Richard L. Schafer Dam, Tule River Basin, California; Tule River Spillway Enlargement Project, Environmental Assessment for the Road Realignment and Right Abutment Spillway Cut

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ACRONYMS

ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effects
BPS	Best Performance Standards
BMP	Best Management Practice
CARB	California Air Resources Board
CGP	Construction General Permit
CNDDB	California Natural Diversity Database
CVRWQCB	Central Valley Regional Water Quality Control Board
DSAC	Dam Safety Action Classification
DSAP	Dam Safety Assurance Program
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FEIR	Final Environmental Impact Report
FEIS	Final Environmental Impact Statement
FONSI	Finding of No Significant Impact
GHG	Greenhouse Gas
IPaC	Information for Planning and Consultation
LTRID	Lower Tule River Irrigation District
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OHWM	Ordinary High Water Mark
SHPO	State Historic Preservation Officer
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMAQMD	Sacramento Metropolitan Air Quality Management District
USACE	U.S. Army Corps of Engineers
Census	U.S. Census Bureau
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
WOTUS	Waters of the United States

SUMMARY OF CHANGES TO DRAFT ENVIRONMENTAL ASSESSMENT

The following changes were made to the draft environmental assessment (EA). A description of the location in the document is followed by a brief explanation of the change.

- Title Page. The word "Draft" was removed from the title and the date was changed to April 2020. "Success Dam" was changed to "Richard L. Schafer Dam" to reflect the dam's new official name. All further references to the dam's name were also updated in the rest of the document. Changed project title as needed to maintain consistency throughout the document.
- Page i. Table of Contents updated to reflect changes to document.
- Page ii. "Appendix E" added since Biological Opinion has been received. "Appendix F" added with list of interested parties.
- Page iii. Erroneous acronyms updated.
- Page 1. Minor changes to last sentence, third paragraph, to reflect that an EA will be completed for Phase 2. The necessity for an additional EA had not been determined when the draft for Phase 1 was written.
- Page 4. Due to clerical error, the term "AEP" was not defined in the draft EA and has been replaced with the word "flood" in the final document to reduce confusion. Due to design refinements, real estate acquisition is no longer needed for Phase 1. Thus, three sentences about this were deleted.
- Page 6. Due to construction schedule changes, the timing for demolition was changed from "winter" to "fall" 2020. One sentence was added about the spillway gradient repair, which is part of Phase 1 and was not included in the draft EA since the designs had yet to be finalized: "The lower emergency spillway was damaged in December 1966 during a flood event. Blasted rock material from the right abutment cut would be used to restore the spillway to its original, pre-1966, grade and elevation (Figure 3)."
- Page 7. Figure 3 and its caption were updated to reflect design changes to stockpile and staging areas, the temporary work area, and the spillway gradient repair.
- Page 8. Construction start date updated from "January" to "June" 2020 to reflect the most recent schedule.
- Pages 10-11. Due to a clerical error, sections on Topography, Geology, and Soils; Hazardous, Toxic, and Radiological Waste; Visual Resources; and Climate Change were missing from the draft EA. These resources were not evaluated in detail since there would likely be little to no effect on them from the proposed action and they were discussed solely to add to the overall understanding of the project area. To avoid confusion, language was added to indicate that section 3.5 discusses recreation in further detail.
- Page 12. Error with table numbers and acronym corrected. Language updated to reflect that the EPA issued a revised general conformity rule on April 5, 2010. Language about the 1993 rule deleted.
- Page 15. Minor revisions to clarify meaning. Added in missing citation for Sacramento Metropolitan Air Quality Management District regarding dust reduction.
- Page 18-19. Paragraph on noise and wildlife moved from page 18 to 19.
- Pages 25, 27, and 28. Minor changes to update language reflecting completion of Cultural Resources consultation.

- Pages 33-35. Updated Table 6 based on consultation with US Fish and Wildlife Service (USFWS). The effects had to be changed due to interrelatedness and interconnectedness between Phase 1 and Phase 2. As a result of best management practices, and minimization and avoidance measures, the effects were still less than significant. Due to updated designs, two historical occurrences of San Joaquin adobe sunburst are within the construction footprint instead of one as reported in the draft EA. Only one survey (in 2019) is now listed since the 2018 survey listed in the draft EA did not occur at the appropriate time of year for proper plant identification.
- Page 37. Due to consultation with USFWS, two additional avoidance and minimization methods were added.
- Pages 43-44. Minor changes were made to cumulative impacts section to improved clarity.
- Sections 5, 6 and 7. Minor changes to language were made to reflect that this is the final EA.

1 PURPOSE AND NEED FOR THE ACTION

1.1 Introduction

Serious flood problems occur along the Tule River and downstream, generally as a result of inadequate channel capacities. In the past, under current operations of the existing dam, releases greater than 3,200 cubic feet per second (cfs) from Richard L. Schafer Dam (formerly known as Success Dam until August 2019) have caused damage to agricultural areas. Channel capacity downstream from the dam ranges from 10,000 cfs through the City of Porterville to as little as 3,200 cfs west of the city. Agricultural areas west of the city are the first areas where property damage and danger to residents have historically occurred, given a release greater than 3,200 cfs. Damages from the 1983 flood were estimated to be $11 million at 2014 price levels.

The U.S. Army Corps of Engineers (USACE) completed a Feasibility Study and a Final Environmental Impact Statement/Final Environmental Impact Report (FEIS/FEIR) for the Tule River Basin Investigation in September 1999 (USACE 1999). The FEIS/FEIR examined the environmental effects of an array of reasonable alternatives that would provide flood risk reduction to the area downstream of Richard L. Schafer Dam, including the City of Porterville, other urban areas, and agricultural land, along with increased upstream storage for irrigation water supply. The Richard L. Schafer Dam, Tule River Basin, California; Tule River Spillway Enlargement Project was authorized for construction in the Water Resources Development Act (WRDA) of 1999. The authorized project included placement of a 10-foot-high concrete ogee weir across the existing spillway sill and widening the spillway from 200 feet to 365 feet, along with associated measures. Detailed design and construction of the authorized project is currently being implemented in two phases. The first phase of the project will be titled the Richard L. Schafer Dam, Tule River Basin, California; Road Realignment and Right Abutment Spillway Cut, but referred to as either the Road Realignment and Right Abutment Spillway Cut or Phase 1 further in this document to differentiate it from the second phase or the project in total.

During Phase 1 development of detailed designs for the spillway widening, changes to the design had the potential for additional effects to environmental resources that were not evaluated in the 1999 FEIS/FEIR. This EA evaluates the environmental effects of the refined spillway widening design, including the realignment of Worth Drive/Avenue 146. Any additional environmental effects for Phase 2, which encompasses the remaining project features (*i.e.*, ogee weir construction, armoring the Highway 190 Bridge and Frazier Dike, and utility relocation), will be addressed in a separate EA as designs are refined.

1.2 Purpose of the Environmental Assessment

The purpose of this EA is to describe the environmental conditions in the project area, evaluate the environmental effects of the alternatives on these conditions as compared to the No Action alternative, and identify measures to avoid or reduce any environmental effects to a less-than-significant level where practicable. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. §4321, et seq). This EA will fully disclose the potential environmental effects of the project to the public and will provide an opportunity for the public to comment on the proposed action.

1.3 Location of the Project

The Richard L. Schafer Dam and Reservoir is located on the main branch of the Tule River about 6 miles east of Porterville, California, in Tulare County. It is in the foothills of the Sierra Nevada, fifty miles north of Bakersfield and sixty miles southeast of Fresno. The Tule River drains about 390 square miles into Lake Success, flowing from the reservoir through Porterville, and continuing 25 miles through agricultural areas. Construction of the dam was completed in May 1961. Figure 1 displays the Lake Success area and some of the features of the reservoir and recreation area.

1.4 Authority

Authorization for construction of the Tule River Spillway Enlargement Project at Lake Success is provided by the WRDA of 1999 Section 101 (b)(4) (Public Law 106-53, 17 August 1999), which authorized the flood damage reduction and water supply project based on the recommendations of the final report of the Chief of Engineers.

1.5 Decision Needed

The USACE Sacramento District Commander, must decide whether or not the proposed action qualifies for a Finding of No Significant Impact (FONSI) under NEPA or whether an Environmental Impact State (EIS) must be prepared.

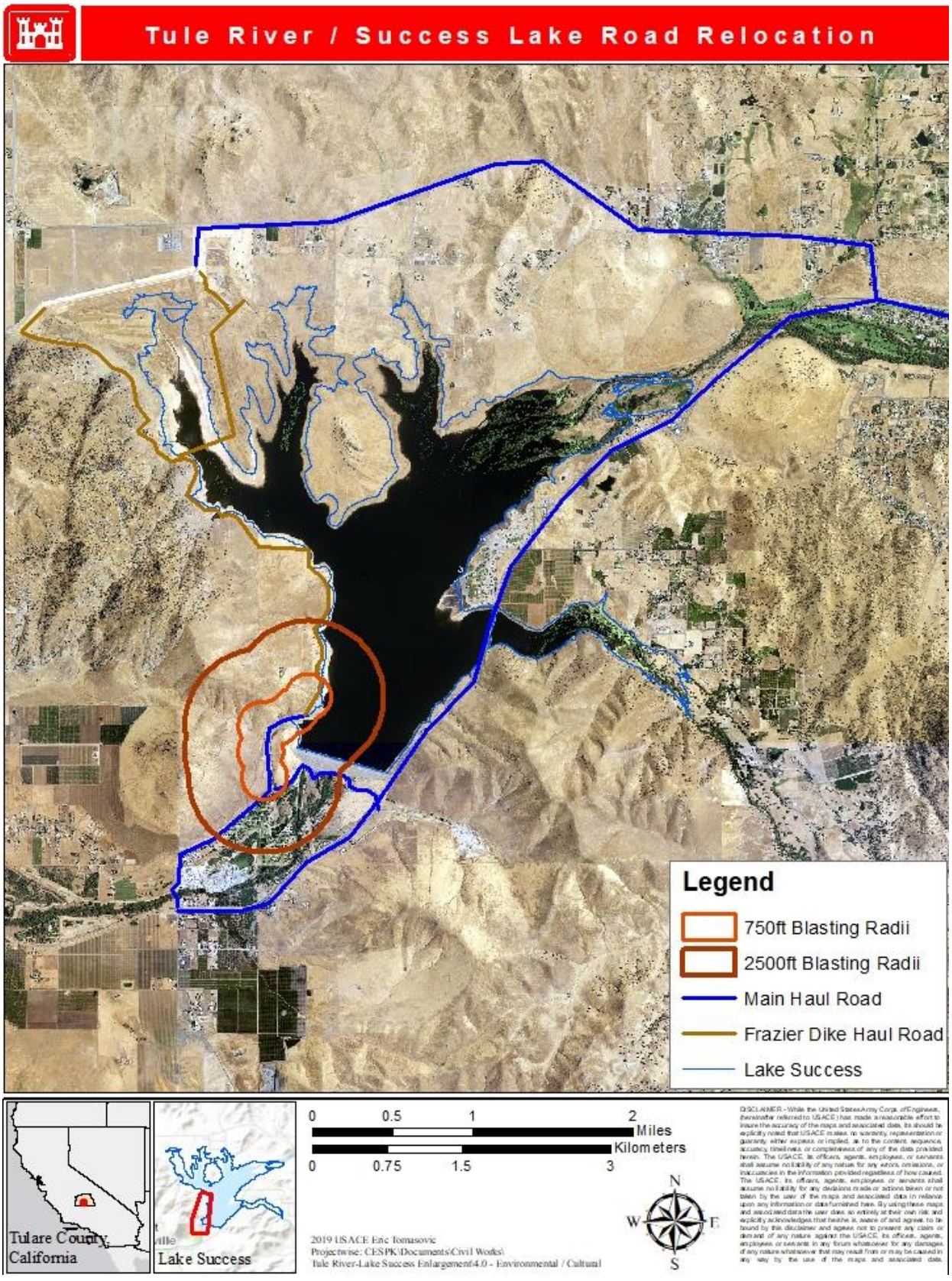

Figure 1. Lake Success and Vicinity with Haul Roads and Blast Radii.

