enough to create a deficiency in the amount of oxygen reaching tissues in organisms. Prolonged hypoxia can result in rapid mortality.

Organic debris in water typically decomposes slowly and the resulting release of oxygen tends to be too slow. Rainfall and turbulent flow can deposit large quantities of oxygen-demanding substances in lakes and streams. Typical urban runoff generates biochemical oxygen demand (BOD) on the same order of magnitude as effluent from an effective secondary wastewater treatment plant. Low DO concentrations result when the rate at which oxygen-demanding material is deposited exceeds the rate of oxygen replenishment.

Oxygen demand is estimated by directly measuring DO levels, and through indirect measures such as BOD, chemical oxygen demand (COD), oils and greases, and TOC.

2.5.6 Biochemical Oxygen Demand

BOD is an index of the oxygen-demanding properties of biodegradable material in water. Samples are taken from the field and incubated in the laboratory at 20 degrees Celsius, then the residual DO is measured. The BOD values commonly referenced are the standard 5-day values. These values are useful in assessing stream pollution loads, making comparisons, and assessing potential impacts on aquatic organisms.

2.5.7 Chemical Oxygen Demand

COD is a measure of pollutant loading in terms of complete chemical oxidation using strong oxidizing agents. It provides an indirect measurement of organic pollutants present in water, and represents the amount of oxygen needed to fully oxidize (i.e., break down) organic compounds into carbon dioxide and ammonia, because carbon and nitrogen are the most basic building blocks of organic molecules. Unlike BOD, COD does not rely on bacteriological actions. However, COD does not necessarily provide a good index of oxygen-demanding properties in natural waters.

2.5.8 Bacteria

Bacteria are present on nearly every surface, in sediment and soils, and are assimilated into other biological organisms. Bacteria levels in undiluted runoff typically exceed public health standards for water contact recreation almost without exception. Studies have found that total coliform counts exceed EPA water quality criteria at almost every runoff site sampled and almost every time it rains (Central Valley RWQCB 2011). The coliform bacteria detected may not present a health risk, but often are associated with human pathogens. Based on the various EPA studies, high bacteria levels presumably would be present in direct, undiluted runoff entering receiving waters near the project site. The Basin Plan includes water quality objectives for bacteria in portions of the San Joaquin River where water contact recreation is a designated beneficial use (Central Valley RWQCB 2011).

2.5.9 Oil and Grease

Oil and grease contain a wide variety of organic hydrocarbons, some of which could be toxic to aquatic life in low concentrations. These materials are initially less dense than water and float on the surface, creating a familiar rainbow-colored film. Hydrocarbons have a strong affinity for sediment and quickly become absorbed to it. The major sources of hydrocarbons are leakage of crankcase oil and other lubricating agents from automobiles. Hydrocarbon levels are highest in the runoff from parking lots, roads, and service stations. Residential land uses generate less export of hydrocarbons, although illegal disposal of waste oil into stormwater can be a local problem.

2.5.10 Other Toxic Chemicals

Priority pollutants are generally related to hazardous wastes or toxic chemicals that can be detected in stormwater, either as dissolved constituents or associated with sediments. Sampling for priority pollutants has been conducted for more than 120 toxic chemicals and compounds (SWRCB 2015). Sampling results have rarely revealed toxins exceeding the current MCLs set by the SWRCB and EPA (SWRCB 2015). In the same studies, runoff was sampled primarily in small residential areas that were not expected to be a source of toxic pollutants, with the exception of illegally disposed or applied household hazardous wastes. Common priority pollutants measured in stormwater include phthalate (plasticizer compound), phenols and creosols (wood preservatives), pesticides, herbicides, oils and greases, and metals.

2.5.11 Specific Conductance

The specific conductance of water, or its ability to conduct an electric current, is related to total dissolved solids (TDS) and salinity. Specific conductivity is essentially a measure of the electrical conductivity of water standardized to 25 degrees Celsius. Because electrical conductivity is temperature dependent, specific conductance provides a measurement comparable through time and among water bodies. Specific conductance or TDS is commonly used as a surrogate for salinity measurements. Specific conductance also can be used to approximate TDS. Specific conductivities in excess of 2,000 micromhos per centimeter (µmhos/cm) represent salinity levels in exceedance of the tolerance of freshwater species. The state MCL for specific conductance is 1,600 µmhos/cm; however, the water quality objective outlined in the Basin Plan states that that it shall not exceed 150 µmhos/cm from Friant Dam to Gravelly Ford (90th percentile) (SWRCB 2015; Central Valley RWQCB 2011).

2.5.12 pH

pH is the measure of the acidity (hydrogen ion concentration) or alkalinity (concentration of base ions and hydroxides) of water; the pH directly affects chemical speciation, availability, and toxicity. A pH of 7 is considered neutral; however, most drinking water is has a pH of approximately 6.8, which also corresponds to the optimum pH of most fish species. Reactions of dissolved carbon dioxide provide a natural pH buffer, shifting from carbonic acid to bicarbonate ions under acidic conditions and back to carbonic acid under alkaline conditions.

pH in aquatic ecosystems is an indication of the balance of chemical equilibrium and affects the availability and toxicity of some chemicals, trace metals, and nutrients. All aquatic organisms thrive at an optimal pH to which they are adapted. Most aquatic organisms cannot survive pH lower than 4.8 or greater than 9.2 unless they possess specific adaptations to extreme environments. The Basin Plan's water quality objective for pH ranges from 6.5 to 8.5 (Central Valley RWQCB 2011).

2.6 100-year Floodplain

The project area has been designated by the Federal Emergency Management Agency (FEMA) as being within a 100-year flood zone (FEMA 2009). According to the FEMA Flood Insurance Study, the base flood elevation (i.e., the peak flood elevation during a 100-year flood) at the project site varies from 268 to 274 feet North American Vertical Datum of 1988(FEMA 2009). The project boundary and 100-year FEMA floodplain are shown in Figure 2-1. The base flood elevations were identified based on uncontrolled flows from Friant Dam of 71,000 cfs.

Table 2-1 presents a summary of the project area located within the 100-year floodplain for the project and alternatives.

Table 2-1: Summary of Project Area in 100-year Floodplain by Alternative

Project Area	Proposed Alternative	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Paved Surfaces (Multipurpose Trail, Roads, Parking Lots)	1.61	2.32	0.34	2.98	1.61	2.44
Other Fill/Hard Packed Surfaces (Multipurpose Trail, Parking Lot, Granite, Gravel)	3.00	2.96	2.25	3.56	3.00	3.37
Total Area in 100-year Floodplain (includes floodway)	**4.61**	**5.28**	**2.59**	**6.54**	**4.61**	**5.81**
Percentage of Total Project Area in Floodplain or Floodway	**46%**	**45%**	**29%**	**58%**	**49%**	**47%**

Note: Alt. = Alternative
Source: Data compiled by AECOM in 2016

Past mining operations left behind an extensively modified channel and have affected the historical flow paths in this part of the San Joaquin River. Further, reclaimed gravel ponds and excavated portions of the River channel have slowed flows and increased water temperatures. Many of the ponds in the project area are separated from each other and from the river by earthen berms, left in place between areas excavated for mining. The earthen berms generally are about 20 feet wide on top, many with large breaches (breaks) and some vegetation. The berms are not levees constructed to flood control standards and tend to fail during high-flow events. As of 2011, five breaks had occurred in several of the berms separating the on-site ponds from the River (Conservancy 2011). The Conservancy is repairing a berm breach that occurred in 2005, to the north and across the River from the project area, to isolate the gravel pond, restore a vehicle access road, and restore habitat. Improvements would increase the berm crown elevation to at least 3 feet above the predicted 8,000-cfs water surface elevation, and would increase the width of the berm to about 20 feet. An equalization saddle would allow water surface elevations between the pond and River to equalize during higher flows, to stabilize the berm. The height of the improved berm would be designed to overtop when flow exceeds approximately 13,000 cfs (Conservancy 2011). The improvements are to be completed before implementation of the project.

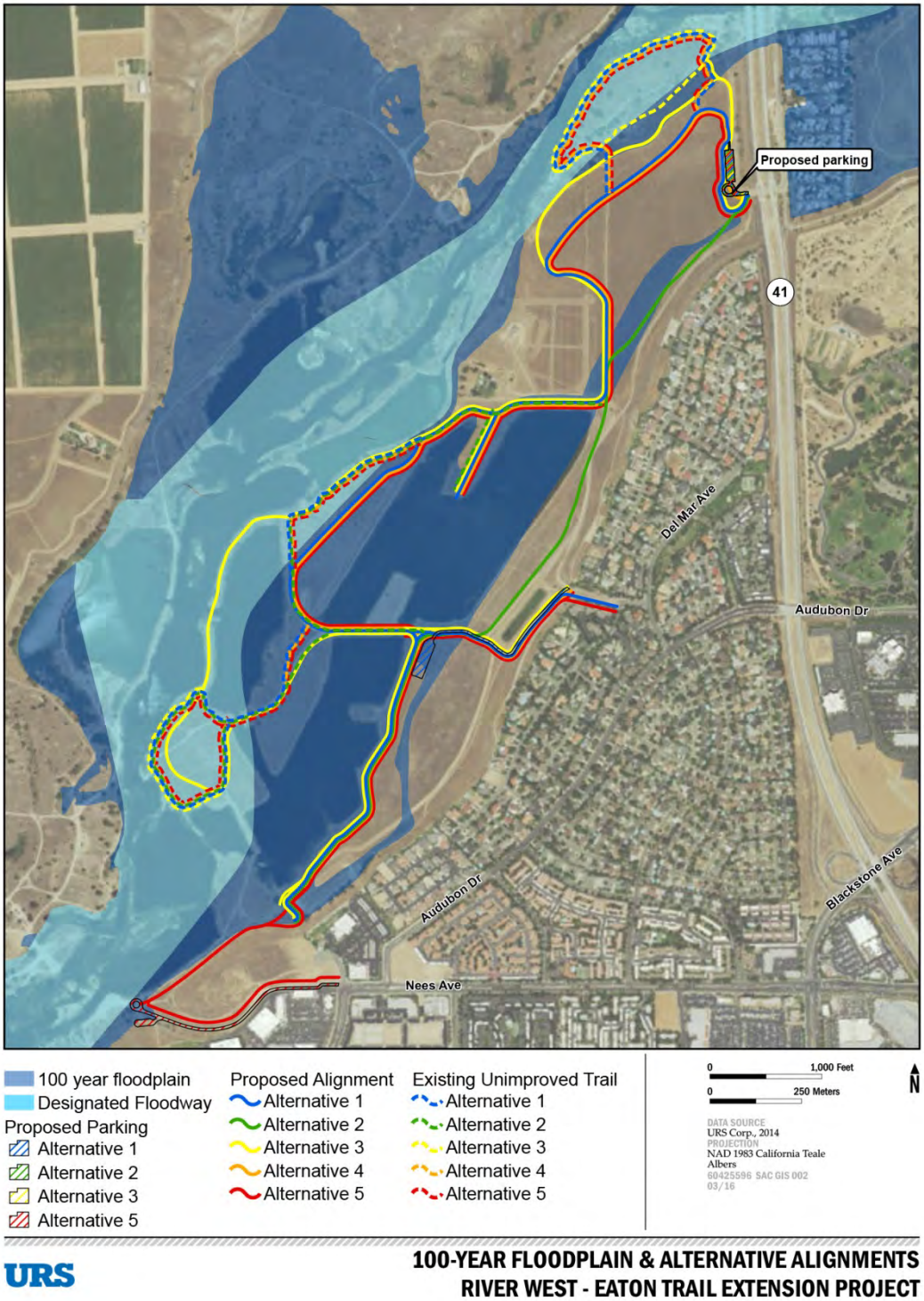

Figure 2-1 100-Year Floodplain and Alternative Alignments

2.7 Designated Floodway

A designated floodway is the channel of a river or stream and the overbank areas that must remain open to carry the deeper, faster moving water during a flood without cumulatively increasing the water surface elevation more than a designated height. A State-designated floodway means either (1) the channel of the stream and that portion of the adjoining floodplain that is reasonably required to provide passage of a base flood, or (2) the floodway between existing levees as adopted by the California State Reclamation Board (now reorganized as the Central Valley Flood Protection Board [CVFPB]) or the State Legislature. The State-designated floodway in the project area is shown in Figure 2-1.

Table 2-2 presents a summary of the project area located within the designated floodway for the project and alternatives.

Table 2-2: Summary of Project Area in Designated Floodway by Alternative (acres)

Project Area	Proposed Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Paved Surfaces (Multipurpose Trail, Roads, Parking Lots)	0.00	0.00	0.00	1.40	0.00	0.00
Other Fill/Hard Packed Surfaces (Multipurpose Trail, Parking Lot, Granite, Gravel)	1.00	1.00	1.08	1.92	1.92	1.00
Total Area in Floodway	**1.00**	**1.00**	**1.08**	**3.32**	**1.92**	**1.00**
Percentage of Total Project Area in Floodway	**10%**	**9%**	**12%**	**30%**	**20%**	**8%**

Note: Alt. = Alternative
Source: Data compiled by AECOM in 2016

2.8 Dams

Friant Dam, a concrete dam that impounds Millerton Lake, is located on the San Joaquin River approximately 11 miles upstream of the project site. Completed in 1942 as part of the Central Valley Project, Millerton Lake provides 520,500 acre-feet of storage capacity for authorized flood control and water supply. The U.S. Bureau of Reclamation owns and operates the dam and controls downstream releases on the River. Both the dam and lake are located in the River's upper watershed with a drainage area of 1,650 square miles. The maximum surface water elevation is 595.6 feet. Waters released from the dam are generally controlled to a maximum of 8,000 cfs in the River.

Friant Dam played a key role during central California's unprecedented 1997 floods. An emergency release of floodwater from the dam was required, peaking at 77,200 cfs. The dam did not fail, but the high flow release caused levee failure and contributed to flooding downstream.

According to the *Fresno County General Plan* (County of Fresno 2000a), the entire project area is located within a dam failure flood inundation area.

2.9 Groundwater

The project site is located within the Kings subbasin of the San Joaquin Valley Groundwater Basin of the Tulare Lake hydrologic region. The San Joaquin Valley Groundwater Basin makes up the southern two-thirds of the 400-mile-long, northwest-trending asymmetric trough of the Central Valley regional aquifer system in the southern extent of the Great Valley Geomorphic Province. The San Joaquin Valley is the southern area of the Central Valley and is bounded on the west by the Coast Ranges, to the south by the San Emigdio and Tehachapi mountains, to the east by the Sierra Nevada, and to the north by the Delta and the Sacramento Valley (DWR 2003).

The San Joaquin Valley Groundwater Basin includes all surface water basins draining into the San Joaquin River system. The region is heavily reliant on groundwater, with recovered groundwater comprising approximately 30% of the annual supply for agricultural and urban uses. Consequently, the Kings subbasin has been identified as critically over drafted (DWR 2006). Aquifers in the basin are thick and typically extend to a depth of up to 800 feet (DWR 2003). The aquifer in the vicinity of the project site is generally unconfined (DWR, 2006). Based on reported measurements of groundwater in monitoring wells in the area, depth to water ranges from approximately 110 to 120 feet bgs. The elevation of the water table in the vicinity of the project site increases northward to the San Joaquin River, where the water table coincides with land surface at an elevation of approximately 250 feet amsl (DWR 2015). General groundwater flow beneath the project site is away from the River. Groundwater recharge beneath the site likely occurs year-round because water percolates through several on-site ponds into the aquifer. Percolation also occurs during the wet season if the basin is flooded for extended periods of time. There is a non-potable well located on the project site located east of the H pond and north of the stormwater detention basin. The well has a pumping capacity of 55 gallons per minute and is providing temporary irrigation for a habitat restoration program.

In general, groundwater quality is suitable for most urban and agricultural uses (DWR 2003). Municipal, industrial, and domestic water supply and supply for irrigation are defined in the Basin Plan as beneficial uses. Water quality objectives require that, at minimum, groundwater designated as supply water must not contain concentrations of chemical constituents that exceed the MCLs specified in California Code of Regulations (CCR) Title 22 (Central Valley RWQCB 2011).

3 Regulatory Setting

3.1 Federal Laws and Regulations

3.1.1 Clean Water Act

The Clean Water Act is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The key sections pertaining to water quality regulation are Sections 303, 401, 402, and 404. Under the CWA, Congress recognized the primary responsibility and rights of states to prevent, reduce, and eliminate pollution, and to plan the development and use (including restoration, preservation, and enhancement) of land and water resources. The SWRCB and its RWQCBs implement Sections 303, 401, and 402 at the state level.

Section 303(d)

Under Section 303(d), states are required to identify "impaired water bodies" (those not meeting established water quality standards), identify the pollutants causing the impairment, establish priority rankings for waters on the list, and develop a schedule for developing control plans to improve water quality. EPA then approves the state's recommended list of impaired waters, or adds and removes water bodies to and from the list. Each RWQCB must update the Section 303(d) list every 2 years. Water bodies on the Section 303(d) list cannot further assimilate the identified pollutant. The list identifies priorities for development of pollution control plans for each listed water body and pollutant.

The pollution control plans triggered by the CWA Section 303(d) list are called TMDLs. The TMDL is a "pollution budget" designed to restore the health of a polluted body of water and ensure the protection of beneficial uses. The TMDL also contains the target reductions needed to meet water quality standards and allocates those reductions among the pollutant sources in the watershed (point sources, nonpoint sources, and natural sources) (40 CFR 130.2).

Section 401

CWA Section 401 requires evaluation of water quality when a proposed activity needing a federal license or permit could result in a discharge to waters of the United States. In California, the SWRCB and its nine RWQCBs issue water quality certifications. Each RWQCB is responsible for implementing Section 401 in compliance with the CWA and its water quality control plan (also known as a basin plan). Applicants for a federal license or those wanting to conduct activities that may result in the discharge to waters of the United States (including wetlands) also must obtain a Section 401 water quality certification to ensure that any such discharge will comply with the applicable provisions of the CWA. Compliance with Section 401 is required for all projects that have a federal component and may affect state water quality.

Section 402

CWA Section 402 regulates point-source discharges to surface waters (other than dredge or fill material) through the National Pollutant Discharge Elimination System (NPDES), administered by EPA. The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits for discharges to waters of the United States. This regulation is implemented at the state level and is described further below.

Section 404

CWA Section 404 regulates the discharge of dredged and fill materials into waters of the United States, which include all navigable waters, their tributaries, and some isolated waters, as well as some wetlands adjacent to the aforementioned waters (33 CFR 328.3).

Areas typically not considered to be jurisdictional waters include nontidal drainage and irrigation ditches excavated on dry land, artificially irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial water bodies such as swimming pools, and water-filled depressions (33 CFR 328). Areas meeting the regulatory definition of waters of the United States are subject to USACE jurisdiction under provisions of CWA Section 404. Construction activities involving placement of fill into jurisdictional waters of the United States are regulated by USACE through permit requirements. No USACE permit is effective in the absence of state water quality certification pursuant to CWA Section 401.

3.1.2 National Pollutant Discharge Elimination System Permit Program

The NPDES permit program was established under the CWA to regulate municipal and industrial discharges to surface waters of the United States. In California, EPA delegates much of the implementation of the CWA to the SWRCB. Although the SWRCB has issued a few NPDES permits, the vast majority of NPDES permits are issued by the nine RWQCBs. The discharge of wastewater to surface waters is prohibited unless an NPDES permit issued by the applicable RWQCB allows that discharge. NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify limits applicable to effluent (post-treated flows) and receiving waters. These limits restrict the concentrations and/or mass pollutant emissions that may be present in the discharge; prohibit discharges not specifically allowed under the permit; and describe actions that the discharger must take, such as conducting industrial pretreatment, pollution prevention, and self-monitoring activities. Typically, NPDES permits are issued for a 5-year term.

3.1.3 Federal Emergency Management Agency

FEMA administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. Under the NFIP, if a community adopts and enforces a floodplain management ordinance to reduce future flood risks to new construction in a Special Flood Hazard Area, flood insurance is made available in the community. Floodplain management ordinances are designed to prevent new development from increasing the flood threat, and to protect new and existing buildings from anticipated flooding. FEMA also issues flood insurance rate maps that identify land areas subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection is established by FEMA; the minimum level of flood protection for new development is the 1-in-100 annual exceedance probability event (i.e., the 100-year flood event).

3.1.4 Executive Order 11988: Floodplain Management

Executive Order 11988 (Floodplain Management), issued in 1977, addresses floodplain issues related to public safety, conservation, and economics. This executive order generally requires federal agencies constructing, permitting, or funding a project in a floodplain to:

- avoid incompatible floodplain development,
- be consistent with the standards and criteria of the NFIP, and
- restore and preserve natural and beneficial floodplain values.

3.1.5 San Joaquin River Restoration Settlement Act

The Settlement Act of 2009 was passed by Congress to authorize implementation of the 2006 Settlement Agreement of Natural Resources Defense Council et al. v. Kirk Rodgers et al. The settlement and foundation of the SJRRP is based on two goals:

- *Restoration:* To restore and maintain fish populations in "good condition" in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish.
- *Water Management:* To reduce or avoid adverse water supply impacts on all of the Friant Division long-term contractors that may result from the Interim Flows and Restoration Flows provided for in the Settlement.

The Settlement Act specifies modifications in Friant Dam operations to restore flows to the River to meet the Restoration Goal. Interim Flows in the river began in 2009. On February 1, 2014, flows released from Friant Dam were decreased to 360 cfs because of a critical low-water year, beginning on March 1, 2014. Reductions of 50 cfs were applied daily until the flows reached 200 cfs, and then incrementally were adjusted until all restoration flows stopped (San Joaquin River Restoration Program 2016.)

3.2 State Laws, Regulations, and Policies

3.2.1 Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) was enacted in 1969 and together with the federal CWA, provides regulatory guidance to protect water quality and water resources. The Porter-Cologne Act established the SWRCB and divided California into nine regions, each overseen by an RWQCB. The Porter-Cologne Act established regulatory authority over waters of the state, which are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code Section 13050). More specifically, the SWRCB and its nine RWQCBs have jurisdiction over any surface water or groundwater to which a beneficial use may be assigned. The Porter-Cologne Act also assigned responsibility for implementing CWA Sections 303, 401, and 402 to the SWRCB and RWQCBs.

The Porter-Cologne Act requires development and periodic review of basin plans for the protection of water quality in each of the state's nine regions. Each RWQCB must formulate and adopt a basin plan for all areas in the region (Water Code Section 13240). A basin plan is unique to each region and must identify beneficial uses, establish water quality objectives for the reasonable protection of the beneficial uses, and establish an implementation program for achieving the water quality objectives. The project area is in the San Joaquin River Basin, within the jurisdiction of the Central Valley RWQCB.

3.2.2 NPDES Permit System

The SWRCB and Central Valley RWQCB have adopted specific NPDES permits and/or waste discharge requirements for a variety of activities that may discharge wastes to waters of the state or to land. Dischargers must eliminate or reduce nonstormwater discharges to storm sewer systems and other waters.

The SWRCB has adopted a statewide NPDES general permit for discharges associated with construction activities that disturb 1 acre or more (Construction General Permit; SWRCB Order 2009-0009-DWQ, as amended by 2010-0014-DWQ). Construction activities such as clearing, grading, stockpiling, and excavation are subject to the statewide NPDES permit for general construction activity. The NPDES regulations also require implementation of appropriate hazardous materials management practices to reduce the possibility of chemical spills or release of contaminants, including any nonstormwater discharge to drainage channels.

The NPDES permit requires that a notice of intent be filed with the RWQCB to discharge stormwater, and that a storm water pollution prevention plan (SWPPP) be prepared and implemented to control contaminated runoff from temporary construction activities. Erosion and sediment best management practices (BMPs) must be designed and used to reduce contaminant runoff during construction. The NPDES permit also requires dischargers to consider using permanent post-construction BMPs that will remain in service to protect water quality throughout the life of the project. Types of BMPs include source controls, treatment controls, and site planning measures. All NPDES permits also have inspection, monitoring, and reporting requirements.

3.2.3 Central Valley Flood Protection Board

In accordance with CCR Title 23, the Central Valley Flood Protection Board (CVFPB) (previously known as the State Reclamation Board) enforces appropriate standards to construct, maintain, and protect flood control facilities in the Central Valley. The CVFPB must review and approve any activity that may affect "project works" or physically change the "designated floodway," so that the activity will maintain the integrity and safety of flood control project levees and floodways and be consistent with the flood control plans adopted by the CVFPB and the California Legislature. An encroachment permit from the CVFPB is required for any project or plan of work that would occur within federal flood control project levees and a board easement; may affect the flood control functions of project levees; or would occur within a CVFPB-designated floodway or a regulated Central Valley stream listed in CCR Title 23, Table 8.1. A portion of the project site is located within a CVFPB-designated floodway for the San Joaquin River.

3.2.4 Water Quality Control Plan for the Sacramento–San Joaquin River Basins

State and federal laws require protecting the designated beneficial uses of water bodies. State law defines beneficial uses as "domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (Water Code Section 13050[f]).

The Central Valley RWQCB, under the authority of the Porter-Cologne Act and in accordance with the CWA, is responsible for authorizing activities that may discharge wastes to surface water or groundwater resources. The Basin Plan, adopted by the Central Valley RWQCB in 1998 and updated in 2011 (Central Valley RWQCB 2011), identifies the beneficial uses of water bodies and lists water quality objectives and standards for waters of the Sacramento River and San Joaquin River basins.

The Basin Plan identifies specific narrative and numeric water quality objectives for physical properties (e.g., temperature, turbidity, and suspended solids); biological constituents (e.g., coliform bacteria); and chemical constituents of concern, including inorganic parameters, trace metals, and organic compounds. The Basin Plan also identifies water quality objectives for toxic priority pollutants (select trace metals and synthetic organic compounds).

3.2.5 Lake and Streambed Alteration Agreements

The California Department of Fish and Wildlife (CDFW) is a responsible agency for issuing lake and streambed alteration permits for projects as appropriate, pursuant to Section 1602 of the California Fish and Game Code. CDFW coordinates with federal and state agencies to mitigate the impacts of projects on fish and wildlife resources and is responsible for enforcing the California Endangered Species Act. CDFW often helps establish instream flows (minimum releases below a dam or diversion structure) to maintain habitat below a project. Such release schedules may be included in water right permits and could affect the yield of a water project.

Section 1602 of the California Fish and Game Code requires notifying CDFW in advance of any activity that would divert or obstruct the natural flow or change the bed, channel, or bank of a river, stream, or lake, or that proposes to use material from a streambed. This notification requirement generally applies to work undertaken within the bed and/or bank of a stream, wash, or lake. Usually these features support fish, wildlife, and riparian vegetation, or did in the past. Upon notification, CDFW may require the project sponsor to enter a Streambed Alteration Agreement which delineates the measures required to protect fish and wildlife.

3.2.6 State Regulations to Regulated Dredged or Fill Discharge Requirements for Wetlands Outside of Federal Jurisdiction

On May 4, 2004, the SWRCB adopted State Water Board Order No. 2004-0004-DWQ, "Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the USACE to be Outside of Federal Jurisdiction" (General WDRs). The General WDRs cover small-scale projects (those that require small acreage or linear feet or involve a small volume of dredged material) with few or no permanent impacts for which USACE "disclaims" federal jurisdiction.

General WDRs for Dredged or Fill Discharges, State Water Board Order No. 2003-0017-DWQ, are for projects that have received state water quality certification. These General WDRs are restricted to dredged or fill discharges of up to 0.2 acre and 400 linear feet for fill and excavation discharges, and up to 50 cubic yards for dredging discharges. For larger projects, the RWQCBs issue Individual WDRs. Certification and issuance of WDRs are overlapping regulatory processes that are administered by the SWRCB and RWQCBs.

3.2.7 Dam Inundation Maps

Dam inundation mapping procedures (19 CCR Section 2575) are required by the Governor's Office of Emergency Services for all dams where human life may be endangered by dam flooding inundation. Dam owners must obtain recent hydrologic, meteorological, and topological data and land surveys denoting the floodplain, for use in preparing a dam inundation map. This information must be submitted to the Office of Emergency Services 60 days before the filling of any dam.

Canal and levee inundation mapping procedures (19 CCR Section 2585) are similar to dam inundation mapping procedures. The Governor's Office of Emergency Services requires following these procedures where human life may be endangered by canal or levee flooding inundation. Canal and levee owners must obtain recent hydrologic, meteorological, and topological data and land surveys denoting the floodplain, for use in preparing a canal or levee inundation map.

3.2.8 Interim San Joaquin River Parkway Master Plan

The Conservancy manages its projects and lands under its jurisdiction in the Parkway through policies in the Parkway Master Plan. The Parkway Master Plan contains Natural Resource Element goals, objectives and policies that apply to the proposed project area. The Natural Resources Element goals, objectives, and policies most relevant to the proposed project in relation to hydrology and water resources are summarized in Table 3-1. These policies do not necessarily avoid impacts, but may lessen them.

Table 3-1. Summary of Interim San Joaquin River Parkway Master Plan Goals, Objectives, and Policies Relating to Hydrology and Water Resources in the Project Area

Natural Resources Objectives	
NRO1	Protect the river as aquatic habitat and a water source. Enhance and protect fisheries in the river and lakes [ponds] in the Parkway.
Natural Resources Policies	
NP6	Obtain updated floodplain maps… to guide siting of Parkway facilities. Do not construct Parkway facilities that would sustain anything more than slight damage from inundation in any area where there is a potential flood risk. Engineer service roads, trails, and bridges to avoid/minimize significant flood damage.
FP1	The Parkway plan explicitly recognizes that use of the river and floodway to transport floodwater is a beneficial use which must be protected.
FP2	The Parkway will be managed to maintain the combined existing flow capacity in the river channel and the designated floodway.
FP3	The Parkway will be designed and managed to maintain the river stage required to pass any given design flood flow, The Parkway shall not cause an increase in areas subject to flooding nor cause an increase in the designated floodway unless the resulting loss in private land is first compensated.
FP4	The Parkway will be managed to allow for the restoration by other parties of channel and floodwater flow capacity to the stage/flow relationship that existed at the time Friant Dam was completed.
FP5	Parkway lands will be managed to control and reduce erosion in the floodway.
RFP3	BMPs as identified by the responsible jurisdiction through an adopted ordinance or standard, shall be implemented to minimize potential effects from grading and construction-related erosion. The BMPs shall include site-specific erosion and sedimentation control plans to be prepared for each site to be developed prior to construction.
RFP4	A spill prevention and cleanup policy shall be prepared. Staging areas for heavy equipment and construction materials shall be established so that inadvertent spills of oil, grease, asphalt, other petroleum by-products, or other hazardous materials shall not be discharged into the stream course. All machinery shall be properly maintained and cleaned to prevent spills and leaks
RFMP1	Any development sited in the 100-year floodplain or designated floodway shall comply, at a minimum, with regulatory requirements...
RFMP2	Structures and amenities associated with anticipated uses within the Parkway shall

Table 3-1. Summary of Interim San Joaquin River Parkway Master Plan Goals, Objectives, and Policies Relating to Hydrology and Water Resources in the Project Area	
	be designed and sited to ensure that such features do not obstruct flood flows, do not create a public safety hazard, or result in a substantial increase in off-site water surface elevations. For permanent structures, such as bridge overcrossings, the minimum level of design flood protection shall be the 100-year event to ensure flood flows are not dammed and to prevent flooding on surrounding properties. Amenities such as picnic tables, litter containers, interpretive displays, and vault toilets shall be designed, placed, and securely fastened to allow for water to easily flow through or around them and so that they do not become dislodged during flood events. Fences, if any, shall be sized, placed, and securely anchored to minimize the potential to impact the flow, location or depth of floodwaters.
RFMP3	Flood warning alert and evacuation procedures for Parkway visitors shall be developed and implemented with the counties of Madera and Fresno, the City of Fresno, and FMFCD to ensure evacuation of visitors from the Parkway during events with high flow risks, and to prevent public access into the Parkway during such events.
RDP 11	Equestrian facilities and connections to the multiple purpose trail system shall be sited, graded, and constructed of suitable materials resistant to the effects of wind and water erosion to minimize the potential for sediments to be carried into adjacent waterways. A program to monitor the effectiveness of such controls shall be established, including implementation of a maintenance and repair plan.
RDP12	For buildings that do not use a gutter system, landscape planting around the base shall provide increased opportunities for stormwater infiltration and protect the soil from erosion caused by concentrated runoff volumes.
ROP1	Reduce impervious land coverage associated with parking areas and boat ramps…
ROP2	Parkway projects, recreational amenities and resource restoration shall be developed consistent with the responsible jurisdiction's standards for Stormwater Pollution Prevention Plans (SWPPP) and maintenance program. The Conservancy shall include as part of final project design appropriate BMPs, consistent with recommendations of the Stormwater Quality Task Force's California Stormwater Best Management Practices Handbook…
ROP3	Install signage at regular intervals at and near river access points to educate users of the importance of protecting water quality…

3.2.9 San Joaquin River Parkway Master Plan Update

In accordance with the Conservancy Act, the Conservancy is preparing a draft *San Joaquin River Parkway Master Plan Update* (Master Plan Update) and EIR to plan for future Parkway projects. Until that EIR has been certified and the update has been adopted by the Conservancy and its governing Board, the Interim Master Plan remains in effect.

The 2014 draft updated Master Plan also includes the following goal:

- *Protect the river's water quality through appropriate management of stormwater runoff in the Parkway;*

The draft Master Plan also includes the following Hydrology and Water Quality BMPs:

BMP WATER-1. NPDES. Comply with all Phase II Non Point Discharge Elimination System (NPDES) Permit requirements for the construction. Submit a Notice of Intent (NOI) with the State Water Resource Control Board's (SWRCB) Division of Water Quality. The contractor shall also be required to prepare a Storm Water Pollution Prevention Plan (SWPPP).

BMP WATER-2. SWPPP. Stormwater pollution prevention BMPs designed to prevent construction-related discharges into surface waters shall be implemented. These BMPs must consider erosion, sedimentation, and pollutant controls during construction and post-construction. These BMPs shall include, but not be limited to, the following:

- Requiring standard erosion control and slope stabilization measures in any area where erosion could lead to sedimentation of a waterbody;
- Performing major vehicle maintenance, repair jobs, and equipment washing at appropriate off-site locations;
- Regularly maintaining equipment to prevent fluid leaks. Any leaks shall be captured in containers until the equipment is moved to a repair location. A spill prevention and response plan shall be prepared prior to construction and shall be implemented immediately for cleanup of fluid or hazardous materials spills;
- Designating one area of the construction-site, well away from streams or storm drain inlets, for auto and equipment parking and routine vehicle and equipment maintenance;
- Cleaning-up spilled dry materials immediately. Spills are not to be "washed away" with water or buried;
- Using the minimum amount of water necessary for dust control;
- Cleaning-up liquid spills on paved or impermeable surfaces using "dry" cleanup methods (e.g. absorbent materials such as cat litter, and/or rags);
- Cleaning-up spills on dirt areas by removing and properly disposing of the contaminated soil;
- Storing stockpiled materials, wastes, containers and dumpsters under a temporary roof or secured plastic sheeting where they cannot enter into or be washed by rainfall or runoff into waters of the U.S./State or aquatic habitat.;
- Properly storing containers of paints, chemicals, solvents, and other hazardous materials in garages or sheds with double containment during rainy periods;
- Applying concrete, asphalt, and seal coat during dry weather. Keeping contaminants from fresh concrete and asphalt out of the storm drains and creeks by scheduling paving jobs during periods of dry weather and allowing new pavement to cure before storm water flows across it;
- Covering catch basins and manholes when applying seal coat, slurry seal and fog seal; and
- Operating no equipment in a live stream channel, unless unavoidable.

Post-construction, all runoff from new improvements shall be retained on-site. Engineered grading and drainage plans shall be prepared to show how additional stormwater will be managed.

Best management practices for treating, detaining, and percolating stormwater runoff, such as bioswales, bioretention areas and seasonal wetlands, shall be implemented.

BMP WATER-3. Prior to implementation any construction project, any existing wells currently in use and any future wells shall obtain the necessary water quality clearance and permits from the California Department of Public Health, Office of Drinking Water, and other California departments with jurisdiction of the testing and monitoring of potable water for a public water system.

BMP WATER-4. Any work within designated flood zones shall conform to provisions established in local ordinances.

BMP WATER-5. New water fixtures shall be designed for low-flow and high-efficiency. Parkway landscaped areas shall be designed to minimize water demand by using native and/or climate-appropriate plants where possible; limiting turf areas to areas that will be used as multiple-use meadows; and installing smart irrigation systems to avoid excessive water use.

BMP WATER-6. Trails shall be inspected periodically to ensure that any erosion issues are corrected.

3.3 Local Laws and Regulations

3.3.1 2025 Fresno General Plan

The City of Fresno's 2025 General Plan, dated February 1, 2002, contains objectives and policies relevant to hydrology and water resources in the proposed project area.

I-4. Objective: Minimize the loss of life and property on the San Joaquin River bluffs that could occur due to geological hazards.

- **I-4-a. Policy:** Maintain and enforce the city's Bluff Preservation (BP) Overlay Zone District. Development within 300 feet of the toe of the San Joaquin River bluffs shall require an engineering soils investigation and evaluation report that demonstrates that the site is, or methods by which the site could be made, sufficiently stable to support the proposed development.

I-5. Objective: Protect the lives and property of current and future residents of the Fresno Clovis Metropolitan Area (FCMA) from the hazards of periodic floods. Recognize and institute adequate safeguards for the particular flooding hazards of areas on the San Joaquin river bottom and bluffs.

- **I-5-f. Policy**: The minimum level of design flood protection shall be the 100-year (one percent) event, as established by the best and most current available data from the U.S. Army Corps of Engineers and the California Department of Water Resources, pursuant to Federal Emergency Management Agency (FEMA) direction.
- **I-5-g. Policy**: Establish special building standards for private structures, public structures, and infrastructure elements in the San Joaquin Valley riverbottom which would protect:
    - construction in this area from being damaged by the intensity of flooding in the river bottom.

- water quality in the San Joaquin River watershed from flood damage-related nuisances and hazards (e.g., the release of raw sewage).
- public health, safety, and general welfare from the effects of flood events.

- **I-5-h. Policy**: Complete studies, addressing the limitations of the area's geological and hydrological status and all the relevant features of the proposed project, will be required prior to the approval of any construction or development project in the San Joaquin river bottom or below the top of the San Joaquin River bluffs.
  - Designated Floodway Map by the State Board of Reclamation.
  - Mapping of the 100-year floodplain with the best available current data and its relationship to the finished project.
  - Central Valley Project easements on the property.
  - Surrounding, topography, river channel configuration and flow characteristics, and on-and off-site drainage features.
  - Soil characteristics and mineral resources zone classification of the project locale.
  - The presence of wetlands, natural vegetation, and wildlife, for which the Clean Water Act and related federal and state legislation may require consultation with the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game.
  - Existing sand and gravel mining and processing facilities in the vicinity.
  - Grading activity proposed for the construction of the project.
  - Residential uses, and proposed structures and accessory structures.
  - Vehicular and pedestrian access for ingress, egress, and emergency response access; primary and secondary roadways and driveways with appurtenant bridges, trestles, and culverts.
  - Water wells, septic tanks, and on-site propane and other fuel tanks.
  - Utility infrastructure (water, sewer, power, and telecommunication lines).
  - Fencing and walls.
  - Ability to provide flood warning and rapid evacuation of the site.

  In consideration of these and other relevant factors that may arise during project review, the proposed construction or development project may be denied, or additional flood protection measures may be required.

- **I-5-i. Policy**: The city of Fresno shall preserve flood-prone areas within the City of Fresno and its Sphere of Influence, particularly the San Joaquin river bottom, for uses which will not have permanent improvement that would be adversely affected by periodic floods.

- **I-5-m. Policy**: A valid beneficial use of the San Joaquin River corridor is to transport floodwater, and this use must be protected. River bottom land uses will be managed with the following objectives:
  - to control and reduce erosion in the floodway.
  - to maintain the combined existing flow capacity in the river channel and the designated floodway by establishing ordinances and policies to prevent nuisance blocking of flood flow.
  - to maintain the river stage required to pass any given flow, so as not to increase the extent of flooded area (no increase in the designated floodway), unless any resulting loss in private land value is first purchased from willing sellers.
  - to coordinate any snagging and clearing activities for river channel enhancement with resource agencies to minimize conflict with natural habitat preservation and mineral extraction activities (including reclamation).

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4 Impacts and Mitigation Measures

4.1 Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis of hydrology and water quality are based on the environmental checklist in the State CEQA Guidelines, as amended. The project or an alternative would have a significant impact on hydrology or water quality if it would:

- violate any water quality standards or waste discharge requirements;
- 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;
- 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 that would result in substantial erosion or siltation on-site or off-site;
- 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 that would result in flooding on-site or off-site;
- create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- otherwise substantially degrade water quality;
- place housing within a 100-year flood hazard area as mapped on a federal flood hazard boundary or flood insurance rate map or other flood hazard delineation map;
- place within a 100-year flood hazard area structures that would impede or redirect flood flows; or
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam or inundation by seiche, tsunami, or mudflow.

4.2 Methodology

The analysis of potential hydrology and water quality impacts was performed qualitatively based on a review of documents pertaining to the project area, the *Fresno County General Plan Environmental Impact Report* (County of Fresno 2000b)*;* the California Department of Water Resources' *California's Groundwater–Bulletin 118, Update 2003* (DWR 2003); FEMA's flood insurance rate maps (FEMA 2009); and review of specific conditions at the project site.

The analysis of impacts on hydrology and water quality is based on the assumption that the project would include standard procedures and BMPs related to water quality, grading, erosion control, stormwater

runoff, and floodplain alteration, including compliance with regulatory requirements and ordinances and design standards. These BMPs are described further in Section 1.8.

4.3 Impacts and Mitigation Measures

Impact WQ-1: The project could violate water quality standards or waste discharge requirements.

Temporary Impacts. Soil disturbed during construction-related activities such as vegetation removal, grading, trenching, and soil stockpiling may be dispersed by wind, rain, and surface flow (winter rainfall and stormwater runoff) and be carried into drainage conveyances and ultimately into the River. Similarly, water used during construction for dust suppression or irrigation, if improperly managed, could enter drainage systems and be carried into the River. Contaminants such as petroleum hydrocarbons (e.g. fuels, oils) could be accidentally spilled during construction, thus contaminating surface soils. Areas of exposed or stockpiled soils could be subject to sheet erosion during short periods of peak stormwater runoff, allowing temporary discharges of soil, sediment, and construction-related contaminants to on-site drainages hydrologically connected to the River. Dewatering of surface water and/or groundwater during construction may be necessary due to the proximity to the River and several surface water features and could have an adverse effect on water quality if not properly managed.

As discussed in Section 1.8, The Conservancy would implement a variety of BMPs as part of the project, including the preparation of a site-specific SWPPP and erosion and sediment control plan and implementation of dewatering provisions, to reduce or avoid potential construction impacts. The SWPPP implemented for the project would be consistent with all SWRCB and Central Valley RWQCB requirements included in the Construction General Permit. Preconstruction and postconstruction BMPs would be implemented for all project phases to limit the discharge of pollutants into stormwater runoff.

Some project construction activities would occur within a designated floodway and the FEMA 100-year floodplain. Construction staging areas have not been identified. Temporary stockpiles and hazardous materials such as fuels, paints, and oils may be stored in construction staging areas and could be subject to flooding if a 100-year flood event were to occur during construction. Discharges of these construction materials and contaminants to receiving waters during storms would degrade water quality and could lead to short-term impacts on fish and other aquatic life in the River. This temporary impact would be **potentially significant.**

Long-Term Impacts. Implementing the project would create new impervious and hard-packed surfaces, structures, and landscape features, which could increase runoff volumes. This increased runoff, in turn, could cause or contribute to long-term discharges of urban contaminants (e.g., sediment, oil and grease, fuel, trash, pesticides, fertilizer) into stormwater runoff and receiving waters, including on-site ponds and the River. Table 1-1 summarizes the impervious and semi-impervious surface areas associated with the project.

In addition, the project would include multiuse trail facilities accessible by pets and equestrians, which could cause animal wastes to be discharged into stormwater runoff and receiving waters. Trampling by

horses could physically break down streambanks and destroy vegetative cover along the River, which could increase sedimentation.

Stormwater or landscaping irrigation runoff discharged from parking lots and other project features degrades water quality when the runoff enters drainages while carrying contaminants found in the project area. Stormwater may encounter oil, grease, or fuel nutrients, and sediments and bacteria found in animal wastes that collect in the parking lots and/or along trails. Water used to irrigate landscaped areas may encounter pesticides, herbicides, and fertilizer. Runoff water that has encountered these chemicals but has not been absorbed by plants and soil can be conveyed to receiving waters. Potential discharges of contaminated urban runoff from paved and landscaped areas would increase and could cause or contribute to adverse effects on aquatic organisms in receiving waters. The River is listed under CWA Section 303(d) as impaired for invasive species. Under this impairment, the River cannot assimilate or accommodate additional invasive species, and any increases in such species would contribute to the impairment.

Stormwater discharges into surface waters including the River could cause long-term degradation of water quality and adverse effects on fish. Prolonged exposure to high levels of suspended sediment reduces the tolerance of fish to disease and toxicants. Especially in shallow quiet pools, increased turbidity can increase water temperature, which in turn can affect DO levels; both effects increase respiration stress. Also, high levels of suspended sediment can cause the movement and redistribution of fish populations. The loss of streamside vegetation caused by trampling may result in excessive solar heating of the water, which can harm coldwater fish such as Chinook salmon. For an additional discussion of impacts on native fish habitat, see EIR Section 4.4, “Biological Resources.” These long-term effects could diminish the character and quality of the physical habitat important to native fish survival and could further impair the River by adversely affecting native fish species or promoting the increase of exotic fish species. In addition, excessive nutrient loading into surface waters including the River could lead to algal blooms and weed problems.

To assist with animal waste management, the project would include several pet stations placed along the multiuse trail and in parking areas, and would implement several Interim Master Plan policies related to litter and waste management, Policies ROP5, RDP13, and RDP14. Policies RFP5 and RFP6 requires implementation of a landscaping program to eliminate, reduce, or minimize the use of pesticides and herbicides or ensure that their application is in accordance with all applicable Agricultural Commissioner’s Office requirements and manufacturer’s recommendations. BMP-Hydro 6 and Policy RDP11 requires that equestrian facilities and connections to the multipurpose trail system be constructed to minimize erosion and the potential for sediment transport into adjacent waterways. The Conservancy would establish a program to inspect and monitor the effectiveness of such controls and implement a maintenance and repair plan. Implementation of project design features and Interim Master Plan policies would reduce long-term impacts on water quality, but impacts of urban contaminants from parking lot runoff and animal wastes from equestrian use would remain. This long-term impact would be **potentially significant.**

Mitigation Measure WQ-1a

The Conservancy shall locate stored hazardous materials and temporary stockpiles in construction staging areas outside of the 100-year floodplain and designated floodway. Before construction

begins, the Conservancy or its contractor shall designate locations for storage of hazardous materials, temporary stockpiles, and demolition debris piles in staging areas outside of the 100-year floodplain and designated floodway. Major storage and stockpile areas shall be designated in the SWPPP, as required for coverage by the NPDES Construction General Permit. Other stockpile areas shall be identified in the SWPPP and appropriate BMPs shall be installed accordingly during the course of construction. Implementation of these measures shall begin before any ground disturbance and shall continue throughout construction as conditions require. Monitoring and enforcement of this mitigation measure shall be completed by the Conservancy and Central Valley RWQCB.

Mitigation Measure WQ-1b

The Conservancy shall design structural BMPs for project operation to treat postconstruction stormwater runoff before it reaches on-site surface waters and the River will be included in project design. Structural BMPs for runoff reduction and the treatment of runoff from the proposed parking lot and other impervious features will be included in the project design. The runoff will be treated through detention or other means before it reaches on-site surface waters, wetlands, and the River. The selected BMPs will minimize and disperse the stormwater flow velocity to the extent practicable. The selected BMPs also will serve to infiltrate, filter, store, evaporate, and detain runoff close to its source, and enhance on-site recharge of groundwater. The structural BMPs will be designed in accordance with applicable local and State regulations. BMPs for treating, detaining, and percolating stormwater runoff, such as bioswales, surface sand or other media filters, vegetated filter strips, and detention basins may be implemented. Completion of the mitigation will occur before project designs are finalized. Monitoring and enforcement of the mitigation measure will be completed by the Conservancy.

Mitigation Measure WQ-1c

The proposed equestrian facilities will be sited, graded, and constructed consistent with Interim Master Plan Policy RDP 11. The equestrian trail and staging area will drain to detention swales, with no direct discharges to on-site waters or the River. Signage, animal waste containers, animal waste removal procedures, and monitoring for effectiveness will be implemented. Completion of the mitigation will occur throughout the course of operations. Monitoring and enforcement of the mitigation measure will be completed by the Conservancy.

Implementation of BMPs, applicable policies from the Interim Master Plan, other regulatory requirements, and Mitigation Measures Hydrology-1 through Hydrology-3 would reduce the water quality impacts associated with the project to **less than significant**.

Impact WQ-2: The project could substantially deplete groundwater supplies or interfere substantially with groundwater recharge so that there would be a net deficit in aquifer volume or a lowering of the local groundwater table.

Temporary Impacts. Project construction would require a water supply for dust control during construction, and for irrigation of the landscape plantings, until they are self-sustaining (up to 5 years). In addition, Dewatering of surface water and/or perched groundwater during construction in certain areas of the project site may also be necessary due to the proximity to the River and several surface water features. The existing nonpotable water well on-site could be used for dust control and for irrigation. The construction contractor would bring in additional water for dust control and irrigation, if needed. Project construction would not significantly increase groundwater demands such that a substantially lowering of the groundwater table would occur. Implementation of BMP Hydro 7 would minimize water demand by using drought tolerant plants and installing low flow and smart irrigation systems. Following temporary groundwater use, any changes to groundwater levels as a result of project construction would return to preproject levels over time. The impact would be **less than significant**.

Long-Term Impacts. The construction of new structures, including restrooms, the paved trail, and parking lot would create additional impervious/paved surface areas that could reduce the infiltration of precipitation into the groundwater at the site. However, the percentage of impervious/paved surface would be very small in relation to the total portion of the project site, and this increase would not measurably affect recharge to the local groundwater basin. Runoff from improvements on the site would drain to pervious swales. A permanent water supply primarily would be needed for fire suppression and drinking fountains. Project operation would not increase groundwater demands substantially, and existing supplies that may be provided by the City of Fresno for fire suppression and drinking water are expected to be adequate to serve the project without lowering groundwater levels (refer to Section 3.18, "Utilities and Service Systems"). The impact would be **less than significant**.

No mitigation measures are required.

No mitigation measures are required.

Impact WQ-3: The project could substantially alter existing drainage patterns, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

Temporary Impacts. Variable incised drainages are visible along the Bluffs and several natural drainages and swales traverse the project area. The project would require grading and moving soil to construct the multiuse trail extension, parking lot, and other new structures on the site. The proposed staircase from Spano Park to the trail extension and the proposed Bluff Trail would be constructed on the steep slope of the Bluffs. Project construction activities would occur within a designated floodway and the FEMA 100-year floodplain. Grading, moving soil, and placing structures on steep slopes and within flood zones could alter drainage courses and runoff patterns.

Implementing water quality BMPs, including the preparation of a SWPPP and erosion and sediment control plan, would reduce or avoid potential construction impacts. Preconstruction and postconstruction BMPs would be implemented for all project phases to limit the discharge of pollutants in stormwater runoff. However, this temporary impact would be **potentially significant**.

Long-Term Impacts. Potential changes to a watershed's hydrologic and geomorphic processes caused by impervious surfaces and drainage modifications from development are referred to as hydromodification.

Hydromodification intensifies erosion and sediment transport and can lead to changes to the geometry of a river channel or bank, and to floodplain properties. These changes can result in erosion, sedimentation, and degraded riparian habitat. Hydromodification also could change the project site's pond or bluff features. Table 1-1 presents the project's total surface area. Tables 2-1 and 2-2 show how much of the project site is located within the designated floodway and floodplain. Implementation of project design features, BMPs, and Interim Master Plan policies would reduce potential hydromodification impacts, but the impacts of adding impervious surfaces and placing other project components adjacent to or within the designated floodway and 100-year floodplain would remain. This impact would be **potentially significant**.

Mitigation Measure WQ-3a: Implement Mitigation Measure WQ-1b

Mitigation Measure WQ-3b

For improvements that require an encroachment permit and approval from the CVFPB, drainage and hydromodification studies will be performed to evaluate and avoid modifications that will increase flooding on upstream or downstream areas, or that will cause obstructions during flood events. A professional civil engineer will conduct a drainage and hydromodification study that will evaluate the location of all existing and proposed drainage features; perform stormwater calculations for surface drainage flows before and after project construction; evaluate the potential for increased erosion on adjacent properties from drainage and floodplain modifications; and determine the base flood elevation before and after construction, so that no net displacement of flood waters will occur. As necessary, the volume of the floodplain or floodway that will be filled below the base flood elevation will be compensated and balanced by a hydraulically equivalent volume of excavation, taken from below the base flood elevation to achieve no net increase in base flood elevation greater than 0.10 foot, as measured at the property lines of the parcels being developed. Studies will be performed in accordance with all applicable floodplain management regulations. The mitigation will be completed before the project design is finalized. Monitoring and enforcement of the mitigation measure will be completed by the Conservancy and CVFPB, as applicable.

Implementing Mitigation Measures WQ-3a and WQ-3b would reduce the temporary and long-term impacts of the project related to a potential substantial alteration of existing drainage patterns that would result in substantial erosion or siltation on- or off-site to **less than significant**.

Impact WQ-5: The project could create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Temporary Impacts. The project would require alteration of and placement of project components into the River's existing designated floodway and 100-year floodplain during construction. As a result, the volume of stormwater runoff flowing from the project site to existing drainage systems could increase during intense storms occurring during construction. See Impact WQ-1 for a discussion of water quality effects from polluted runoff. With impervious surfaces added and other project components placed adjacent to or

within the designated floodway and 100-year floodplain, runoff could be directed off-site onto adjacent properties or other features, increasing the potential for flooding. This temporary impact would be **potentially significant**.

Long-Term Impacts. The project would require alteration of and placement of project components into the River's existing designated floodway and 100-year floodplain during construction. As a result, the volume of stormwater runoff flowing from the project site to existing drainage systems could increase during intense storms occurring during operation. See Impact WQ-1 for a discussion of water quality effects from polluted runoff. No new stormwater drainage facilities or expansion of existing facilities are planned as part of the project. With impervious surfaces added and other project components placed adjacent to or within the designated floodway and 100-year floodplain, runoff could be directed off-site onto adjacent properties or other features, increasing the potential for flooding. This long-term impact would be **potentially significant**.

Mitigation Measure WQ-5: Implement Mitigation Measures WQ-1b and WQ-3b

Implementing Mitigation Measure WQ-5 would reduce the temporary and long-term impacts of the project related to creation or contribution of runoff to stormwater drainage systems to **less than significant**.

Impact WQ-6: The project could otherwise substantially degrade water quality.

The project's temporary and long-term impacts on water quality are described under Impacts WQ-1 and WQ-5. Project implementation would not degrade water quality beyond the effects described in Impacts WQ-1 and WQ-5. However, this impact would be **potentially significant**.

Mitigation Measure WQ-6: Implement Mitigation Measures WQ-1a, WQ-1b, WQ-1c, and WQ-3b

Implementing Mitigation Measure WQ-6 would reduce the temporary and long-term impacts of the project related to potential other substantial degradation of water quality to **less than significant**.

Impact WQ-7: The project could place housing within a 100-year floodplain hazard area as mapped on flood hazard delineation maps.

The project would not involve the construction of housing; therefore, **no impact** would occur related to the placement of housing within a 100-year flood zone.

Impact WQ-8: The project could 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.

Temporary Impacts. As described previously (see Impact WQ-5), the project would include construction of a multiuse trail extension and new structures within the River's designated floodway and 100-year floodplain. The new structures and other project components would be designed to avoid posing a safety hazard, in accordance with Interim Master Plan Policies RFMP 1 and RFMP 2. In addition, in accordance

with Interim Master Plan Policy RFMP3, the Conservancy would develop and implement flood warning alert and evacuation procedures in conjunction with the City of Fresno and FMFCD to safely evacuate Parkway visitors during events with high-flow risks and prevent the public from accessing the Parkway during such events. Implementing these measures would reduce potential risks associated with flood exposure.

According to the Friant Dam Failure Flood Area Map prepared by the County of Fresno, the project site would be inundated if Friant Dam were to fail. The failure of a levee, dike, or other flood control structure on the River upstream of the project site also could result in site inundation. Such a failure would expose people or structures to flooding, but the likelihood of such an occurrence is remote. The Governor's Office of Emergency Services provides information for local governments about responding to critical hazards, including potential flooding from levee failure or dam inundation. No levees in the project area are designated to provide flood protection. Dam failure has an extremely low probability and is not considered a reasonably foreseeable event. Nonetheless, dam failure cannot be completely ruled out. The impact would be **potentially significant**.

The project would follow established regulatory requirements, Interim Master Plan policies, and related implementation programs.

Long-Term Impacts. Long-term impacts of the project related to potential loss, injury, or death from flooding caused by levee or dam failure would be similar to the project's temporary impacts. The project would follow established regulatory requirements, Interim Master Plan policies, and related implementation programs, and dam failure has an extremely low probability and is not considered a reasonably foreseeable event.

Mitigation Measure WQ-8: Implement Mitigation Measure WQ-3b

Implementing Mitigation Measure WQ-8 would reduce the temporary and long-term impacts of the project related to potential loss, injury, or death from flooding caused by levee or dam failure to **less than significant**.

Impact WQ-8: The project could expose people or structures to a significant risk of loss, injury, or death from inundation by seiche, tsunami, or mudflow.

Temporary and Long-Term Impacts. The potential temporary and long-term impacts of the project on inundation by seiche, tsunami, and mudflow are similar. Earthquakes can cause hazards in relation to open bodies of water, by creating seismic sea waves (tsunamis) and seiches. The potential for tsunami at the project site would be negligible because the distance from water bodies that could generate seismically induced tidal phenomena is considerable (i.e., the Pacific Ocean is located approximately 115 miles west of the project area). Seiches are earthquake-induced oscillations of water that can occur for a few minutes or several hours in an enclosed or restricted water body, such as a basin, river, or lake. The project area consists of a network of ponds that are interconnected with the River and floodplain. As described in Section 4.6, "Geology and Soils," a low potential exists for a seismic event in the project area. In the unlikely event that an earthquake was to occur, any waves generated in a portion of one of these water bodies by an

earthquake likely would be damped down and would not develop a substantial “back and forth” motion, associated with a seiche. Therefore, **no impact** would occur.

A potentially significant impact may occur if a project is located adjacent to a hillside area with soil characteristics that indicate potential susceptibility to mudslides or mudflows. As described in Section 3.7, “Geology and Soils,” evidence exists of past natural landslide activity, including rock falls, topples, debris flows, earth flows, mudflows, and creep in the project vicinity at the base of the bluff escarpment. Most of the project would be located more than 300 feet from of the toe of the bluffs; however, the staircase from Spano Park to the trail and/or staircase access from the Bluff Trail to the trail would be constructed on the steep slope of the bluff. Placing structures on or otherwise disturbing the steep bluff slope at the Bluff Trail and the slope to Spano Park could increase the area’s susceptibility to mudflows, if the proper engineering controls and BMPs to protect against slope instability and erodibility are not implemented.

In accordance with Interim Master Plan Policy RFP-7, geotechnical investigations would be performed by qualified personnel before approval of the final design for each feature, to identify geologic or soil characteristics that could result in unstable soils (e.g., highly erodible soils or slope conditions). Siting of project features also would avoid areas where potential slope instability could occur. In addition, the City of Fresno requires that projects within its jurisdiction perform additional soil investigation and evaluation, in accordance with City of Fresno Municipal Code Section 15-1404 (Development Standards) for any construction occurring within 300 feet of the San Joaquin River bluff. These investigation requirements would further identify issues with slope stability and would identify design controls to minimize the potential for landslides and any associated inundation. Therefore, the impact would be **less than significant**.

No mitigation measures are required.

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5 Alternatives

5.1 Alternative 1: Additional Parking

Under Alternative 1, the trail extension alignment, parking lot, and associated recreation amenities would be constructed as described for the project. In addition, a controlled vehicle entrance and a 40-stall parking lot would be constructed between the H Pond and the E Pond (Figure 1-3). This parking lot would not accommodate horse trailers. A two-vault ADA-accessible restroom, fire hydrant, and pet station would be located in the parking lot area. Access to the parking lot would be provided by a two-lane paved road from West Riverview Drive.

Impact WQ-1: Alternative 1 could violate water quality standards or waste discharge requirements.

Temporary Impacts. Under Alternative 1, a 40-stall parking lot, access road, and restroom facilities would be constructed in addition to the facilities described for the project. This alternative would disturb a larger area than the project (Table 1-1), but the construction activities would be similar. The BMPs for Alternative 1 would be the same as for the project. Therefore, the temporary impacts of Alternative 1 related to a potential violation of water quality standards or waste discharge requirements would be similar to the project impacts described in Chapter 4, "Impacts and Mitigation Measures," and would be **potentially significant**.

Long-Term Impacts. Alternative 1 would require a larger area of new impervious surfaces and parking than the project (Table 1-1). Alternative 1 also would provide an additional restroom facility in addition to the facilities and uses described for the project. The BMPs to reduce long-term water quality impacts would be the same as for the project. The impacts of urban contaminants from parking lot runoff and animal wastes from equestrian use would remain under this alternative. The long-term impacts of Alternative 1 related to a potential violation of water quality standards or waste discharge requirements would be similar to the project impacts described in Chapter 4 and would be **potentially significant**.

Mitigation Measure WQ-1a

Mitigation Measure WQ-1b

Mitigation Measure WQ-1c

These mitigation measures are presented under Impact WQ-1 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measures WQ-1a, WQ-1b, and WQ-1c would reduce the temporary and long-term impacts of Alternative 1 related to a potential violation of water quality standards or waste discharge requirements to **less than significant**.

Impact WQ-2: Alternative 1 could substantially deplete groundwater supplies or interfere substantially with groundwater recharge so that there would be a net deficit in aquifer volume or a lowering of the local groundwater table.

Temporary Impacts. The construction activities for the project and Alternative 1 would be similar. Therefore, the temporary impacts of Alternative 1 related to groundwater depletion would be similar to the project impacts described in Chapter 4, "Impacts and Mitigation Measures," and would be **less than significant**. No mitigation measures are required.

Long-Term Impacts. As shown in Table 1-1, Alternative 1 would require a larger amount of new impervious surfaces. This Alternative would also have fire suppression water demands greater than the project. However, the proposed impervious surface would be very small relative to the entire project site, and the increase in impervious area would not measurably affect recharge to the local groundwater basin. Operation under Alternative 1 would not substantially increase groundwater demands. Existing supplies that would be provided by the City of Fresno for fire suppression are expected to be adequate to serve Alternative 1 without lowering groundwater levels. This impact would be **less than significant**. No mitigation measures are required.

Impact WQ-3: Alternative 1 could substantially alter existing drainage patterns, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

Temporary Impacts. Like the project, Alternative 1 would require grading and moving soil and placing structures on steep slopes and within flood zones, which could alter drainage courses and runoff patterns. The proposed area of disturbance within the designated floodway for Alternative 1 is similar to the project's proposed area of disturbance (Table 2-1), but the proposed area of 100-year floodplain disturbance for this alternative is greater than that of the project (Table 2-2). Although the proposed area of disturbance is slightly different, the construction activities for the project and Alternative 1 would be similar. The water quality BMPs for Alternative 1 also would be the same as for the project. Therefore, the temporary impacts of Alternative 1 related to alteration of existing drainage patterns would be similar to the project impacts described in Chapter 4, "Impacts and Mitigation Measures," and would be **potentially significant**.

Long-Term Impacts. Placing impervious surfaces and other project components adjacent to or within the River's designated floodway and 100-year floodplain and on the steep Bluffs could contribute to hydromodification processes and associated water quality impacts. Tables 2-1 and 2-2 present the portions of Alternative 1 that would be located within the designated floodway and floodplain. Modifications of the Bluffs under Alternative 1 would be the same as under the project. No impervious surfaces would encroach into the designated floodway under Alternative 1. The total area of impervious and hard-packed surfaces within the 100-year floodplain would be slightly greater under Alternative 1 than under the project. Although the area of flood zone would be slightly different, implementation of project design features, BMPs, and Interim Master Plan policies would be the same. Therefore, the long-term impacts of Alternative 1 related to alteration of existing drainage patterns would be similar to the project impacts described in Chapter 4 and would be **potentially significant**.

Mitigation Measure WQ-3a: Implement Mitigation Measures WQ-1b

Mitigation Measure WQ-3b

These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measures WQ-3a and WQ-3b would reduce the temporary and long-term impacts of Alternative 1 related to a potential substantial alteration of existing drainage patterns that would result in substantial erosion or siltation on- or off-site to **less than significant**.

Impact WQ-4: Alternative 1 could substantially alter the 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 that would result in flooding on-site or off-site;

The temporary and long-term impacts of Alternative 1 related to alteration of drainage patterns are described under Impact WQ-3. Implementing Alternative 1 would not alter the drainage pattern of the project area beyond the effects described above in Impact WQ-3. However, this impact would be **potentially significant**.

Mitigation Measure WQ-4: Implement Mitigation Measures WQ-1b and WQ-3b

These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measure WQ-4 would reduce the temporary and long-term impacts of Alternative 1 related to a potential substantial alteration of the drainage pattern of the site to **less than significant**.

Impact WQ-5: Alternative 1 could create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

The temporary and long-term impacts of Alternative 1 related to creation or contribution of runoff to stormwater drainage systems would be greater than project impacts described in Chapter 4, "Impacts and Mitigation Measures," as a result of a larger amount of disturbance and impermeable surfaces and would be **potentially significant**.

Mitigation Measure WQ-5: Implement Mitigation Measures WQ-1band WQ-3b

These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measure WQ-5 would reduce the temporary and long-term impacts of Alternative 1 related to creation or contribution of runoff to stormwater drainage systems to **less than significant**.

Impact WQ-6: Alternative 1 could otherwise substantially degrade water quality.

The temporary and long-term impacts of Alternative 1 on water quality are described under Impacts WQ-1 and WQ-5. Implementing Alternative 1 would not degrade water quality beyond the effects described in Impacts WQ-1 and WQ-5. However, this impact would be potentially significant.

> **Mitigation Measure WQ-6: Implement Mitigation Measures WQ-1a, WQ-1b, WQ-1c, and WQ-3b**
>
> These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measure WQ-6 would reduce the temporary and long-term impacts of Alternative 1 related to substantial degradation of water quality to **less than significant**.

Impact WQ-7: Alternative 1 could place housing within a 100-year floodplain hazard area as mapped on flood hazard delineation maps.

Alternative 1 would not involve the construction of housing; therefore, **no impact** would occur related to the placement of housing within a 100-year flood zone.

Impact WQ-8: Alternative 1 could 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.

Temporary and long-term impacts of Alternative 1 related to potential loss, injury, or death from flooding caused by levee or dam failure would be greater than project impacts described in Chapter 4, "Impacts and Mitigation Measures," due to a larger area of floodplain alterations and would be **potentially significant**.

> **Mitigation Measure WQ-8: Implement Mitigation Measures WQ-1a and WQ-3b**
>
> These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measure WQ-8 would reduce the temporary and long-term impacts of Alternative 1 related to potential loss, injury, or death from flooding caused by levee or dam failure to **less than significant**.

Impact WQ-9: Alternative 1 could be subject to inundation by seiche, tsunami or mudflow.

Temporary and long-term impacts of Alternative 1 related to the potential for inundation by seiche, tsunami, or mudflow would be the same as project impacts described in Chapter 4, "Impacts and Mitigation Measures," and would be **less than significant**. No mitigation measures are required.

5.2 Alternative 2

Alternative 2 proposes an alternate alignment for a portion of the multipurpose trail extension. The trail section between the E Pond and the parking lot near the Perrin Canal bench would remain east of the H pond and would be aligned about 300 feet from the base of the Bluffs. All other amenities described for the project would be provided, including the proposed parking lot, landscaping, wildlife viewing areas, picnic areas, and restrooms.

Impact WQ-1: Alternative 2 could violate water quality standards or waste discharge requirements.

Temporary Impacts. The construction activities for the project and Alternative 2 would be similar; however, the proposed area of disturbance for Alternative 2 is less than the project's proposed area of disturbance (Table 1-1). BMPs would be the same for Alternative 2 as for the project. Therefore, the temporary water quality impacts of Alternative 2 would be similar to the project impacts described in Chapter 4, "Impacts and Mitigation Measures," and would be **potentially significant**.

Long-Term Impacts. Alternative 2 would require a smaller amount of new impervious surfaces and parking than the project (Table 1-1), but would have the same uses as the project. The BMPs also would be the same. Therefore, the long-term water quality impacts of Alternative 2 would be similar to the project impacts described in Chapter 4 and would be **potentially significant**.

Mitigation Measure WQ-1a

Mitigation Measure WQ-1b

Mitigation Measure WQ-1c

These mitigation measures are presented under Impact WQ-1 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measures WQ-1a, WQ-1b, and WQ-1c would reduce the temporary and long-term impacts of Alternative 2 related to a potential violation of water quality standards or waste discharge requirements to **less than significant**.

Impact WQ-2: Alternative 2 could substantially deplete groundwater supplies or interfere substantially with groundwater recharge so that there would be a net deficit in aquifer volume or a lowering of the local groundwater table.

Temporary Impacts. The construction activities for the project and Alternative 2 would be similar; therefore, the temporary impacts of Alternative 2 related to groundwater depletion would similar to the

project impacts described in Chapter 4, “Impacts and Mitigation Measures,” and would be **less than significant**. No mitigation measures are required.

Long-Term Impacts. As shown in Table 1-1, Alternative 1 would require a smaller amount of new impervious surface. The Alternative would also have lower fire suppression water demands than the project. Operation under Alternative 2 would not substantially increase groundwater demands. Existing supplies that would be provided by the City of Fresno for fire suppression are expected to be adequate to serve Alternative 2 without lowering groundwater levels. This impact would be less than significant. No mitigation measures are required.