2 ALTERNATIVES

2.1 Alternatives Eliminated from Further Consideration

2.1.1 Western Road Realignment and Right Abutment Cut

In addition to the proposed action one other alternative was considered, but was eliminated from further consideration due to cost and safety issues. The western road realignment would be almost double in length of the proposed action, increasing costs and the amount of property that would need to be acquired. This realignment would have many cuts and curves into and around slopes and hills, making this realignment longer and less safe than the proposed action. Therefore this alternative was determined not feasible due to costs and safety.

2.2 No Action

Under the No Action alternative, the right abutment cut and road realignment would not occur. Thus, the current, existing road would remain in use during normal conditions. However, the road would be closed to travel during Probable Maximum Flood (PMF) events, which have a less than 1 in 500 chance to occur in a given year. This would limit travel to the west side of Lake Success and access to the Rocky Hill Recreation Area during such events. Furthermore, access via Worth Drive/Avenue 146 to one private property would be limited during PMF events.

2.3 Proposed Action – Road Realignment and Right Abutment Spillway Cut

The proposed action being addressed in this EA is to realign Worth Drive/Avenue 146 so that it no longer crosses the Richard L. Schafer Dam spillway. The road would be realigned to a bench along the right abutment above the spillway and new gross pool elevation. Worth Drive/Avenue 146 is currently within the spillway and must be closed when the spillway is constructed. The construction of the 10 foot ogee weir spillway would permanently obstruct vehicle passage on the existing road. Since the right abutment of the spillway needs to be wider to accommodate the ogee weir, the project development team has determined that relocating the road to a bench within the abutment cut is the safest and most economical option. This would allow realigned Worth Drive/Avenue 146 to remain opened up to the 1 percent flood event.

Constructing the new road before the spillway raise would help maintain access to the west side of the reservoir for both the residents that live on the west side of Lake Success and public access to the Rocky Hill Recreation Area during the bulk of the construction of the Spillway Raise (Phase 2) of the Tule River Spillway Enlargement Project. Figure 2 illustrates the proposed road realignment along a bench on the right abutment of the spillway. This realignment would require the right abutment to be degraded.

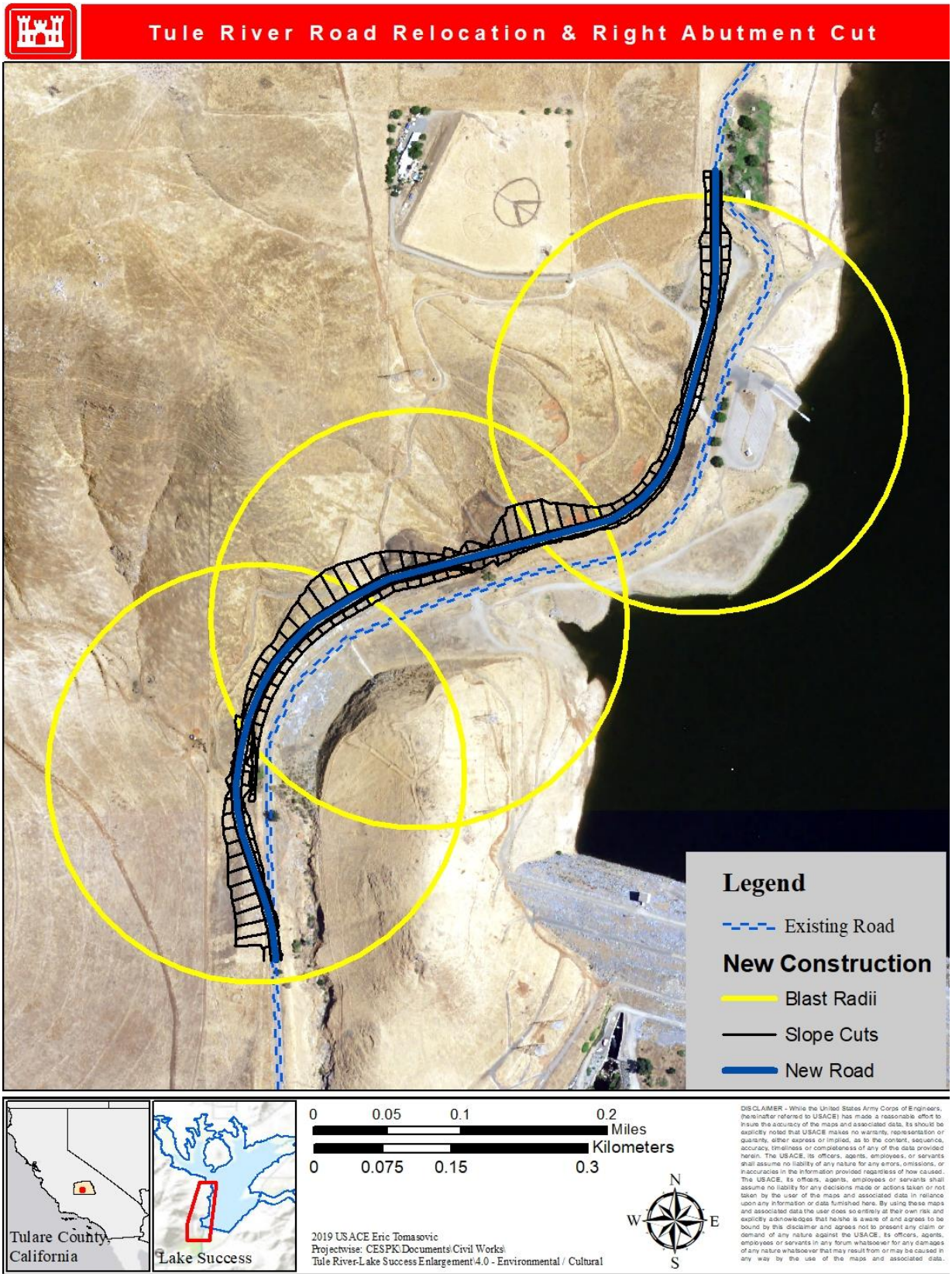

Figure 2. Proposed Road Alignment and Blast Area for the Right Abutment Cut of the Spillway.

Construction sequencing of the Road Realignment and Right Abutment Spillway Cut begins with staging of equipment and preliminary site preparation including office site preparation including trailers, power lines or generators, security fencing. The second activity would be the removal of loose dirt/rock and vegetation that could interfere with blasting, and relocating it to staging areas.

The Road Realignment and Right Abutment Spillway Cut construction sequence after staging is excavating the right abutment cut, with drilling and explosives, to shape the spillway abutment and road bench. Due to the need for control of the blasts, low impact blast packages would be used, reducing the peak blast wave in comparison with normal quarry blasting. The debris would be moved to temporary staging areas using excavators and dump trucks. This material would be used on-site to shore gaps for the roadway relocation or transported off-site for disposal. The demolition is expected to occur during the fall of 2020. The construction of the relocated road-bed and abutment cut is expected to be completed by February 2021. The temporary effects would last one year while demolition and road bench construction are completed. See Figure 2 for the new road location and blast radii during demolition.

After each blast there must be a clearing of the debris to temporary stockpiles and potentially some sorting. The clearing would be done using excavators and dump trucks relaying material to the temporary stockpiles.

The stockpiled debris might be used as fill for the road relocation bench where there are terrain gaps. Some of the stockpiled debris will be used to armor Frazier Dike, located 3 miles north of the spillway widening. The armoring of Frazier Dike and the finishing of the road bench would be in the Spillway Raise (Phase 2) of the Tule River Spillway Enlargement Project. The lower emergency spillway was damaged in December 1966 during a flood event. Blasted rock material from the right abutment cut would be used to restore the spillway to its original, pre-1966, grade and elevation (Figure 3).

Table 1 denotes the quantities and details of (1) demolishing the current road, (2) excavating the right abutment west of the spillway, and (3) constructing the new road aligned on a bench along the newly excavated right abutment.

Table 1. Proposed Action Quantities and Details.

Construction Action	Data
Cubic Yards of Material for Excavation	527,400
Cubic Yards of Concrete	175,000
Construction Duration	1 Year
# of Workers per Day	40
# of Truck Trips per Day	50
Potential Stockpile CY	265,000
Total Worker Hours	195,000
Total Equipment Hours	250,000

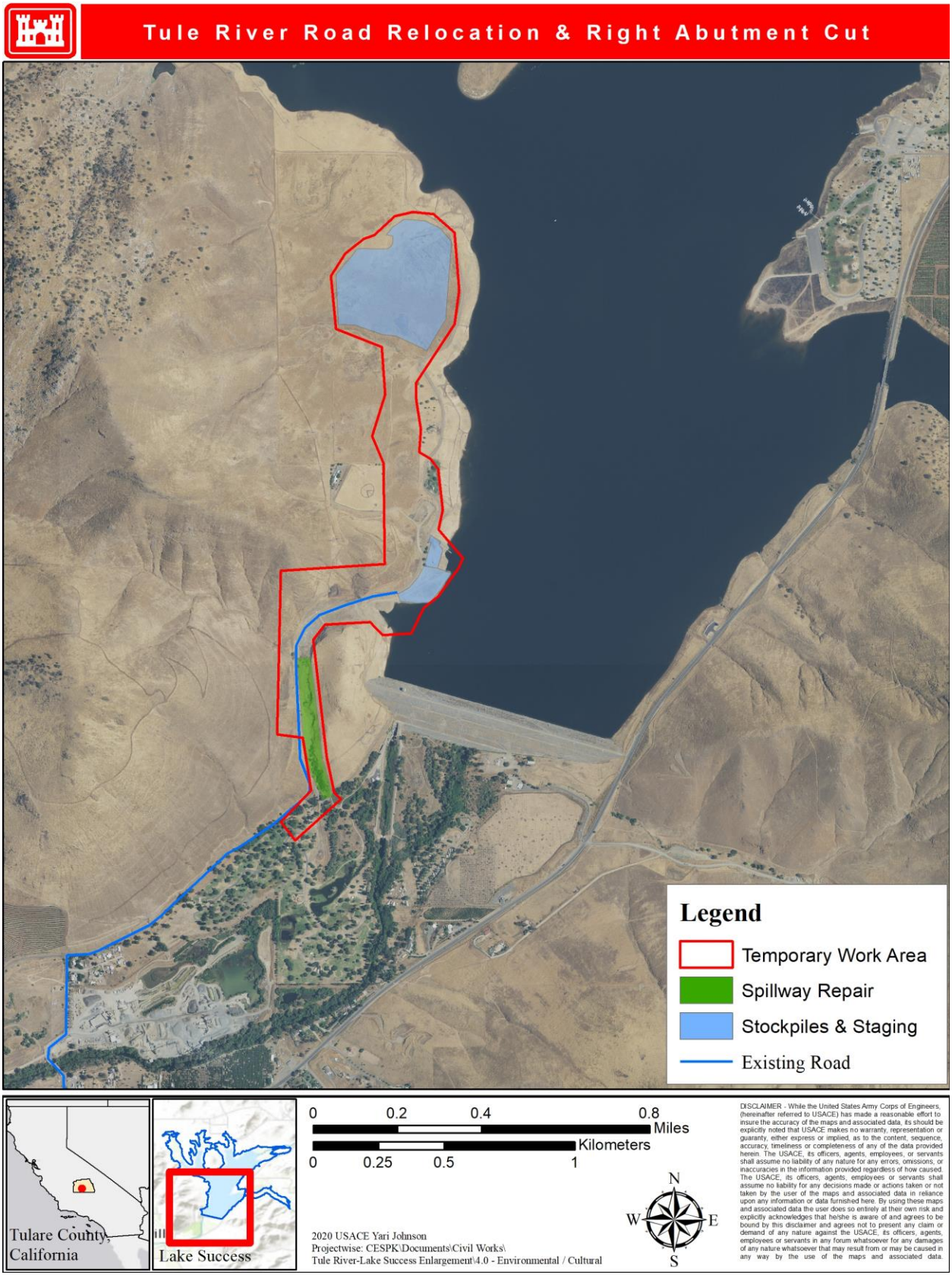

Figure 3. Proposed Temporary Stock Piles, Staging Area, and Spillway Gradient Repair.

2.3.1 Haul Routes and Staging Areas

There are two major haul routes (Figure 1) and three staging areas (Figure 3) for the proposed action. Additionally, there are two commercial quarries downstream of Richard L. Schafer Dam that could potentially supply additional rock or take any excess material from the excavation of the right abutment.

The Frazier Dike Haul Route has been identified as a short haul route from the construction site to Frazier Dike for placement of stockpile material for Phase 2. This route follows existing fire roads and may not be navigable due to weather conditions and lake levels. An alternative haul route, the Main Haul Route, would be along Hwy 190, but this route is longer, and more expensive both in time and money.

2.3.2 Phase 1 Schedule

- Construction Start: June 2020
- Construction Completion: February 2021

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the environmental resources in the project area, as well as any effects of the alternatives on those resources. Mitigation measures to avoid, minimize, rectify, reduce, and/or compensate for potential adverse effects are also identified. The significance thresholds used in this EA incorporate factors required under NEPA to evaluate the context and intensity of the effects of the proposed action and its ability to "significantly affect the quality of the human environment."

3.1 Environmental Resources Not Considered in Detail

Initial evaluation of the effects of the project indicated that there would likely be little to no effect on several resources. These resources are discussed below to add to the overall understanding of the project area.

3.1.1 Fisheries

There are no anadromous, catadromous, or estuarine species in Lake Success or Tule River because the river does not have an ocean outlet. Lake Success and the Tule River were chemically treated to remove all fish species in 1961, 1981, and 1987. Currently, Lake Success supports a stocked warm water fishery and is known for year-round bass fishing. Common species found in the reservoir include Florida bass *(Micropterus floridanus*), largemouth bass (*Micropterus salmoides*), and spotted bass (*Micropterus punctulatus*); channel catfish (*Ictalurus punctatus*); black crappie (*Pomoxis nigromaculatus*); white crappie (*Pomoxis annularis*); carp (*Cyprinis carpio*); green sunfish (*Lepomis cyanellus*); redear sunfish (*Lepomis microlophus*); bluegill (*Lepomis macrochirus*); and threadfin shad (*Dorosoma petenense*). Lake Success is stocked several times in the fall with catchable-sized trout. Since the road alignment and right abutment cut will occur outside of both the lake and river, implementation of the proposed action

would not impact fisheries resources in the reservoir and river. The spillway is only used during emergencies and is dry during most years.

3.1.2 Land Use and Socioeconomics

Lake Success falls within the Tulare County General Plan 2010. This plan includes a comprehensive statement of the development policies and standards that prescribe land use and circulation patterns for the foothill region of the county. The plan encompasses 675,641 acres of land bounded on the east by the Federally-owned parks in the Sierra Nevada and some privately owned lands on the San Joaquin Valley floor. Nearly 85-percent of the land within this region is dedicated to agricultural uses. The lands that are developable are located mainly along transportation corridors where geographic and geological characteristics are conducive to development. In total, less than one percent of land within this region is vacant or unused. The proposed action is located on Federal land, and would have no effects on or changes to land use plans.

Porterville (54,165) is the third largest city in Tulare County (464,493). Porterville and Tulare County have higher representation of White, Hispanic / Latino origins than California overall, with lower representations of all other origin categories. Porterville and Tulare County have higher percentages of residents below the statewide poverty rates (Census, 2019). No relocations would occur as a result of the spillway cut and road realignment.

Table 2. Population statistics for Porterville, Tulare County and California (Census 2019).

Origin	**Porterville, CA**	**Tulare County, CA**	**California**
Population (July1, 2017)	59,145	464,493	39,557,045
White (alone)	77.3 percent	88.3 percent	72.4 percent
African American (alone)	0.8 percent	2.2 percent	6.5 percent
Native American / Alaskan Native (alone)	0.9 percent	2.8 percent	1.6 percent
Asian (alone)	4.5 percent	4.0 percent	15.2 percent
Native Hawaiian / Pacific Islander (alone)	0.2 percent	0.2 percent	0.5 percent
Two or more races	2.8 percent	2.6 percent	3.9 percent
Hispanic or Latino	65.4 percent	64.7 percent	39.1 percent
White (non-Hispanic)	26.7 percent	28.6 percent	37.2 percent
Economy			
Poverty	30.1 percent	24.0 percent	13.3 percent

Populations would not be impacted by any long-term or permanent changes in regional infrastructure, reduction in the availability of affordable housing; long-term decreases in earnings, or employment affecting the regional economy; and no loss in community facilities, events, population, or major industry. Project information would be distributed to property owners and potentially affected and institutions without any distinction based on minority or income status; the populations that could be affected by the action would be determined by their proximity to the proposed project.

Construction blasting may adversely affect recreation at Lake Success if recreation facilities were closed, activities were restricted to accommodate the blasting, or recreation use declined as a result of blasting activity. Reduced recreation use, in turn, would affect recreation-related spending patterns and therefore local economic activity, resulting in temporary adverse impacts on income and employment in the region, particularly in the small towns surrounding the Lake. However, the temporary access will allow residential access and some recreation to continue during construction at the Rocky Hill Recreation Area, when there is not active blasting. Once the blasting is completed, visitation and visitor expenditures for recreation at Lake Success would be expected return to at least pre-construction levels. Overall effects from the proposed project on recreation are discussed in further detail in Section 3.5.

During years with heavy precipitation and an extremely large snowpack, floodwater volume to the Tulare Lakebed typically increases and results in flooding of additional land and thus loss of agriculture. Agricultural workers are predominantly made up of minority populations. If the proposed action was not implemented, there would be an increased time to access the west side of the reservoir (longer access route), so residents, farmers, and recreationists would take more time to drive to that area. Incorporating temporary access in the absence of active blasting would result in little to no effect on minority or low income population.

3.1.3 Topography, Geology, and Soils

Lake Success is located within the foothills of the southern Sierra Nevada. Northwest and southwest trending hills and broad valleys typify the area. The foothill belt is five to 12 miles wide and merges with increasing relief into the Sierra Nevada. The Tule River is the major stream in this area, with about 390 square miles of Tule River drainage above Lake Success. The valley area downstream of the dam is relatively flat due to alluvial deposits from the river.

All rock within the area, with the exception of alluvium, is part of the "bedrock complex" of the Sierra Nevada. There are five different Quaternary surficial deposits mapped at the Richard L. Schafer Dam site. These fan, alluvium, and terrace deposits are reported as consolidated to loose, and most have been determined liquefiable. The underlying bedrock is a complicated sequence of Mesozoic age metamorphic igneous, volcanic, and sedimentary rocks. The rock is differentially weathered. At the downstream toe of Richard L. Schafer Dam, drill holes encountered decomposed to intensely weathered rock, which was determined to be stable. In July 2014, the Dam Safety Oversight Group lowered the Dam Safety Action Classification from II to III indicating that seismic and seepage risks are within tolerable risk guidelines.

The bedrock is relatively impermeable in the weathered zones near the surface and in areas where the weathering is deep seated. The underlying less weathered rock is found to be permeable through fractures in the rock. Drill holes and relief wells at the downstream toe of Richard L. Schafer Dam encountered artesian water.

Soils in the region are residual soils, which were formed by weathering of the bedrock complex and terrace deposits, and slopewash where movement of the residual soils by gravity has occurred. Alluvial materials at the dam site are recent alluvium, older alluvium, terrace

deposits, and alluvial fan deposits. The proposed spillway widening, road realignment and increased reservoir levels would have no effect on topography, geology, and soils.

3.1.4 Hazardous, Toxic and Radioactive Waste

Hazardous, toxic and radioactive waste (HTRW) were evaluated in the 1999 FEIS / FEIR, Tule River Basin Investigation, California, in section 3.3.4. Based on updated records search and communication with Lake Success operations staff, there have been no changes regarding to HTRW within the expanded pool investigated in 1998. Further HTRW investigations will occur during Phase 2 prior to property acquisitions.

3.1.5 Visual Resources

Lake Success is surrounded by a natural environment in the southern Sierra foothills. Currently, the conservation space elevation fluctuates seasonally, with a corresponding change in the viewshed at the reservoir. The proposed road relocation and right abutment spillway cut would have a temporary effect on visual resources during construction, but after construction, prior to the spillway raise, the viewshed would be only slightly modified from existing conditions. There would still be a spillway and a road, but the spillway would be wider and the road would be next to the spillway instead of inside the spillway.

3.1.6 Climate Change

An alternative would be considered to have a significant effect with climate change if it would generate GHG emissions that may cause a significant net increase in emissions; that does not comply with any applicable threshold of significance; or that would conflict with any applicable plan, policy, or rules regulating the emissions of GHGs.

The San Joaquin Valley Air Pollution Control District (SJVAPCD) has local jurisdiction to regulate GHG emissions within Tulare County. The major sources of GHGs that are relevant to the Spillway Enlargement Project are transportation and construction emissions from fuel combustion. Currently, there are no known federal, state, or local GHG emissions thresholds in place for transportation and construction emissions sources. The proposed action would have little to no effect on Climate Change from GHG emissions sources.

Climate Change/GHGs were not considered in the 1999 FEIS/FEIR, Tule River Basin, California. The proposed action does not present significant new circumstances or information regarding the nature and scope of effects to Climate Change associated with the Spillway Enlargement Project. The action area considered within this EA would have no effect on Climate Change due to its size, scope and location. The proposed action would support downstream flood protection and storage for irrigation water supply to be implemented in subsequent phase of the Tule River Spillway Enlargement Project.

3.2 Air Quality

3.2.1 Affected Environment

Air quality in the air basin is regulated at the Federal, State, and regional levels. At the Federal level, the EPA is responsible for overseeing implementation of the Federal Clean Air Act. The Air Resources Board is the State agency that regulates mobile sources and oversees the State air quality laws, including the California Clean Air Act. The SJVAPCD regulates air quality within Tulare County. Each of these agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although EPA regulations may not be superseded, both State and local regulations may be more stringent.

Air quality regulations focus on the following air pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable and fine particulate matter (PM_{10} and $PM_{2.5}$), and lead. Because these are the most prevalent air pollutants known to be deleterious to human health and extensive health-effects criteria documents are available, they are commonly referred to as "criteria air pollutants."

Locally, the SJVAPCD is responsible for ensuring compliance with Federal, State, and local air quality regulations. Specifically, SJVAPCD issues permits and enforces the regulations to protect the public health and environment in accordance with Federal and State Clean Air Act through guidelines developed by Federal and State agencies. The current maximum levels are listed in Tables 3 and 4.

On April 5, 2010, the EPA issued a revised General Conformity Rule, stating that Federal actions must not cause or contribute to any violation of a National ambient air quality standard (see Table 3 and Appendix C for more details), or delay timely attainment of air quality standards. A conformity determination is required for each pollutant where the total of direct and indirect emissions caused by a Federal action in a nonattainment area exceeds the *de minimis* threshold requirements listed in the rule (40 CFR 93.153).

The project site is located in Tulare County, which is within the San Joaquin Valley Air Basin (SJVAB). The SJVAB also comprises all of Fresno, Kings, Madera, Merced, San Joaquin, and Stanislaus, and the valley portion of Kern County. The EPA reports that Tulare County is in nonattainment for $PM_{2.5}$ and 8 hour Ozone (O_3) (EPA 2019). The ambient concentrations of air pollutant emissions are determined by the amount of emissions released by pollutant sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and the presence of sunlight.

Sensitive receptors include those individuals and/or wildlife that could be affected by changes in air quality due to emissions from construction activity. The nearest sensitive receptors to the spillway are two residents, located 0.35 and 1.9 miles away, respectively, and local wildlife and recreationists using the reservoir area.