Impact WQ-3: Alternative 2 could substantially alter existing drainage patterns, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

Temporary Impacts. Like the project, Alternative 2 would require grading and moving soil and placing structures on steep slopes and within flood zones, which could alter drainage courses and runoff patterns. The proposed area of disturbance within the designated floodway for Alternative 2 is slightly greater than the project’s proposed area of disturbance (Table 2-1), but the proposed area of 100-year floodplain disturbance for this alternative is less than that of the project (Table 2-2). Although the proposed area of disturbance is slightly different, the construction activities for the project and Alternative 2 would be similar. The water quality BMPs for Alternative 2 also would be the same as for the project. Therefore, the temporary impacts of Alternative 2 related to alteration of existing drainage patterns would be similar to the project impacts described in Chapter 4, “Impacts and Mitigation Measures,” and would be **potentially significant**.

Long-Term Impacts. Placing impervious surfaces and other project components adjacent to or within the River’s designated floodway and 100-year floodplain and on the steep Bluffs could contribute to hydromodification processes and associated water quality impacts. Tables 2-1 and 2-2 present the portions of Alternative 2 that would be located within the designated floodway and floodplain. Modifications of the Bluffs under Alternative 2 would be the same as under the project. No impervious surfaces would encroach into the designated floodway under Alternative 2. The total area of impervious and hard-packed surfaces within the 100-year floodplain would be slightly greater under Alternative 2 than under the project. Although the area of flood zone would be slightly different, implementation of project design features, BMPs, and Interim Master Plan policies would be the same. Therefore, the long-term impacts of Alternative 2 related to alteration of existing drainage patterns would be similar to the project impacts described in Chapter 4 and would be **potentially significant**.

Mitigation Measure WQ-3a: Implement Mitigation Measures WQ-1b, and

Mitigation Measure WQ-3b

These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, “Impacts and Mitigation Measures”).

Implementing Mitigation Measures WQ-3a and WQ-3b would reduce the temporary and long-term impacts of Alternative 2 related to a potential substantial alteration of existing drainage patterns that would result in substantial erosion or siltation on- or off-site to **less than significant**.

Impact WQ-4: Alternative 2 could substantially alter the 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 that would result in flooding on-site or off-site;

The temporary and long-term impacts of Alternative 2 related to alteration of drainage patterns are described under Impact WQ-3. Implementing Alternative 2 would not alter the drainage pattern of the project area beyond the effects described above in Impact WQ-3. However, this impact would be **potentially significant**.

> **Mitigation Measure WQ-4: Implement Mitigation Measures WQ-1band WQ-3b**
>
> These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measure WQ-4 would reduce the temporary and long-term impacts of Alternative 2 related to a potential substantial alteration of the drainage pattern of the site to **less than significant**.

Impact WQ-5: Alternative 2 could create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

The temporary and long-term impacts of Alternative 2 related to creation or contribution of runoff to stormwater drainage systems would be less than project impacts described in Chapter 4, "Impacts and Mitigation Measures," due to a smaller area of impermeable surfaces and would be **potentially significant**.

> **Mitigation Measure WQ-5: Implement Mitigation Measures WQ-1b and WQ-3b**
>
> These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measure WQ-5 would reduce the temporary and long-term impacts of Alternative 2 related to creation or contribution of runoff to stormwater drainage systems to **less than significant**.

Impact WQ-6: Alternative 2 could otherwise substantially degrade water quality.

The temporary and long-term impacts of Alternative 2 on water quality are described under Impacts WQ-1 and WQ-5. Implementing Alternative 2 would not degrade water quality beyond the effects described in Impacts WQ-1 and WQ-5. However, this impact would be **potentially significant.**

Mitigation Measure WQ-6: Implement Mitigation Measures WQ-1a, WQ-1b, WQ-1c, and WQ-3b

These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measure WQ-6 would reduce the temporary and long-term impacts of Alternative 2 related to substantial degradation of water quality to **less than significant**.

Impact WQ-7: Alternative 2 could place housing within a 100-year floodplain hazard area as mapped on flood hazard delineation maps.

Alternative 2 would not involve the construction of housing; therefore, **no impact** would occur related to the placement of housing within a 100-year flood zone.

Impact WQ-8: Alternative 2 could 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.

Temporary and long-term impacts of Alternative 2 related to potential loss, injury, or death from flooding caused by levee or dam failure would be less than project impacts described in Chapter 4, "Impacts and Mitigation Measures," due to smaller area of floodplain alteration and would be **potentially significant**.

Mitigation Measure WQ-8: Implement Mitigation Measures WQ-3b

These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measure WQ-8 would reduce the temporary and long-term impacts of Alternative 2 related to potential loss, injury, or death from flooding caused by levee or dam failure to **less than significant**.

Impact WQ-9: Alternative 2 could be subject to inundation by seiche, tsunami or mudflow.

Temporary and long-term impacts of Alternative 2 related to the potential for inundation by seiche, tsunami, or mudflow would be the same as project impacts described in Chapter 4, "Impacts and Mitigation Measures," and would be **less than significant.** No mitigation measures are required.

5.3 Alternative 3

Alternative 3 would involve constructing the multiuse trail extension along the river's edge in the southern portion of the project site. In the northern portion of the site, the trail extension would be in the same area as proposed by the project. All other amenities described for the project would be provided, including the proposed parking lot, landscaping, wildlife viewing areas, picnic tables, and restrooms. Spano Park access would be the same as for the project, but the access trail that would connect to the Bluff Trail would be moved to the northeast of the detention basin, near West Riverview Drive.

Alternative 3 also would relocate the pedestrian bridge to accommodate the river's edge multiuse trail alignment.

Impact WQ-1: Alternative 3 could violate water quality standards or waste discharge requirements.

Temporary Impacts. Alternative 3 would involve constructing an alternative multiuse trail extension route in addition to the facilities described for the project. The proposed area of disturbance and paved surfaces for Alternative 3 are greater than the project's proposed area of disturbance and paved surfaces (Table 1-1); however, construction activities would be similar. The BMPs also would be the same for Alternative 3 as for the project. Therefore, the temporary water quality impacts of Alternative 3 would be similar to the project impacts described in Chapter 4, "Impacts and Mitigation Measures," and would be **potentially significant**.

Long-Term Impacts. Alternative would require a larger amount of new impervious surfaces than the project (Table 1-1), and would provide an additional restroom facility along with the facilities and uses described for the project. However, BMPs would be the same for Alternative 3 as for the project. Therefore, the long-term water quality impacts of Alternative 3 would be similar to the project impacts described in Chapter 4 and would be **potentially significant**.

Mitigation Measure WQ-1a

Mitigation Measure WQ-1b

Mitigation Measure WQ-1c

These mitigation measures are presented under Impact WQ-1 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measures WQ-1a, WQ-1b, and WQ-1c would reduce the temporary and long-term impacts of Alternative 3 related to a potential violation of water quality standards or waste discharge requirements to **less than significant**.

Impact WQ-2: Alternative 3 could substantially deplete groundwater supplies or interfere substantially with groundwater recharge so that there would be a net deficit in aquifer volume or a lowering of the local groundwater table.

Temporary Impacts. The construction activities for the project and Alternative 3 would be similar; therefore, the temporary impacts of Alternative 3 related to groundwater depletion would slightly greater than the project impacts described in Chapter 4, "Impacts and Mitigation Measures," due to a larger area of disturbance and would be **less than significant**. No mitigation measures are required.

Long-Term Impacts. As shown in Table 1-1, Alternative 3 would require a larger amount of new impervious surfaces. This Alternative would also have fire suppression water demands under Alternative 1 would be greater than the project given the larger impervious surface. However, the percentage of impervious surface proposed is very small relative to the entire project site, and this increase would not

measurably affect recharge to the local groundwater basin. Operation under Alternative 3 would not substantially increase groundwater demands. Existing supplies that would be provided by the City of Fresno for fire suppression are expected to be adequate to serve Alternative 3 without lowering groundwater levels. This impact would be **less than significant**. No mitigation measures are required.

Impact WQ-3: Alternative 3 could substantially alter existing drainage patterns, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

Temporary Impacts. Like the project, Alternative 3 would require grading and moving soil and placing structures on steep slopes and within flood zones, which could alter drainage courses and runoff patterns. The proposed area of disturbance within the designated floodway for Alternative 3 is similar to the project's proposed area of disturbance (Table 2-1), but Alternative 3 would place the multiuse trail extension and associated surfaces in the designated floodway. The proposed area of 100-year floodplain disturbance for this alternative is less than that of the project (Table 2-2). Although the proposed area of disturbance is slightly different, the construction activities for the project and Alternative 3 would be similar. The water quality BMPs for Alternative 3 also would be the same as for the project. Therefore, the temporary impacts of Alternative 3 related to alteration of existing drainage patterns would be similar to the project impacts described in Chapter 4, "Impacts and Mitigation Measures," and would be **potentially significant**.

Long-Term Impacts. The placement of impervious surfaces and other project components adjacent to or within the designated floodway and 100-year floodplain and on the steep bluffs could contribute to hydromodification processes and associated water quality impacts. Tables 2-1 and 2-2 present the portion of Alternative 3 located within the designated floodway and floodplain. Modifications of the Bluffs under Alternative 3 would be the same as the project. No impervious surfaces would encroach into the designated floodway under Alternative 1. The total area of impervious and hard-packed surfaces would be slightly greater within the 100-year floodplain under Alternative 1 than the project. While the area of flood zone is slightly different, implementation of project design features, BMPs, and Interim Master Plan policies and mitigation measures would be the same. Therefore, the long-term impacts of Alternative 3 related to alteration of existing drainage patterns would be similar to the project impacts described in Chapter 4 and would be **potentially significant.**

Mitigation Measure WQ-3a: Implement Mitigation Measures WQ-1a, WQ-1b, and WQ-1c

Mitigation Measure WQ-3b

These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measures WQ-3a and WQ-3b would reduce the temporary and long-term impacts of Alternative 1 related to a potential substantial alteration of existing drainage patterns that would result in substantial erosion or siltation on- or off-site to less than significant.

Impact WQ-4: Alternative 3 could substantially alter the 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 that would result in flooding on-site or off-site.

The temporary and long-term impacts of Alternative 3 related to alteration of drainage patterns are described in Impact WQ-3. Implementing Alternative 3 would not alter the drainage pattern beyond the effects described above in Impact WQ-3. However, this impact would be **potentially significant.**

> **Mitigation Measure WQ-4: Implement Mitigation Measures WQ-1band WQ-3b**
>
> These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measure WQ-4 would reduce the temporary and long-term impacts of Alternative 3 related to a potential substantial alteration of the drainage pattern of the site to **less than significant**.

Impact WQ-5: Alternative 3 could create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

The temporary and long-term impacts of Alternative 3 related to creation or contribution of runoff to stormwater drainage systems would be greater than project impacts described in Chapter 4, "Impacts and Mitigation Measures," due to the amount of impermeable surfaces and would be **potentially significant**.

> **Mitigation Measure WQ-5: Implement Mitigation Measures WQ-1b and WQ-3b**
>
> These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measure WQ-5 would reduce the temporary and long-term impacts of Alternative 3 related to creation or contribution of runoff to stormwater drainage systems to **less than significant**.

Impact WQ-6: Alternative 3 could otherwise substantially degrade water quality.

The temporary and long-term impacts of Alternative 3 on water quality are described under Impacts WQ-1 and WQ-5. Implementing Alternative 3 would not degrade water quality beyond the effects described in Impacts WQ-1 and WQ-5. However, this impact would be **potentially significant**.

> **Mitigation Measure WQ-6: Implement Mitigation Measures WQ-1a, WQ-1b, WQ-1c, and WQ-3b**
>
> These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measure WQ-6 would reduce the temporary and long-term impacts of Alternative 3 related to substantial degradation of water quality to **less than significant**.

Impact WQ-7: Alternative 3 could place housing within a 100-year floodplain hazard area as mapped on flood hazard delineation maps.

Alternative 3 would not involve the construction of housing; therefore, **no impact** would occur related to the placement of housing within a 100-year flood zone.

Impact WQ-8: Alternative 3 could 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.

Temporary and long-term impacts of Alternative 3 related to potential loss, injury, or death from flooding caused by levee or dam failure would be greater than project impacts described in Chapter 4, "Impacts and Mitigation Measures" due to placement of paved surfaces and structures with the designated floodway. Under Alternative 3, the trail extension would also be aligned along the berm for the O pond, including a portion of the berm that previously breached. An additional pedestrian bridge and surface water equalization saddle would be installed along the portion of this trail. The berms are not levees constructed to flood control standards and tend to fail during high-flow events. Aligning the trail extension along the pond berm could increase exposure to flooding as a result of berm failure if the berm were to become unstable or breach. In accordance with Interim Master Plan Policies RFMP1 and RFMP2, new structures and other project components would be designed to avoid posing a safety hazard. Implementing the project design features and Interim Master Plan policies would reduce potential exposure to flood hazards. However, this impact would be **potentially significant.**

> **Mitigation Measure WQ-8: Implement Mitigation Measure WQ-3b**
>
> This mitigation measure is presented under Impact WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measure WQ-8 would reduce the temporary and long-term impacts of Alternative 3 related to potential loss, injury, or death from flooding caused by levee or dam failure to **less than significant**.

Impact WQ-9: Alternative 3 could be subject to inundation by seiche, tsunami or mudflow.

Temporary and long-term impacts of Alternative 3 related to the potential for inundation by seiche, tsunami, or mudflow would be the same as project impacts described in Chapter 4, "Impacts and Mitigation Measures," and would be **less than significant.** No mitigation measures are required.

5.4 Alternative 4

In Alternative 4, no public parking or trailering would be provided on-site. The trail extension would be constructed on the proposed or alternative trail alignments (Figure 1-3). All entrances

would be walk-in/bicycle-in only. All amenities described for the project other than the entrance station and parking landscaping would be provided.

Impact WQ-1: Alternative 4 could violate water quality standards or waste discharge requirements.

Temporary Impacts. The construction activities for the project and Alternative 4 would be similar; however, the proposed area of disturbance for Alternative 4 is less than the project's proposed area of disturbance (Table 1-1). BMPs would be the same for Alternative 4 as for the project. Therefore, the temporary water quality impacts of Alternative 4 would similar to the project impacts described in Chapter 4, "Impacts and Mitigation Measures," and would be **potentially significant**.

Long-Term Impacts. Alternative 4 would require a smaller amount of new impervious surfaces and parking than the project (Table 1-1), but would have the same uses. The BMPs also would be the same. Therefore, the long-term water quality impacts of Alternative 4 would be similar to the project impacts described in Chapter 4 and would be **potentially significant**.

Mitigation Measure WQ-1a

Mitigation Measure WQ-1b

Mitigation Measure WQ-1c

These mitigation measures are presented under Impact WQ-1 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measures WQ-1a, WQ-1b, and WQ-1c would reduce the temporary and long-term impacts of Alternative 4 related to a potential violation of water quality standards or waste discharge requirements to **less than significant**.

Impact WQ-2: Alternative 4 could substantially deplete groundwater supplies or interfere substantially with groundwater recharge so that there would be a net deficit in aquifer volume or a lowering of the local groundwater table.

Temporary Impacts. The construction activities for the project and Alternative 4 would be similar; therefore, the temporary impacts of Alternative 4 related to groundwater depletion would be similar to the project impacts described in Chapter 4, "Impacts and Mitigation Measures," and would be **less than significant**. No mitigation measures are required.

Long-Term Impacts. As shown in Table 1-1, Alternative 4 would require a smaller amount of new impervious surfaces. The percentage of impervious surface proposed is very small relative to the entire project site, and this increase would not measurably affect recharge to the local groundwater basin. Operation under Alternative 4 would not substantially increase groundwater demands. Existing supplies that would be provided by the City of Fresno for fire suppression are expected to be adequate to serve Alternative 4 without lowering groundwater levels. This impact would be **less than significant.** No mitigation measures are required.

Impact WQ-3: Alternative 4 could substantially alter existing drainage patterns, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

Temporary Impacts. Like the project, Alternative 4 would require grading and moving soil and placing structures on steep slopes and within flood zones, which could alter drainage courses and runoff patterns. The proposed area of disturbance within the designated floodway for Alternative 4 is similar to the project's proposed area of disturbance (Table 2-1), but the proposed area of 100-year floodplain disturbance for this alternative is less than that of the project (Table 2-2). Although the proposed area of disturbance is slightly different, the construction activities for the project and Alternative 4 would be similar. The water quality BMPs for Alternative 4 also would be the same as for the project. Therefore, the temporary impacts of Alternative 4 related to alteration of existing drainage patterns would be similar to the project impacts described in Chapter 4, "Impacts and Mitigation Measures," and would be potentially significant.

Long-Term Impacts. Placing impervious surfaces and other project components adjacent to or within the River's designated floodway and 100-year floodplain and on the steep Bluffs could contribute to hydromodification processes and associated water quality impacts. Tables 2-1 and 2-2 present the portions of Alternative 4 that would be located within the designated floodway and floodplain. Modifications of the Bluffs under Alternative 4 would be the same as under the project. No impervious surfaces would encroach into the designated floodway under Alternative 4. The total area of impervious and hard-packed surfaces within the 100-year floodplain would be slightly less under Alternative 4 than under the project. Although the area of flood zone would be slightly different, implementation of project design features, BMPs, and Interim Master Plan policies would be the same. Therefore, the long-term impacts of Alternative 4 related to alteration of existing drainage patterns would be similar to the project impacts described in Chapter 4 and would be **potentially significant**.

> **Mitigation Measure WQ-3: Implement Mitigation Measures WQ-1a, WQ-1b, WQ-1c, and WQ-3b**
>
> These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measures WQ-3a and WQ-3b would reduce the temporary and long-term impacts of Alternative 4 related to a potential substantial alteration of existing drainage patterns that would result in substantial erosion or siltation on- or off-site to **less than significant**.

Impact WQ-4: Alternative 4 could substantially alter the 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 that would result in flooding on-site or off-site;

The temporary and long-term impacts of Alternative 4 related to alteration of drainage patterns are described in Impact WQ-3. Alternative 4 would not alter the drainage pattern beyond the effects described above in Impact WQ-3. However, this impact would be **potentially significant**.

Mitigation Measure WQ-4: Implement Mitigation Measures WQ-1b and WQ-3b

Implementing Mitigation Measure WQ-4 would reduce the temporary and long-term impacts of Alternative 4 related to a potential substantial alteration of the drainage pattern of the site to **less than significant**.

Impact WQ-5: Alternative 4 could create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Temporary and long-term impacts of Alternative 4 related to creation or contribution of runoff to stormwater drainage systems would be similar to the project impacts described in Chapter 4, "Impacts and Mitigation Measures." However, Alternative 4 would have less potential than the project to cause a construction-related exceedance of stormwater drainage capacity and generate polluted runoff during construction. Because Alternative 4 would not include the parking lot(s), drainage and treatment of polluted water from these impervious surfaces would not be necessary. However, this impact would be **potentially significant.**

Mitigation Measure WQ-5: Implement Mitigation Measures WQ-1band WQ-3b

These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measure WQ-5 would reduce the temporary and long-term impacts of Alternative 4 related to creation or contribution of runoff to stormwater drainage systems to **less than significant**.

Impact WQ-6: Alternative 4 could otherwise substantially degrade water quality.

The temporary and long-term impacts of Alternative 4 on water quality are described in Impacts WQ-1 and WQ-5. Implementing Alternative 4 would not degrade water quality beyond the effects described in Impacts WQ-1 and WQ-5. However, this impact would be **potentially significant**.

Mitigation Measure WQ-6: Implement Mitigation Measures WQ-1a, WQ-1b, WQ-1c, and WQ-3b

These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measure WQ-6 would reduce the temporary and long-term impacts of Alternative 4 related to substantial degradation of water quality to **less than significant**.

Impact WQ-7: Alternative 4 could place housing within a 100-year floodplain hazard area as mapped on flood hazard delineation maps.

Alternative 4 would not involve the construction of housing; therefore, **no impact** would occur related to the placement of housing within a 100-year flood zone.

Impact WQ-8: Alternative 4 could 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.

Temporary and long-term impacts of Alternative 4 related to potential loss, injury, or death from flooding caused by levee or dam failure would be similar to the project impacts described in Chapter 4, "Impacts and Mitigation Measures," and would be **potentially significant**.

> **Mitigation Measure WQ-8: Implement Mitigation Measures WQ-1a and WQ-3b**
>
> These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measure WQ-8 would reduce the temporary and long-term impacts of Alternative 1 related to potential loss, injury, or death from flooding caused by levee or dam failure to **less than significant**.

Impact WQ-9: Alternative 4 could be subject to inundation by seiche, tsunami or mudflow.

Temporary and long-term impacts of Alternative 4 related to the potential for inundation by seiche, tsunami, or mudflow would be to the same as project impacts described in Chapter 4, "Impacts and Mitigation Measures," and would be **less than significant**. No mitigation measures are required.

5.5 Alternative 5

In Alternative 5, the multiuse trail extension would continue downriver from the end of the proposed trail near the FMFCD flood control basin (Figure 1-3). Trail design would remain the same as described for the project. Public access to the river would be provided from the intersection of Palm and Nees Avenues via the existing paved road (outermost road). A 40-stall parking lot would be constructed on the river bottom and two-way vehicle access would be provided by the paved road. A physically separated pedestrian path and or bikeway would parallel the paved road. The paved road would connect with a turnaround near the parking lot. The turnaround would be designed to accommodate the turning radius of a Fresno Fire Department fire truck. Recreational amenities such as two-vault ADA-compliant toilets, landscaping, lighting, and picnic tables would be added near the parking lot. The multiuse trail extension would end at the turnaround. Access to the parking lot would be managed by a vehicle control gate, or traffic bollards and a fee entrance station.

Impact WQ-1: Alternative 5 could violate water quality standards or waste discharge requirements.

Temporary Impacts. Alternative 5 would involve constructing a lengthier multiuse trail extension, a 40-stall parking lot and access road plus turnaround area, and restrooms, in addition to the facilities described for the project. The proposed area of disturbance and paved surfaces for Alternative 5 are greater than the

project's proposed area of disturbance and paved surfaces (Table 1-1). BMPs, applicable policies from the Conservancy's Interim Master Plan, and other regulatory requirements would be implemented to reduce temporary water quality impacts. The BMPs for this alternative would be the same as for the project.

The location of the Alternative 5 project features coincides with an area that was formerly used as an Air Corps training facility, Japanese internment camp, and the Pinedale Landfill. A plume of groundwater contaminated with trichloroethylene, polychlorinated biphenyls, and chloroform is situated below the residential development on the Bluffs, near the intersection of Palm and Nees avenues; the soils in the vicinity of the groundwater plume also may be contaminated (URS Corporation 2014). Disturbance of the soil during construction could mobilize contaminated sediments, creating a health hazard and a potential source of polluted sediment that could enter receiving waters. Construction activities near the former landfill could disturb drainage patterns or disturb cover, which could cause or allow the landfill materials to become wet, thereby increasing the potential for possible leachate accumulation over time. This temporary impact would be **potentially significant.**

Long-Term Impacts. Alternative 5 would require a larger amount of new impervious surfaces than the project (Table 1-1). This alternative also would have an additional restroom facility along with the facilities and uses described for the project.

Implementing BMPs, applicable policies from the Conservancy's Interim Master Plan, and other regulatory requirements would adequately reduce most water quality impacts associated with construction under Alternative 5; however, the potential would remain for water quality impacts associated with construction in areas with possible contamination. As discussed above for the temporary impacts, placement of facilities near the former landfill could disturb drainage patterns or disturb cover, which could cause or allow the landfill materials to become wet, thereby contributing to an increased potential for possible leachate accumulation over time. This long-term impact would be **potentially significant.**

Mitigation Measure WQ-1a: Implement Project Mitigation Measures WQ-1a, WQ-1b, and WQ-1c

These mitigation measures are presented under Impact WQ-1 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Mitigation Measure WQ-1b: Implement Alternative 5 Mitigation Measures HAZ-1, HAZ-2, and HAZ-3.

These mitigation measures are presented in the analysis of Hazards and Hazardous Materials impacts for Alternative 5 in the EIR, but are reproduced below.

HAZ-1: Perform a Phase II Environmental Site Assessment and Implement any Necessary Remedial Activities. A licensed environmental professional shall be retained to perform site-specific testing at the locations of the proposed paved pedestrian/bicycle path (adjacent to the existing access road) and new parking area and associated facilities (at the base of the existing access road). Testing shall include soil and groundwater samples for constituents of concern such as volatile organic compounds, along with vapor monitoring for ambient air emissions of

constituents such as methane. Laboratory results shall be presented and summarized in a report, which shall be submitted to the County of Fresno Department of Public Health. The report shall recommend specific remedial activities and any project design features that are necessary to assure human and environmental health and safety with implementation of Alternative 5. (An example of a necessary project design feature is installing a concrete-lined drainage ditch adjacent to the paved pathway next to the access road to prevent potentially explosive gases from forming as stormwater runoff interacts with landfill materials, and to prevent runoff from transporting landfill leachate materials into the San Joaquin River.) All remedial actions recommended in the report shall be implemented before the start of any earthmoving or ground-disturbing activities within the Alternative 5 project site.

HAZ-2: Prepare and Implement a Postclosure Land Use Plan. Before the start of any earthmoving activities at the Alternative 5 project site, a postclosure land use plan shall be prepared in compliance with 27 CCR Sections 20950–21420. As required by Section 21190, the postclosure land use shall be designed and maintained to:

- protect public health and safety and prevent damage to structures, roads, utilities, and gas monitoring and control systems;
- prevent public contact with waste, landfill gas, and leachate; and
- prevent landfill gas explosions.

The land use plan shall be submitted to the County of Fresno Department of Public Health and the Central Valley RWQCB for review and approval.

HAZ-3: Prepare a Worker Health and Safety Plan. A worker health and safety plan shall be prepared before the start of construction activities within the Alternative 5 project site. The plan shall identify the following information, at a minimum:

- the potential types of contaminants that could be encountered during construction activity;
- all appropriate worker, public health, and environmental protection equipment and procedures to be used during project activities;
- emergency response procedures;
- the most direct route to the nearest hospitals; and
- a Site Safety Officer.

The plan shall describe actions to be taken should hazardous materials be encountered during construction, including protocols for handling hazardous materials and preventing their spread, and emergency notification procedures to local and/or State regulatory agencies. The plan shall

specify that if evidence of hazardous materials contamination is observed or suspected during site preparation or construction through either obvious or implied measures (i.e., stained or odorous soil or groundwater), construction activities shall immediately cease in the area of the find. A qualified hazardous materials specialist shall assess the site and collect and analyze soil and/or groundwater samples, if needed. If contaminants are identified in the samples, the Conservancy shall employ measures, or coordinate with the landowner or other responsible party to employ measures, in accordance with federal and State regulations before construction activities can resume at the site.

Implementing Mitigation Measures WQ-1a and WQ-1b would reduce the temporary and long-term impacts of Alternative 5 related to a potential violation of water quality standards or waste discharge requirements to **less than significant**.

Impact WQ-2: Alternative 5 could substantially deplete groundwater supplies or interfere substantially with groundwater recharge so that there would be a net deficit in aquifer volume or a lowering of the local groundwater table.

Temporary Impacts. The construction activities for the project and Alternative 5 would be similar; therefore, the temporary impacts of Alternative 5 related to groundwater depletion would similar to the project impacts described in Chapter 4, "Impacts and Mitigation Measures," and would be **less than significant**. No mitigation measures are required.

Long-Term Impacts. As shown in Table 1-1, Alternative 5 would require a larger amount of new impervious surfaces. However, the percentage of impervious surface proposed is very small relative to the entire project site, and this increase would not measurably affect recharge to the local groundwater basin. Operation under Alternative 5 would not substantially increase groundwater demands. Existing supplies that would be provided by the City of Fresno for fire suppression are expected to be adequate to serve Alternative 5 without lowering groundwater levels. This impact would be **less than significant.** No mitigation measures are required.

Impact WQ-3: Alternative 5 could substantially alter existing drainage patterns, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

Temporary Impacts. Like the project, Alternative 5 would require grading and moving soil and placing structures on steep slopes and within flood zones, which could alter drainage courses and runoff patterns. The proposed area of disturbance within the designated floodway for Alternative 5 is similar to the project's proposed area of disturbance (Table 2-1), but the proposed area of 100-year floodplain disturbance for this alternative is greater than that of the project (Table 2-2). Although the proposed area of disturbance is slightly different, the construction activities for the project and Alternative 5 would be similar. The water quality BMPs for Alternative 5 also would also be the same as for the project. Therefore, the temporary impacts of Alternative 5 related to alteration of existing drainage patterns would be similar to the project impacts described in Chapter 4, "Impacts and Mitigation Measures." Construction of facilities near the former landfill could alter drainage patterns or disturb landfill covers, which could further contribute to hydromodification. BMPs, applicable policies from the Conservancy's

Interim Master Plan, and other regulatory requirements would be implemented to reduce any impacts of hydromodification from placing structures in areas of the former landfill. However, this impact would be **potentially significant.**

Long-Term Impacts. Placing impervious surfaces and other project components adjacent to or within the River's designated floodway and 100-year floodplain and on the steep Bluffs could contribute to hydromodification processes and associated water quality impacts. Tables 2-1 and 2-2 present the portions of Alternative 5 that would be located within the designated floodway and floodplain. Modifications of the Bluffs under Alternative 5 would be the same as under the project. No impervious surfaces would encroach into the designated floodway under Alternative 5. The total area of impervious and hard-packed surfaces within the 100-year floodplain would be slightly greater under Alternative 5 than under the project. As discussed above for construction, placement of facilities near the former landfill could disturb drainage patterns or disturb cover, which could further contribute to hydromodification. BMPs, applicable policies from the Conservancy's Interim Master Plan, and other regulatory requirements would be implemented to reduce any impacts of hydromodification from placing structures in areas of the former landfill. However, this impact would be **potentially significant**.

> **Mitigation Measure WQ-3: Implement Project Mitigation Measures WQ-1a, WQ-1b, WQ-1c, and WQ-3b and Alternative 5 Mitigation Measure WQ-1b**
>
> Project Mitigation Measures WQ-1a, WQ-1b, WQ-1c, and WQ-3b are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures"). Alternative 5 Mitigation Measure WQ-1b is presented under Alternative 5 Impact WQ-1, above.

Implementing Mitigation Measure WQ-3 would reduce any impacts of Alternative 5 related to hydromodification from placing structures in areas of the former landfill to **less than significant**.

Impact WQ-4: Alternative 5 could substantially alter the 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 that would result in flooding on-site or off-site;

The temporary and long-term impacts of Alternative 5 related to alteration of drainage patterns are described in Impact WQ-3. Alternative 5 would not alter the drainage pattern of the project area beyond the effects described above in Impact WQ-3. However, this impact would be **potentially significant**.

> **Mitigation Measure WQ-4: Implement Project Mitigation Measures WQ-1b WQ-3b and Alternative 5 Mitigation Measure WQ-1b**
>
> Project Mitigation Measures WQ-1b and WQ-3b are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures"). Alternative 5 Mitigation Measure WQ-1b is presented under Alternative 5 Impact WQ-1, above.

Implementing Mitigation Measure WQ-4 would reduce the temporary and long-term impacts of Alternative 5 related to a potential substantial alteration of the drainage pattern of the site to **less than significant**.

Impact WQ-5: Alternative 5 could create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

The temporary and long-term impacts of Alternative 5 related to creation or contribution of runoff to stormwater drainage systems would be similar to the project impacts described in Chapter 4, "Impacts and Mitigation Measures," and would be **potentially significant**.

> **Mitigation Measure WQ-5: Implement Project Mitigation Measures WQ-1band WQ-3b**
>
> These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures").

Implementing Mitigation Measure WQ-5 would reduce the temporary and long-term impacts of Alternative 5 related to creation or contribution of runoff to stormwater drainage systems to **less than significant**.

Impact WQ-6: Alternative 5 could otherwise substantially degrade water quality.

The temporary and long-term impacts of Alternative 5 on water quality are described in Impacts WQ-1 and WQ-5. Implementing Alternative 5 would not degrade water quality beyond the effects described in Impacts WQ-1 and WQ-5. However, this impact would be **potentially significant**.

> **Mitigation Measure WQ-6: Implement Project Mitigation Measures WQ-1a, WQ-1b, WQ-1c, and WQ-3b and Alternative 5 Mitigation Measures HAZ-1, HAZ-2, and HAZ-3**
>
> These project mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, "Impacts and Mitigation Measures"). These Alternative 5 mitigation measures are presented under Alternative 5 Impact WQ-1, above.

Implementing Mitigation Measure WQ-6 would reduce the temporary and long-term impacts of Alternative 1 related to substantial degradation of water quality to **less than significant**.

Impact WQ-7: Alternative 5 could place housing within a 100-year floodplain hazard area as mapped on flood hazard delineation maps.

Alternative 5 would not involve the construction of housing; therefore, **no impact** would occur related to the placement of housing within a 100-year flood zone.

Impact WQ-8: Alternative 5 could 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.

Temporary and long-term impacts of Alternative 5 related to potential loss, injury, or death from flooding caused by levee or dam failure would be similar to the project impacts described in Chapter 4, "Impacts and Mitigation Measures," and would be **potentially significant**.

Mitigation Measure WQ-8: Implement Project Mitigation Measures WQ-1a and WQ-3b

These mitigation measures are presented under Impacts WQ-1 and WQ-3 for the project (see Chapter 4, “Impacts and Mitigation Measures”).

Implementing Mitigation Measure WQ-8 would reduce the temporary and long-term impacts of Alternative 1 related to potential loss, injury, or death from flooding caused by levee or dam failure to **less than significant**.

Impact WQ-9: Alternative 5 could be subject to inundation by seiche, tsunami or mudflow.

Temporary and long-term impacts of Alternative 5 related to the potential for inundation by seiches, tsunami, or mudflow would be the same as project impacts described in Chapter 4, “Impacts and Mitigation Measures,” and would be less than significant. No mitigation measures are required.

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Appendix H
Traffic Report

AECOM

Traffic Impact Analysis Report

San Joaquin River Conservancy
River West Fresno,
Eaton Trail Extension Project

Prepared for

San Joaquin River Conservancy

AECOM Project No. 60425596
March 2016

999 Town and County Road, Suite 300
Orange, CA 92868

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Section 1 Introduction

1.1 Study Purpose

The purpose of this Traffic Impact Analysis (TIA) Report is to document the traffic analysis conducted for the San Joaquin River Conservancy, River West Fresno, Eaton Trail Extension Project (the "project"), identify potential traffic and traffic impacts, and recommend mitigation measures to reduce those impacts to a less-than-significant level. This study was prepared according to the *City of Fresno Traffic Impact Study Report Guidelines* (City of Fresno 2009) and in consultation with the Fresno County Public Works Department, Traffic Engineering staff.

The analysis focuses on the potential traffic impacts to the surrounding roadway circulation system and the development of mitigation measures at any impacted location.

1.2 Study Area and Project Background

The Project study area encompasses land uses immediately bordering the project site including the adjacent roadway circulation system comprised of State Highway 41 and local roadways. Figure 1-1 shows the project site in context to the regional roadway circulation system. Figure 1-2 shows the project study area.