Table 3. National Ambient Air Quality Standards from the EPA.

Pollutant		Primary/Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		primary and secondary	Rolling 3 month average	0.15 μg/m3 (1)	Not to be exceeded
Nitrogen Dioxide (NO_2)		primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb (2)	Annual Mean
Ozone (O_3)		primary and secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	$PM_{2.5}$	primary	1 year	12.0 μg/m3	annual mean, averaged over 3 years
		secondary	1 year	15.0 μg/m3	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 μg/m3	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24 hours	150 μg/m3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)		primary	1 hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

3.2.2 Environmental Consequences

Methodology. Air quality effects were evaluated through identification of all potential air emission sources associated with the project, evaluation of potential emissions, evaluation of existing requirements for their control, and determination of onsite measures to reduce them to less-than-significant levels. The model used is the Road Construction Emissions Model, Version 9.0.0 (Table 4).

Basis of Significance. An alternative would be considered to have a significant effect on air quality if it would violate any ambient air quality standard, contribute on a long-term basis to an existing or projected air quality violation, expose sensitive receptors to substantial pollution concentrations, or not conform to applicable Federal, State, and local standards.

Table 4. Emissions Estimates and Thresholds (tons per year).

	CO	NO_x	ROG	PM_{10}	$PM_{2.5}$
RCEM Estimate without Mitigation	10.94	15.46	1.40	14.44	3.49
SJVACMD Threshold	100	10	10	15	15
Exceeded?	No	Yes	No	No	No
de minimis Threshold	100	25	25	100	100
Exceeded?	No	No	No	No	No
RCEM Estimate with Tier 4 Mitigation	12.88	2.22	0.69	13.86	2.95

No Action. Under the no action alternative, USACE would not realign the road or widen the spillway for subsequent phases of the Tule River Spillway Enlargement Project. Tulare County would likely remain in nonattainment for $PM_{2.5}$ and 8 hour O_3 in the near future with gradual improvements in status with implementation of a basin air quality attainment plan.

Proposed Action. In comparison with the No Action Alternative, the proposed action would construct the spillway cut and road realignment, and provide more reliable access to the west side of Lake Success. In comparison with the No Action alternative, the proposed action could have some temporary effects on NO_x emissions due to construction activities (Table 4); however, with implementation of the BMPs identified in section 3.2.3, the effects of the Proposed Action on air quality would be less than significant.

3.2.3 Mitigation

Mitigation would be required to reduce air quality impacts to less than significant. With implementation of mitigation, all effects on air quality would be less than significant. USACE would require the Contractor to implement a set of Basic Construction Emission Control Practices as BMPs regardless of the significance determination. Sacramento Metropolitan Air Quality Management District (SMAQMD) estimates that the use of these practices can result in a 55 percent reduction of fugitive PM_{10} dust emissions from soil disturbance areas and a 44 percent reduction of fugitive PM dust emissions from entrained PM_{10} road dust from unpaved

roads (2009). The following subsections address the BMPs and other actions that would be implemented to mitigate air quality impacts.

Construction Emission Control Practices

The construction contractor would be required to implement basic construction emission control practices, fugitive dust mitigation measures, and enhanced fugitive dust control practices include but not limited to the following:

- Water all exposed surfaces at least two times daily.
    - Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
    - In areas of active construction activities, water at least every 2 hours, or sufficiently often to keep disturbed areas adequately wet to the depth of activity, but do not overwater to the extent that sediment flows off the project site.
- Use wet power vacuum street sweepers, such as a HEPA filter-equipped vacuum device, to remove any visible track out mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
- Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).
    - Install one or more of the following track-out prevention measures: a gravel pad to clean the tires of exiting vehicles, tire shakers, pavement extensions of at least 50 feet from paved public intersections, wheel washers for all exiting trucks, wash off all trucks and equipment leaving the site, or any other measure(s) as effective as the measures listed above.
    - Treat site access to a distance of 100 feet from the paved road with a 6 to 12-inch layer of wood chips, mulch, or gravel to reduce generation of road dust and road dust carryout onto public roads.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to five minutes (as required by the state airborne toxics control measure [Title 13, Sections 249(d)(3) and 2485 of the California Code of Regulations]).
- Provide clear signage that posts this requirement for workers at the entrances to the site.
    - Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person would respond and take corrective action within 48 hours of receiving a complaint.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

Enhanced Exhaust Control Practices

The construction contractor would be required to implement the following enhanced exhaust control practices:

- Provide a plan for approval by the lead agency and USACE demonstrating that the heavy-duty (50 horsepower (hp) or more) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, would achieve a project-wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent California Air Resources Board (CARB) fleet average.
- Acceptable options for reducing emissions may include use of late model engines, low emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. Per conversation with SJVAPCD, the SMAQMD's Construction Mitigation Calculator can be used to identify an equipment fleet that achieves this reduction. The subject plan would be submitted in conjunction with the equipment inventory discussed below.
- Submit to the lead agency and USACE a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 hp, that would be used an aggregate of 40 or more hours during any portion of the construction project. The inventory would include the hp rating, engine model year, and projected hours of use for each piece of equipment. The inventory would be updated and submitted monthly throughout the duration of the project, except that an inventory would not be required for any 30-day period in which no construction activity occurs. At least 4 business days hours prior to the use of subject heavy-duty off-road equipment, the contractor would provide USACE with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman. Per conversation with SJVAPCD, the SMAQMD's Model Equipment List can be used to submit this information.
- Ensure that emissions from all off-road diesel-powered equipment used on the project site do not exceed 40 percent opacity for more than 3 minutes in any 1 hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) would be repaired immediately. Non-compliant equipment would be documented and a summary provided to the lead agency and USACE monthly. A visual survey of all in-operation equipment would be made at least weekly, and a monthly summary of the visual survey results would be submitted throughout the duration of the project, except that the monthly summary would not be required for any 30-day period in which no construction activity occurs. The monthly summary would include the quantity and type of vehicles surveyed as well as the dates of each survey.

Additional Air Quality Mitigation Measures

USACE would also continue to implement the following mitigation measures to reduce the potential adverse air quality effects of the project. The construction contractor would be required to comply with the following:

- All off-road diesel-powered construction equipment greater than 50 hp would meet Tier-4 off road emission standards (reference 40 CFR Part 1039), where available.
- In addition, if not already supplied with a factory-equipped diesel particulate filter, all construction equipment would be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emissions control device used by the construction contractor would achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations. In the event that a certain tier engine is not available for any off-road equipment larger than 50 hp, that equipment would be equipped with the next lower tier engine (e.g., if Tier 3 is not available use Tier 2), or an engine that is equipped with retrofit controls to reduce exhaust emissions of NOx and diesel PM to no more than the next available tier, unless certified by engine manufacturers that the use of such devices is not practical for specific engine types. If the construction contractor proposes to use off-road diesel powered construction equipment greater than 50 hp that does not meet Tier 4 off road emissions standards, such usage would first have to be approved by USACE.
- Construction equipment would incorporate emissions-reducing technology such as specific fuel economy standards. Idling would be restricted to a maximum of 5 minutes, except as provided in the CARB 13CCR, Section 2485 exceptions.

3.3 Noise and Vibration

3.3.1 Affected Environment

Regulatory Setting. In response to the Federal Noise Control Act of 1972, the EPA has identified noise levels requisite to protect public health and welfare against hearing loss, annoyance, and activity interference (EPA 1974). One of the purposes of this document is to provide a basis for State and local governments' judgments in setting standards. In doing so, the information presented by the EPA must be utilized along with other relevant factors. These factors include the balance between costs and benefits associated with setting standards at particular noise levels, the nature of the existing or projected noise problems in any particular area, and the local aspirations and the means available to control environmental noise.

The Noise Element (10.8) of the 2030 Update, Tulare County General Plan (2012) contains policies designed to accomplish the following goals: to protect the citizens of Tulare County from the harmful effects of exposure of excessive noise, and to protect the economic base of Tulare County by preventing encroachment incompatible land uses near noise-producing industries, railroads, airports and other sources. The Tulare County General Plan limits construction related noise to normal business hours Monday through Saturday (7 a.m. to 7 p.m.). However, the Tulare County General Plan Noise Element (2012) establishes the hourly equivalent continuous sound level (commonly denoted L_{eq}) resulting from the development of new noise-sensitive land uses or new noise-generating sources shall not exceed maximum A-weighted noise level (commonly denoted L_{max}) of 70 dB(A) during the day or 60 dB(A) during the night.

The area surrounding Lake Success is largely open space. The nearest sensitive receptors to the spillway are two residents, located 0.35 and 1.9 miles away, and recreationists using the reservoir area. The existing noise conditions in the vicinity of the project site are influenced primarily by surface transportation noise emanating from vehicle traffic on area roadways (e.g., SR 190 and SR 65). Noise from surrounding operations (e.g., watercraft on Lake Success), in addition to noise from outdoor activities areas (e.g., people talking, dogs barking, operation of landscaping and agricultural equipment) also contribute to the existing noise environment to a lesser extent.

Blasting generally includes a series of small charges or shots, which are placed in holes drilled into the rock formation. The charges or shots are detonated and are timed so that they occur in sequence (generally milliseconds apart). This is referred to as the "shot timing." The noise levels associated with blasting are generally a function of shot sizes, number of shots, depth of the blasting charges and the shot timing. Noise levels associated with blasting is generally very low frequency in nature. With the implementation of a Construction Noise and Vibration Monitoring Plan (CNVMP), which includes BMPs for blasting as stated in Section 3.3.3, the short duration blasting noise impacts associated with this alternative are anticipated to be low to moderate and less-than-significant.

USACE is continuing to refine alternatives, construction methods, and schedules in an effort to avoid or reduce significant adverse noise and vibration impacts on nearby sensitive receptors. However, it may become necessary to temporarily relocate some sensitive receptors if localized noise impacts from short-term construction activities become individually relevant for specific sensitive receptors.

3.3.2 Environmental Consequences

Basis of Significance. Criteria for determining the level of noise impacts associated with the proposed action were based on Federal, State, and local guidance regarding noise and vibration impacts. On that basis, noise impacts were considered significant if the project would result in the following:

- Exposure of persons to or generation of noise levels in excess of standards established in the Tulare County General Plan 2012 or noise ordinance or applicable standards of other agencies;
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;
- Substantial permanent increase in ambient noise levels in the project vicinity above existing levels, generally defined as 3-5 dB; or
- Substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels, generally defined as 3-5 dB.

No Action. Under the No Action alternative, the Proposed Action would not be implemented and would not affect noise. Sources of noise and noise levels would continue to be determined by local activities, development, and natural sounds. USACE would not realign the road as proposed in Road Realignment and Right Abutment Spillway Cut of the Tule River

Spillway Enlargement Project. There would be no temporary change in noise conditions in the project area due to the construction of the proposed action and conditions would remain consistent with existing conditions until any planned future development is implemented. However, noise levels would temporarily increase in the event of an emergency flood-fighting situation.

Proposed Action. The proposed action would construct the spillway cut and road realignment, and provide more reliable access to the west side of Lake Success. USACE has determined that some short-duration controlled blasting would need to take place to break up the bedrock within the proposed Emergency Spillway channel widening. A CNVMP would be developed by USACE or designated contractor prior to the start of construction, which would include any short-term road closures and other public safety management measures that may be required in the vicinity of the blasting. With proper monitoring and management the effects of noise and vibration caused by this phase of the project will not significantly affect sensitive receptors.

The effect of the blasting on wildlife is highly variable due to specific attenuation of the shockwave where the animal is located, sensitivity of the animal to sound and vibration and the propensity of the species to acclimatize to the sound and / or vibrations. Of the animals present in the project areas sound footprint, the most likely to be affected by the blasting would be waterbirds (ducks, egrets, pelicans, etc.). The disturbance of birds (and other wildlife) due to blasting attenuates with repeated blasts. Animal reactions vary through the blasting cycle from minor to moderate disturbance that fades to little or no response to blasts. The response of birds has been well studied and is a surrogate for other species that are less observable (mammals, reptiles and amphibians) (Holthuijzen 1990). The noise and vibration effect on wildlife is discussed in-depth in the Biological Assessment (Appendix A).