The proposed project site is located within the city limits of Fresno on lands owed by the San Joaquin River Conservancy and the City of Fresno (City) on the south side of the San Joaquin River and west of State Route 41. The San Joaquin River Conservancy's, *Interim San Joaquin River Parkway Master Plan* (San Joaquin River Conservancy 1997) proposes to extend the City's Eaton Trail, and provide public access improvements and wildlife habitat enhancements.

1.3 Report Organization

Following this Introduction, this report is organized into the following sections:

Section 2 Analysis Methodology describes the methodologies and standards utilized to analyze roadway and intersection traffic conditions.

Section 3 Existing Conditions describes the existing traffic network within the study area and provides analysis results for existing traffic conditions.

Section 4 Project Description describes the proposed project including project traffic generation, trip distribution patterns, and project trip assignment.

Section 5 Existing Plus Project Traffic Conditions describes existing plus project traffic conditions. Results are provided for the existing with project traffic conditions.

Section 6 Future Circulation Conditions describes future project circulation and analysis under long-term (2040) conditions.

Section 7 Findings and Conclusions summarizes overall traffic study findings and conclusions.

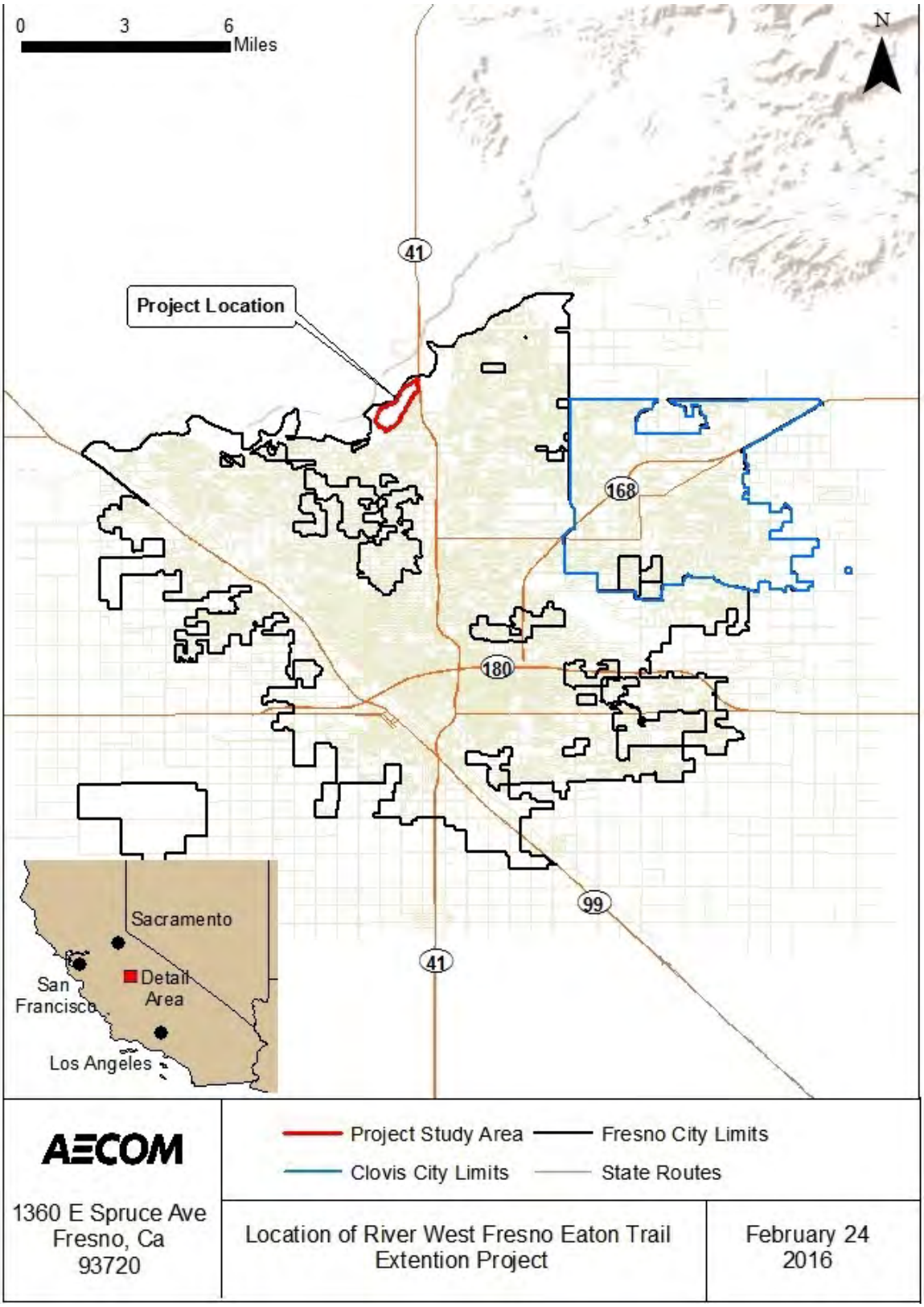

Figure 1-1 Regional Vicinity Map

Figure 1- 2 Project Study Area

Section 2
Analysis Methodology

The traffic analyses prepared for this study were performed in accordance with *City of Fresno Traffic Impact Study Report Guidelines* (City of Fresno 2009). Detailed information on roadway segment analysis methodologies, standards, and thresholds are discussed in the following sections.

The traffic analysis focuses in the evaluation of study roadway segment operating conditions with and without the proposed project. According to the *City of Fresno Traffic Impact Study Guidelines* (City of Fresno 2009), all roadway segments shall operate at a level of service (LOS) D or better under the near-term conditions. Under long-term conditions (year 2025 conditions) all City roadway segments shall operate at a LOS D or better, except for the roadway segments adopted in the City of Fresno General Plan 2035 Update (City of Fresno 2014a) and Final EIR (City of Fresno 2014b) to operate at LOS E or F. The roadway segment LOS shall be based on Florida Tables or latest Highway Capacity Manual (HCM) procedures.

The parking assessment prepared for this study was performed to specifically document existing parking operations and park use activity at areas traditionally used to access the project site. Detailed information on the parking analysis methodology used in this study is discussed below.

2.1 Level of Service Descriptions

LOS is an indicator of operating conditions on a roadway or at an intersection and is defined in categories ranging from A to F. These categories can be viewed much like school grades, with LOS A representing the best traffic flow conditions and LOS F representing poor conditions. LOS A indicates free-flowing traffic, and LOS F indicates substantial congestion with stop-and-go traffic and long delays at intersections. Table 2-1 provides a description of roadway segment operations as it relates to LOS and is consistent with the requirements from the *City of Fresno Traffic Impact Study Report Guidelines* (City of Fresno 2009).

2.2 Roadway Segment Analysis

Roadway segment LOS standards and thresholds provide the basis for roadway segment performance. The assessment of roadway segment LOS is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes.

For analysis purposes and consistent with the requirements of the *City of Fresno Traffic Impact Study Report Guidelines* (City of Fresno 2009), the roadway segment assessment was based on the Florida Department of Transportation Table 7, Generalized Peak Hour Directional Volumes for Urbanized Areas. The generalized peak hour roadway segment volumes were subsequently adjusted to reflect non-state signalized roadway segment volumes. This methodology is approved for use by the *City of Fresno Traffic Impact Study Report Guidelines* (City of Fresno 2009). The table considers the capacity of individual roadway segments based on numerous roadway variables (such as highway design speed, number of passing lanes, saturation flow, shoulder width, intersection spacing, etc.). Highways are generally considered uninterrupted flow roadways (two-lane or multilane). Uninterrupted flow highways are roadways with a combination of roadway segments which have average signalized intersection spacing

Table 2-1 Roadway Levels of Service Description

Level of Service	Description of Operation
A	At LOS A, motorists experience high operating speeds on Class I highways and little difficulty in passing. Platoons of three or more vehicles are rare. On Class II highways, speed would be controlled primarily by roadway conditions. A small amount of platooning would be expected. On Class III highways, drivers should be able to maintain operating speeds close to or equal to the free-flow speed of the facility.
B	At LOS B, passing demand and passing capacity are balanced. In both Class I and Class II, the degree of platooning becomes noticeable. Some speed reductions are present on Class I highways. On Class III highways it becomes difficult to maintain FFS operation, but the speed reduction is relatively small.
C	At LOS C, most vehicles are traveling in platoons. Speeds are noticeably curtailed on all three classes of highway.
D	At LOS D, platooning increases significantly. Passing demand is high on both Class I and Class II facilities, but passing capacity approaches zero. A high percentage of vehicles are now traveling in platoons, and PTSF is quite noticeable. On Class III highways, the fall-off from FFS is now significant.
E	At LOS E, demand is approaching capacity. Passing on Class I and II highways is virtually impossible, and PTSF is more than 80%. Speeds are seriously curtailed. On Class III highways, speed is less than two-thirds the FFS. The lower limit of this LOS represents capacity.
F	LOS F exists whenever demand flow in one or both directions exceeds the capacity of the segment. Operating conditions are unstable, and heavy congestion exists on all classes of two-lane highway.

Source: 2010 Highway Capacity Manual

greater than 2 miles and are not freeways. Interrupted flow roadways are characterized by signals with average signalized intersection spacing less than or equal to 2 miles.

Table 2-2 provides the Generalized Peak Hour Directional Volumes Ranges for Urbanized Areas and LOS categories (Source: Florida Department of Transportation Table 7, Generalized Peak Hour Directional Volumes for Urbanized Areas (Modified for Non-State Roadways) (Florida Department of Transportation 2012) that will be used in the evaluation of roadway segment performance and in determining project related impacts.

2.3 Determination of Significant Impacts

According to *the City of Fresno Traffic Impact Study Guidelines* (City of Fresno 2009), a project is considered to have an individually significant impact on the operation of an intersection if the addition traffic generated from the proposed project results in any of the following conditions:

- Triggers an intersection operating at acceptable LOS to operate at unacceptable levels of service.
- Triggers an intersection operating at unacceptable LOS (LOS E) to operate at LOS F.
- Increases the average delay for a study intersection that is already operating at unacceptable LOS.

Since the *(*City of Fresno 2009) does not provide for specific significance criteria for roadway segments, the first two conditions described above were used to evaluate roadway segment impacts.

Table 2-2 Generalized Peak Hour Directional Volumes Ranges for Urbanized Areas

Uninterrupted Flow Facilities (Freeways)					
Lanes	**Median**	**Level of Service (LOS)**			
		B	**C**	**D**	**E**
2	Divided	2,260	3,020	3,660	3,940
3	Divided	3,360	4,580	5,500	6,080
4	Divided	4,500	6,080	7,320	8,220
5	Divided	5,660	7,680	9,220	10,360
6	Divided	7,900	10,320	12,060	12,500
Interrupted Flow Facilities (Non-State Roadways**)** **Class I** (40 mph or higher posted speed limit)					
Lanes	**Median**	**Level of Service (LOS)**			
		B	**C**	**D**	**E**
1	Undivided	*	750	790	**
2	Divided	*	1,720	1,800	**
3	Divided	*	2,650	2,720	**
4	Divided	*	3,570	3,640	**
Interrupted Flow Facilities (Non-State Roadways**)** **Class II** (35 mph or slower posted speed limit)					
Lanes	**Median**	**Level of Service (LOS)**			
		B	**C**	**D**	**E**
1	Undivided	*	330	680	**
2	Divided	*	660	1,470	**
3	Divided	*	1,050	2,270	**
4	Divided	*	1,450	3,050	**

Source: Florida Department of Transportation Table 7, Generalized Peak Hour Directional Volumes for Urbanized Areas (Modified for Non-State Roadways)

2.4 Parking Survey

In addition to the traffic impact analysis, a windshield parking survey was conducted at select locations surrounding the project site to observe existing vehicle traffic activity and parking at areas that are currently used as de facto parking adjacent to the site. The parking survey worksheets are provided in Appendix A.

Section 3
Existing Conditions

This section describes the existing study area roadway circulation system and key roadways segments, existing daily roadway volume information and LOS analysis results for existing conditions.

3.1 Existing Roadway Network

Several regionally and locally significant roadways traverse the study area. Key characteristics of the roadway circulation system within the project study area are discussed below.

SR-41: State Route 41 is a north-south regional facility traversing the project site. Within the project study area, SR-41 provides two lanes per direction in the project vicinity and with an ADT of 24,777 vehicles per day between the Fresno-Madera county Line and Avenue 12. Full ramp access is provided at the freeway interchanges at Children's Boulevard and Blackstone Avenue.

SR 41 East Frontage Road (Cobb Ranch Road): Cobb Ranch Road is located east of SR 41 and parallels SR 41 running north-south providing local access to the project study area. Cobb Ranch Road is local frontage roadway providing one lane per direction in the project vicinity with an ADT of 158 vehicles per day just north of Vin Rose Lane.

Audubon Drive: Audubon Drive is a local arterial running east-west south of the project site. Within the project study area, Audubon Drive provides two lanes per direction on the segment just east and west of SR 41, then narrows to one lane per direction to the west towards the project vicinity. The ADT on the segment between SR 41 and Palm Avenue is 10,885 vehicles per day while the segment of Audubon Avenue just east of SR 41 carries 11,078 vehicles per day.

3.2 Study Roadway Segments

The following key study area roadway segments shown in Table 3-1 were identified for inclusion and analysis in this traffic study. These study roadway segments are the most likely routes used to access the project site.

Table 3-1 Study Roadway Segments

No.	Roadway Segment
1	SR 41 between Fresno-Madera County Line and Avenue 12
2	SR 41 East Frontage Road (Cobb Ranch Road) north of Vin Rose Lane
3	Audubon Drive between SR 41 and Palm Avenue
4	Audubon Drive just east of SR 41
5	Del Mar Avenue between Audubon Drive and Riverview Drive

3.3 Existing Traffic Volume

A very important component of the traffic study is the collection of 24-hour roadway segment ADT counts during three consecutive days of anticipated maximum use at the project site and its facilities. Roadway segment traffic counts were collected on Saturday, May 24, Sunday, May 25, and Monday, May 26 during the 2014 Memorial Day weekend to capture a worst-case scenario traffic count sampling of roadway traffic demand at the study roadway segments serving the project site. The traffic count worksheets are provided in Appendix B – 24-Hour ADT Traffic Data.

3.4 Existing Level of Service Analysis

LOS analyses under existing conditions were conducted using the methodologies described in Section 2. The roadway segment and intersection LOS analysis results are discussed below.

3.5 Roadway Segment Analysis

Table 3-2 summarizes the results of study roadway segment LOS analysis under Existing conditions. With the exception of State Route 41, all study roadway segments are local roadways and arterials.

Table 3-2 Roadway Segment Analysis – Existing Conditions

Roadway Segment (1)	No of Lanes (2)	Dir.	ADT 24-hr volume	Existing Condition			
				AM Peak Hour		PM Peak Hour	
				Vol	LOS	Vol	LOS
1. SR 41 between Fresno-Madera County Line and Avenue 12	2/D	NB SB	24,777	514 408	B B	772 925	B B
2. SR 41 East Frontage Road (Cobb Ranch Road) north of Vin Rose Lane	1/U	NB SB	158	8 2	C C	6 6	C C
3. Audubon Drive between SR 41 and Palm Avenue	1/U	EB WB	10,886	293 330	C C	346 447	C C
4. Audubon Drive just east of SR 41	2/D	EB WB	11,078	294 338	C C	345 466	C C
5. Del Mar Avenue between Audubon Drive and Riverview Drive	1/U	NB SB	1,604	25 67	C C	50 71	C C

Note:
(1) Evaluated using Table 7 Florida Tables
(2) Number of lanes in each direction
U= Undivided, D=Divided, EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, Dir.=Direction.

As shown in Table 3-2, all study roadway segments are currently operating at acceptable LOS C or better under existing conditions.

3.6 Existing Plus Project Level of Service Analysis

This scenario presents the effects of the project to the study roadway segments if the project built is under existing conditions. The roadway segment and intersection LOS analysis results are discussed below.

3.7 Roadway Segment Analysis

Table 3-3 summarizes the results of study roadway segment LOS analysis under existing conditions. With the exception of State Route 41, all study roadway segments are local roadways and arterials.

Table 3-3 Roadway Segment Analysis – Existing Plus Project Conditions

Roadway Segment (1)	No of Lanes (2)	Dir.	ADT 24-hr volume	Existing Plus Project Condition			
				AM Peak Hour		PM Peak Hour	
				Vol	LOS	Vol	LOS
1. SR 41 between Fresno-Madera County Line and Avenue 12	2/D	NB SB	25,095	554 428	B B	825 945	B B
2. SR 41 East Frontage Road (Cobb Ranch Road) north of Vin Rose Lane	1/U	NB SB	476	28 42	C C	26 59	C C
3. Audubon Drive between SR 41 and Palm Avenue	1/U	EB WB	10,886	293 330	C C	346 447	C C
4. Audubon Drive just east of SR 41	2/D	EB WB	11,078	294 338	C C	345 466	C C
5. Del Mar Avenue between Audubon Drive and Riverview Drive	1/U	NB SB	1,604	25 67	C C	50 71	C C

Note:
(3) Evaluated using Table 7 Florida Tables
(4) Number of lanes in each direction
U= Undivided, D=Divided, EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, Dir.=Direction.

As shown in the Table 3-3, all study roadway segments are currently operating at acceptable LOS C or better under Existing Plus Project conditions.

Section 4
Project Description

This section describes the proposed project and its anticipated trip generation/distribution estimates.

4.1 Project Description

The Conservancy proposes to extend the Lewis S. Eaton Trail (Trail) by constructing a multiple purpose trail and provide ancillary recreation amenities. The Trail would be extended approximately 2.5 miles from Perrin Avenue (near SR 41) on the east to Spano Park on the west.

4.2 Project Site Access

4.2.1 Vehicular Access and Parking

The primary vehicular access to the project is via a controlled vehicle entrance near the Perrin Avenue undercrossing at SR 41. The proposed project will include a 50-stall parking lot adjacent to entrance. The parking lot and multi-trail will provide access in accordance with the Americans with Disabilities Act (ADA). The parking lot will provide three horse trailer stalls, potable water, and a two-vault accessible restroom.

4.2.2 Pedestrian and Bicycle Access

Pedestrian and bicycle access will be provided at three locations: Spano Park, and the W. Riverview Drive and Churchill Avenue entrances to the Bluff Trail. A wide staircase with bicycle guides may be constructed from Spano Park to the proposed trail below. The Bluff Trail is an existing neighborhood trail located on the historic Perrin Canal Bench. A proposed 12-foot-wide paved trail will connect the Bluff Trail to the proposed multi-use trail. This connecting trail would be constructed on a steep bluff slope.

4.3 Planned Improvements

Several circulation improvements are planned to facilitate overall traffic circulations within the project study area. The improvements listed below are expected to part of the proposed project and project alternatives as discussed in the Draft EIR:

- A new project entry at Perrin Avenue will be construction as part of the Project. This entry will lead into the new 50-stall parking lot and amenities.
- Under Alternative 1, new additional parking will be provided via Riverview Drive.
- Under Alternative 5 will provide access via Palm and Nees to the River near Spano Park.

4.4 Project Trip Generation

In order to develop trip generation assumptions for the project, the Institute of Transportation Engineers (ITE) Trip Generation Manual 9th Edition (Institute of Transportation Engineers 2012) was reviewed as a reference; however, due to nonconventional nature of walking trails and amenities, no ITE trip generation rates currently exists specific to walking trails.

For purposes of developing trip generation for the proposed project and evaluate project traffic impacts, the proposed project parking supply (Perrin Avenue parking) was used as the basis of developing trip generation assumption for the project.

The proposed project will potentially attract future and existing recreation users who will utilize the parking and restroom amenities at the Perrin Avenue entrance. This trip-making potential for the proposed project is anticipated to be a combination of existing trail users who have customarily parked elsewhere and potential new trail users attracted by the convenience of onsite parking.

The following conservative trip generation assumptions reflect the anticipated usage of parking lot by a combination of trail users and casual visitors to the project site.

- **AM Peak Hour**: It is conservatively assumed that 75 percent of the parking capacity of 53 spaces (50 cars plus 3 horse trailer stalls) will access the site during the 7-9 AM peak hour (40 vehicles inbound), while at least 20 vehicles (early and late arrivals) leave during the AM peak hour as well.

- **PM Peak Hour**: It is similarly conservatively assumed that 100 percent of the parking capacity of 53 spaces (50 cars plus 3 horse trailer stalls) will access the site during the 4-6 PM peak hour (53 vehicles inbound) and at least 20 vehicles (early arrivals and potential turnaround trips) leave during the PM peak.

- **Daily**: It was conservatively assumed that the all parking spaces will turn over three times during the day, resulting in 159 inbound (53 spaces x 3) and 159 outbound (53 spaces x 3) for a total of 318 daily trips.

Two project alternatives, Alternatives 1 and 5, would each provide an additional 40 parking spaces. This would yield a combined total of 93-space parking available for both Alternative 1 – Riverview Drive and Alternative 5 – Spano Park respectively.

- **AM Peak Hour**: It is conservatively assumed that 75 percent of the parking capacity of 93 spaces will access the site during the 7-9 AM peak hour (70 vehicles inbound), while at least 35 vehicles (early and late arrivals) leave during the AM peak hour as well.

- **PM Peak Hour**: It is similarly conservatively assumed that 100 percent of the parking capacity of 93 spaces will access the site during the 4-6 PM peak hour (93 vehicles inbound) and at least 35 vehicles (early arrivals and potential turnaround trips) leave during the PM peak.

- **Daily**: It was conservatively assumed that the all parking spaces will turn over three times during the day resulting in 279 inbound (93 spaces x 3) and 279 outbound (93 spaces x 3) for a total of 558 daily trips.

Table 4-1 summarizes the assumed individual trip generation estimate for the proposed project and Alternatives as described above.

Table 4-1 Project Trip Generation Estimates[1]

Land Use	Qty.	Total Trips Generated								
		Daily			AM			PM		
		Total	in	out	Total	in	out	Total	in	out
Proposed Project (Perrin Avenue Access)	53 spaces	318	159	159	60	40	20	73	53	20
Alternative 1 (Riverview Drive Access)	40 spaces	240	120	120	45	30	15	55	40	15
Alternative 5 (Spano Park Access)	40 spaces	240	120	120	45	30	15	55	40	15

[1]Proposed project assumed daily trip generation estimates based on site parking capacity of 53 spaces and assumed three times parking turnover during the day. Alternative 1 and Alternative 5 assumed daily trip generation estimates based on site parking capacity of 40 spaces and assumed three times parking turnover during the day and also assumes that the 53-space Perrin Avenue parking is constructed.

4.5 Project Trip Distribution and Trip Assignment

The project trip distribution percentages were estimated considering the anticipated vehicular access routes in context to the location parking within the project site.

- **Proposed Project (Perrin Avenue Access)**: This project access scenario will primarily utilize SR-41 and Cobb Ranch Road.
- **Alternative 1 (Riverview Drive)**: This project access scenario will primarily utilize Audubon Drive and Del Mar Avenue.
- **Alternative 5 (Spano Park Access)**: This project access scenario will primarily utilize Nees and Palm Avenues. For analysis purposes, up to 20 percent of Alternative 5 traffic were assigned to utilize Audubon Drive.

Section 5
Project Buildout (2025) Traffic Conditions

This section provides an analysis of Project Buildout (2025) traffic conditions for both with and without the proposed project.

Project Buildout (2025) conditions traffic volumes were developed by applying annual traffic growth factors to existing 2014 roadway segment volumes. In consultation with Fresno Council of Governments (COG) staff, future traffic projections were developed using Fresno COG's Transportation Model Development and Support (Fresno Council of Governments 2012) forecasts within the project study area.

Due to the project site setting and location, the combination of open space and residential uses surrounding the project site, the application of annual growth factors (ranging from 3 to 4 percent) to exiting traffic volume was deemed very conservative and sufficient to account for any potential cumulative project development that may influence the project study area.

The traffic analysis conducted includes the following scenarios:

- Project Buildout (2025) Base Traffic Conditions (No Project)
- Project Buildout (2025) Base Traffic Conditions Plus Lewis S. Eaton Trail – River West Project (With Project)
- Project Buildout (2025) Base Traffic Conditions Plus Project Alternative 1 – Riverview Drive Access
- Project Buildout (2025) Base Traffic Conditions Plus Project Alternative 5 – Spano Park Access

5.1 Project Buildout (2025) Base (No Project) Traffic Conditions

This section documents the analysis performed under the Project Buildout (2025) Base (No Project) traffic conditions. The 2025 No Project conditions will be used as the baseline to evaluate potential future traffic impacts associated with the operation of the proposed project and alternatives.

5.2 Roadway Segment Analysis

Project Buildout (2025) Base (No Project) conditions will be used as the baseline to evaluate potential traffic impacts associated with the operation of the proposed project. Table 5-1 displays the results of roadway segment LOS analysis under Project Buildout (2025) Base (No Project) conditions.

As shown in Table 5-1, all study roadway segments are forecast to operate at LOS C or better under Project Buildout (2025) Base conditions.

Table 5-1 Roadway Segment Analysis
Project Buildout (2025) Base Conditions

Roadway Segment [1]	No of Lanes[2]	Dir.	ADT 24-hr volume	(2025) Base Conditions			
				AM Peak Hour		PM Peak Hour	
				Vol	LOS	Vol	LOS
1. SR 41 between Fresno-Madera County Line and Avenue 12	2/D	NB SB	35,680	740 588	B B	1,112 1,332	B B
2. SR 41 East Frontage Road (Cobb Road Ranch) north of Vin Rose Lane	1/U	NB SB	210	11 3	C C	8 8	C C
3. Audubon Drive between SR 41 and Palm Avenue	1/U	EB WB	16,870	390 475	C C	460 644	C C
4. Audubon Drive just east of SR 41	2/D	EB WB	15,950	391 487	C C	459 671	C C
5. Del Mar Avenue between Audubon Drive and Riverview Drive	1/U	NB SB	2,130	33 89	C C	67 94	C C

Note:
(1) Evaluated using Table 7 Florida Tables
(2) Number of lanes in each direction
U= Undivided, D=Divided, EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, Dir.=Direction.

5.3 Project Buildout (2025) Base Plus Project Traffic Conditions

Project Buildout (2025) Base plus Project analysis builds upon the Project Buildout (2025) Base conditions and incorporates all applicable project improvements that are constructed or planned for completion by 2025.

As described in Section 4.1, there is no current baseline number of Trail users within the project site. There is, however, a potential to attract more visitors due to the convenience afforded by the proposed onsite parking and improved access to the project site. For traffic impact assessment purposes, the focus of the plus project analysis will be the trip making associated with potential attraction of visitors users during weekend and holidays (e.g. Memorial Day weekend).

5.4 Roadway Segment Analysis (Project)

Table 5-2 displays the results of roadway segment LOS analysis under Project Buildout (2025) Base Plus Project conditions.

As shown in Table 5-2, all study roadway segments are forecast to operate at LOS C or better under Project Buildout (2025) Base Plus Project conditions. All roadway segments have sufficient capacity to accommodate project added traffic and still operate at acceptable levels of service.

5.5 Project Buildout (2025) Base Plus Alternative 1 Traffic Conditions

Project Buildout (2025) Base plus Alternative 1 analysis builds upon the Project Buildout (2025) Base conditions and incorporates all applicable Alternative 1 improvements that are constructed or planned for completion by 2025.

Table 5-2 Roadway Segment Analysis
Project Buildout (2025) Base Plus Project Conditions

Roadway Segment (1)	No of Lanes (2)	Dir.	ADT 24-hr volume	(2025) Base Plus Project Conditions			
				AM Peak Hour		PM Peak Hour	
				Vol	LOS	Vol	LOS
1. SR 41 between Fresno-Madera County Line and Avenue 12	2/D	NB SB	35,998	780 608	B B	1,165 1,352	B B
2. SR 41 East Frontage Road (Cobb Road Ranch) north of Vin Rose Lane	1/U	NB SB	528	31 43	C C	28 61	C C
3. Audubon Drive between SR 41 and Palm Avenue	1/U	EB WB	16,870	390 475	C C	460 644	C C
4. Audubon Drive just east of SR 41	2/D	EB WB	15,950	391 487	C C	459 671	C C
5. Del Mar Avenue between Audubon Drive and Riverview Drive	1/U	NB SB	2,130	33 89	C C	67 94	C C

Note:
(1) Evaluated using Table 7 Florida Tables
(2) Number of lanes in each direction
U= Undivided, D=Divided, EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, Dir.=Direction.

5.6 Roadway Segment Analysis (Alternative 1)

Table 5-3 displays the results of roadway segment LOS analysis under Project Buildout (2025) Base Plus Alternative 1 conditions.

Table 5-3 Roadway Segment Analysis
Project Buildout (2025) Base Plus Alternative 1 Conditions

Roadway Segment (1)	No of Lanes (2)	Dir.	ADT 24-hr volume	(2025) Base Plus Alternative 1 Conditions			
				AM Peak Hour		PM Peak Hour	
				Vol	LOS	Vol	LOS
1. SR 41 between Fresno-Madera County Line and Avenue 12	2/D	NB SB	35,998	780 608	B B	1,165 1,352	B B
2. SR 41 East Frontage Road (Cobb Road Ranch) north of Vin Rose Lane	1/U	NB SB	528	31 43	C C	28 61	C C
3. Audubon Drive between SR 41 and Palm Avenue	1/U	EB WB	16,990	405 482	C C	480 651	C C
4. Audubon Drive just east of SR 41	2/D	EB WB	16,070	399 502	C C	467 691	C C
5. Del Mar Avenue between Audubon Drive and Riverview Drive	1/U	NB SB	2,370	63 104	C C	107 109	C C

Note:
(1) Evaluated using Table 7 Florida Tables
(2) Number of lanes in each direction
U= Undivided, D=Divided, EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, Dir.=Direction.

As shown in Table 5-3, all study roadway segments are forecast to operate at LOS C or better under Project Buildout (2025) Base Plus Alternative 1 conditions. Similar to with project conditions, all roadway segments under Alternative 1 have sufficient capacity to accommodate added traffic and still operate at acceptable levels of service.

5.7 Project Buildout (2025) Base Plus Alternative 5 Traffic Conditions

Project Buildout (2025) Base plus Alternative 5 analysis builds upon the Project Buildout (2025) Base conditions and incorporates all applicable Alternative 5 improvements that are constructed or planned for completion by 2025.

5.8 Roadway Segment Analysis

Table 5-4 displays the results of roadway segment LOS analysis under Project Buildout (2025) Base Plus Alternative 5 conditions.

Table 5-4 Roadway Segment Analysis
Project Buildout (2025) Base Plus Alternative 5 Conditions

Roadway Segment (1)	No of Lanes (2)	Dir.	ADT 24-hr volume	(2025) Base Plus Alternative 5 Conditions			
				AM Peak Hour		PM Peak Hour	
				Vol	LOS	Vol	LOS
1. SR 41 between Fresno-Madera County Line and Avenue 12	2/D	NB SB	35,998	780 608	B B	1,165 1,352	B B
2. SR 41 East Frontage Road (Cobb Road Ranch) north of Vin Rose Lane	1/U	NB SB	528	31 43	C C	28 61	C C
3. Audubon Drive between SR 41 and Palm Avenue	1/U	EB WB	16,918	393 481	C C	463 652	C C
4. Audubon Drive just east of SR 41	2/D	EB WB	15,998	394 493	C C	462 677	C C
5. Del Mar Avenue between Audubon Drive and Riverview Drive	1/U	NB SB	2,130	33 89	C C	67 94	C C

Note:
(1) Evaluated using Table 7 Florida Tables
(2) Number of lanes in each direction
U= Undivided, D=Divided, EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, Dir.=Direction.

As shown in Table 5-4, all study roadway segments are forecast to operate at LOS C or better under Project Buildout (2025) Base Plus Alternative 5 conditions. Similar to project conditions, all roadway segments under Alternative 5 have sufficient capacity to accommodate added traffic and still operate at acceptable levels of service.

Section 6
Findings and Recommendations

This section provides a summary of the key findings and study recommendations, including the LOS results for each of the scenario analyzed. Both with and without project conditions are discussed.

6.1 Roadway Segment Analysis Summary

Table 6-1 displays intersection Level of Service results for each of the analyzed scenarios.

The following key points summarize the roadway segment traffic analyses of the proposed project:

- Under Existing conditions, all study intersections are currently operating at LOS C or better during both morning and evening peak analysis hours.
- Under Existing Plus Project conditions, all study intersections are forecast to operate at LOS C or better during both morning and evening peak analysis hours.
- Under Project Buildout (2025) Base No Project conditions, all study intersections are forecast to operate at LOS C or better during both morning and evening peak analysis hours.
- Under Project Buildout (2025) Base Plus Project conditions, all study intersections are forecast to operate at LOS C or better during both morning and evening peak analysis hours.
- Under Project Buildout (2025) Base Plus Project Alternative 1 conditions, all study intersections are forecast to operate at LOS C or better during both morning and evening peak analysis hours.
- Under Project Buildout (2025) Base Plus Project Alternative 5 conditions, all study intersections are forecast to operate at LOS C or better during both morning and evening peak analysis hours.

6.2 VMT Analysis Summary

In addition to the roadway segment analysis, a Vehicle Miles Traveled (VMT) analysis was conducted for the project and Alternatives 1 and 5 and is summarized in Table 6-2.

As shown in Table 6-2, the proposed project, with the Perrin Avenue parking only, will generate the least VMT when compared to Alternatives 1 and 5, which generate additional and approximately the same VMT. This is primarily attributed to the assumption that parking built for either Alternatives 1 or 5 would be built in addition to the parking at Perrin Avenue.

Table 6-1 Summary of Roadway Segment Level of Service Results

Roadway Segment (1)	No of Lanes (2)	Dir.	Existing Conditions				Existing Plus Project Conditions				(2025) Base Conditions				(2025) Base Plus Project Conditions				(2025) Base Plus Project Alternative 1 Conditions				(2025) Base Plus Project Alternative 5 Conditions			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Vol	LOS	Vol	Vol	Vol	LOS	Vol	Vol	Vol	LOS	Vol	Vol	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
1. SR 41 between Fresno-Madera County Line and Avenue 12	2/D	NB SB	514 408	B B	772 925	B B	554 428	B B	825 945	B B	740 588	B B	1,112 1,332	B B	780 608	B B	1,165 1,352	B B	780 608	B B	1,165 1,352	B B	780 608	B B	1,165 1,352	B B
2. SR 41 East Frontage Road (Cobb Road Ranch) north of Vin Rose Lane	1/U	NB SB	8 2	C C	6 6	C C	28 42	C C	26 59	C C	11 3	C C	8 8	C C	31 43	C C	28 61	C C	31 43	C C	28 61	C C	31 43	C C	28 61	C C
3. Audubon Drive between SR 41 and Palm Avenue	1/U	EB WB	293 330	C C	346 447	C C	293 330	C C	346 447	C C	390 475	C C	460 644	C C	390 475	C C	460 644	C C	405 482	C C	480 651	C C	393 481	C C	463 652	C C
4. Audubon Drive just east of SR 41	2/D	EB WB	294 338	C C	345 466	C C	294 338	C C	345 466	C C	391 487	C C	459 671	C C	391 487	C C	459 671	C C	399 502	C C	467 691	C C	394 493	C C	462 677	C C
5. Del Mar Avenue between Audubon Drive and Riverview Drive	1/U	NB SB	25 67	C C	50 71	C C	25 67	C C	50 71	C C	33 89	C C	67 94	C C	33 89	C C	67 94	C C	63 104	C C	107 109	C C	33 89	C C	67 94	C C

Table 6-2 Summary of Vehicle Miles Traveled (VMT) Analysis Results

Project Alternatives	Access	Daily Trips	Trip Length (1) (Miles)	VMT	VMT Total
Proposed Project	Perrin Parking	318	8.3	2,639	2639
Alternative 1	Perrin Parking Riverview Parking	318 240	8.3 5.2	2,639 1,246	3885
Alternative 5	Perrin Parking Spano Park Access	318 240	8.3 5.0	2,639 1,200	3839
(1) Representative trail user trip length assumed originating from around SR-41 and Shaw area for analysis purposes.					