3.3.3 Mitigation

Recommended mitigation measures, including BMPs, to reduce potential noise impacts are described below. Even without the implementation of these measures and BMPs, it is anticipated that most of the localized noise impacts from short-term construction activities would remain less than significant.

The following mitigation measures and BMPs are to be implemented:

- All contractor construction equipment will comply with Tulare County noise level performance standards (Tulare County 2012). All construction will occur Monday through Saturday between 7 a.m. and 7 p.m.
- No construction shall occur on Sundays or national holidays without a permit from the County to minimize noise impacts associated with development near sensitive receptors.
- A contractor-prepared CNVMP before beginning work on the project. The plan would be prepared by an acoustical consultant recognized by Tulare County. The CNVMP would include site-specific noise and vibration attenuation measures to ensure that maximum feasible noise and vibration attenuation is achieved. The CNVMP would

include as many of the control strategies listed below as are feasible for this project. Project workers would be trained on the CNVMP before construction begins.

- Monitor construction noise for the project duration. The most potentially affected of the four sensitive receptors at the following locations would be selected: residences (two receptors), and the west side recreation area (one receptor), and primary haul routes (two sensitive locations). Summaries of measured noise levels would be provided weekly or more often, if noise complaints arise.
- Equip all equipment with noise control devices (e.g., mufflers), in accordance with manufacturers' specifications.
- Inspect all equipment periodically to ensure proper maintenance and presence of noise control devices (e.g., lubrication, mufflers that do not leak, and shrouding).
- Prevent equipment from idling more than five minutes.
- Limit blasting to daytime, and employ other measures to limit noise and vibration of blasting, such as burying charges and/or using blasting mats, spacing timing of shots, using appropriate shot size, or other measures determined by a qualified blasting engineer.
- Conspicuously post a 24-hour contact number around the project site, and supply to nearby residents. The disturbance coordinator would receive all public complaints and be responsible for determining the cause of the complaint and implementing any feasible measures to alleviate the problem.
- Encourage the hauling of material along sensitive routes only from 8 AM to 5 PM (daytime hours).
- Discourage the use of engine braking ("jake brakes") along sensitive routes.
- Encourage truckers to reduce engine noise when shifting in noise sensitive areas, and post these areas.
- Notify all residences and businesses within 1,500 feet of construction areas prior to conducting blasting (NOTE: In this particular situation, there are not any residences or business within 1,500 feet of the construction area).

3.4 Traffic

3.4.1 Affected Environment

State Route 190 is a lightly traveled highway going from Porterville, along Lake Success, to Springville and Eagle Mountain Casino. The casino, whose entrance is about 10 miles north of Lake Success, is operated on the Tule Indian Reservation. Highway 190 is the primary access for the casino, especially on weekends. Springville, with a population of approximately 1,100, is residence to many commuters who travel State Route 190 to Porterville during the week. Worth Drive / Avenue 146 also connects the City of Porterville to Richard L. Schafer Dam at the southern end of the reservoir. This segment of Worth Drive / Avenue 146 is utilized by residents of two households and support 80,000 visitor days to the Rocky Hill Recreation Area. The Lake Success Recreation Area is accessible from the town of Strathmore via Avenue 196 to Avenue 176.

3.4.2 Environmental Consequences

Basis of Significance. An alternative would be considered to have a significant effect on traffic if it would result in a substantial increase in traffic volume, an increase in safety hazards on an area roadway, or cause substantial deterioration of the physical condition of the area roadways.

No Action. Under the no action alternative, USACE would not make the right abutment cut, nor realign the road on the spillway bench as proposed in the Road Realignment and Right Abutment Cut of the Tule River Spillway Enlargement Project. As a result, traffic and public access to the west side of Lake Success would be restricted and the existing roadway would not be replaced. This would remove the more immediate access to those residents and people who recreate on the western side of the reservoir during Probable Maximum Flood events. It is currently approximately 1.5 miles from the intersection of Avenue 146 and Road 284 to the western side of the reservoir. During PMF events, access to Avenue 146 over the raised spillway with no replacement road would mean an approximately 16.5 mile detour from the intersection of Avenue 146 and Road 284, along highway 190, Avenue 176, south on Road 276, then along the now-private road along the western shore of Lake Success to reconnect to Avenue 146 upstream of the raised spillway. However, due to the regional climate within the Tule River watershed, PMF events are rare. The current spillway has only been used once since Richard L. Schafer Dam was constructed in 1961. This occurred in December, 1966 (USACE 2006). As a result, these impacts would be considered less than significant.

Proposed Action. The proposed action would construct the spillway cut and road realignment, and in the long-term would provide more reliable access to the west side of Lake Success. The Spillway Raise (Phase 2) of the project would not impede traffic on Worth Drive/Avenue 146 during the ogee weir construction. During Road Realignment and Right Abutment Cut, the traffic along the haul routes and worker ingress and egress would affect local traffic during construction. The roads will remain open on the weekends, and partial access to roads will be allowed on weekdays when blasting activities are not scheduled to occur. Once the new road is constructed, traffic will revert to normal, with fewer road closures due to spillway engagement. With implementation of the mitigation measures described in section 3.4.3, short-term, construction-related effects of the Proposed Action on traffic patterns would be less than significant.

3.4.3 Mitigation

The following mitigation measures would be implemented to minimize effects on traffic that may occur during the proposed spillway cut and road realignment to less than significant.

- Coordinate with affected residents and the landowners prior to construction.
- Place proper signage to warn and direct traffic, including signalmen, if necessary.
- Provide temporary passage for residents and recreation during construction.

3.5 Recreation

3.5.1 Affected Environment

Water-based recreational opportunities to local residents and tourists are considered a significant part of the economy in the Porterville area. Water sports, camping, hunting, fishing, boating, and picnicking are main attractions of Lake Success. There are a number of other water use activities, such as jet skiing, boating, and swimming. About 15 to 20 percent of the total recreational use is devoted to fishing. Because of the reservoir's outstanding warm water fishery, fishing is actively pursued each month of the year, with fishing tournaments almost every weekend.

Lake Success recreation facilities include day-use areas, camping facilities, and a commercial marina. Boating and fishing are allowed 24 hours, and the summer night bass fishing is excellent. There is one marina located on the reservoir. Boat rentals, boat slips, jet skis, bait, tackle, food, and fuel are available at Lake Success Marina located on the east side of the reservoir. Overnight houseboat rentals are also available from Lake Success Marina.

Other facilities include the park headquarters, Rocky Hill, Tule, and Vista Point recreation areas, and a wildlife area. The park headquarters is a day-use area that receives fewer than 2,000 visitors annually. Two parking lots provide space for 30 cars. An interpretive trail is onsite. Rocky Hill is a day-use area that is popular for picnicking and fishing. There are eight picnic sites and enough parking for 50 cars/trailers. One launch ramp (two lanes), a courtesy dock, and a fish cleaning station are provided. Tule is available for both day-use and camping opportunities. Water, toilets, eight large arbors, multiple picnic sites, and two parking lots provide parking for 125 cars/trailers. Year-round camping is provided at 104 sites. Additionally, two launch ramps (four lanes), and two courtesy docks are provided. Vista Point is a day-use facility that is void of both water and toilet facilities. The facility has enough parking for 25 cars. The Wildlife Area is a day-use site with well water, toilet facilities, and enough parking for 50 cars/trailers. The 1,400-acre wildlife area on the northwest side of the reservoir is open for public use with hunting allowed, shotguns only, during appropriate seasons. Parking around the reservoir is limited to 400 designated spaces; however, adequate parking is available on roadsides surrounding the reservoir.

Annual recreation use around Lake Success is approximately 800,000 visits (Table 5), with its peak use during the months of April through July. Recreational visitation numbers indicate that Lake Success has consistently had between 2.5 and 3 million visitor-hours each year. Based on an 8-hour recreation visitor-day, it is estimated that 350,000 recreation visitor-days are spent in and around Lake Success.

Table 5. Visits (person-trips) in FY 2016.

Activity	Number
Swimming	143,233
Picnicking	133,566
Sightseeing	97,982
Hunting	76,528
Fishing	60,436
Water Skiing	36,053
Boating	30,733
Camping	13,424
Other Activities	266,849
Total	**858,804**

(N. Arbelo, Southern Operations Area Ranger, pers. comm., Feb 2019)

3.5.2 Environmental Consequences

Basis of Significance. An alternative would be considered to have a significant effect on recreation if it would result in loss of recreational facilities, cause a substantial disruption in a recreational activity or opportunity, or substantially diminish the quality of the recreational experience.

No Action. Under the no action alternative, USACE would not make the right abutment cut, nor realign the road on the spillway bench as proposed in the Road Realignment and Right Abutment Spillway Cut of the Tule River Spillway Enlargement Project. As a result, traffic and public access to the west side of Lake Success would be restricted and the existing roadway would not be replaced. This would remove the more immediate access to those residents and people who recreate on the western side of the reservoir during Probable Maximum Flood events. Access would require a 30-mile roundtrip detour as described in Section 3.4.2.

Proposed Action. The proposed action would construct the spillway cut and road realignment, and provide more reliable access to the west side of Lake Success. The temporary inaccessibility of the Rocky Hill recreational facilities during construction of Road Realignment and Right Abutment Spillway Cut (Phase 1), which is expected to take approximately one year and is considered an unavoidable impact. The alternative recreational facilities in the area (Tule Recreation Area, Vista Point, and Park Headquarters) are expected to have sufficient capacity to accommodate persons who normally use the Rocky Hill recreational facility. Additionally, the construction of newer recreational facilities above the new gross pool is planned for the Spillway Raise (Phase 2). Therefore, there will be some temporal interruption of visitation at Rocky Hill Recreation Area. The impact will be mitigated with improved facilities post construction and temporary passage around the construction, except when blasting is in progress.

3.5.3 Mitigation

The following mitigation measures would be implemented to minimize effects on recreation that may occur during the proposed spillway cut and road realignment to less than significant:

- Coordinate public announcement of construction schedule with local residents.
- Schedule blasting and excavation outside the recreation season to the extent possible.
- Provide temporary passage for residents and recreation during construction.

3.6 Cultural Resources

3.6.1 Affected Environment

Cultural resources are broadly defined as buildings, structures, objects, sites, districts, and archeological resources associated with human activity in prehistory or history. For the purposes of the current assessment, "prehistory" refers to a time period prior to the arrival of Spanish and other Euro-American explorers and settlers into the project area, when the area was inhabited only by Native American peoples, described below as the Prehistoric Setting.

Prehistoric Setting. Radiometric dating techniques place human habitation along portions of coastal California to well before 12,000 years ago. Areas along the shoreline of ancient Tulare Lake, in Kings County, also show evidence of early Holocene occupation, dating to 8,000 years before present (BP) or earlier. Based on archaeological and linguistic evidence, Native Americans ancestral to present-day Yokuts tribes lived the area around present-day Lake Success for 5,000 to 7,000 years. This area, where several forks of the Tule River converge, provided a rich base for human subsistence and permanent and semi-permanent settlements. Native American peoples occupying this region employed an economic strategy involving seasonal rounds, with the valley, foothills, and higher elevations of the Sierra Nevada range offering a wide variety of plant, animal, and other resources.

Beginning around 3,000 years ago, acorns increasingly gained dietary importance throughout California, and archaeological evidence indicates they were a staple of the local diet by 2,000-1,500 years BP. In the southern San Joaquin Valley and foothills, intensification of plant use and increased residential mobility is seen as corresponding with a period of widespread climate change in California around 1000 years ago, known as the Medieval Climatic Anomaly.

After around 800 years ago, land use practices again centered on permanent or semi-permanent villages. In the current project area this pattern likely continued to the contact period. Previous archaeological work around Lake Success has located several prehistoric sites, many of which comprise bedrock milling features used for processing acorns and other plant and mineral resources. While the cultural sequence within the project area remains relatively undefined, in general the prehistoric record suggests relatively high population densities (Berryman and Elsasser 1966:7).

Occasional European intrusion into the area began around A.D. 1772, but the absence of Spanish missions in the lower San Joaquin Valley somewhat limited early contact between native and non-native peoples. By way of example, the malaria epidemic of 1833, which devastated the northern San Joaquin Valley, appears not to have penetrated into the nearby Tulare Valley (Phillips 1993:94). Native American populations who escaped decimation by disease in this region were able to maintain seasonal rounds and trade contacts into the late nineteenth and early twentieth centuries.

Native American Ethno-history. The current project area is located near the convergence of the Southern Valley and the Foothill Yokuts territories. The territory of the larger Southern Valley Yokuts reportedly extended from the Coastal Ranges to the west, Fresno to the North, the Tehachapi Foothills in the south and into the Sierra Foothills to the east almost to the current Tule River Indian Reservation. Of the Southern Valley Yokuts, the Koyeti lived along the lower Tule River, with several ethno-historic Koyeti situated along the Tule River in the vicinity of Porterville. These included the Chokowisho, Tenalu, and Chetetik Nowsuh (Reddy et al. 2008:2.8).

Foothill Yokuts territory is thought to have covered a much smaller area consisting of fragmented areas around the Tule, Kings, San Joaquin, Fresno, Kaweah, and Poso Rivers. Foothill Yokuts Tribes located closest to Success Valley included the Yawdanchi near the North Fork of the Tule River and the Hoeynche situated along the South Fork of the Tule River. While the project area is within known Yokuts boundaries, trade and interaction with other ethnically and linguistically distinct tribes, such as the Mono and Tübatulabal, was common.

In the 1850s, some Yokuts peoples, especially Foothill Yokuts, labored at agriculture on the Tule River Farm near the town of Porterville (Reddy et al. 2008). In 1864, the Tule River Farm became the Tule River Indian Reservation. In 1873, the reservation of the government-reformulated Tule River Tribe, now consisting of Yokuts, Mono, and Tübatulabal members, was re-located to a more mountainous, less economically-productive, area approximately 15 miles to the east and upslope from Porterville. Cultural resources dating to the ethno-historic period may be present in the project area.

Historic-era Setting. The first documented contact between indigenous groups of the area and Europeans was in 1772, when Spanish explorers with the Fages party entered the region. Contact was largely limited in the following decades, until the early 19th century when the Spanish government and the Catholic Church began sending missionization expeditions into the southern San Joaquin Valley. These efforts to missionize the local Yokuts were not particularly successful. Conflicts between the European and native populations during the Mexican period of California history were more frequent than in the preceding period (Wallace 1978: 459-460).

Gold was discovered in the early 1850s east of the Success Valley in the Globe District and on Cow Mountain. In subsequent years, several gold and silver claims were staked in these areas, albeit with limited success. In 1859, the location of Porterville was established by Porter Putnam as a spot for his hotel and store. Both of the enterprises were built to service overland stagecoach traffic between San Francisco and Los Angeles. The town site also was an important supply stop along the route from the valley to gold mines northeast in the Sierra Nevada.

Even though gold and silver mining in Tulare County was not hugely successful, magnesite mining did later have an economic impact on the region. Magnesite deposits in the Porterville area were first discovered by W. P. Blake in 1853 during a U.S. expedition and survey for a railroad. Extraction of magnesite in the region did not begin in earnest until the early part the 1900s, following restrictions on foreign shipments of this mineral during European wars. At this time, the entire domestic production of magnesite was from California, with the vast majority of the mineral extracted from Tulare County in the areas around Porterville, Success, and Lindsay.

Although mining continued in subsequent decades to be a major industry in the San Joaquin Valley, agriculture and ranching also grew in economic importance, with large herds of cattle and sheep brought into the valley to graze. Ranching and agriculture continued to be primary sources of revenue for families in the Success Valley well into the 20th century. The establishment of agriculture and ranching in the Success Valley prompted several irrigation projects to be undertaken. One of the most notable of these near the Lake Success project area was the Pioneer Ditch. The Pioneer Ditch was dug over a seven year period between 1860 and 1867 to provide water a local flour mill, reduce flood damage, and later to turn turbines for electricity production for Porterville (Meighan et al. 1988).

In addition to irrigation, another major contributor to the success of the agricultural industry was rail transportation of goods and livestock to markets outside the region. The Southern Pacific Railroad was the first to reach Porterville in 1888. As a result, the town underwent a population increase, as well as an increase in exported fruit production and, to a lesser extent, other crops including raisins, grapes, and lemons (Reddy et al. 2008).

Construction of Richard L. Schafer Dam began in 1958 and was completed on May 15, 1961. The dam provides flood risk reduction benefits to the city of Porterville and other communities downstream of the dam. In addition, the dam helps protect several hundred thousand acres of valuable farmland to the west of the dam from damaging winter and spring floods. In 1999, during preparation of the Tule River Basin Investigation Feasibility Study and FEIS/FEIR (USACE 1999), Richard L. Schafer Dam was evaluated for historic significance and determined not eligible for inclusion on the National Register of Historic Places (NRHP), with consensus from the California State Historic Preservation Officer (SHPO) (October 15,1999 [COE990720A]). Given the passage of time since that previous determination, through correspondence dated September 18, 2019, USACE reinitiated consultation with the SHPO regarding the determination that Richard L. Schafer Dam is not eligible for inclusion in the NRHP. The SHPO concurred with that determination through correspondence dated November 5, 2019.

Regulatory Setting. The National Historic Preservation Act (NHPA) of 1966, as amended (54 U.S.C. § 300101 *et seq*.), is the primary Federal legislation governing the preservation and protection of significant cultural resources. Title 54 U.S.C. § 306108, formerly and commonly known as Section 106 of the NHPA, requires Federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment with regard to such undertakings. Undertakings are projects, activities, or programs funded in whole or in part under

the direct or indirect jurisdiction of a Federal agency (54 U.S.C. § 300320). Historic properties are cultural resources that are included on, or eligible for inclusion on, the NRHP (54 U.S.C. § 300308).

The process for implementing Section 106 of the NHPA is described at 36 CFR Part 800. For any undertaking that has the potential to cause effects on historic properties, compliance with Section 106 of the NHPA requires a good faith effort by the Federal agency to identify historic properties in the area of potential effects (APE) for the undertaking and resolve of any adverse effects on such properties through a consultative process involving the agency, the State Historic Preservation Officer, Indian tribes, and other consulting parties. Pursuant to 36 CFR § 800.1(c), the Section 106 process must be completed prior to the approval of the expenditure of Federal funds on the undertaking.

Ahead of the Tule River Basin Investigation Feasibility Study and FEIS/FEIR (USACE 1999), initial efforts to identify historic properties in the project area were conducted. Section 106 identification efforts at that time consisted of archival research and cultural resources pedestrian surveys completed by the Institute of Archaeology at the University of California, Los Angeles (Meighan 1988). Nine prehistoric and two historic-era cultural resources were identified during those survey efforts, one of which—a bedrock milling station recorded as CA-TUL-971—was determined eligible for the NRHP (SHPO letter of July 12, 2002 [COE020423A]). That historic property is outside the APE for all phases of the Tule River Spillway Enlargement Project.

Additional historic properties' identification efforts covering portions of the Phase 1, and larger, project APE have been completed since that time (e.g., Meighan et al. 1988; Reddy 2008; O'Day and Pfertsh 2017). With the exception of one historic-era resource (CA-TUL-970), identified as the Tulare Mining Company Mine or the Bartlett Mine, and recommended as "potentially eligible" for listing on the NRHP by O'Day and Pfertsh (2017:44), all cultural resources identified through previous investigations in the Phase 1 and larger project APE have been determined ineligible for NRHP inclusion, with SHPO consensus. CA-TUL-970 is located on the South Fork Tule River, outside of the Phase 1 APE.

Additionally, in February 2019, USACE archaeologists conducted an updated records search through the Southern San Joaquin Valley Records Center of the California Historical Resources Information System and an intensive pedestrian survey specific to the Phase 1 APE. During the USACE survey, a cluster of prospect pits with no associated features or artifacts was identified and recorded in the vicinity of the proposed road realignment (Phelps 2019). USACE has evaluated this cultural resource for NRHP eligibility and determined it ineligible for inclusion on the NRHP. The Richard L. Schafer Dam right abutment spillway is the only other known cultural resource in the Phase 1 APE. As noted previously, in 1999 Richard L. Schafer Dam was determined ineligible for NRHP inclusion, with SHPO consensus. There are no known historic properties in the Phase 1 APE.

3.6.2 Environmental Consequences

Basis of Significance. An action alternative that would result in an adverse effect on cultural resources that are listed on, or eligible for listing on, the NRHP (i.e., historic properties) also would constitute a significant cultural resources impact under NEPA. An adverse effect would result if the action alternative would alter any of the characteristics of a historic property that qualify it for inclusion in the NRHP in a manner that diminishes the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Types of adverse effects include:

- Physical destruction, damage, or alteration of all or part of the historic property;
- Alteration of the property in a way inconsistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR Part 68);
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its significance;
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- Neglect of a property which causes its deterioration;
- Transfer, lease, or sale of the historic property out of federal ownership or control without adequate and legally enforceable conditions to ensure its preservation.

No Action. Under the no action alternative, USACE would not implement Phase 1 of the Tule River Spillway Enlargement Project, which includes realigning the existing road and widening the spillway to facilitate subsequent phases of the project. Ground disturbing activities required to relocate the road and widen the spillway would not occur and existing conditions related to cultural resources would remain unchanged. The no action alternative would result in no impacts to cultural resources.

Proposed Action. The proposed action would construct the widened spillway cut and realignment of Worth Drive/Avenue 146 to a new cut bench on the right abutment of the spillway. The proposed action comprises Phase 1 of the Tule River Spillway Enlargement Project, a Federal undertaking involving activities that have the potential to cause effects on historic properties under 36 CFR § 800.3(a).

USACE has completed efforts to identify and evaluate historic properties in the APE for Phase 1 of the Tule River Spillway Enlargement Project; however, as described at 36 CFR § 800.1(c), USACE must complete the Section 106 process for the entire undertaking, comprising all phases of the Tule River Spillway Enlargement Project, prior to approving the expenditure funds for the proposed action covered under this EA. Given the extensive nature of the combined APE for all phases of the undertaking, which includes more than 300 acres on both public and private lands surrounding Lake Success, a phased approach to Section 106 compliance for the undertaking is required. In accordance with 36 CFR § 800.4(b)(2), in order to phase the identification and evaluation of historic properties under Section 106, execution of a Programmatic Agreement is required, pursuant to 36 CFR § 800.14(b)(1)(ii).

USACE notified the ACHP and California SHPO of the need for a Programmatic Agreement (PA) to govern the Section 106 process for the Tule River Spillway Enlargement Project and consulted with the SHPO on the PA development. USACE also initiated Section 106 consultation regarding this undertaking and PA with the following Indian tribes and Native American communities identified by the California Native American Heritage Commission as having cultural resources interests in the APE: Tule River Indian Tribe, Santa Rosa Rancheria Tachi Yokut Tribe, Kern Valley Indian Community, Tubatulabals of Kern Valley, and Wuksache Indian Tribe/Eshom Valley Band. The PA was fully executed between USACE and the SHPO on December 13, 2019 (Appendix B). USACE will continue to consult with the SHPO and Native American interested parties throughout project construction as described in the PA.

3.6.3 Mitigation

There are no known historic properties in the Phase 1 APE for the right abutment spillway cut and road realignment. As such, no significant impacts to cultural resources would result from the Phase 1 proposed action and no mitigation measures specific to that action are contemplated.