6.3 Conclusions and Recommendations

The proposed project will not create any significant impact to the surrounding roadway circulation system analyzed in this study. All study roadway segments are expected to operate at LOS C or better under all scenarios analyzed in this study. Similarly both Alternatives 1 and 5 will not create any significant impact to the surrounding roadway circulation system analyzed in this study.

The above finding is primarily attributed to the low trip generation characteristics of recreational trail use. Provision for onsite parking for the proposed project and alternatives will alleviate any potential parking impacts to the surrounding land uses.

Section 7
References

City of Fresno 2009. *City of Fresno Traffic Impac*t Study Report Guidelines. Originally adopted October 18, 2006; updated February 2, 2009. Fresno, CA.

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Florida Department of Transportation 2012. Florida Department of Transportation Table 7, Generalized Peak Hour Directional Volumes for Urbanized Areas.

Fresno Council of Governments 2012. Transportation Model Development and Support dated August 2012.

Institute of Transportation Engineers 2012. Institute of Transportation Engineers Trip Generation Manual 9th Edition.

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Appendix A

Parking Survey Worksheets

	Spano Park			
	Parking Capacity			
Date		7 AM - 9 AM	10 AM - 12 PM	4 PM - 6 PM
24-May	17	5	3	9
25-May	17	2	4	15
26-May	17	5	6	19
Total		12	13	43

	Riverview Dr.		
Parking Capacity			
	7 AM - 9 AM	10 AM - 12 PM	4 PM - 6 PM
Street Parking	4	2	2
Street Parking	1	3	7
Street Parking	5	5	1
	10	10	10

	Perrin Avenue/ 41		
Parking Capacity			
	7 AM - 9 AM	10 AM - 12 PM	4 PM - 6 PM
Street Parking	0	0	0
Street Parking	0	0	0
Street Parking	0	0	0
	0	0	0

		Old Blackstone Avenue		
	Parking Capacity			
Date		7 AM - 9 AM	10 AM - 12 PM	4 PM - 6 PM
24-May	Street Parking	0	1	2
25-May	Street Parking	0	2	2
26-May	Street Parking	2	5	10
Total		2	8	14

Total: Bikes			
Date	7 AM - 9 AM	10 AM - 12 PM	4 PM - 6 PM
24-May	4	3	0
25-May	5	6	2
26-May	7	5	1
Total	16	14	3

Total: Walk/ Run			
Date	7 AM - 9 AM	10 AM - 12 PM	4 PM - 6 PM
24-May	1	0	0
25-May	7	0	14
26-May	20	5	2
	28	5	16

Total: Horseback Riders			
Date	7 AM - 9 AM	10 AM - 12 PM	4 PM - 6 PM
24-May	0	0	0
25-May	0	0	0
26-May	0	0	4
			4

Appendix B

Traffic Counts

Prepared by NDS/ATD

VOLUME

SR-41 between Fresno-Madera County Line & Avenue 12

Day: Saturday
Date: 5/24/2014

City: Fresno
Project #: CA14_8073_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	0	0	0

AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	0	0			0	12:00	0	0			0
00:15	0	0			0	12:15	0	0			0
00:30	0	0			0	12:30	0	0			0
00:45	0	0			0	12:45	0	0			0
01:00	0	0			0	13:00	0	0			0
01:15	0	0			0	13:15	0	0			0
01:30	0	0			0	13:30	0	0			0
01:45	0	0			0	13:45	0	0			0
02:00	0	0			0	14:00	0	0			0
02:15	0	0			0	14:15	0	0			0
02:30	0	0			0	14:30	0	0			0
02:45	0	0			0	14:45	0	0			0
03:00	0	0			0	15:00	0	0			0
03:15	0	0			0	15:15	0	0			0
03:30	0	0			0	15:30	0	0			0
03:45	0	0			0	15:45	0	0			0
04:00	0	0			0	16:00	0	0			0
04:15	0	0			0	16:15	0	0			0
04:30	0	0			0	16:30	0	0			0
04:45	0	0			0	16:45	0	0			0
05:00	0	0			0	17:00	0	0			0
05:15	0	0			0	17:15	0	0			0
05:30	0	0			0	17:30	0	0			0
05:45	0	0			0	17:45	0	0			0
06:00	0	0			0	18:00	0	0			0
06:15	0	0			0	18:15	0	0			0
06:30	0	0			0	18:30	0	0			0
06:45	0	0			0	18:45	0	0			0
07:00	0	0			0	19:00	0	0			0
07:15	0	0			0	19:15	0	0			0
07:30	0	0			0	19:30	0	0			0
07:45	0	0			0	19:45	0	0			0
08:00	0	0			0	20:00	0	0			0
08:15	0	0			0	20:15	0	0			0
08:30	0	0			0	20:30	0	0			0
08:45	0	0			0	20:45	0	0			0
09:00	0	0			0	21:00	0	0			0
09:15	0	0			0	21:15	0	0			0
09:30	0	0			0	21:30	0	0			0
09:45	0	0			0	21:45	0	0			0
10:00	0	0			0	22:00	0	0			0
10:15	0	0			0	22:15	0	0			0
10:30	0	0			0	22:30	0	0			0
10:45	0	0			0	22:45	0	0			0
11:00	0	0			0	23:00	0	0			0
11:15	0	0			0	23:15	0	0			0
11:30	0	0			0	23:30	0	0			0
11:45	0	0			0	23:45	0	0			0
TOTALS					0	TOTALS					0
SPLIT %					#DIV/0!	SPLIT %					#DIV/0!

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	0	0	0

AM Peak Hour						PM Peak Hour					
AM Pk Volume						PM Pk Volume					
Pk Hr Factor						Pk Hr Factor					
7 - 9 Volume	0	0	0	0	0	4 - 6 Volume	0	0	0	0	0
7 - 9 Peak Hour						4 - 6 Peak Hour					
7 - 9 Pk Volume	0	0	0	0	0	4 - 6 Pk Volume	0	0	0	0	0
Pk Hr Factor	0.000	0.000	0.000	0.000	0.000	Pk Hr Factor	0.000	0.000	0.000	0.000	0.000

Prepared by NDS/ATD

VOLUME

SR-41 between Fresno-Madera County Line & Avenue 12

Day: Sunday
Date: 5/25/2014

City: Fresno
Project #: CA14_8073_002

DAILY TOTALS	NB	SB	EB	WB	Total
	11,541	10,888	0	0	22,429

AM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0						0	
00:15	0		0						0	
00:30	0		0						0	
00:45	0		0						0	
01:00	0		0						0	
01:15	0		0						0	
01:30	0		0						0	
01:45	0		0						0	
02:00	0		0						0	
02:15	0		0						0	
02:30	0		0						0	
02:45	0		0						0	
03:00	0		0						0	
03:15	0		0						0	
03:30	0		0						0	
03:45	0		0						0	
04:00	0		0						0	
04:15	0		0						0	
04:30	0		0						0	
04:45	0		0						0	
05:00	0		0						0	
05:15	0		0						0	
05:30	0		0						0	
05:45	0		0						0	
06:00	0		0						0	
06:15	0		0						0	
06:30	0		0						0	
06:45	0		0						0	
07:00	0		0						0	
07:15	0		0						0	
07:30	0		0						0	
07:45	0		0						0	
08:00	0		0						0	
08:15	121		0						121	
08:30	196		0						196	
08:45	159	476	99	99					258	575
09:00	190		142						332	
09:15	196		167						363	
09:30	200		179						379	
09:45	245	831	170	658					415	1489
10:00	212		189						401	
10:15	203		177						380	
10:30	220		193						413	
10:45	214	849	198	757					412	1606
11:00	222		202						424	
11:15	252		176						428	
11:30	223		212						435	
11:45	245	942	213	803					458	1745
TOTALS		3098		2317						5415
SPLIT %		57.2%		42.8%						24.1%

PM Period	NB		SB		EB		WB		TOTAL	
12:00	227		194						421	
12:15	240		205						445	
12:30	281		211						492	
12:45	289	1037	228	838					517	1875
13:00	257		204						461	
13:15	256		189						445	
13:30	289		235						524	
13:45	253	1055	187	815					440	1870
14:00	244		196						440	
14:15	244		186						430	
14:30	227		226						453	
14:45	246	961	194	802					440	1763
15:00	196		187						383	
15:15	202		206						408	
15:30	225		191						416	
15:45	223	846	195	779					418	1625
16:00	243		208						451	
16:15	227		185						412	
16:30	213		221						434	
16:45	204	887	211	825					415	1712
17:00	206		197						403	
17:15	192		203						395	
17:30	180		216						396	
17:45	196	774	205	821					401	1595
18:00	173		218						391	
18:15	172		190						362	
18:30	157		209						366	
18:45	158	660	199	816					357	1476
19:00	168		196						364	
19:15	189		181						370	
19:30	150		226						376	
19:45	145	652	207	810					352	1462
20:00	154		178						332	
20:15	159		163						322	
20:30	145		172						317	
20:45	135	593	191	704					326	1297
21:00	148		169						317	
21:15	124		167						291	
21:30	104		135						239	
21:45	102	478	143	614					245	1092
22:00	86		116						202	
22:15	88		120						208	
22:30	65		114						179	
22:45	65	304	84	434					149	738
23:00	62		105						167	
23:15	45		77						122	
23:30	45		69						114	
23:45	44	196	62	313					106	509
TOTALS		8443		8571						17014
SPLIT %		49.6%		50.4%						75.9%

DAILY TOTALS	NB	SB	EB	WB	Total
	11,541	10,888	0	0	22,429

AM Peak Hour	11:45	11:30			11:45	PM Peak Hour	12:45	12:45			12:45
AM Pk Volume	993	824			1816	PM Pk Volume	1091	856			1947
Pk Hr Factor	0.883	0.967			0.923	Pk Hr Factor	0.944	0.911			0.929
7 - 9 Volume	476	99	0	0	575	4 - 6 Volume	1661	1646	0	0	3307
7 - 9 Peak Hour	08:00	08:00			08:00	4 - 6 Peak Hour	16:00	16:30			16:00
7 - 9 Pk Volume	476	99	0	0	575	4 - 6 Pk Volume	887	832	0	0	1712
Pk Hr Factor	0.607	0.250	0.000	0.000	0.557	Pk Hr Factor	0.913	0.941	0.000	0.000	0.949

Prepared by NDS/ATD

VOLUME

SR-41 between Fresno-Madera County Line & Avenue 12

Day: Monday
Date: 5/26/2014

City: Fresno
Project #: CA14_8073_002

DAILY TOTALS	NB	SB	EB	WB	Total
	11,285	13,492	0	0	24,777

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	40		54				94		12:00	214		286				500	
00:15	34		41				75		12:15	206		341				547	
00:30	25		41				66		12:30	234		284				518	
00:45	36	135	20	156			56	291	12:45	226	880	303	1214			529	2094
01:00	19		30				49		13:00	234		283				517	
01:15	18		33				51		13:15	216		258				474	
01:30	13		37				50		13:30	245		273				518	
01:45	11	61	24	124			35	185	13:45	239	934	292	1106			531	2040
02:00	4		17				21		14:00	231		287				518	
02:15	22		22				44		14:15	227		202				429	
02:30	12		18				30		14:30	206		282				488	
02:45	9	47	14	71			23	118	14:45	207	871	242	1013			449	1884
03:00	13		28				41		15:00	202		253				455	
03:15	6		16				22		15:15	193		258				451	
03:30	10		21				31		15:30	186		238				424	
03:45	14	43	11	76			25	119	15:45	215	796	242	991			457	1787
04:00	8		13				21		16:00	212		239				451	
04:15	12		24				36		16:15	199		206				405	
04:30	13		26				39		16:30	166		241				407	
04:45	13	46	25	88			38	134	16:45	195	772	237	923			432	1695
05:00	16		19				35		17:00	185		241				426	
05:15	29		39				68		17:15	189		190				379	
05:30	27		35				62		17:30	185		184				369	
05:45	37	109	34	127			71	236	17:45	156	715	233	848			389	1563
06:00	43		36				79		18:00	175		206				381	
06:15	68		50				118		18:15	179		186				365	
06:30	54		70				124		18:30	149		225				374	
06:45	66	231	42	198			108	429	18:45	161	664	190	807			351	1471
07:00	88		52				140		19:00	156		207				363	
07:15	102		62				164		19:15	130		191				321	
07:30	104		72				176		19:30	130		177				307	
07:45	96	390	86	272			182	662	19:45	125	541	121	696			246	1237
08:00	131		81				212		20:00	122		173				295	
08:15	123		95				218		20:15	123		154				277	
08:30	122		121				243		20:30	121		149				270	
08:45	138	514	111	408			249	922	20:45	113	479	155	631			268	1110
09:00	155		161				316		21:00	107		125				232	
09:15	156		148				304		21:15	120		100				220	
09:30	171		206				377		21:30	91		122				213	
09:45	164	646	190	705			354	1351	21:45	68	386	95	442			163	828
10:00	202		188				390		22:00	84		83				167	
10:15	207		257				464		22:15	61		68				129	
10:30	197		271				468		22:30	56		63				119	
10:45	196	802	273	989			469	1791	22:45	59	260	40	254			99	514
11:00	198		276				474		23:00	40		42				82	
11:15	234		307				541		23:15	42		36				78	
11:30	204		308				512		23:30	23		43				66	
11:45	193	829	314	1205			507	2034	23:45	29	134	27	148			56	282
TOTALS		3853		4419				8272	TOTALS		7432		9073				16505
SPLIT %		46.6%		53.4%				33.4%	SPLIT %		45.0%		55.0%				66.6%

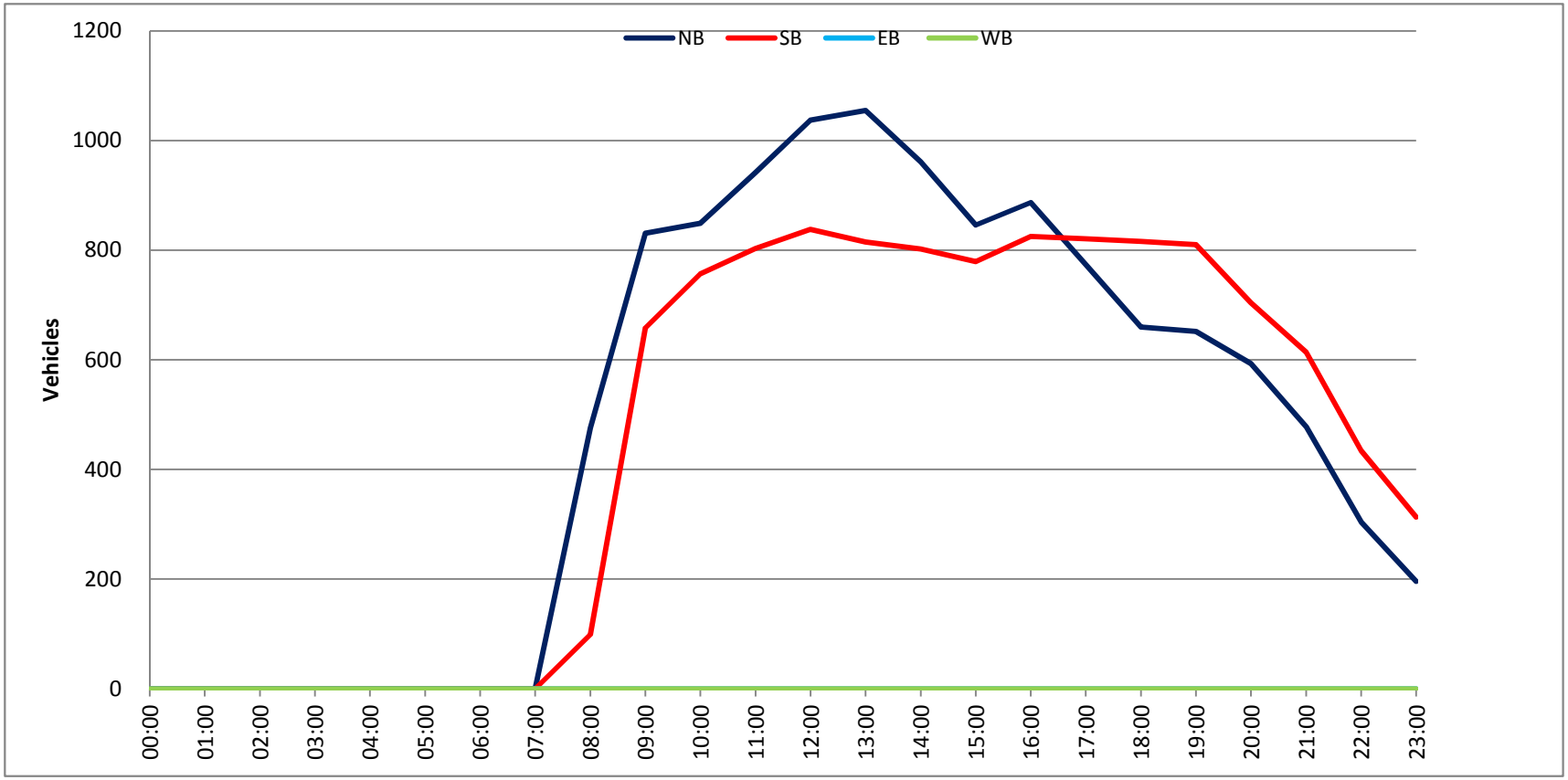
DAILY TOTALS	NB	SB	EB	WB	Total
	11,285	13,492	0	0	24,777

AM Peak Hour	11:45	11:30			11:45	PM Peak Hour	13:30	12:00			12:15
AM Pk Volume	847	1249			2072	PM Pk Volume	942	1214			2111
Pk Hr Factor	0.905	0.916			0.947	Pk Hr Factor	0.961	0.890			0.965
7 - 9 Volume	904	680	0	0	1584	4 - 6 Volume	1487	1771	0	0	3258
7 - 9 Peak Hour	08:00	08:00			08:00	4 - 6 Peak Hour	16:00	16:15			16:00
7 - 9 Pk Volume	514	408	0	0	922	4 - 6 Pk Volume	772	925	0	0	1695
Pk Hr Factor	0.931	0.843	0.000	0.000	0.926	Pk Hr Factor	0.910	0.960	0.000	0.000	0.940

Prepared by NDS/ATD

Project #: CA14_8073_002 **City:** Fresno

Location: SR-41 between Fresno-Madera County Line **Date:** 5/25/2014



Prepared by NDS/ATD

Project #: CA14_8073_002 **City:** Fresno

Location: SR-41 between Fresno-Madera County Line **Date:** 5/26/2014

Prepared by NDS/ATD

VOLUME

SR-41 East Frontage Rd (Cobb Ranch Blvd) N/o Vin Rose Lane

Day: Saturday
Date: 5/24/2014

City: Fresno
Project #: CA14_8073_003

DAILY TOTALS	NB	SB	EB	WB	Total
	63	72	0	0	135

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	2		0				2		12:00	1		2				3	
00:15	0		0				0		12:15	3		3				6	
00:30	0		0				0		12:30	1		1				2	
00:45	0	2	1	1			1	3	12:45	2	7	2	8			4	15
01:00	0		0				0		13:00	4		2				6	
01:15	0		0				0		13:15	2		2				4	
01:30	0		1				1		13:30	1		1				2	
01:45	1	1	0	1			1	2	13:45	0	7	0	5			0	12
02:00	0		0				0		14:00	1		1				2	
02:15	1		0				1		14:15	1		1				2	
02:30	0		0				0		14:30	0		0				0	
02:45	0	1	0				0	1	14:45	0	2	0	2			0	4
03:00	0		0				0		15:00	0		1				1	
03:15	1		0				1		15:15	2		1				3	
03:30	0		0				0		15:30	0		0				0	
03:45	0	1	0				0	1	15:45	0	2	1	3			1	5
04:00	0		0				0		16:00	2		2				4	
04:15	0		0				0		16:15	1		1				2	
04:30	1		1				2		16:30	2		3				5	
04:45	0	1	0	1			0	2	16:45	1	6	3	9			4	15
05:00	0		0				0		17:00	1		1				2	
05:15	0		0				0		17:15	1		2				3	
05:30	0		0				0		17:30	0		0				0	
05:45	0		0				0		17:45	0	2	0	3			0	5
06:00	0		0				0		18:00	0		1				1	
06:15	0		0				0		18:15	1		1				2	
06:30	0		0				0		18:30	2		2				4	
06:45	0		1	1			1	1	18:45	1	4	1	5			2	9
07:00	0		0				0		19:00	0		0				0	
07:15	1		1				2		19:15	1		1				2	
07:30	2		1				3		19:30	1		1				2	
07:45	0	3	1	3			1	6	19:45	0	2	0	2			0	4
08:00	1		1				2		20:00	2		1				3	
08:15	1		1				2		20:15	0		0				0	
08:30	1		2				3		20:30	0		1				1	
08:45	0	3	0	4			0	7	20:45	0	2	0	2			0	4
09:00	0		0				0		21:00	0		0				0	
09:15	0		0				0		21:15	0		1				1	
09:30	0		1				1		21:30	0		0				0	
09:45	1	1	1	2			2	3	21:45	0		0	1			0	1
10:00	3		4				7		22:00	0		0				0	
10:15	0		0				0		22:15	0		0				0	
10:30	1		2				3		22:30	1		1				2	
10:45	4	8	4	10			8	18	22:45	0	1	0	1			0	2
11:00	0		0				0		23:00	0		0				0	
11:15	1		2				3		23:15	1		1				2	
11:30	3		4				7		23:30	0		0				0	
11:45	2	6	1	7			3	13	23:45	0	1	0	1			0	2
TOTALS		27		30				57	TOTALS		36		42				78
SPLIT %		47.4%		52.6%				42.2%	SPLIT %		46.2%		53.8%				57.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	63	72	0	0	135

AM Peak Hour	11:30	10:00			11:30	PM Peak Hour	12:15	16:00			12:15
AM Pk Volume	9	10			19	PM Pk Volume	10	9			18
Pk Hr Factor	0.750	0.625			0.679	Pk Hr Factor	0.625	0.750			0.750
7 - 9 Volume	6	7	0	0	13	4 - 6 Volume	8	12	0	0	20
7 - 9 Peak Hour	07:15	07:45			07:15	4 - 6 Peak Hour	16:00	16:00			16:00
7 - 9 Pk Volume	4	5	0	0	8	4 - 6 Pk Volume	6	9	0	0	15
Pk Hr Factor	0.500	0.625	0.000	0.000	0.667	Pk Hr Factor	0.750	0.750	0.000	0.000	0.750

Prepared by NDS/ATD

VOLUME

SR-41 East Frontage Rd (Cobb Ranch Blvd) N/o Vin Rose Lane

Day: Sunday
Date: 5/25/2014

City: Fresno
Project #: CA14_8073_003

DAILY TOTALS	NB	SB	EB	WB	Total
	84	74	0	0	158

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0						0		12:00	1		1						2	
00:15	0		0						0		12:15	2		0						2	
00:30	1		1						2		12:30	4		3						7	
00:45	1	2	1	2					2	4	12:45	1	8	1	5					2	13
01:00	0		0						0		13:00	1		1						2	
01:15	0		0						0		13:15	4		4						8	
01:30	5		0						5		13:30	1		1						2	
01:45	0	5	0						0	5	13:45	2	8	3	9					5	17
02:00	0		0						0		14:00	2		2						4	
02:15	0		0						0		14:15	6		6						12	
02:30	0		0						0		14:30	0		1						1	
02:45	0		0						0		14:45	1	9	1	10					2	19
03:00	2		1						3		15:00	2		2						4	
03:15	0		0						0		15:15	1		0						1	
03:30	0		0						0		15:30	1		1						2	
03:45	0	2	0	1					0	3	15:45	3	7	4	7					7	14
04:00	0		0						0		16:00	1		0						1	
04:15	0		0						0		16:15	1		1						2	
04:30	0		0						0		16:30	4		3						7	
04:45	0		0						0		16:45	0	6	0	4					0	10
05:00	0		0						0		17:00	1		2						3	
05:15	0		1						1		17:15	1		1						2	
05:30	0		0						0		17:30	1		1						2	
05:45	0		0	1					0	1	17:45	0	3	0	4					0	7
06:00	1		0						1		18:00	2		3						5	
06:15	0		0						0		18:15	2		1						3	
06:30	0		0						0		18:30	1		1						2	
06:45	0	1	0						0	1	18:45	0	5	0	5					0	10
07:00	0		1						1		19:00	0		0						0	
07:15	0		0						0		19:15	2		1						3	
07:30	1		0						1		19:30	0		0						0	
07:45	1	2	1	2					2	4	19:45	0	2	0	1					0	3
08:00	0		0						0		20:00	1		1						2	
08:15	0		0						0		20:15	2		2						4	
08:30	1		1						2		20:30	0		0						0	
08:45	2	3	1	2					3	5	20:45	0	3	0	3					0	6
09:00	2		2						4		21:00	1		2						3	
09:15	0		0						0		21:15	3		2						5	
09:30	0		0						0		21:30	0		0						0	
09:45	0	2	1	3					1	5	21:45	0	4	0	4					0	8
10:00	1		0						1		22:00	0		0						0	
10:15	0		1						1		22:15	1		1						2	
10:30	2		1						3		22:30	0		0						0	
10:45	1	4	1	3					2	7	22:45	1	2	1	2					2	4
11:00	0		0						0		23:00	0		0						0	
11:15	0		0						0		23:15	0		0						0	
11:30	4		4						8		23:30	0		0						0	
11:45	2	6	2	6					4	12	23:45	0		0						0	
TOTALS		27		20						47	TOTALS		57		54						111
SPLIT %		57.4%		42.6%						29.7%	SPLIT %		51.4%		48.6%						70.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	84	74	0	0	158

AM Peak Hour	11:30	11:15			11:30	PM Peak Hour	13:30	13:30			13:30
AM Pk Volume	9	7			16	PM Pk Volume	11	12			23
Pk Hr Factor	0.563	0.438			0.500	Pk Hr Factor	0.458	0.500			0.479
7 - 9 Volume	5	4	0	0	9	4 - 6 Volume	9	8	0	0	17
7 - 9 Peak Hour	08:00	07:00			08:00	4 - 6 Peak Hour	16:00	16:15			16:15
7 - 9 Pk Volume	3	2	0	0	5	4 - 6 Pk Volume	6	6	0	0	12
Pk Hr Factor	0.375	0.500	0.000	0.000	0.417	Pk Hr Factor	0.375	0.500	0.000	0.000	0.429

Prepared by NDS/ATD

VOLUME

SR-41 East Frontage Rd (Cobb Ranch Blvd) N/o Vin Rose Lane

Day: Monday
Date: 5/26/2014

City: Fresno
Project #: CA14_8073_003

DAILY TOTALS	NB	SB	EB	WB	Total
	64	65	0	0	129

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0				0		12:00	2		1				3	
00:15	0		0				0		12:15	5		10				15	
00:30	1		1				2		12:30	0		1				1	
00:45	1	2	1	2			2	4	12:45	2	9	1	13			3	22
01:00	0		0				0		13:00	1		0				1	
01:15	0		0				0		13:15	1		1				2	
01:30	0		0				0		13:30	1		2				3	
01:45	0		0				0		13:45	2	5	1	4			3	9
02:00	0		0				0		14:00	4		3				7	
02:15	0		0				0		14:15	1		2				3	
02:30	0		0				0		14:30	3		3				6	
02:45	0		0				0		14:45	0	8	0	8			0	16
03:00	0		0				0		15:00	0		0				0	
03:15	0		0				0		15:15	3		3				6	
03:30	0		0				0		15:30	0		0				0	
03:45	0		0				0		15:45	0	3	1	4			1	7
04:00	0		0				0		16:00	0		0				0	
04:15	0		0				0		16:15	0		0				0	
04:30	0		0				0		16:30	1		0				1	
04:45	0		0				0		16:45	3	4	4	4			7	8
05:00	0		0				0		17:00	1		1				2	
05:15	0		0				0		17:15	5		3				8	
05:30	1		1				2		17:30	0		0				0	
05:45	0	1	0	1			0	2	17:45	0	6	0	4			0	10
06:00	0		0				0		18:00	1		1				2	
06:15	0		0				0		18:15	1		2				3	
06:30	0		0				0		18:30	0		0				0	
06:45	0		0				0		18:45	0	2	0	3			0	5
07:00	0		1				1		19:00	0		0				0	
07:15	0		0				0		19:15	0		0				0	
07:30	1		0				1		19:30	1		1				2	
07:45	0	1	0	1			0	2	19:45	0	1	0	1			0	2
08:00	0		0				0		20:00	1		1				2	
08:15	1		0				1		20:15	0		0				0	
08:30	0		0				0		20:30	1		1				2	
08:45	2	3	2	2			4	5	20:45	0	2	0	2			0	4
09:00	0		0				0		21:00	1		1				2	
09:15	1		1				2		21:15	0		0				0	
09:30	1		1				2		21:30	0		0				0	
09:45	0	2	0	2			0	4	21:45	1	2	0	1			1	3
10:00	1		2				3		22:00	0		0				0	
10:15	0		1				1		22:15	0		0				0	
10:30	1		4				5		22:30	0		0				0	
10:45	0	2	0	7			0	9	22:45	1	1	0				1	1
11:00	1		1				2		23:00	0		0				0	
11:15	4		1				5		23:15	0		0				0	
11:30	2		3				5		23:30	0		0				0	
11:45	3	10	1	6			4	16	23:45	0		0				0	
TOTALS		21		21				42	TOTALS		43		44				87
SPLIT %		50.0%		50.0%				32.6%	SPLIT %		49.4%		50.6%				67.4%

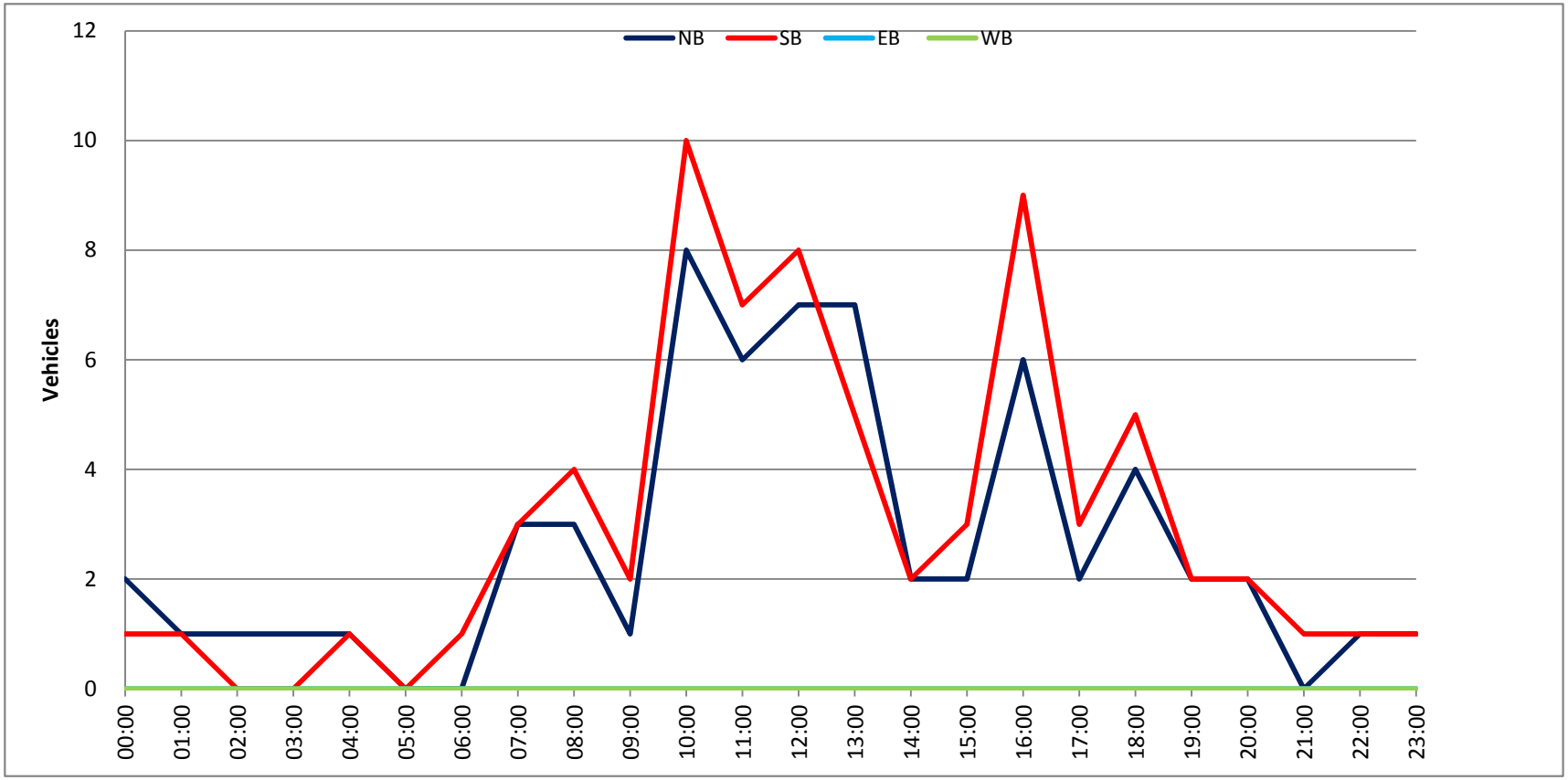
DAILY TOTALS	NB	SB	EB	WB	Total
	64	65	0	0	129

AM Peak Hour	11:30	11:30			11:30	PM Peak Hour	13:45	12:00			12:00
AM Pk Volume	12	15			27	PM Pk Volume	10	13			22
Pk Hr Factor	0.600	0.375			0.450	Pk Hr Factor	0.625	0.325			0.367
7 - 9 Volume	4	3	0	0	7	4 - 6 Volume	10	8	0	0	18
7 - 9 Peak Hour	08:00	08:00			08:00	4 - 6 Peak Hour	16:30	16:30			16:30
7 - 9 Pk Volume	3	2	0	0	5	4 - 6 Pk Volume	10	8	0	0	18
Pk Hr Factor	0.375	0.250	0.000	0.000	0.313	Pk Hr Factor	0.500	0.500	0.000	0.000	0.563