Efforts to identify historic properties within the APE for subsequent phases of the Tule River Spillway Enlargement Project included pedestrian surveys covering the APE for the new maximum reservoir pool for the Tule River Spillway Enlargement Project, which were completed in the summer of 2019. USACE has executed a PA with the California SHPO to govern the phased approach to Section 106 compliance for the undertaking. The PA includes mitigation commitments that will resolve adverse effects on historic properties resulting from all Phase 2 of the undertaking. Methods for mitigating effects to previously unknown historic properties that may be discovered after PA execution also are specified in the PA.

3.7 Federal Special Status Species

3.7.1 Affected Environment

Federally listed species and their habitats are protected by Federal laws and agency regulations. The Endangered Species Act (ESA) of 1973 (16 U.S.C. § 1531 – 1599) provides legal protection for plant and animal species in danger of extinction (50 CFR Part 17). This act is administered by the USFWS and the National Marine Fisheries Service (NMFS). Informal consultation with USFWS, Mr. Harry Kahler, was initiated in December 2018. In July 2019, USACE transmitted a Biological Assessment to USFWS and requested to re-initiate formal Section 7 consultation. After further consultation, USACE submitted an updated Biological Assessment in December 2019 (Appendix A). USFWS issued a Biological Opinion in February 2020 (Appendix E).

A list of Federally listed and candidate species, and species of concern that may be affected by the project was requested via the USFWS Information for Planning and Consultation (IPaC) website (USFWS 2019). Additionally, a search of the California Natural Diversity Database (CNDDB) conducted July, 2019, within the ‘Success Dam’ U.S. Geological Survey Quad indicated there were reported occurrences of Federal and State listed species near the

project area. A summary of effects to Endangered and Threatened Species is in Table 6. The following Federally listed species are potentially affected by project activities at Lake Success and were considered in the Road Realignment and Right Abutment Spillway Cut Biological Assessment (Appendix A):

- Southwestern Willow Flycatcher (*Empidonax traillii)* Endangered
- San Joaquin Kit Fox (*Vulpes macrotis mutica)* Endangered
- San Joaquin Adobe Sunburst (*Pseudobahia peirsonii)* Threatened
- Least Bell's Vireo (*Vireo bellii pusillus)* Endangered

In addition the following special-status species were considered but not evaluated fully:

- California Condor (*Gymnogyps californianus)* Endangered
- Blunt-nosed Leopard Lizard (*Gambelia silus*) Endangered
- Giant Garter Snake (*Thamnophis gigas*) Threatened
- California Red-legged frog (*Rana draytonii)* Threatened
- VELB (*Desmocerus californicus dimorphus)* Threatened
- Delta Smelt (*Hypomesus transpacificus*) Threatened
- Keck's Checker-mallow (*Sidalcea keckii*) Threatened
- Springville Clarkia (*Clarkia springvillensis*) Threatened

The only species listed above with designated critical habitat in the Lake Success area is the California condor. The California condor's Critical Habitat covers the northern mile of Lake Success with its southern-most edge. The project area is one mile south of the southern extent of the condor Critical Habitat. However, there is no appropriate nesting habitat for the condor within the project area, and condor visitation to the project area is not documented as more than transient (USFWS 2015, unpublished GPS telemetry data.) As a result, the USACE has determined the proposed action would have no effect on the condor. Keck's checker-mallow and the striped adobe lily populations are near the reservoir, but outside of the inundation area, and not within the project area. Therefore, the spillway widening and road relocation would not affect their survival. These species would not be affected by the proposal and therefore are not further discussed.

USACE coordinated with the USFWS on the Federally endangered Least Bell's vireo (*Vireo bellii pusillus*) due to updated information indicating the potential presence of the vireo in the Lake Success area. As a result, this section has been revised to include discussion of the vireo. A discussion of each species and the potential for their occurrence in the project area is provided below.

Southwestern Willow Flycatcher. Southwestern willow flycatchers (*Empidonax traillii)* are neotropical migrants that breed in patches of riparian habitat throughout the American southwest. Their breeding habitat currently ranges from southern California, through southern Nevada, southern Utah, Arizona, New Mexico, southwestern Colorado, and historically included western Texas and extreme northwestern Mexico. They travel south to winter ranges in Mexico, Central America, and northern South America. While their current distribution is similar to their

historic range, southwestern willow flycatcher population numbers have declined precipitously in response to the loss of suitable riparian habitat throughout the region.

The final critical habitat designation includes 1,227 floodplain miles in California, Arizona, Nevada, Utah, Colorado, and New Mexico encompassing a total area of approximately 208,973 acres within the 1 percent AEP-plain or flood-prone areas. Lake Success is outside the designated critical habitat area. Where the Tule River flows into Lake Success there are about 160 acres of transient willow riparian woodland that is adequate southwestern willow flycatcher nesting habitat. From a Google Earth review of the project area, the habitat appears to be mixed willow and blue oak woodland. Figure 4 displays the general nesting timeline for the Lake Success area. Due to the stochastic nature of the water elevations, and therefore suitable habitat, and the short duration of this project, the effect on southwestern willow flycatcher is expected to be less than significant.

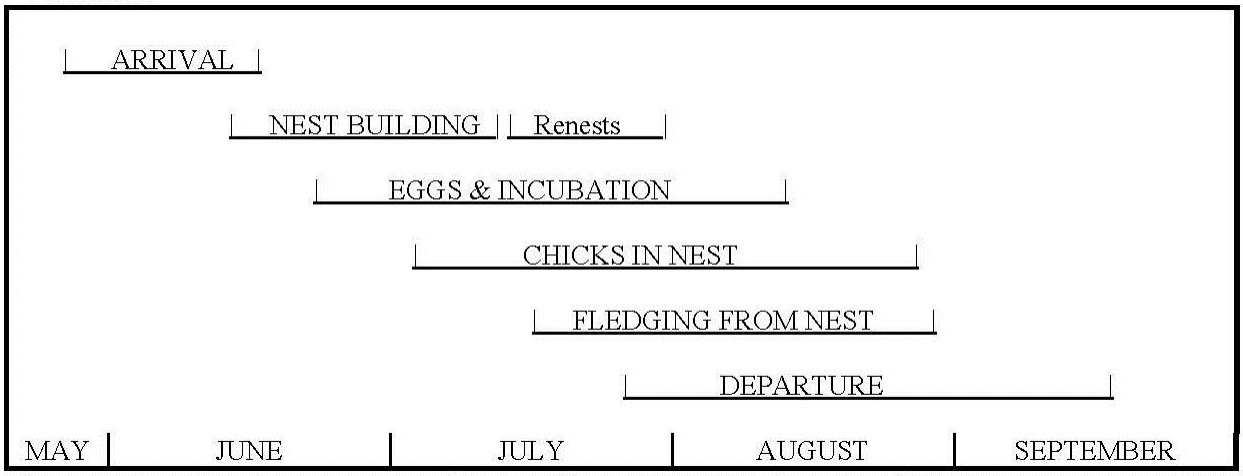

Figure 4. General Willow Flycatcher Breeding Chronology for Central and Northern California.

San Joaquin Kit Fox. Historically, the San Joaquin kit fox (*Vulpes macrotis mutica)* occurred in several San Joaquin Valley native plant communities. In the southernmost portion of the range, these communities included valley sink scrub, valley saltbush scrub, upper Sonoran subshrub scrub, and annual grassland. San Joaquin kit foxes also exhibit a capacity to utilize habitats that have been altered by man. Kit foxes can inhabit the margins and fallow lands near irrigated row crops, orchards, and vineyards, and may forage occasionally in these agricultural areas (USFWS 1998).

The kit fox typically inhabits open grasslands, which form large contiguous blocks within the eastern portions of its range. The listed canine also utilizes oak savanna and some types of agriculture (e.g. orchards and alfalfa). Orchards occur in large contiguous blocks in the northwest portions of the project area and at scattered locations in the southwest portions. Orchards sometimes support prey species if the grounds are not manicured; however, denning potential is typically low and kit foxes can be more susceptible to coyotes predation within the orchards (Bell 1994; Scott-Graham 1994). Although agricultural areas are not traditional kit fox habitat and are often highly fragmented, they can offer sufficient prey resources to support small numbers of kit foxes, but usually lack denning sites. Low, suitable habitat is present, but the

project area is at the edge of the species current known range. The kit fox has been documented in the nine surrounding quads but greater than 5 miles from the project area (CDFW 2019). USFWS has advised that the kit fox may potentially use the area for foraging or as a movement corridor.

The project actions may result in short term avoidance by kit fox due to construction and blasting. However, these actions will take place late fall and winter, reducing the likelihood of encountering a kit fox. BMPs (Section 3.7.3, Avoidance and Minimization) would avoid, minimize, or reduce interactions with kit fox to less than significant.

San Joaquin Adobe Sunburst. The San Joaquin adobe sunburst (*Pseudobahia peirsonii*) is a member of the sunflower family (*Asteraceae*) and has woolly gray stems and foliage. Each plant produces a single head of yellow disk and ray flowers at the ends of the branches between March and May. San Joaquin adobe sunburst is restricted to heavy, adobe clay soils with slight slopes on valley floors and rolling hills in scattered location in northern Kern County, Tulare, and Fresno counties. These soils may be favored by the San Joaquin adobe sunburst for their moisture holding capacity in the summer dry season. This plant is endemic to the eastern San Joaquin Valley. The population is limited to about 31 occurrences in valleys and flats and in the foothills of the Sierra Nevada (USFWS 1992). It occurs at elevations ranging from 500 to 2,500 feet above mean sea level primarily in annual grassland plant communities, but sometimes in annual grassland-blue oak woodland ecotone communities. San Joaquin adobe sunburst grows in grasslands dominated by non-native annual grasses, mustards, and filarees. The intrusive and aggressive nature of these herbaceous weeds appears to be detrimental to the quality of habitat for the San Joaquin adobe sunburst.

The extant population at Lake Success is considered in fair condition and a remnant population of a larger one that used to occupy an area that is now part of Lake Success. The Lake Success extant population of San Joaquin adobe sunburst has varied from 50 to over 300 individual plants in four different areas covering an estimated 10-acre area along the west side of Lake Success and Boat Island. In addition there is a small population on the south side of the inlet where the South Fork of the Tule River enters Lake Success (USFWS 1991; USACE 2009).

San Joaquin adobe sunburst successfully blooms during locally high rain years at Lake Success. The local population of the plant is not dependent on the flow regime or pool elevation in the locations it has been found. The populations within the construction footprint may no longer be extant due to grazing by cows and horses on private land and by goats and/or sheep on USACE lands, indicated by recent (2019) surveys. With BMPs such as environmental training and preconstruction surveys, the project would avoid, minimize, or reduce interactions with San Joaquin adobe sunburst to less than significant.

California Red-legged Frog. The California red-legged frog *(Rana draytonii)* is a relatively large aquatic frog ranging that can appear from above as brown, gray, olive, red or orange, often with a pattern of dark flecks or spots. The undersides of adult California red-legged frogs are white, usually with patches of bright red or orange on the abdomen and hind legs. California red-legged frogs occur in different habitats depending on their life stage, the season, and weather conditions. Range-wide, and even within local populations, there is much

variation in how frogs use their environment. All life history stages are most likely to be encountered in and around breeding sites, which are known to include coastal lagoons, marshes, springs, permanent and semi-permanent natural ponds, ponded and backwater portions of streams, as well as artificial impoundments such as stock ponds, irrigation ponds, and siltation ponds. Creeks and ponds where California red-legged frogs are found most often have dense growths of woody riparian vegetation, especially willows (*Salix* spp.) (Hayes and Jennings 1988).

The California red-legged frog was probably extirpated from the floor of the Central Valley before 1960 (USFWS 1996). Because populations of frogs may be extirpated with some frequency, occurrence data may not adequately describe the status of the species in a region. In 2010 the USFWS designated 1,636,609 acres of final revised critical habitat in 27 California counties under the Endangered Species Act of 1973. Lake Success is not within the critical habitat designation; however, where the Tule River flows into Lake Success there is a variable estimated 160 acres of willow riparian woodland that may be adequate California red-legged frog habitat. This potential habitat is more than 1.5 miles from the construction footprint, therefore the effect of this project on California red-legged frog is less than significant.