Prepared by NDS/ATD

Project #: CA14_8073_003 **City:** Fresno

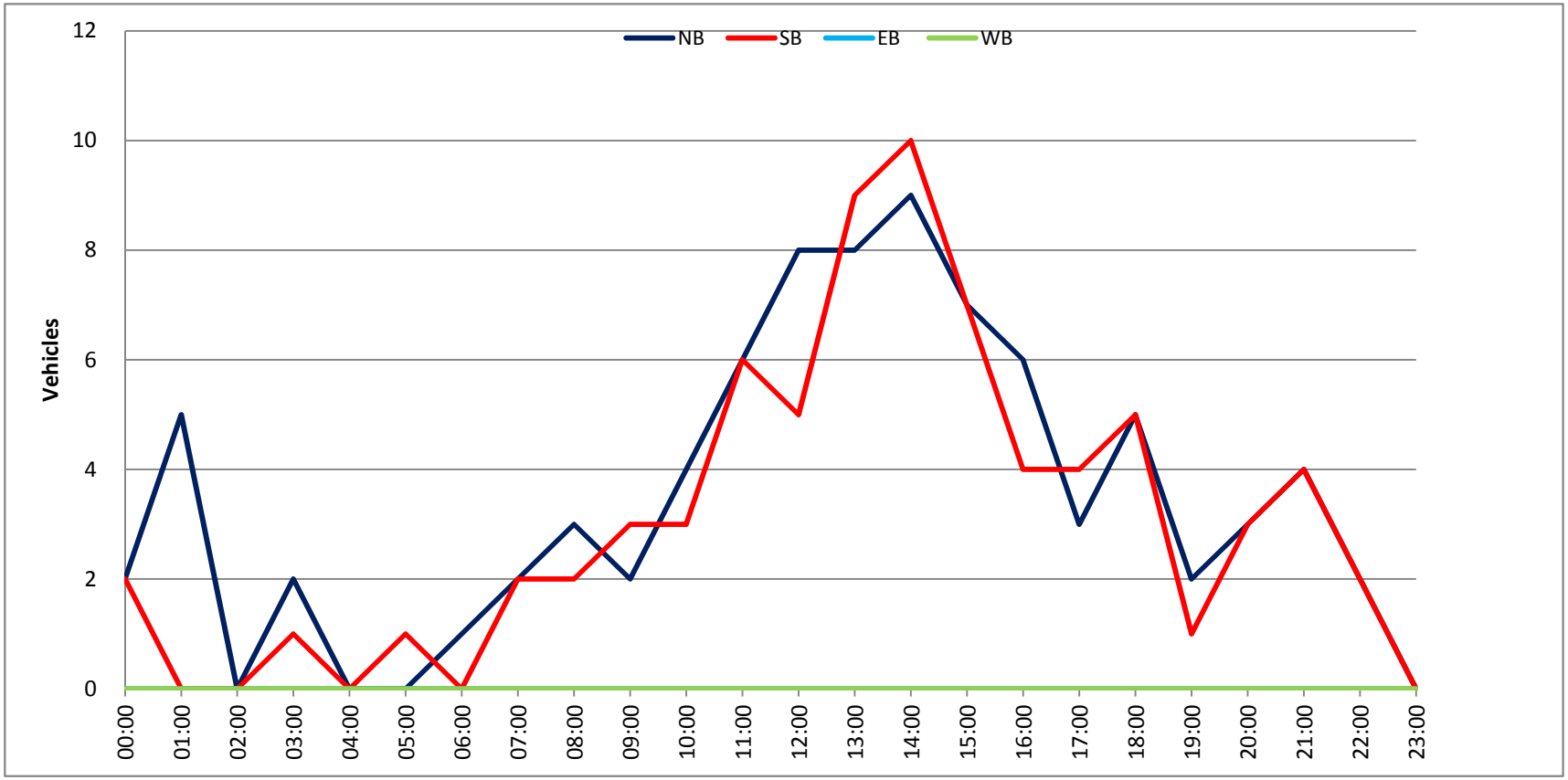
Location: SR-41 East Frontage Rd (Cobb Ranch Blvd) **Date:** 5/24/2014



Prepared by NDS/ATD

Project #: CA14_8073_003 **City:** Fresno

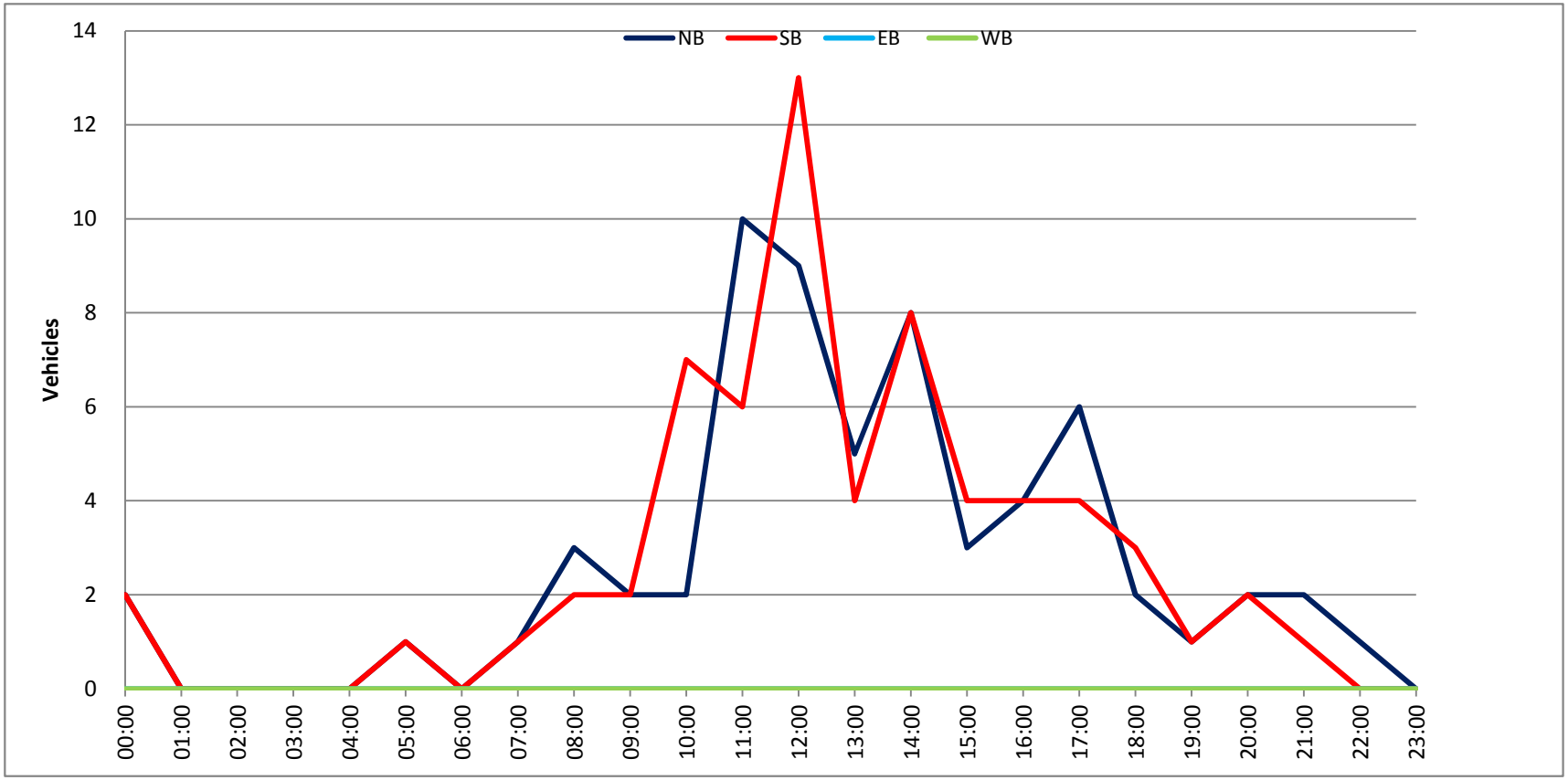
Location: SR-41 East Frontage Rd (Cobb Ranch Blvd) **Date:** 5/25/2014



Prepared by NDS/ATD

Project #: CA14_8073_003 **City:** Fresno

Location: SR-41 East Frontage Rd (Cobb Ranch Blvd) **Date:** 5/26/2014



Prepared by NDS/ATD

VOLUME

Audubon Dr between SR-41 & Palm Ave

Day: Saturday
Date: 5/24/2014

City: Fresno
Project #: CA14_8073_004

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,597	5,289	10,886

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			18		21		39		12:00			105		83		188	
00:15			20		20		40		12:15			113		63		176	
00:30			14		16		30		12:30			101		66		167	
00:45			11	63	17	74	28	137	12:45			97	416	79	291	176	707
01:00			11		22		33		13:00			100		90		190	
01:15			13		14		27		13:15			87		100		187	
01:30			10		13		23		13:30			105		100		205	
01:45			6	40	17	66	23	106	13:45			89	381	71	361	160	742
02:00			11		15		26		14:00			84		98		182	
02:15			8		5		13		14:15			107		104		211	
02:30			4		6		10		14:30			74		73		147	
02:45			8	31	6	32	14	63	14:45			85	350	70	345	155	695
03:00			4		4		8		15:00			87		79		166	
03:15			4		3		7		15:15			104		91		195	
03:30			7		5		12		15:30			135		99		234	
03:45			3	18	3	15	6	33	15:45			114	440	87	356	201	796
04:00			5		3		8		16:00			92		83		175	
04:15			3		2		5		16:15			77		74		151	
04:30			9		2		11		16:30			86		79		165	
04:45			6	23	6	13	12	36	16:45			62	317	96	332	158	649
05:00			7		5		12		17:00			68		137		205	
05:15			12		6		18		17:15			97		119		216	
05:30			16		10		26		17:30			85		95		180	
05:45			21	56	16	37	37	93	17:45			96	346	63	414	159	760
06:00			20		16		36		18:00			86		76		162	
06:15			29		16		45		18:15			81		87		168	
06:30			42		24		66		18:30			77		92		169	
06:45			49	140	31	87	80	227	18:45			77	321	61	316	138	637
07:00			48		38		86		19:00			59		76		135	
07:15			50		44		94		19:15			51		68		119	
07:30			48		45		93		19:30			53		68		121	
07:45			73	219	59	186	132	405	19:45			53	216	66	278	119	494
08:00			59		74		133		20:00			59		48		107	
08:15			72		77		149		20:15			73		46		119	
08:30			81		79		160		20:30			65		54		119	
08:45			81	293	100	330	181	623	20:45			58	255	42	190	100	445
09:00			64		80		144		21:00			52		54		106	
09:15			95		89		184		21:15			59		50		109	
09:30			113		87		200		21:30			61		39		100	
09:45			112	384	96	352	208	736	21:45			39	211	48	191	87	402
10:00			87		101		188		22:00			40		48		88	
10:15			93		64		157		22:15			46		53		99	
10:30			99		91		190		22:30			32		50		82	
10:45			94	373	90	346	184	719	22:45			33	151	38	189	71	340
11:00			120		93		213		23:00			31		38		69	
11:15			104		94		198		23:15			36		26		62	
11:30			93		101		194		23:30			29		27		56	
11:45			113	430	77	365	190	795	23:45			27	123	32	123	59	246
TOTALS				2070		1903		**3973**	**TOTALS**				3527		3386		**6913**
SPLIT %				52.1%		47.9%		**36.5%**	**SPLIT %**				51.0%		49.0%		**63.5%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,597	5,289	10,886

AM Peak Hour		11:45	10:45	**11:00**
AM Pk Volume		432	378	**795**
Pk Hr Factor		0.956	0.936	**0.933**
7 - 9 Volume	0 0	512	516	**1028**
7 - 9 Peak Hour		08:00	08:00	**08:00**
7 - 9 Pk Volume	0 0	293	330	**623**
Pk Hr Factor	0.000 0.000	0.904	0.825	**0.860**

PM Peak Hour		15:15	16:45	**15:15**
PM Pk Volume		445	447	**805**
Pk Hr Factor		0.824	0.816	**0.860**
4 - 6 Volume	0 0	663	746	**1409**
4 - 6 Peak Hour		17:00	16:45	**17:00**
4 - 6 Pk Volume	0 0	346	447	**760**
Pk Hr Factor	0.000 0.000	0.892	0.816	**0.880**

Prepared by NDS/ATD

VOLUME

Audubon Dr between SR-41 & Palm Ave

Day: Sunday
Date: 5/25/2014

City: Fresno
Project #: CA14_8073_004

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,733	4,657	9,390

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			22		18		40		12:00			74		69		143	
00:15			16		23		39		12:15			79		100		179	
00:30			19		17		36		12:30			88		99		187	
00:45			30	87	14	72	44	159	12:45			77	318	90	358	167	676
01:00			12		12		24		13:00			58		70		128	
01:15			13		11		24		13:15			87		72		159	
01:30			9		12		21		13:30			80		95		175	
01:45			12	46	20	55	32	101	13:45			82	307	89	326	171	633
02:00			5		7		12		14:00			92		92		184	
02:15			5		8		13		14:15			97		68		165	
02:30			4		3		7		14:30			72		68		140	
02:45			4	18	2	20	6	38	14:45			72	333	72	300	144	633
03:00			5		5		10		15:00			75		74		149	
03:15			4		3		7		15:15			90		88		178	
03:30			6		5		11		15:30			96		89		185	
03:45			1	16	4	17	5	33	15:45			78	339	79	330	157	669
04:00			2		4		6		16:00			74		88		162	
04:15			4		5		9		16:15			87		75		162	
04:30			4		2		6		16:30			80		83		163	
04:45			4	14	4	15	8	29	16:45			71	312	81	327	152	639
05:00			4		4		8		17:00			99		105		204	
05:15			10		4		14		17:15			79		70		149	
05:30			15		6		21		17:30			90		86		176	
05:45			12	41	11	25	23	66	17:45			63	331	68	329	131	660
06:00			14		9		23		18:00			65		78		143	
06:15			17		7		24		18:15			75		68		143	
06:30			22		8		30		18:30			65		70		135	
06:45			35	88	17	41	52	129	18:45			76	281	87	303	163	584
07:00			22		11		33		19:00			63		60		123	
07:15			33		21		54		19:15			65		89		154	
07:30			31		36		67		19:30			52		61		113	
07:45			46	132	38	106	84	238	19:45			57	237	68	278	125	515
08:00			55		35		90		20:00			59		80		139	
08:15			44		41		85		20:15			43		99		142	
08:30			62		40		102		20:30			50		67		117	
08:45			89	250	41	157	130	407	20:45			71	223	74	320	145	543
09:00			50		50		100		21:00			49		70		119	
09:15			79		61		140		21:15			64		40		104	
09:30			76		75		151		21:30			35		53		88	
09:45			82	287	72	258	154	545	21:45			43	191	40	203	83	394
10:00			74		53		127		22:00			49		50		99	
10:15			76		59		135		22:15			48		46		94	
10:30			72		80		152		22:30			23		39		62	
10:45			84	306	81	273	165	579	22:45			35	155	27	162	62	317
11:00			99		79		178		23:00			39		35		74	
11:15			79		74		153		23:15			16		31		47	
11:30			77		56		133		23:30			17		12		29	
11:45			77	332	73	282	150	614	23:45			17	89	22	100	39	189
TOTALS				1617		1321		**2938**	**TOTALS**				3116		3336		**6452**
SPLIT %				55.0%		45.0%		**31.3%**	**SPLIT %**				48.3%		51.7%		**68.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,733	4,657	9,390

AM Peak Hour			10:45	11:45	**11:45**	**PM Peak Hour**			13:30	12:15	**13:30**
AM Pk Volume			339	341	**659**	**PM Pk Volume**			351	359	**695**
Pk Hr Factor			0.856	0.853	**0.881**	**Pk Hr Factor**			0.905	0.898	**0.944**
7 - 9 Volume	0	0	382	263	**645**	**4 - 6 Volume**	0	0	643	656	**1299**
7 - 9 Peak Hour			08:00	08:00	**08:00**	**4 - 6 Peak Hour**			16:45	16:15	**16:15**
7 - 9 Pk Volume	0	0	250	157	**407**	**4 - 6 Pk Volume**	0	0	339	344	**681**
Pk Hr Factor	0.000	0.000	0.702	0.957	**0.783**	**Pk Hr Factor**	0.000	0.000	0.856	0.819	**0.835**

Prepared by NDS/ATD

VOLUME

Audubon Dr between SR-41 & Palm Ave

Day: Monday
Date: 5/26/2014

City: Fresno
Project #: CA14_8073_004

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,697	4,775	9,472

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			18		20		38		12:00			76		76		152	
00:15			16		11		27		12:15			99		79		178	
00:30			10		16		26		12:30			68		85		153	
00:45			8	52	9	56	17	108	12:45			102	345	87	327	189	672
01:00			8		11		19		13:00			86		90		176	
01:15			7		6		13		13:15			82		72		154	
01:30			2		5		7		13:30			104		86		190	
01:45			8	25	8	30	16	55	13:45			80	352	88	336	168	688
02:00			9		4		13		14:00			84		86		170	
02:15			4		5		9		14:15			91		84		175	
02:30			2		2		4		14:30			83		103		186	
02:45			3	18	3	14	6	32	14:45			74	332	94	367	168	699
03:00			4		5		9		15:00			94		102		196	
03:15			4		2		6		15:15			87		76		163	
03:30			5		5		10		15:30			79		81		160	
03:45			4	17	5	17	9	34	15:45			73	333	86	345	159	678
04:00			1		5		6		16:00			79		101		180	
04:15			3		7		10		16:15			80		87		167	
04:30			8		4		12		16:30			71		84		155	
04:45			4	16	5	21	9	37	16:45			102	332	86	358	188	690
05:00			10		3		13		17:00			78		85		163	
05:15			12		3		15		17:15			83		87		170	
05:30			15		10		25		17:30			85		68		153	
05:45			17	54	15	31	32	85	17:45			62	308	83	323	145	631
06:00			18		13		31		18:00			78		72		150	
06:15			19		15		34		18:15			71		82		153	
06:30			28		26		54		18:30			77		81		158	
06:45			44	109	27	81	71	190	18:45			77	303	64	299	141	602
07:00			36		36		72		19:00			65		75		140	
07:15			35		43		78		19:15			67		57		124	
07:30			51		34		85		19:30			75		60		135	
07:45			62	184	44	157	106	341	19:45			59	266	68	260	127	526
08:00			55		37		92		20:00			50		67		117	
08:15			55		51		106		20:15			46		67		113	
08:30			42		51		93		20:30			43		62		105	
08:45			53	205	63	202	116	407	20:45			41	180	48	244	89	424
09:00			52		60		112		21:00			53		59		112	
09:15			58		57		115		21:15			47		48		95	
09:30			68		67		135		21:30			29		42		71	
09:45			75	253	97	281	172	534	21:45			18	147	34	183	52	330
10:00			87		65		152		22:00			35		33		68	
10:15			78		88		166		22:15			33		30		63	
10:30			94		86		180		22:30			23		29		52	
10:45			90	349	98	337	188	686	22:45			21	112	19	111	40	223
11:00			81		86		167		23:00			16		23		39	
11:15			87		72		159		23:15			20		12		32	
11:30			78		94		172		23:30			9		11		20	
11:45			99	345	85	337	184	682	23:45			15	60	12	58	27	118
TOTALS				1627		1564		**3191**	**TOTALS**				3070		3211		**6281**
SPLIT %				51.0%		49.0%		**33.7%**	**SPLIT %**				48.9%		51.1%		**66.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,697	4,775	9,472

AM Peak Hour			10:30	10:15	**10:15**	**PM Peak Hour**			12:45	14:15	**14:15**
AM Pk Volume			352	358	**701**	**PM Pk Volume**			374	383	**725**
Pk Hr Factor			0.936	0.913	**0.932**	**Pk Hr Factor**			0.899	0.930	**0.925**
7 - 9 Volume	0	0	389	359	**748**	**4 - 6 Volume**	0	0	640	681	**1321**
7 - 9 Peak Hour			07:30	08:00	**08:00**	**4 - 6 Peak Hour**			16:45	16:00	**16:00**
7 - 9 Pk Volume	0	0	223	202	**407**	**4 - 6 Pk Volume**	0	0	348	358	**690**
Pk Hr Factor	0.000	0.000	0.899	0.802	**0.877**	**Pk Hr Factor**	0.000	0.000	0.853	0.886	**0.918**

Prepared by NDS/ATD

Project #: CA14_8073_004 **City:** Fresno

Location: Audubon Dr between SR-41 & Palm Ave **Date:** 5/24/2014

Prepared by NDS/ATD

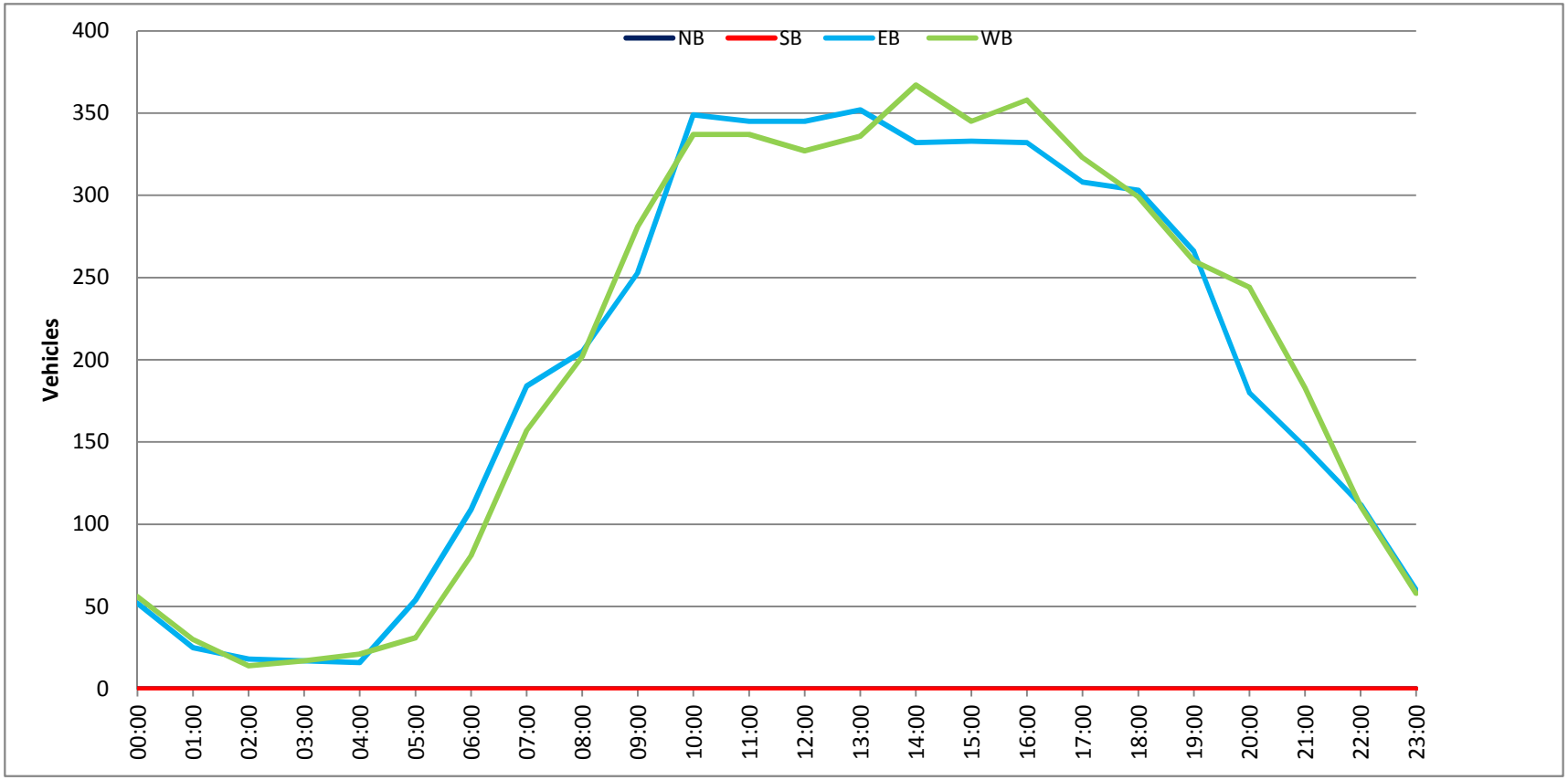
Project #: CA14_8073_004 **City:** Fresno

Location: Audubon Dr between SR-41 & Palm Ave **Date:** 5/25/2014

Prepared by NDS/ATD

Project #: CA14_8073_004 **City:** Fresno

Location: Audubon Dr between SR-41 & Palm Ave **Date:** 5/26/2014



Prepared by NDS/ATD

VOLUME

Audubon Dr E/o SR-41

Day: Saturday
Date: 5/24/2014

City: Fresno
Project #: CA14_8073_005

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,594	5,484	11,078

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			19		22		41		12:00			108		89		197	
00:15			18		24		42		12:15			120		65		185	
00:30			16		15		31		12:30			101		71		172	
00:45			12	65	18	79	30	144	12:45			105	434	76	301	181	735
01:00			11		23		34		13:00			90		92		182	
01:15			12		15		27		13:15			95		105		200	
01:30			12		13		25		13:30			102		102		204	
01:45			5	40	17	68	22	108	13:45			86	373	75	374	161	747
02:00			10		18		28		14:00			84		100		184	
02:15			8		5		13		14:15			112		104		216	
02:30			5		6		11		14:30			73		80		153	
02:45			8	31	7	36	15	67	14:45			80	349	70	354	150	703
03:00			4		5		9		15:00			93		89		182	
03:15			2		3		5		15:15			97		92		189	
03:30			8		5		13		15:30			135		104		239	
03:45			4	18	5	18	9	36	15:45			118	443	91	376	209	819
04:00			5		3		8		16:00			92		87		179	
04:15			1		2		3		16:15			79		77		156	
04:30			11		2		13		16:30			88		82		170	
04:45			5	22	6	13	11	35	16:45			60	319	104	350	164	669
05:00			6		5		11		17:00			70		140		210	
05:15			12		6		18		17:15			95		123		218	
05:30			16		11		27		17:30			84		99		183	
05:45			21	55	16	38	37	93	17:45			96	345	68	430	164	775
06:00			19		15		34		18:00			81		75		156	
06:15			29		17		46		18:15			86		93		179	
06:30			40		22		62		18:30			74		95		169	
06:45			46	134	32	86	78	220	18:45			82	323	61	324	143	647
07:00			48		36		84		19:00			55		79		134	
07:15			45		48		93		19:15			55		71		126	
07:30			53		44		97		19:30			52		72		124	
07:45			71	217	60	188	131	405	19:45			54	216	73	295	127	511
08:00			60		75		135		20:00			54		50		104	
08:15			69		79		148		20:15			72		48		120	
08:30			84		80		164		20:30			64		58		122	
08:45			81	294	104	338	185	632	20:45			64	254	42	198	106	452
09:00			65		80		145		21:00			48		57		105	
09:15			93		89		182		21:15			62		54		116	
09:30			105		87		192		21:30			60		41		101	
09:45			112	375	92	348	204	723	21:45			40	210	51	203	91	413
10:00			93		105		198		22:00			37		52		89	
10:15			92		66		158		22:15			48		56		104	
10:30			106		95		201		22:30			32		54		86	
10:45			89	380	96	362	185	742	22:45			32	149	38	200	70	349
11:00			117		100		217		23:00			33		43		76	
11:15			102		91		193		23:15			34		28		62	
11:30			93		103		196		23:30			30		28		58	
11:45			113	425	81	375	194	800	23:45			26	123	31	130	57	253
TOTALS				2056		1949		**4005**	**TOTALS**				3538		3535		**7073**
SPLIT %				51.3%		48.7%		**36.2%**	**SPLIT %**				50.0%		50.0%		**63.8%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,594	5,484	11,078

AM Peak Hour			11:45	10:45	**11:00**	**PM Peak Hour**			15:00	16:45	**15:00**
AM Pk Volume			442	390	**800**	**PM Pk Volume**			443	466	**819**
Pk Hr Factor			0.921	0.947	**0.922**	**Pk Hr Factor**			0.820	0.832	**0.857**
7 - 9 Volume	0	0	511	526	**1037**	**4 - 6 Volume**	0	0	664	780	**1444**
7 - 9 Peak Hour			08:00	08:00	**08:00**	**4 - 6 Peak Hour**			17:00	16:45	**16:45**
7 - 9 Pk Volume	0	0	294	338	**632**	**4 - 6 Pk Volume**	0	0	345	466	**775**
Pk Hr Factor	0.000	0.000	0.875	0.813	**0.854**	**Pk Hr Factor**	0.000	0.000	0.898	0.832	**0.889**

Prepared by NDS/ATD

VOLUME

Audubon Dr E/o SR-41

Day: Sunday
Date: 5/25/2014

City: Fresno
Project #: CA14_8073_005

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,724	4,861	9,585

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			25		20		45		12:00			77		70		147	
00:15			16		23		39		12:15			78		106		184	
00:30			17		19		36		12:30			77		103		180	
00:45			29	87	16	78	45	165	12:45			84	316	92	371	176	687
01:00			13		12		25		13:00			63		73		136	
01:15			12		13		25		13:15			83		77		160	
01:30			11		13		24		13:30			79		95		174	
01:45			9	45	22	60	31	105	13:45			83	308	93	338	176	646
02:00			8		7		15		14:00			93		95		188	
02:15			5		8		13		14:15			91		71		162	
02:30			4		4		8		14:30			79		72		151	
02:45			4	21	2	21	6	42	14:45			71	334	77	315	148	649
03:00			5		6		11		15:00			68		73		141	
03:15			4		3		7		15:15			91		98		189	
03:30			6		4		10		15:30			94		92		186	
03:45			1	16	4	17	5	33	15:45			85	338	88	351	173	689
04:00			2		4		6		16:00			75		89		164	
04:15			3		5		8		16:15			83		79		162	
04:30			4		2		6		16:30			76		86		162	
04:45			4	13	4	15	8	28	16:45			74	308	88	342	162	650
05:00			3		6		9		17:00			105		108		213	
05:15			11		4		15		17:15			81		76		157	
05:30			13		6		19		17:30			83		90		173	
05:45			13	40	12	28	25	68	17:45			68	337	69	343	137	680
06:00			14		9		23		18:00			63		83		146	
06:15			18		7		25		18:15			78		71		149	
06:30			20		8		28		18:30			63		72		135	
06:45			32	84	17	41	49	125	18:45			75	279	87	313	162	592
07:00			25		11		36		19:00			64		68		132	
07:15			35		22		57		19:15			62		89		151	
07:30			26		35		61		19:30			53		64		117	
07:45			49	135	39	107	88	242	19:45			55	234	69	290	124	524
08:00			53		36		89		20:00			59		82		141	
08:15			45		40		85		20:15			48		106		154	
08:30			58		40		98		20:30			46		70		116	
08:45			87	243	44	160	131	403	20:45			71	224	79	337	150	561
09:00			53		51		104		21:00			52		75		127	
09:15			79		62		141		21:15			60		45		105	
09:30			79		78		157		21:30			38		54		92	
09:45			80	291	74	265	154	556	21:45			39	189	40	214	79	403
10:00			71		54		125		22:00			54		51		105	
10:15			82		63		145		22:15			43		50		93	
10:30			73		82		155		22:30			27		44		71	
10:45			82	308	84	283	166	591	22:45			34	158	30	175	64	333
11:00			89		81		170		23:00			39		38		77	
11:15			82		74		156		23:15			14		34		48	
11:30			80		58		138		23:30			18		13		31	
11:45			79	330	75	288	154	618	23:45			15	86	24	109	39	195
TOTALS				1613		1363		**2976**	**TOTALS**				3111		3498		**6609**
SPLIT %				54.2%		45.8%		**31.0%**	**SPLIT %**				47.1%		52.9%		**69.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,724	4,861	9,585

AM Peak Hour			10:45	11:45	**11:45**	**PM Peak Hour**			13:30	12:15	**15:15**
AM Pk Volume			333	354	**665**	**PM Pk Volume**			346	374	**712**
Pk Hr Factor			0.935	0.835	**0.904**	**Pk Hr Factor**			0.930	0.882	**0.942**
7 - 9 Volume	0	0	378	267	**645**	**4 - 6 Volume**	0	0	645	685	**1330**
7 - 9 Peak Hour			08:00	08:00	**08:00**	**4 - 6 Peak Hour**			16:45	16:45	**16:45**
7 - 9 Pk Volume	0	0	243	160	**403**	**4 - 6 Pk Volume**	0	0	343	362	**705**
Pk Hr Factor	0.000	0.000	0.698	0.909	**0.769**	**Pk Hr Factor**	0.000	0.000	0.817	0.838	**0.827**

Prepared by NDS/ATD

VOLUME

Audubon Dr E/o SR-41

Day: Monday
Date: 5/26/2014

City: Fresno
Project #: CA14_8073_005

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,696	4,941	9,637

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			20		21		41		12:00			79		82		161	
00:15			16		13		29		12:15			93		83		176	
00:30			12		16		28		12:30			78		83		161	
00:45			6	54	10	60	16	114	12:45			101	351	88	336	189	687
01:00			10		11		21		13:00			84		93		177	
01:15			4		6		10		13:15			81		76		157	
01:30			3		5		8		13:30			104		88		192	
01:45			9	26	8	30	17	56	13:45			82	351	88	345	170	696
02:00			9		5		14		14:00			80		90		170	
02:15			4		5		9		14:15			86		88		174	
02:30			2		3		5		14:30			88		106		194	
02:45			3	18	3	16	6	34	14:45			74	328	96	380	170	708
03:00			4		5		9		15:00			98		103		201	
03:15			3		3		6		15:15			80		77		157	
03:30			5		4		9		15:30			74		84		158	
03:45			5	17	6	18	11	35	15:45			86	338	97	361	183	699
04:00			1		5		6		16:00			69		105		174	
04:15			3		6		9		16:15			84		95		179	
04:30			8		5		13		16:30			69		84		153	
04:45			5	17	5	21	10	38	16:45			103	325	85	369	188	694
05:00			9		3		12		17:00			78		92		170	
05:15			11		3		14		17:15			80		95		175	
05:30			14		10		24		17:30			89		70		159	
05:45			17	51	15	31	32	82	17:45			61	308	90	347	151	655
06:00			18		13		31		18:00			78		71		149	
06:15			17		15		32		18:15			76		92		168	
06:30			31		26		57		18:30			72		80		152	
06:45			39	105	27	81	66	186	18:45			78	304	67	310	145	614
07:00			37		36		73		19:00			62		73		135	
07:15			37		45		82		19:15			71		60		131	
07:30			50		34		84		19:30			77		62		139	
07:45			59	183	44	159	103	342	19:45			60	270	70	265	130	535
08:00			58		35		93		20:00			51		72		123	
08:15			54		55		109		20:15			47		68		115	
08:30			42		51		93		20:30			43		66		109	
08:45			52	206	63	204	115	410	20:45			42	183	48	254	90	437
09:00			55		60		115		21:00			51		65		116	
09:15			55		59		114		21:15			47		52		99	
09:30			72		68		140		21:30			32		46		78	
09:45			68	250	95	282	163	532	21:45			19	149	40	203	59	352
10:00			90		69		159		22:00			34		37		71	
10:15			75		86		161		22:15			31		33		64	
10:30			95		90		185		22:30			24		30		54	
10:45			90	350	96	341	186	691	22:45			19	108	20	120	39	228
11:00			79		91		170		23:00			19		25		44	
11:15			90		76		166		23:15			16		12		28	
11:30			74		92		166		23:30			11		13		24	
11:45			99	342	87	346	186	688	23:45			16	62	12	62	28	124
TOTALS				1619		1589		**3208**	**TOTALS**				3077		3352		**6429**
SPLIT %				50.5%		49.5%		**33.3%**	**SPLIT %**				47.9%		52.1%		**66.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,696	4,941	9,637

AM Peak Hour			10:30	10:15	**10:30**	**PM Peak Hour**			12:45	14:15	**14:15**
AM Pk Volume			354	363	**707**	**PM Pk Volume**			370	393	**739**
Pk Hr Factor			0.932	0.945	**0.950**	**Pk Hr Factor**			0.889	0.927	**0.919**
7 - 9 Volume	0	0	389	363	**752**	**4 - 6 Volume**	0	0	633	716	**1349**
7 - 9 Peak Hour			07:30	08:00	**08:00**	**4 - 6 Peak Hour**			16:45	16:00	**16:00**
7 - 9 Pk Volume	0	0	221	204	**410**	**4 - 6 Pk Volume**	0	0	350	369	**694**
Pk Hr Factor	0.000	0.000	0.936	0.810	**0.891**	**Pk Hr Factor**	0.000	0.000	0.850	0.879	**0.923**

Prepared by NDS/ATD

Project #: CA14_8073_005 **City:** Fresno

Location: Audubon Dr E/o SR-41 **Date:** 5/24/2014

Prepared by NDS/ATD

Project #: CA14_8073_005 **City:** Fresno

Location: Audubon Dr E/o SR-41 **Date:** 5/25/2014

Prepared by NDS/ATD

Project #: CA14_8073_005 **City:** Fresno

Location: Audubon Dr E/o SR-41 **Date:** 5/26/2014

Prepared by NDS/ATD

VOLUME

Del Mar Ave between Audubon Dr & Riverview Dr

Day: Saturday
Date: 5/24/2014

City: Fresno
Project #: CA14_8073_006

DAILY TOTALS	NB	SB	EB	WB	Total
	662	942	0	0	1,604

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	3		1				4		12:00	10		18				28	
00:15	3		3				6		12:15	13		17				30	
00:30	5		2				7		12:30	14		11				25	
00:45	5	16	3	9			8	25	12:45	9	46	17	63			26	109
01:00	0		2				2		13:00	11		12				23	
01:15	3		1				4		13:15	15		10				25	
01:30	1		2				3		13:30	18		11				29	
01:45	2	6	1	6			3	12	13:45	16	60	22	55			38	115
02:00	0		2				2		14:00	11		8				19	
02:15	2		1				3		14:15	17		16				33	
02:30	0		1				1		14:30	8		9				17	
02:45	1	3	5	9			6	12	14:45	8	44	18	51			26	95
03:00	0		2				2		15:00	18		16				34	
03:15	1		0				1		15:15	5		11				16	
03:30	0		3				3		15:30	17		17				34	
03:45	1	2	2	7			3	9	15:45	16	56	16	60			32	116
04:00	1		1				2		16:00	10		13				23	
04:15	3		0				3		16:15	10		21				31	
04:30	0		4				4		16:30	9		19				28	
04:45	0	4	2	7			2	11	16:45	10	39	18	71			28	110
05:00	0		2				2		17:00	15		9				24	
05:15	0		4				4		17:15	16		18				34	
05:30	1		3				4		17:30	9		19				28	
05:45	1	2	2	11			3	13	17:45	8	48	10	56			18	104
06:00	1		6				7		18:00	8		16				24	
06:15	0		5				5		18:15	7		15				22	
06:30	1		6				7		18:30	15		14				29	
06:45	3	5	4	21			7	26	18:45	7	37	7	52			14	89
07:00	6		8				14		19:00	8		12				20	
07:15	8		13				21		19:15	10		12				22	
07:30	5		11				16		19:30	9		8				17	
07:45	6	25	5	37			11	62	19:45	12	39	15	47			27	86
08:00	1		11				12		20:00	7		6				13	
08:15	8		12				20		20:15	7		16				23	
08:30	6		21				27		20:30	5		9				14	
08:45	6	21	23	67			29	88	20:45	4	23	11	42			15	65
09:00	4		13				17		21:00	5		6				11	
09:15	7		15				22		21:15	8		6				14	
09:30	15		19				34		21:30	3		5				8	
09:45	9	35	19	66			28	101	21:45	7	23	1	18			8	41
10:00	6		19				25		22:00	6		6				12	
10:15	7		18				25		22:15	7		6				13	
10:30	13		21				34		22:30	6		6				12	
10:45	10	36	16	74			26	110	22:45	1	20	2	20			3	40
11:00	13		25				38		23:00	6		1				7	
11:15	16		15				31		23:15	6		1				7	
11:30	13		19				32		23:30	6		3				9	
11:45	10	52	23	82			33	134	23:45	2	20	6	11			8	31
TOTALS		207		396				**603**	**TOTALS**		455		546				**1001**
SPLIT %		34.3%		65.7%				**37.6%**	**SPLIT %**		45.5%		54.5%				**62.4%**

DAILY TOTALS	NB	SB	EB	WB	Total
	662	942	0	0	1,604

AM Peak Hour	10:30	11:00			**11:00**	**PM Peak Hour**	13:30	16:00			**15:30**
AM Pk Volume	52	82			**134**	**PM Pk Volume**	62	71			**120**
Pk Hr Factor	0.813	0.820			**0.882**	**Pk Hr Factor**	0.861	0.845			**0.882**
7 - 9 Volume	46	104	0	0	**150**	**4 - 6 Volume**	87	127	0	0	**214**
7 - 9 Peak Hour	07:00	08:00			**08:00**	**4 - 6 Peak Hour**	16:30	16:00			**16:30**
7 - 9 Pk Volume	25	67	0	0	**88**	**4 - 6 Pk Volume**	50	71	0	0	**114**
Pk Hr Factor	0.781	0.728	0.000	0.000	**0.759**	**Pk Hr Factor**	0.781	0.845	0.000	0.000	**0.838**

Prepared by NDS/ATD

VOLUME

Del Mar Ave between Audubon Dr & Riverview Dr

Day: Sunday
Date: 5/25/2014

City: Fresno
Project #: CA14_8073_006

DAILY TOTALS	NB	SB	EB	WB	Total
	556	772	0	0	1,328

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	2		2						4		12:00	11		11						22	
00:15	1		2						3		12:15	11		21						32	
00:30	1		1						2		12:30	12		11						23	
00:45	0	4	6	11					6	15	12:45	9	43	15	58					24	101
01:00	3		4						7		13:00	6		12						18	
01:15	2		2						4		13:15	8		19						27	
01:30	9		3						12		13:30	9		16						25	
01:45	2	16	2	11					4	27	13:45	9	32	9	56					18	88
02:00	1		1						2		14:00	7		8						15	
02:15	2		0						2		14:15	12		12						24	
02:30	0		0						0		14:30	13		10						23	
02:45	0	3	0	1					0	4	14:45	7	39	11	41					18	80
03:00	0		0						0		15:00	9		7						16	
03:15	0		0						0		15:15	11		19						30	
03:30	1		1						2		15:30	13		12						25	
03:45	1	2	0	1					1	3	15:45	9	42	14	52					23	94
04:00	1		1						2		16:00	15		18						33	
04:15	0		1						1		16:15	16		13						29	
04:30	0		0						0		16:30	8		14						22	
04:45	0	1	1	3					1	4	16:45	12	51	13	58					25	109
05:00	0		2						2		17:00	11		15						26	
05:15	0		2						2		17:15	5		17						22	
05:30	0		3						3		17:30	8		16						24	
05:45	2	2	1	8					3	10	17:45	5	29	10	58					15	87
06:00	0		4						4		18:00	8		8						16	
06:15	0		4						4		18:15	13		9						22	
06:30	3		3						6		18:30	8		15						23	
06:45	0	3	4	15					4	18	18:45	8	37	9	41					17	78
07:00	2		7						9		19:00	6		11						17	
07:15	3		8						11		19:15	9		7						16	
07:30	0		5						5		19:30	8		14						22	
07:45	5	10	5	25					10	35	19:45	10	33	10	42					20	75
08:00	3		4						7		20:00	9		8						17	
08:15	5		8						13		20:15	10		3						13	
08:30	10		18						28		20:30	12		11						23	
08:45	4	22	17	47					21	69	20:45	6	37	6	28					12	65
09:00	6		10						16		21:00	13		6						19	
09:15	6		9						15		21:15	10		10						20	
09:30	3		17						20		21:30	11		7						18	
09:45	4	19	12	48					16	67	21:45	2	36	5	28					7	64
10:00	10		16						26		22:00	3		7						10	
10:15	9		18						27		22:15	5		6						11	
10:30	11		12						23		22:30	4		2						6	
10:45	9	39	14	60					23	99	22:45	1	13	4	19					5	32
11:00	11		10						21		23:00	3		4						7	
11:15	6		17						23		23:15	2		1						3	
11:30	6		8						14		23:30	2		2						4	
11:45	8	31	13	48					21	79	23:45	5	12	6	13					11	25
TOTALS		152		278						430	TOTALS		404		494						898
SPLIT %		35.3%		64.7%						32.4%	SPLIT %		45.0%		55.0%						67.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	556	772	0	0	1,328

AM Peak Hour	11:45	09:30			10:00	PM Peak Hour	15:30	15:15			15:15
AM Pk Volume	42	63			99	PM Pk Volume	53	63			111
Pk Hr Factor	0.875	0.875			0.917	Pk Hr Factor	0.828	0.829			0.841
7 - 9 Volume	32	72	0	0	104	4 - 6 Volume	80	116	0	0	196
7 - 9 Peak Hour	07:45	08:00			08:00	4 - 6 Peak Hour	16:00	16:45			16:00
7 - 9 Pk Volume	23	47	0	0	69	4 - 6 Pk Volume	51	61	0	0	109
Pk Hr Factor	0.575	0.653	0.000	0.000	0.616	Pk Hr Factor	0.797	0.897	0.000	0.000	0.826

Prepared by NDS/ATD

VOLUME

Del Mar Ave between Audubon Dr & Riverview Dr

Day: Monday
Date: 5/26/2014

City: Fresno
Project #: CA14_8073_006

DAILY TOTALS	NB	SB	EB	WB	Total
	672	891	0	0	1,563

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	3		1						4		12:00	13		19						32	
00:15	2		4						6		12:15	10		14						24	
00:30	6		3						9		12:30	8		17						25	
00:45	0	11	1	9					1	20	12:45	8	39	21	71					29	110
01:00	2		1						3		13:00	15		20						35	
01:15	1		0						1		13:15	13		9						22	
01:30	0		1						1		13:30	18		14						32	
01:45	1	4	1	3					2	7	13:45	13	59	16	59					29	118
02:00	1		2						3		14:00	11		18						29	
02:15	0		2						2		14:15	9		9						18	
02:30	0		0						0		14:30	5		14						19	
02:45	1	2	1	5					2	7	14:45	12	37	10	51					22	88
03:00	0		0						0		15:00	21		15						36	
03:15	1		1						2		15:15	20		14						34	
03:30	0		0						0		15:30	10		15						25	
03:45	1	2	3	4					4	6	15:45	17	68	14	58					31	126
04:00	1		0						1		16:00	8		15						23	
04:15	1		3						4		16:15	15		12						27	
04:30	1		0						1		16:30	14		11						25	
04:45	0	3	1	4					1	7	16:45	15	52	26	64					41	116
05:00	0		4						4		17:00	8		15						23	
05:15	0		1						1		17:15	11		18						29	
05:30	0		1						1		17:30	10		14						24	
05:45	4	4	3	9					7	13	17:45	10	39	11	58					21	97
06:00	4		6						10		18:00	10		24						34	
06:15	1		2						3		18:15	9		29						38	
06:30	2		5						7		18:30	15		24						39	
06:45	3	10	10	23					13	33	18:45	12	46	16	93					28	139
07:00	2		5						7		19:00	9		10						19	
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07:30	1		12						13		19:30	7		15						22	
07:45	6	13	9	35					15	48	19:45	4	35	12	55					16	90
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11:15	15		17						32		23:15	2		4						6	
11:30	15		8						23		23:30	0		1						1	
11:45	15	55	17	51					32	106	23:45	9	17	4	10					13	27
TOTALS		210		304						**514**	**TOTALS**		462		587						**1049**
SPLIT %		40.9%		59.1%						**32.9%**	**SPLIT %**		44.0%		56.0%						**67.1%**

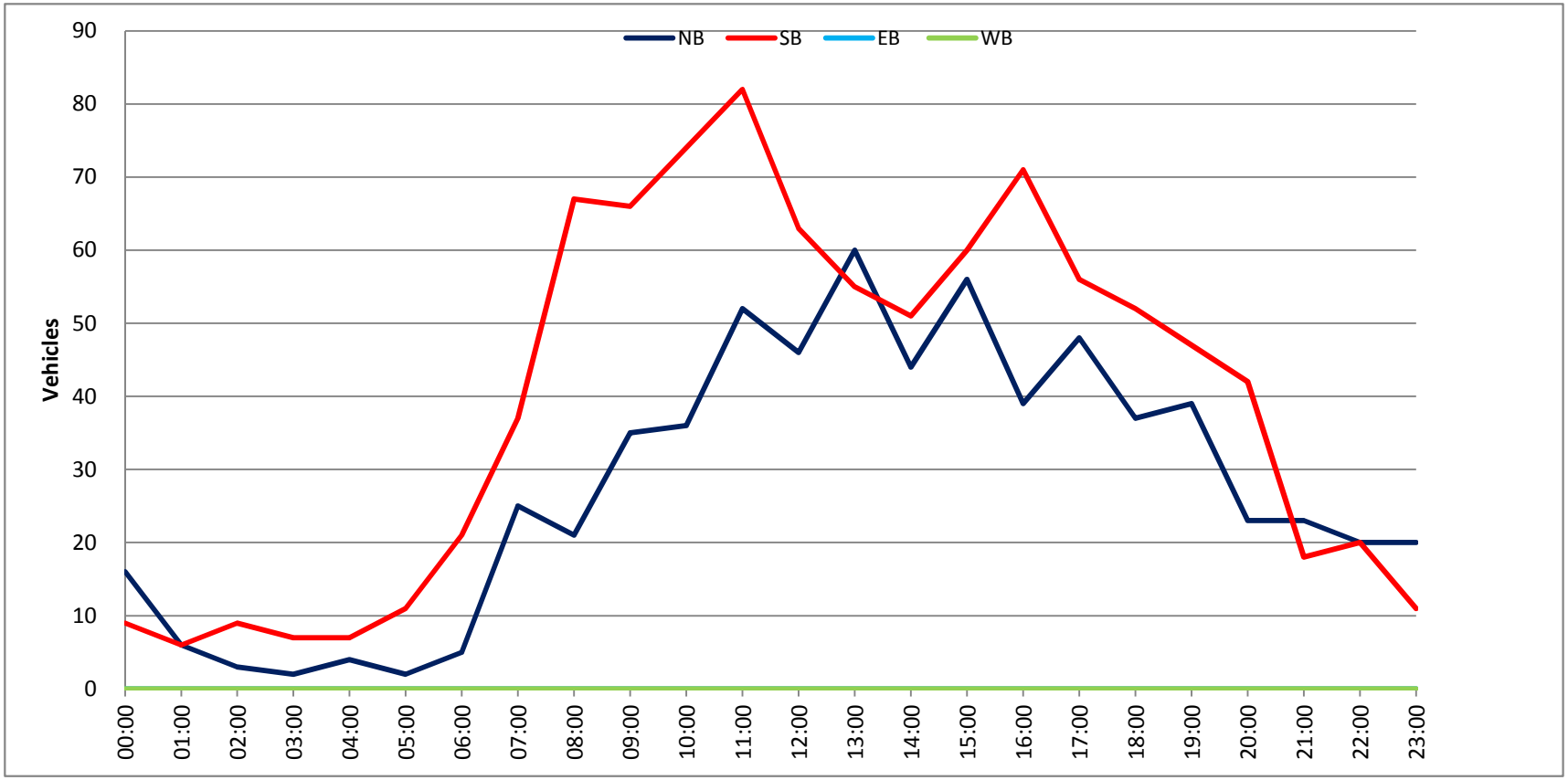
DAILY TOTALS	NB	SB	EB	WB	Total
	672	891	0	0	1,563

AM Peak Hour	11:15	10:00			**11:15**	**PM Peak Hour**	15:00	18:00			**18:00**
AM Pk Volume	58	67			**119**	**PM Pk Volume**	68	93			**139**
Pk Hr Factor	0.967	0.644			**0.930**	**Pk Hr Factor**	0.810	0.802			**0.891**
7 - 9 Volume	39	75	0	0	**114**	**4 - 6 Volume**	91	122	0	0	**213**
7 - 9 Peak Hour	08:00	07:30			**08:00**	**4 - 6 Peak Hour**	16:00	16:45			**16:30**
7 - 9 Pk Volume	26	43	0	0	**66**	**4 - 6 Pk Volume**	52	73	0	0	**118**
Pk Hr Factor	0.722	0.896	0.000	0.000	**0.786**	**Pk Hr Factor**	0.867	0.702	0.000	0.000	**0.720**

Prepared by NDS/ATD

Project #: CA14_8073_006 **City:** Fresno

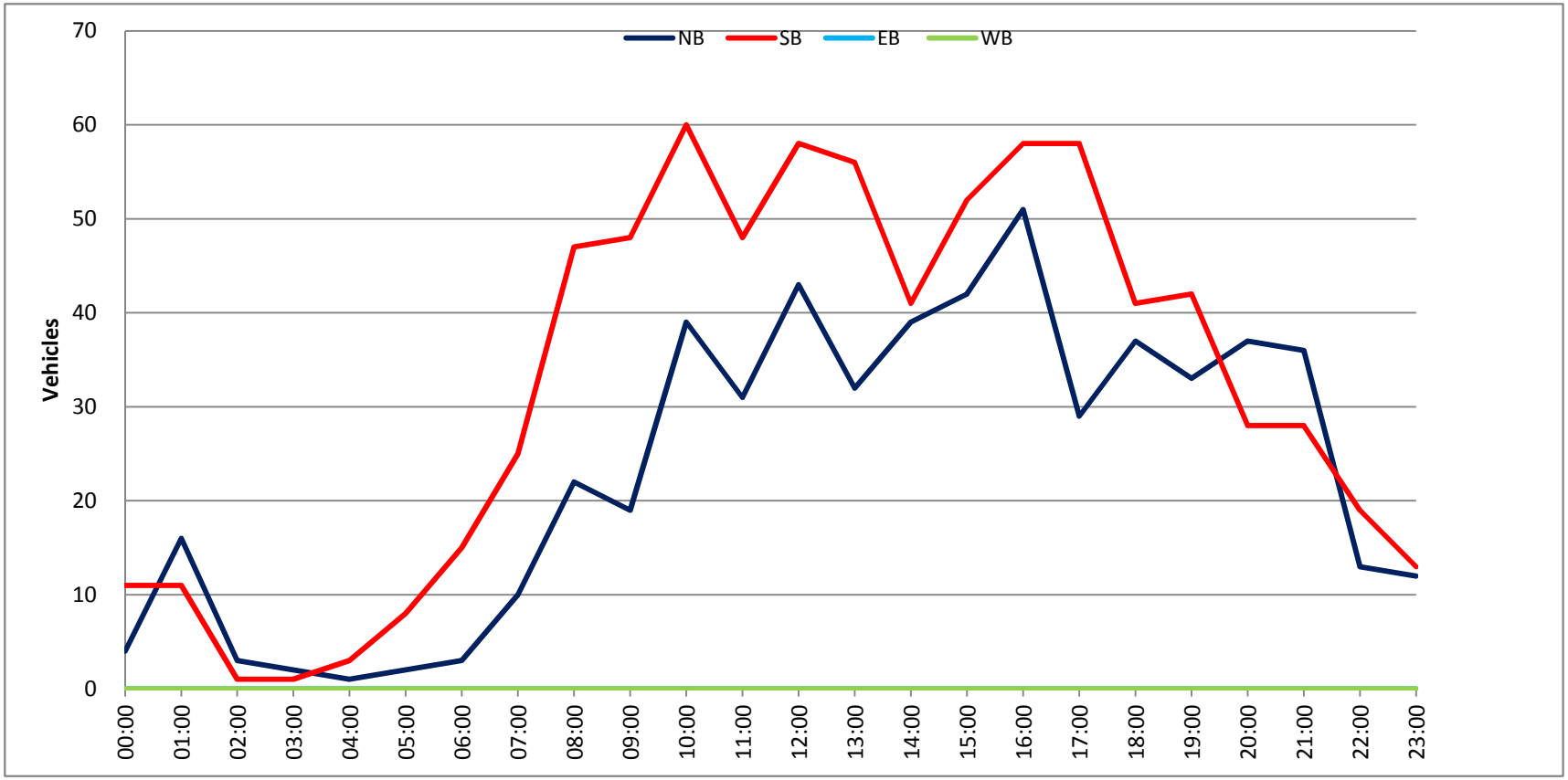
Location: Del Mar Ave between Audubon Dr & **Date:** 5/24/2014



Prepared by NDS/ATD

Project #: CA14_8073_006 **City:** Fresno

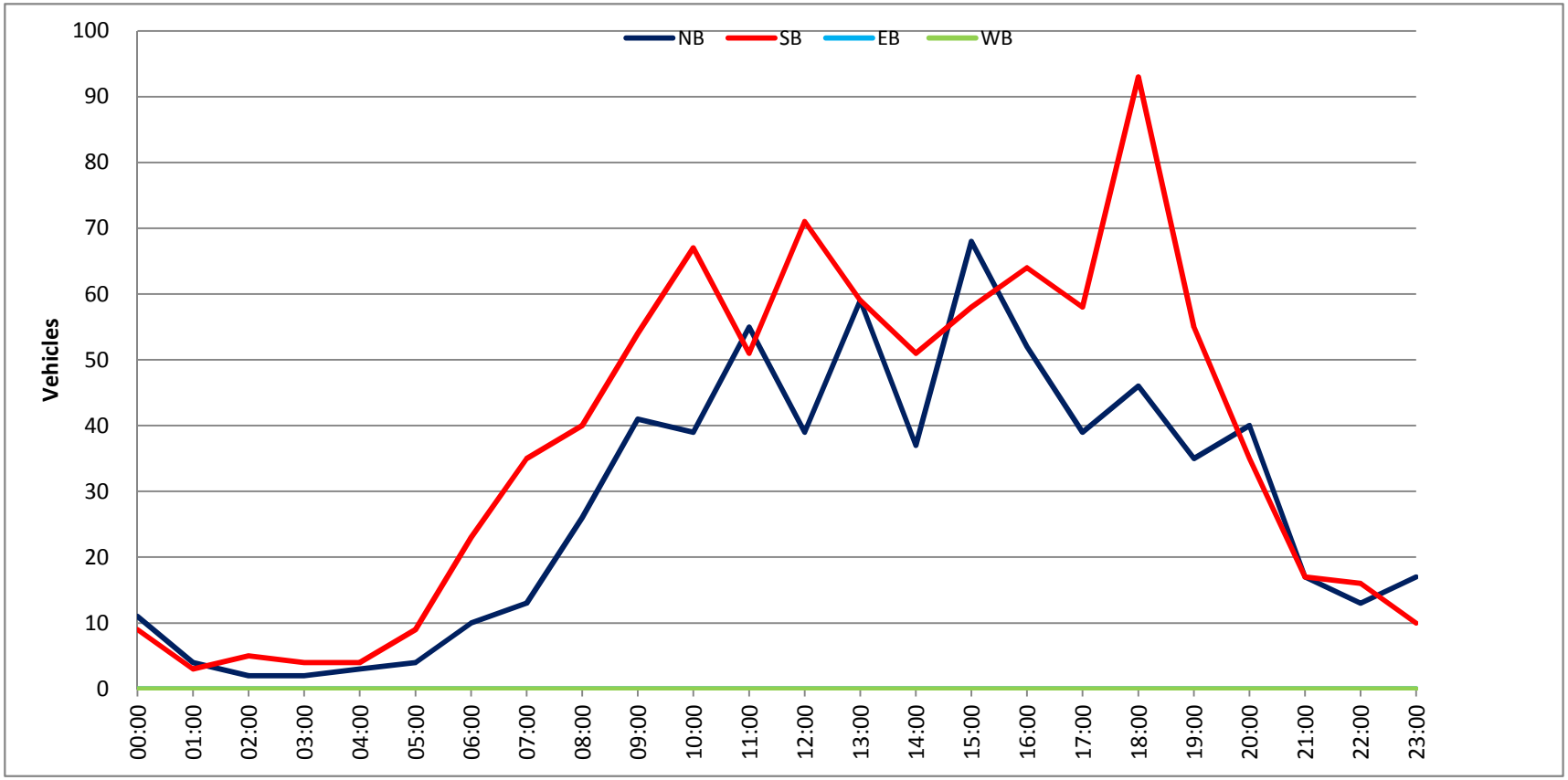
Location: Del Mar Ave between Audubon Dr & **Date:** 5/25/2014



Prepared by NDS/ATD

Project #: CA14_8073_006 **City:** Fresno

Location: Del Mar Ave between Audubon Dr & **Date:** 5/26/2014



Appendix I
Road Feasibility Report

AECOM

Road Feasibility Report

San Joaquin River Conservancy River West Fresno, Eaton Trail Extension Project

Prepared for
San Joaquin River Conservancy

AECOM Project No. 60425596
February 2017

1360 E. Spruce Avenue, Suite 101
Fresno, CA 93720

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Section 1
Introduction

1.1 Background

This Feasibility Report was prepared in support of a Draft Environmental Impact Report (DEIR) prepared under the California Environmental Quality Act (CEQA) for the San Joaquin River Conservancy Fresno River West Eaton Trail Extension Project. It evaluates the viability of vehicular access to the proposed multipurpose Lewis Eaton Trail via five routes starting adjacent to or near the intersection of Nees and Palm Avenues. Each route was independently evaluated for feasibility in constructing a paved two-way road to provide public access to a parking area. This Feasibility Study recommends a single route for Alternative 5 of the EIR.

Alternative 5 was developed in support of the EIR to address limited public access to the San Joaquin River (River) for residents of a nearby disadvantage census tract and more broadly to Fresno residents due to the travel distance to access the proposed parking area via the Perrin Avenue entrance. This technical report considers five routes to provide public access to the proposed multiuse trail from a location near the intersection of North Palm and West Nees Avenues in Fresno, California.

The Alternative 5 area is located along the River west of Spano Park and is within the city limits of Fresno. It is generally delineated on the north by the River and on the south and east by commercially-developed parcels on the plateau above the steep river bluff. The commercially-developed parcels include the Park Place Shopping Center and the Palm Bluffs Corporate Center. On the plateau northeast and southwest of the subject area is residential development. Most of the subject area consists of open space or commercial land use.

The area encompasses about 65 acres on 10 parcels of land, all of which are privately owned. Table 1-1 identifies the individual parcels, size, land use and zoning and owner(s). A map of the parcels is presented in Figure 1-1. A private access road (referred to in this report as the paved or unpaved Gravel Haul Road) traverses through the Alternative 5 area (Assessor's Parcel Numbers 40203063S, 40534018S, 40534019S, and 40553085). State and local agencies have certain public access easements on these roads. Photographs 1, 2 and 3 below show Gravel Haul Road. Table 1-1 presents the size, land use, zoning and owners of the parcels of land that compose the Alternative 5 area.

A portion of Gravel Haul Road is paved and connects with the intersection of Palm and West Nees Avenues on the plateau overlooking the River. The paved portion ends on parcel 40534018S and then proceeds upriver as an unpaved road. The paved road is about 1,200 feet long and 27 feet wide; the unpaved road is about 640 feet long and 10 feet wide. Several nonpublic unpaved roads can be seen on aerial photographs of the site (Figure 1-1). An example of one of these roads is presented in Photograph 4. Access to the area is from the intersection of Nees and Palm Avenues. The entrance is blocked by a locked gate as seen in Photograph 5.

Table 1-1 Parcel Numbers, Size, Land Use and Owner(s) of Alternative 5 Area

Assessor's Parcel Number	Acreage	Existing Land Use Description	Planned Land Use Description	Zoning	Owner
40203063S	11.61	Open Space/ Multi-Use	Open Space/ Multi-Use	AE-5	SOB Enterprises
40203067S	4.52	Open Space/ Multi-Use	Open Space/ Multi-Use	AE-5	SOB Enterprises
40203043	1.19	Vacant	Commercial/ Special	SPLIT: AE-5 and AE-20	SOB Enterprises
40203070	3.06	Vacant	Commercial/ Special	SPLIT: AE-5 and AE-20	SOB Enterprises
40553085	11.66	Office/ Commercial	Commercial/ Office	C-2	Park Place
40534019S	0.70	Vacant	Open Space/ Multi-Use	AE-20	SOB Enterprises
40534018S	0.76	Open Space/ Multi-Use	Open Space/ Ponding Basin	AE-20	SOB Enterprises
40203064S	10.94	Vacant	Open Space/ Multi-Use	AE-20	SOB Enterprises
40534004	11.89	Vacant	Commercial/ Office	C-P	C&A Farms, LLC; North Palm Partners
40534017S	8.75	Vacant	Open Space/ Multi-Use	AE-20	SOB Enterprises
Total Acres	65.08				

1.2 Setting

The landform of the San Joaquin River plateau is a terrace escarpment composed of parent alluvial sediments of a Pleistocene geologic. It is referred to as the bluff in this report. In general the earth material profile of the bluff consists predominantly of near surface sandy silt in the upper 1 to 2 feet and underlain by layers of silty sand, poorly graded sand with varying silt content, and sandy silt. The relative consistency of the coarse grained soils range from medium to very dense, while the fine grained soils are medium stiff to hard.

The plateau or cliff area overlooks the River and consists of three slopes: an upper, central, and lower slope. The upper slope is separated from the central slope by a terrace with a depth of 8 feet while the lower slope is separated from the central slope by a terrace with a depth of approximately 25 feet. The upper slope is approximately a 1.3:1 (horizontal to vertical) slope with an overall height of about 20 feet. The slope is approximately 1:1 with an overall height of about 60 feet (client confidential data 2012) above the floodplain of the River.

Prior to 1937 the plateau was used for agriculture, primarily fig orchards and livestock grazing. Examination of an aerial photograph taken in 1937 reveals a fairly sharp bluff crest, with drainage incisions near to and within the Alternative 5 project site. Aerial photos from 1981 indicate that in some portions of the bluff crest had migrated forward (towards the San Joaquin River), as evidenced by the filling of drainages. Figure 2 presents a conceptual outline of the original bluff crest (1937) compared to the current crest based on tracings of USGS topographic maps.

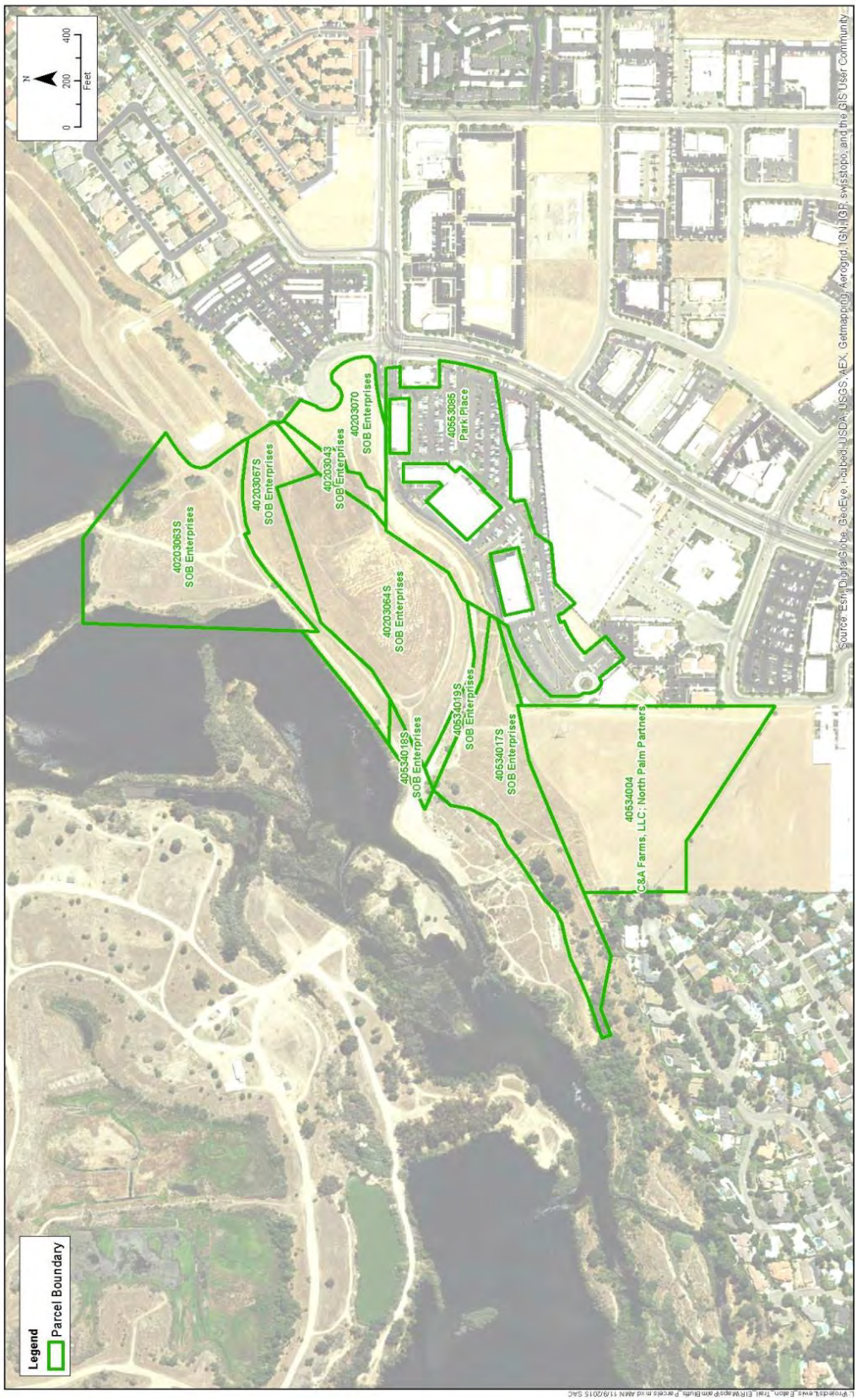

Figure 1-1 Map of the Parcel Boundary by Accessors Parcel Number

Photograph 1. A view of the paved Gravel Haul Road located within parcel 40534019S. The paved road lies between parcels 40203064S and 40534017S.

Photograph 2. View of paved Gravel Haul Road facing the Park Place Shopping Center located on bluff.

Photograph 3. View of unpaved Gravel Haul Road. The unpaved road traverses across parcel 405340185 and continues to parcel 40203063S.

Photograph 4. View of nonpublic unpaved road. View is looking toward the east. The road traverses across parcel 40203064S.

Photograph 5. Locked entrance to the area. View is looking toward the west.

From the early 1940s to mid-1970s, several locations on the subject parcels were used as open dumps or landfill. The earliest landfilling activity is associated with the United States Army's Camp Pinedale. The camp was constructed in 1942 near the beginning of World War II and continued until 1947, when it was closed. A sewage treatment plant and associated treatment ponds were built to serve the camp. In 1962, the Pinedale Utility District took over the treatment plant and began landfilling activities or allowed landfilling activities by Mr. Clyde Kepley until 1977, when it was closed. Other areas within Alternative 5 were used for the disposal of concrete, asphalt, and construction and demolition wastes (AECOM 2016). Landfilling of organic wastes (domestic garbage) took place at the former Pinedale Dump (also known as Kepco Pinedale Landfill) along the bluffs of the subject property. The specific locations of the various landfills are not known. Figure 1-3 presents a conceptual footprint of former landfill disposal sites. The illustrated boundaries are approximate and are based on the review of data provided from a Phase I Environmental Site Assessment (AECOM 2016).

Mr. Kepley conducted Class II and III sanitary landfill activities from 1950 to 1978. Most fill was Class II and III sanitary landfill material, although some cutting, removal, and filling along Gravel Haul Road was performed during the construction of Nees Avenue. The Regional Water Quality Control Board (RWQCB) definitions of Class II and III landfill sites (in 1969, when the landfill operations were occurring) were as follows (The Foundation Engineers, Inc. 1981):

- Class II - Sites underlain by usable, confined or free groundwater when the minimum elevation can be maintained above anticipated high groundwater elevations, protected from surface runoff where surface drainage can be restricted to the site or discharged to a suitable wasteway. Limited to ordinary household or commercial refuse or trash, garbage, other decomposable organic refuse, and scrap metal deemed safe at levels above high ground water.

- Class III - Sites located with little or no protection of usable waters. Limited to non-decomposable inert solids, mainly construction materials.

Figure 1-2 Conceptual Outline of the Original Bluff Crest (circa 1937) vs Current Crest

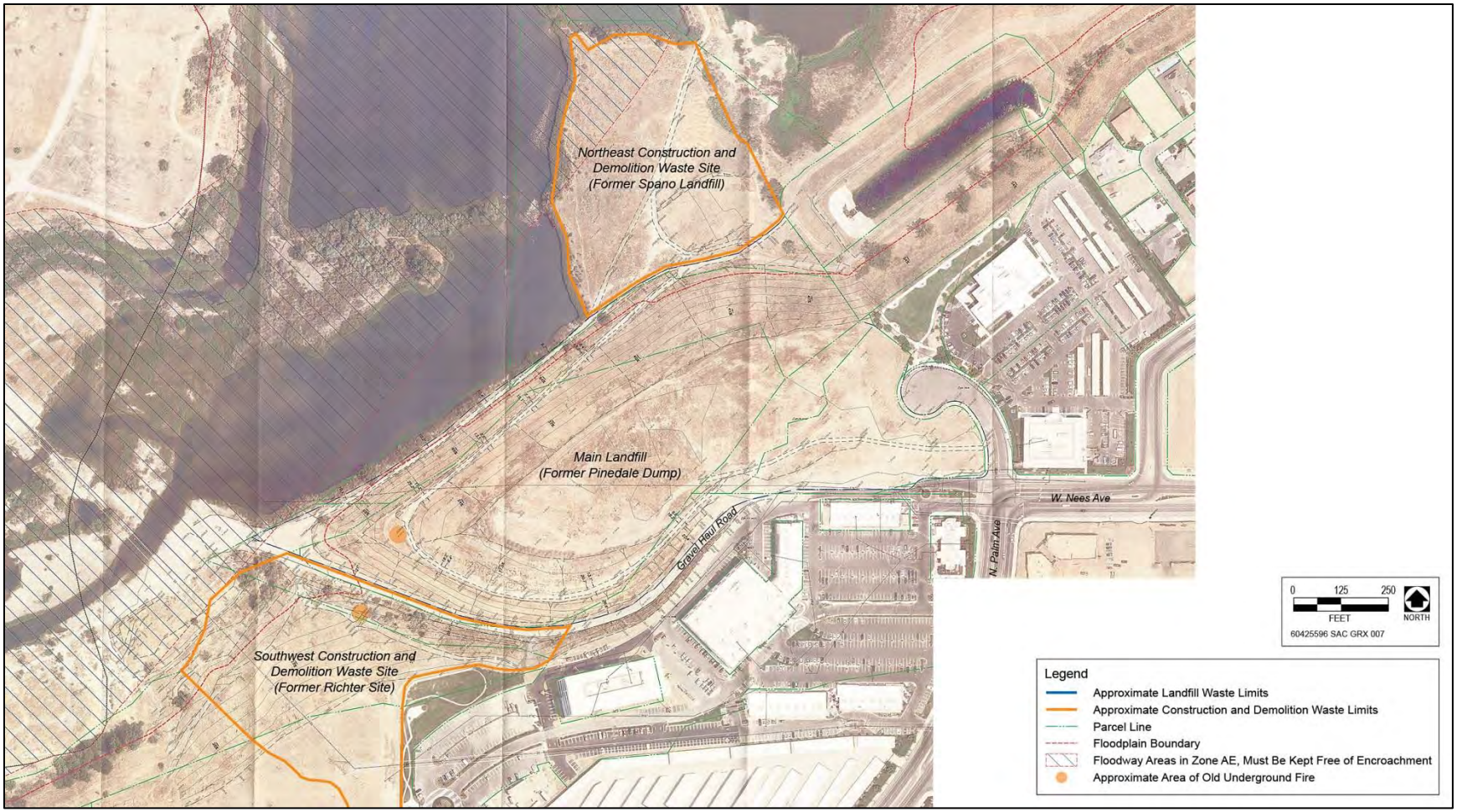

Figure 1-3 Conceptual Footprint of Former Landfill Disposal Sites

Photographs 6, 7, and 8 are historic photographs of Kepco Landfill activities (locally known as the Pinedale Dump) from 1972. Most of the landfill material consisted of domestic waste (household wastes, paper, plastic bags, clothes, toys, cans, glass, metal, wire, and mixed organic matter) and landscape trimmings and construction debris that were covered with soil at the time of placement, so the landfill was interlayered at many locations (AECOM 2016). It is not known if the landfill material was compacted. Landfill activities of the former landfill disposal sites created the present artificial plateau of the Alternative 5 area.

Photograph 6. Historic photograph of public use at the Kepco Pinedale Landfill circa 1972.

Photograph 7. Historical photograph of Kepco Pinedale Landfill activities circa 1972. Commercial dump truck visible in background. View is facing the San Joaquin River in far background.

Photograph 8. A historical photograph of Kepco Pinedale Landfill prior to closure. The view is facing north across San Joaquin River.

Multiple Environmental Site Assessments (ESAs) have been performed within the Alternative 5 area over the years. An ESA is meant to identify the potential for contamination of a site by hazardous or toxic materials and to identify other possible environmental constraints on the site. Reviews of several ESAs were performed to identify the potential for environmental contaminants (AECOM 2016). Although the review was not a detailed comprehensive investigation based on quantitative or qualitative analytical data, Table 1-2 presents a list of chemical constituents that have been found in various soil borings taken from multiple locations the area. Trace concentrations of chemicals, referred to as volatile organic compounds (VOCs), have been detected. Some locations had concentrations that exceed the California Human Health Screening Levels (CHHSL) (AECOM 2016).

A contaminant of concern is a chemical or material characterized by a perceived, potential, or real threat to human health or the environment or by a lack of published health standards. Table 1-2 identifies chemical constituents detected from borehole drilling at several locations of the Alternative 5 area.

Table 1-2 Chemical Constituents Detected at Alternative 5 Sites

Site Investigations	Constituent
The Foundation Engineers, Inc. (1981)	Methane concentration above 100% lower explosive limit with minor amounts of ethane and propane
Montgomery Watson (1995)	Cis-1,2 dichlorobenzene (DCB), cis-1,2-dichloroethene (DCE), tetrachloroethylene (PCB), 1,1-dichloroethylene (1,1-DCE), 1,1-dichloroethane (1,1-DCA), and 1,1,1-trichloroethane (1,1,1-TCA), along with chromium
The Twining Laboratories (1999)	Sec-butyl benzene, dichlorodifluoromethane, manganese,
BSK (2004)	Methane, benzene, vinyl chloride
SCS Engineers (2013)	Tetrachloroethene, vinyl chloride

Since the closure of the landfill activities, stockpiles of soils and concrete have occasionally been deposited in the Alternative 5 area. In 2016 the portions of the Alternative 5 area were graded. However, it is not known if the soil has been compacted and the degree of settling is not known. According to the U.S. Natural Resources Conservation Service, native soils of the Alternative 5 project area are the same as described for the project: Grangeville fine sandy loam, Hesperia sandy loam, Tujunga, and Riverwash.

Section 2
Feasibility Criteria

A feasibility study aims to objectively and rationally uncover the strengths and weaknesses of an existing business or proposed venture, opportunities and threats present in the environment and the resources required to carry through, and ultimately the prospects for success. The following criteria were used to evaluate the feasibility of four potential routes.

2.1 Emergency Vehicular Requirements

Emergency Vehicular Requirements refers to the Fresno Fire Department (FFD) Development Policies Section 401 to 409 and Fire Industry Bulletin 2016-004 provided below:

- Policy 2. Points of Access

    e. All types of access shall not exceed a 10 percent grade or contain any irregularity creating an angle of approach or departure in excess of 10 percent, except as approved by the Fire Marshal (or designee).

- Policy 5. Turnarounds

    a. Buildings and exterior storage areas with a single point of access in excess of 150 feet in length are required to be provided with approved turnarounds. Turnarounds shall be located within 150 feet of the termination of the single entry road. Portions of the road requiring fire apparatus to back up shall not include any turns or bends, except for the required turnarounds. The maximum length of a single point of access shall be 450 feet.

    b. Intermediate turnarounds shall be required for multiple points of access exceeding 700 feet in length.

    c. All turnarounds shall have a minimum 44-foot centerline turning radius with a minimum of 20 feet clear drive width. “T” turnarounds shall have a minimum clear drive width of 20 feet and shall be a minimum of 60 feet in length.

- Policy 8. Emergency Vehicle Access

    a. Emergency only access is dedicated for the exclusive use of fire department apparatus and is required where common vehicle access is either inadequate or unreliable. Emergency only access shall be a minimum of 20 feet in clear drive width. Additional clear widths may be required and must be approved by the Fire Marshal (or designee).

    b. Turnaround requirements for emergency vehicle access shall be the same as referred to in Section 5, Turnarounds.

    c. Gates, posts, or other barriers approved by the fire department shall be installed at each entrance to emergency only access points.

    f. Assurance of the integrity and reliability of emergency vehicle access points may require the dedication of a fire protection access easement to the City or County.

2.2 Geotechnical

Geotechnical considerations refer to the adequacy of actual ground conditions and slope stability. A route may conflict with grading standards as described in Article 14 of the Bluff Protection Overlay District (City of Fresno 2015) and Section 15-1407 of the Citywide Development Code (dated March 31, 2015). The Bluff Protection Overlay District states: "No grading or modification of the existing landscape or alteration of existing topography or construction of any structures shall be permitted on the bluff face or air space above it."

2.3 Environmental Constraints

Environmental contaminants of concern may be present at sites associated with the access roads and parking area. Contaminant constituents identified in Table 2 include but are not limited to cis-1,2 dichlorobenzene (DCB), cis-1,2-dichloroethene (DCE), tetrachloroethylene (PCB), 1,1-dichloroethylene (1,1-DCE), 1,1-dichloroethane (1,1-DCA), and 1,1,1-trichloroethane (1,1,1-TCA), along with chromium

2.4 Trail Compatibility

Trail compatibility refers to the compatibility of the proposed route to visitor safety, recreation use, and the private landowners' plans for future improvements.

2.5 Description of Proposed Routes

Five vehicle routes and public access, identified as routes 5a, 5b, 5c, 5d and 5e in this report, were considered for Alternative 5. Each possible route was developed to meet the Conservancy's public access objectives, safety, provide equivalent public vehicle access and parking for 40 vehicle, public use amenities, and extend the proposed multiuse Trail for about 600 feet. Road feasibility studies (alignments, slopes, grading, soils, topography, etc.), review of land use and waste disposal history and investigations, and a Phase 1 Environmental Site Assessment (hazardous materials site assessment) was conducted to assess any significant engineering constraints, risks to public health and safety, or environmental liabilities. The five vehicle routes are described below.

- **Route 5a**. Access to the multipurpose trail would be provided by improving the two existing unpaved private access roads as depicted in a conceptual drawing in Figure 2-1. Each road would be paved and provide one-way vehicle traffic to a parking lot in river bottom. The proposed multipurpose trail would terminate at the new parking area and connect to the proposed project staircase to Spano Park. The outermost road begins at the Palm and Nees intersection. W. Nees Avenue continues downslope toward the river bottom where it meets an existing dirt road. The dirt road parallels the river and continues upstream toward a vacant private parcel where a proposed 40-stall parking lot would be constructed. The innermost road is a dirt road which parallels the outermost road and proceeds toward the proposed parking lot. Both roads would be used for one-way traffic to comply with the FFD roadway width of 20 feet for emergency service vehicles. About 2,200 feet of retaining walls would be constructed along both roads to stabilize the bluff face and underlying fill material. This route would proceed across five parcels of private property. The proposed parking lot and the outermost road lie within the 100-year floodplain boundary.

- **Route 5b**. Access to the multipurpose trail would be provided by the construction of a paved road from the cul-de-sac at Palm Avenue north of Nees Avenue, as depicted in a conceptual drawing (Figure 2-2). The road, with two 15-foot travel lanes, would be constructed across the face of the bluff slope at a downgradient greater than 10% toward the river bottom and then around the Fresno Metropolitan Flood Control District (FMFCD) basin. The proposed road would end at a

proposed 40-stall parking lot in the same location as Route 5a. The proposed trail would terminate at the new parking area, along with the proposed trial to the staircase to Spano Park. About 700 feet of retaining wall would be constructed along the road to stabilize the buff face and underlying fill and organic wastes. This route would proceed across four parcels of private property and one parcel owned by the City of Fresno. The proposed parking lot and portions of the road lie within the 100-year floodplain boundary.

- **Route 5c**. Access to the multipurpose trail would be provided by the construction of a paved road from the corner of W. Alluvial and N. Harrison Avenues as depicted as a conceptual drawing (Figure 2-3). The road would have two 15-foot travel lanes and would be constructed with a 10% gradient and proceed across two parcels of land toward the top of the bluff. The road would end at a proposed 40-stall parking lot on the artificial plateau near the bluff crest. An ADA-compatible pedestrian trail would be constructed down the bluff face to the multipurpose trail. The pedestrian trial is illustrated as a series of switchbacks down the steep slope of the bluff.

- **Route 5d**. Access to the multipurpose trail would be provided via the existing Gravel Haul Road as depicted as a conceptual drawing (Figure 2-4). In this alternative the trail would be extended downriver from the end of the proposed trail near the FMFCD flood control basin. Public vehicle access to the river would be provided from the intersection of Palm and Nees Avenues along the Gravel Haul Road. A 40-stall parking lot would be constructed near the river. A physically separated pedestrian path and or bikeway would parallel the paved Gravel Haul Road. The paved road would lead to a turnaround near the parking lot. The turnaround would be designed to accommodate the turning radius of a FFD fire truck. The multiuse trail would extend from the proposed project site along the riverbank and end at a turnaround. Some of the proposed features would be located on state sovereign lands. Although there are limited public access easements on the private access roads, the underlying land is privately owned.

- **Route 5e**. Access to the multipurpose trail is similar to Route 5d and is depicted as a conceptual drawing (Figure 2-5). In this alternative the multiuse trail would be extended downriver from the end of the proposed trail near the FMFCD flood control basin. Public vehicle access to the river would be provided from the intersection of Palm and Nees Avenues via the existing Gravel Haul Road. A 40-stall parking lot would be constructed near the river bottom with two way vehicle access provided by the paved road. A physically separated pedestrian path and or bikeway would parallel the paved road. The paved road would lead to a turnaround near the parking lot. The turnaround would be designed to accommodate the turning radius of a FFD fire truck. The multiuse trail would extend from the proposed project site along the riverbank and end at the turnaround. Some of the proposed features would be located closer to the River. Although there are limited public access easements on the private access roads, the underlying land is privately owned. The proposed parking lot is located within the 100-year floodplain boundary.

Figure 2-1 Conceptual Illustration of Route 5a

Figure 2-2 Conceptual Illustration of Route 5b

Figure 2-3 Conceptual Illustration of Route 5c

Figure 2-4 Conceptual Illustration of Route 5d

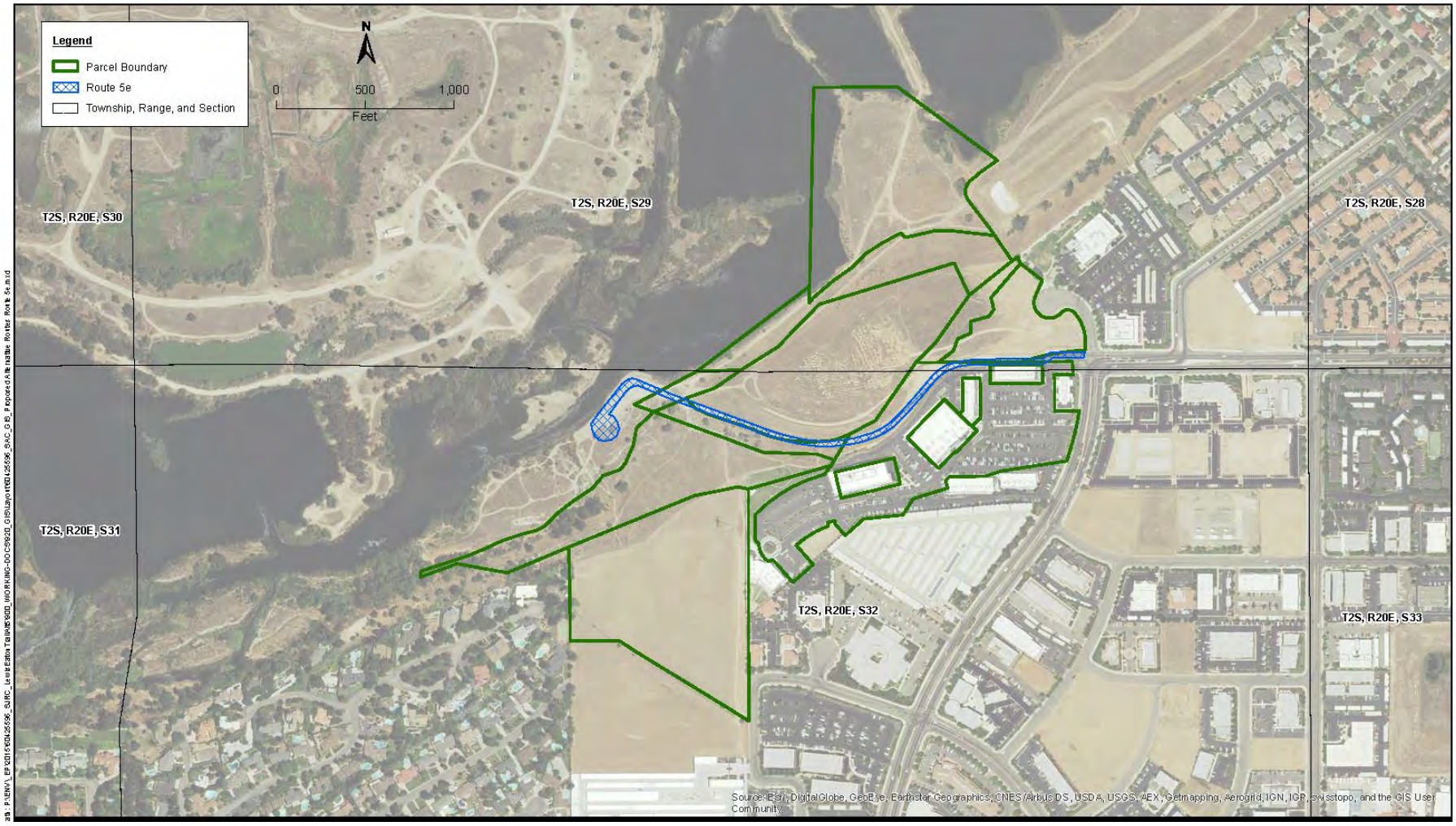

Figure 2-5 Conceptual Illustration of Route 5e

Section 3
Results of Route Feasibility

The following analysis evaluated each route based on the standards described in Section 2 Feasibility Criteria of this report.

3.1 Route 5a Feasibility

3.1.1 Emergency Vehicular Requirements

Route 5a is inconsistent with the FFD Development Policies Section 401 to 409 and Fire Industry Bulletin 2016-004 regarding emergency vehicle access. The proposed route or point of access to the proposed parking area is greater than 10 percent grade and the route length is greater than the maximum length of 450 feet for a single access point.

3.1.2 Geotechnical

Currently there is an inadequate assessment of actual ground conditions and slope instability due to previous landfilling activities. Slope failure may occur as a result of inherent geological instability, soil erosivity or effects of road construction. Additional geological investigation of this route would be needed. The slope along the toe of the bluff is unstable due to past landfilling activities. A mechanical structure, such as a concrete retaining wall or a reinforced earth structure would be required along the portion of the route proposed along the toes of the bluff slope. The route would conflict with grading standards as described in Article 14 of the Bluff Protection Overlay District (City of Fresno 2015). Section 15-1407 of the Citywide Development Code dated March 31, 2015 (Bluff Protection Overlay District) states: “No grading or modification of the existing landscape or alteration of existing topography or construction of any structures shall be permitted on the bluff face or air space above it.”

3.1.3 Environmental Constraints

Postclosure plans must be prepared before disposal areas can be converted to other uses. A postclosure plan was never prepared for the unregulated landfill activities on and near the Alternative 5 site. The presence of the known contaminants in the Kepco Pinedale Landfill represent a Recognized Environmental Condition. Constructing a paved pedestrian/bicycle pathway along the existing road through the landfill, and a new parking lot at the base of the road, under Alternative 5 could expose construction workers and members of the public to hazardous materials (gases such as methane and volatile organic compounds such as vinyl chloride and benzene). Furthermore, construction activities at the former landfill could disturb drainage patterns or disturb cover, which could cause or allow the landfill materials to become wet. Over time, this condition would increase the potential for the presence of explosive and flammable gases and possible leachate movement and accumulation. Additionally, disturbed landfill soils could become mobilized, causing potential human health and pollution issues. Construction across the bluff face, potentially through the landfill materials, also presents a potential hazard from unstable soils that may be unsuitable for use as a base material.

Furthermore, regulatory agencies might require a Phase II or Phase III remediation before development. Environmental liabilities, such as public safety and costs associated with regulatory-mandated cleanup, disposal of regulated-waste and civil liability, would be required. Civil liability may occur when contaminants of concern migrate offsite.

3.1.4 Trail Compatibility

The outermost road is narrow (about 10 feet wide) and is constrained one side by the bluff slope and the river on the other. The distance from the cut edge of the bluff slope and the River is about 10 feet wide. The width of the outermost road is insufficient to accommodate both the trail extension and a new paved road, which would preclude extending the multipurpose trail to the Palm/Nees area. This would conflict with the objectives of the project (see Section 2.2, "Project Objectives" of the DEIR) and create a potential vehicle/pedestrian hazard (a safety issue), because pedestrians would likely use the roadways in any case. The outermost road at the riverbank could not be widened to accommodate both a road and the extended multipurpose trail because of the necessity to deposit fill in the regulated floodway and waters of the U.S. on the riverward side, and cut into the unconsolidated fill and organic waste materials on the bluff side.

3.1.5 Constructability Access

Compared to other routes, Route 5a would require the most road construction (several thousand feet of access road), all of which would be located in the former Pinedale Dump landfill area, which is composed of both construction debris and of domestic waste. Moreover, the land is privately owned. Constraints associated with the private landowner's plans for future improvement would conflict with developing Route 5a. Therefore, this route is significantly constrained and has been determined to be largely infeasible.

3.2 Route 5b Feasibility

3.2.1 Emergency Vehicular Requirements

Similar to Route 5a, Route 5b is inconsistent with the FFD Development Policies Section 401 to 409 and Fire Industry Bulletin 2016-004 regarding emergency vehicle access. The proposed route or point of access to the proposed parking area is along a grade greater than 10 percent with a route length greater than the maximum length of 450 feet for a single access point. The two 15-foot travel lane alignments are inconsistent with the 20–foot minimum "clear drive width" for dedicated emergency vehicle access.

3.2.2 Geotechnical

Route 5b crosses the same artificial plateau as Alternative 5a. Ground conditions are unknown and slope instability is possible due to previous landfilling activities. The slope along the toe of the bluff is unstable due to past landfilling activities. Slope failure is possible as a result of inherent geological instability or effects of new road construction. Additional geological investigation of this route would be needed. Also, as proposed for Route 5a, a mechanical structure, such as a concrete retaining wall or a reinforced earth structure would be required along the portion of the route proposed along the toes of the bluff slope. Route 5b could conflict with grading standards as described in Article 14 of the Bluff Protection Overlay District (City of Fresno 2015).

Additional geological investigation of this route would be needed. Due to the proximity of the proposed route to a Fresno Metropolitan Flood Control (FMFCD) basin, there may additional geotechnical considerations to minimize impacts to the basin.

3.2.3 Environmental Constraints

Similar to Route 5a, environmental contaminants of concern are present along the Route 5b alignment. The two roads lie on and cut into unconsolidated fill material containing organic wastes. Extensive engineered retaining walls for both roadways would be necessary to attempt to stabilize the slope. The parking area would lie on a closed landfill and disposed construction debris. Furthermore, regulatory

agencies might require a Phase II or Phase III remediation before development. Environmental liabilities, such as public safety and costs associated with regulatory-mandated cleanup, disposal of regulated-waste and civil liability, would be required. As stated above, civil liability may occur when contaminants of concern migrate offsite of these parcels.

3.2.4 Trail Compatibility

The two roads would preclude extending the multipurpose downstream by creating a potential vehicle/pedestrian hazard (a safety issue). This would conflict with the objectives of the project (see Section 2.2, "Project Objectives" of the DEIR). The roads could not be widened to accommodate both a public road access and the extension of multipurpose trail because of the necessity to deposit fill in the regulated floodway and waters of the U.S. on the riverward side, and cut into the unconsolidated fill and organic waste materials on the bluff side. Moreover, the roads could cause a traffic-pedestrian safety conflict when vehicles cross the trail to enter the parking area.

3.2.5 Constructability Access

Route 5b would require less road construction than Route 5a. However, the alignment would be located in the former Pinedale Dump landfill area, which is composed of both construction debris and of domestic waste. Moreover, the land is privately owned. Constraints associated with the private landowner's plans for future improvement would conflict with developing Route 5b. Therefore, this route is significantly constrained and has been determined to be largely infeasible.

3.3 Route 5c Feasibility

3.3.1 Emergency Vehicular Requirements

Route 5c is consistent with the FFD Development Policies Section 401 to 409 and Fire Industry Bulletin 2016-004 regarding emergency vehicle access. A new road with two 15-foot travel lanes would be constructed across parcel numbers 40534004 and consistent with the 20 feet minimum clear drive width for dedicated emergency vehicle access. The gradient varies but is less than or equal to a 10% slope.

3.3.2 Geotechnical

There is an inadequate assessment of actual ground conditions and slope instability due to previous landfilling activities. The alignment of Route 5c overlays the Kepco Pinedale Landfill which represents a Recognized Environmental Condition. Constructing a paved pedestrian/bicycle pathway along the existing road through the landfill and a new parking lot at the base of the road under Alternative 5 could expose construction workers and members of the public to hazardous materials (gases such as methane and volatile organic compounds such as vinyl chloride and benzene).

Additional geological investigation of this route would be needed. An ADA-compatible ramp or pedestrian trail would be constructed down the bluff face to the trail. This pedestrian trail could conflict with grading standards as described in Article 14 of the Bluff Protection Overlay District (City of Fresno 2015). The slope along the toe of the bluff is unstable due to past landfilling activities. A mechanical structure, such as a concrete retaining wall or a reinforced earth structure, would be required along the portion of the pedestrian trail.

3.3.3 Environmental Constraints

Similar to Route 5a, environmental contaminants of concern are present at along the Route 5c alignment. The parking area would be located on an artificial plateau that overlays a closed landfill. Furthermore, regulatory agencies might require a Phase II or Phase III remediation before development. Environmental

liabilities, such as public safety and costs associated with regulatory-mandated cleanup, disposal of regulated-waste, and civil liability, would be required. As stated above, civil liability may occur when contaminants of concern migrate offsite of these parcels.

3.3.4 Trail Compatibility

This alternative is promotes visitor safety and use of the recreational amenities proposed for the multiuse trail. However, visitors could be exposed to environmental contaminants of concern associated with historic landfilling activities. The land is privately owned. Constraints associated with the private landowner's plans for future improvement would conflict with developing Route 5c.

3.3.5 Constructability Access

Constraints associated with the private landowner's plans for future improvement would conflict with the alignment for this route. Therefore, Route 5c is significantly constrained and has been determined to be largely infeasible.

3.4 Route 5d Feasibility

3.4.1 Emergency Vehicular Requirements

Route 5d is consistent with FFD Development Policies Section 401 to 409 and Fire Industry Bulletin 2016-004 regarding emergency vehicle access. The route would follow the existing Gravel Haul Road. However, the existing road may be widened to meet FFD requirements. Alternative 5d would provide appropriate emergency-vehicle access (fire, police, and ambulance) via a paved road from the Palm and Nees Avenue entrance onto the project site, including the additional parking lot. This road would also provide additional emergency egress for members of the public using the trail. The Riverview Drive and Perrin Avenue entrances would also provide access for emergency vehicles. The trail leading from the Alternative 5 site to the trail extension would accommodate emergency response vehicles.

3.4.2 Geotechnical

The existing Gravel Haul Road would need to be widened by cutting into the bluff, which is composed of unconsolidated fill material containing organic wastes. Engineered retaining walls would be necessary to attempt to stabilize the slope. Additional geological investigation of this route would be needed. The route would conflict with grading standards as described in Article 14 of the Bluff Protection Overlay District (City of Fresno 2015). The slope along the toe of the bluff is unstable due to past landfilling activities. A mechanical structure, such as a concrete retaining wall or a reinforced earth structure, would be required along the portion of the route proposed along the toes of the bluff slope

3.4.3 Environmental Constraints

This alternative is promotes visitor safety and use of the recreational amenities proposed for the multiuse trail. Worker exposure to environmental contaminants of concern could be minimized with remediation during the widening of the Gravel Haul Road. However portions of the parking area and multiuse trail would be located within the designated floodway of the River.

3.4.4 Trail Compatibility

The existing paved roadway that would be used for the Palm and Nees Avenue access is 21 feet wide, which may be enough to meet the minimum standards required by the City of Fresno for emergency-vehicle access. However, this alternative would also entail constructing a paved, 5-foot-wide pedestrian/bicycle access path alongside the existing road. This path would connect the trail to existing

city streets for pedestrians and bicyclists, and would provide trail access for members of the public who may park along the top of the bluffs (e.g., in the parking area at Spano Park) when the proposed new parking lot at the base of the trail is full. Under Alternative 5d, the additional paved pedestrian/bicycle path would be constructed within deposits associated with the former Kepco Pinedale Landfill. The proposed new parking lot at the foot of the bluffs could also be constructed within these deposits from the former landfill.

3.4.5 Constructability Access

Although the land is privately owned State and local agencies have certain limited public access easements on these roads. Constraints associated with the private landowner's plans for future improvement would conflict with the alignment for this route. The public access easements would need to be broadened to accommodate visitor access. Therefore Route 5d is constrained and may be feasible.

3.5 Route 5e Feasibility

3.5.1 Emergency Vehicular Requirements

Route 5e is consistent with FFD Development Policies Section 401 to 409 and Fire Industry Bulletin 2016-004 regarding emergency vehicle access. The route would follow the existing Gravel Haul Road. However, the existing road may be widened, to meet FFD requirements. Alternative 5e would provide appropriate emergency-vehicle access (fire, police, and ambulance) via a paved road from the Palm and Nees avenues entrance onto the project site, including the additional parking lot. This road would also provide additional emergency egress for members of the public using the trail. The Riverview Drive and Perrin Avenue entrances would also provide access for emergency vehicles. The trail leading form the Alternative 5 site to the trail extension would accommodate emergency response vehicles.

3.5.2 Geotechnical

The existing Gravel Haul Road would need to be widened by cutting into the bluff, which is composed of unconsolidated fill material containing organic wastes. Engineered retaining walls would be necessary to attempt to stabilize the slope. Additional geological investigation of this route would be needed. The slope along the toe of the bluff is unstable due to past landfilling activities. A mechanical structure, such as a concrete retaining wall or a reinforced earth structure, would be required along the portion of the route proposed along the toes of the bluff slope. The route would conflict with grading standards as described in Article 14 of the Bluff Protection Overlay District (City of Fresno 2015).

3.5.3 Environmental Constraints

This alternative is promotes visitor safety and use of the recreational amenities proposed for the multiuse trail. Worker exposure to environmental contaminants of concern could be minimized with remediation during the widening of the Gravel Haul Road. However, portions of the parking area and multiuse trail would be located within the designated floodway of the River.

3.5.4 Trail Compatibility

The existing paved roadway that would be used for the Palm and Nees Avenue access is 21 feet wide, which may be enough to meet the minimum standards required by the City of Fresno for emergency-vehicle access. However, this alternative would also entail constructing a paved, 5-foot-wide pedestrian/bicycle access path alongside the existing road. This path would connect the trail to existing city streets for pedestrians and bicyclists, and would provide trail access for members of the public who may park along the top of the bluffs (e.g., in the parking area at Spano Park) when the proposed new parking lot at the base of the trail is full. Under Alternative 5e, the additional paved pedestrian/bicycle path

would be constructed within deposits associated with the former Kepco Pinedale Landfill. The proposed new parking lot at the foot of the bluffs could also be constructed within these deposits from the former landfill. Moreover, the location of the proposed parking lot is within the 100-year floodplain.

3.5.5 Constructability Access

Although the land is privately owned, state and local agencies have certain limited public access easements on these roads. Constraints associated with the private landowner's plans for future improvement would conflict with the alignment for this route. The public access easements would need to be broadened to accommodate visitor access. Therefore, Route 5e is constrained but may be feasible.

Table 3-1 presents a comparison of possible constraints for Routes 5a through 5e. Routes 5a through 5c are constrained by private landowners' plans for future development and significant exposure of hazardous materials to the public. Route 5e is constrained by the location of the proposed parking lot within the 100-year floodplain.

Table 3-1 Comparison of Constraints for Routes 5a through 5e

Is the Route Constrained by	Route 5a	Route 5b	Route 5c	Route 5d	Route 5e
Emergency Vehicular Requirements	Yes	Yes	No	No	No
Geotechnical	Yes	Yes	Yes	No	No
Environmental Constraints	Yes	Yes	Yes	No	No
Trail Compatibility	Yes	Yes	No	No	No
Constructability Access	Yes	Yes	Yes	No	Yes

Route 5d should be evaluated in the DEIR as Alternative 5 because the site is located at the base of the bluff, is relatively flat, and is accessible via the paved Gravel Haul Road. The trail and the widening of the additional paved pedestrian/bicycle path would be constructed within deposits associated with the former Kepco Pinedale Landfill. However, a full environmental analysis under CEQA would identify potential significant impacts.

Section 4
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