Least Bell's Vireo. The Least Bell's vireo (*Vireo bellii pusillus*) is a riparian species of bird that typically inhabits structurally diverse woodlands such as cottonwood bottomland forest, sycamore alluvial woodland, arroyo willow riparian forest, and mulefat scrub. Habitat requirements generally feature variable height structures including dense cover within 6 feet of the ground for nesting and a dense stratified canopy for foraging. This type of structure is most often associated with early successional riparian habitat, but the age of the vegetation is less important than the structure diversity. Least Bell's vireos are insectivorous and will often forage insects directly from vegetation (USFWS 1998).

Least Bell's vireo have been observed arriving in southern California in mid-March to early April, with nest building activities occurring a few days after pair formation. Nests are typically constructed in the fork of a tree or shrub within three feet of the ground. Egg laying begins shortly after nest completion, with incubation lasting approximately 14 days. An additional 10 to 12 days are required for fledging, though adults continue to care for the young at least two weeks after fledging. Re-nesting is common, though there have been few documented instances of re-nesting past July (USFWS 1998).

In the Lake Success area, there were reports of the vireo's presence in the Tule River riparian zone on the north east side of the reservoir in 2014. All documented nests were within the reservoir's existing gross pool zone (USACE 2014). Due to the stochastic nature of the water elevations, and therefore suitable habitat, and the short duration of this project, the effect on least Bell's vireo is expected to be less than significant.

3.7.2 Environmental Consequences

Basis of Significance. Adverse effects on Federally listed species were considered significant if an alternative would result in any of the following:

- Direct or indirect reduction in the growth, survival, or reproductive success of species listed or proposed for listing as threatened or endangered under the ESA.
- Direct mortality, long-term habitat loss, survival, or reproductive success of Federally-listed threatened or endangered animal or plant species.
- Have an adverse effect on a species' designated critical habitat

Table 6. Summary of Effects to Endangered and Threatened Species.

Evolutionarily Significant Unit (ESU) / Distinct Population Segment (DPS) / Other	Listing Status	Resource Agency Jurisdiction	Critical Habitat Designation/ Action Area within Designated Critical Habitat (DHC)	Magnuson-Stevens Act Essential Fish Habitat / Effects Determination	Factors Affecting Determination	ESA Section 7 Effects Determination
Mammals						
San Joaquin Kit Fox (*Vulpes macrotis mutica*)	Endangered (March 11, 1967: 32 FR 4001)	USFWS	None Designated	N/A	The project actions may result in short term avoidance by kit fox due to construction and blasting. However, these actions will take place late fall and winter, reducing the likelihood of encountering a kit fox. BMPs would avoid, minimize, or reduce interactions with kit fox to less than significant.	May affect, is likely to adversely affect
Birds						
California Condor (*Gymnogyps californianus*)	Endangered (March 11, 1967: 32 FR 4001)	USFWS	Outside DCH	N/A	Regional shrubland, coniferous forest, and oak savanna vegetation growth would remain consistent with baseline conditions. Therefore available habitat would not be diminished.	No Effect
Least Bell's Vireo (*Vireo bellii pusillus*)	Endangered (May 2, 1986: 51 FR 16474)	USFWS	Outside DCH	N/A	Local riparian vegetation growth would remain consistent with baseline conditions. Therefore available habitat would not be diminished.	May affect, but is not likely to adversely affect
Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	Endangered (February 27, 1995: 60 FR 10694)	USFWS	Outside DCH	N/A	Local riparian vegetation growth would remain consistent with baseline conditions. Therefore available habitat would not be diminished.	May affect, but is not likely to adversely affect
Reptiles						
Blunt-nosed Leopard Lizard (*Gambelia silus*)	Endangered (March 11, 1967: 32 FR 4001)	USFWS	None Designated	N/A	Regional grassland and shrubland vegetation growth would remain consistent with baseline conditions. Therefore available habitat would not be diminished. Species is not known to currently occur east of Hwy 99 in Tulare County, which is more than 20 miles west of the proposed action.	No Effect

Evolutionarily Significant Unit (ESU) / Distinct Population Segment (DPS) / Other	Listing Status	Resource Agency Jurisdiction	Critical Habitat Designation/ Action Area within Designated Critical Habitat (DHC)	Magnuson-Stevens Act Essential Fish Habitat / Effects Determination	Factors Affecting Determination	ESA Section 7 Effects Determination
Giant Garter Snake (*Thamnophis gigas*)	Threatened (October 20, 1993: 58 FR 54053)	USFWS	Outside DCH	N/A	Based on the USFWS 2017 Final GGS Recovery Plan, the species is not currently found downstream from Lake Success along the Tule River, or anywhere else in Tulare County. Therefore, available habitat would not be diminished.	No Effect
Amphibians						
California Red-legged Frog (*Rana draytonii*)	Threatened (May 23, 1996: 61 FR 25813-25833)	USFWS	Outside DCH	N/A	Local riparian vegetation growth would remain consistent with baseline conditions. Therefore available habitat would not be diminished.	No Effect
Insects						
Valley Elderberry Longhorn Beetle (VELB) (*Desmocerus californicus dimorphus*)	Threatened (August 8, 1980: 45 FR 52803-52807)	USFWS	Outside DCH	N/A	Regional riparian vegetation growth would not differ substantially from baseline conditions. Available habitat would not be significantly diminished.	No Effect
Fishes						
Delta Smelt (*Hypomesus transpacificus*)	Threatened (March 5, 1993: 58 FR 12854-12864)	USFWS	Outside DCH	N/A	Lake Success and the Tule River are outside the habitat range for this species.	No Effect
Flowering Plants						
Keck's Checker-mallow (*Sidalcea keckii*)	Endangered (February 16, 2000: 65 FR 7757-7764)	USFWS	Outside DCH	N/A	Local blue oak woodland growth would not differ substantially from baseline conditions. Available habitat would not be significantly diminished. Only known occurrence of this species within the "Success Dam" quad was extirpated in 2002.	No Effect
San Joaquin Adobe Sunburst (*Pseudobahia peirsonii*)	Threatened (February 6, 1997: 62 FR 5542-5551)	USFWS	None Designated	N/A	Two occurrences of this species are within the project area footprint. Field surveys by a trained USACE botanist in 2019 determined that the species is not currently present. However, this action would directly, adversely affect known habitat.	May affect, is likely to adversely affect

Evolutionarily Significant Unit (ESU) / Distinct Population Segment (DPS) / Other	Listing Status	Resource Agency Jurisdiction	Critical Habitat Designation/ Action Area within Designated Critical Habitat (DHC)	Magnuson-Stevens Act Essential Fish Habitat / Effects Determination	Factors Affecting Determination	ESA Section 7 Effects Determination
Springville Clarkia (*Clarkia springvillensis*)	Threatened (September 14, 1998: 63 FR 49022-49035)	USFWS	None Designated	N/A	Both occurrences of this species at Success Lake listed on CNDDB are erroneous. These occurrences came from USACE surveys in 2006. Dr. Frank Vasek, the botanist who originally described the species, verified in 2008 that the collected specimens were actually an atypical outcrossing form of Kern River clarkia (*Clarkia exilis*) (Unger and Beyerl 2008)	No Effect

No-Action Alternative. Under the no action alternative, USACE would not realign the road, nor make the right abutment cut, as proposed in the Road Realignment and Right Abutment Cut (Phase 1) of the Tule River Spillway Enlargement Project. There would be no effects on existing Federally listed species or critical habitat at Lake Success.

Proposed Action. The proposed action would construct the spillway cut and road realignment, and provide more reliable access to the west side of Lake Success. Subsequent phase of the Tule River Spillway Enlargement Project would support downstream flood protection and storage for irrigation water supply.

The following Federally listed species are potentially affected by project activities at Lake Success and were considered in the Tule River Spillway Cut and Road Realignment Biological Assessment (Appendix A):

- Southwestern Willow Flycatcher (*Empidonax traillii)* Endangered
- San Joaquin Kit Fox (*Vulpes macrotis mutica)* Endangered
- San Joaquin Adobe Sunburst (*Pseudobahia peirsonii)* Threatened
- Least Bell's Vireo (*Vireo bellii pusillus)* Endangered

3.7.3 Mitigation

Implementation of the following BMPs would avoid and minimize effects of Federally listed species and ensure that the effects of the Proposed Action on Federally listed species are less than significant. Consultation with USFWS is complete.

- Prior to construction, an employee education program would be conducted consisting of a brief presentation of San Joaquin kit fox, Southwestern willow flycatcher, least Bell's vireo, Blunt-nosed leopard lizard, Keck's Checker-mallow, San Joaquin adobe sunburst, Springville clarkia, California Condor, Bald and Golden eagles, and migratory birds by persons knowledgeable in biology and legislative protection . The

program should include the occurrence of species in the area, its description and life history, and an explanation of the species status and protection under the ESA.

- USACE botanist will conduct pre-construction surveys within the construction footprint during peak-flower, based on bloom times of known populations in the area, to ensure that no San Joaquin adobe sunburst are present. If the species is present, USACE will undertake the following mitigation measures: (a) as possible, avoid plants and erect a 25- foot buffer using exclusionary fencing; (b) if avoidance is not practical, plants will be hand dug and transplanted outside the construction footprint under the guidance of a qualified botanist or restoration ecologist; (c) transplanted plant locations will first be chosen with a preference for having existing San Joaquin adobe sunburst plants, second, former known adobe sunburst location, and third, an area with similar slope, aspect and soils; (d) in addition to transplanting, topsoil will be collected in a 6-foot buffer around the plants to help secure the seedbank; (e) collected topsoil will be placed in six to twelve-inch wide, circular, shallow pits near the transplanted plants; (f) during Phase 1 & 2 construction, transplanted plants will be monitored by a qualified biologist during each growing season via flower counts, percent cover, and stem length measurements; and (g) an annual monitoring report will be submitted to USFWS each November until one year after construction is complete. Any existing San Joaquin adobe sunburst plants located near the construction footprint will be protected with exclusionary fencing for the duration of the project.
- A representative shall be appointed who would be the contact for any employee/contractor who might find dead, injured, or entrapped Threatened or Endangered animals or new plots of Threatened or Endangered plants in the work area. This representative shall contact the USFWS immediately.
- A certified kit fox biologist, considered qualified by the USFWS, will conduct pre-activity surveys for kit fox presence within 30 days, and to the extent practicable, within 14 days of construction initiation using methodologies acceptable to the USFWS. Surveys will cover all areas potentially affected by ground disturbing activities associated with the project, including vehicle travel and staging.
- Project-related vehicles would observe a daytime speed limit of 15-mph and a nighttime speed limit of 10-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. Off-road traffic, outside of designated project areas, would be prohibited.
- Stormwater runoff would be controlled using standard construction BMPs and equipment (straw wattle, silt fencing, etc.)
- All food-related trash items such as wrappers, cans, bottles, and food scraps would be disposed of in securely closed containers, and removed at least once a week from a construction or project site. Daily removal is preferred.
- No firearms will be allowed on the project site.
- No pets, such as dogs or cats, will be permitted on the project site to prevent harassment, mortality, or destruction of dens or burrows.
- To prevent inadvertent entrapment of kit foxes, blunt-nosed leopard lizards, or other animals, during the construction phase of a project, all excavated, steep-walled holes

or trenches more than 2-feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks would be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured animal is discovered, the Service will be contacted.

- In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service will be contacted for guidance.
- Kit foxes are attracted to den-like structures, such as pipes, and may enter stored pipes and become trapped or injured. 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 should not be moved until the Service 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.
- Use of rodenticides and herbicides in project areas would be restricted. This is necessary to reduce primary or secondary poisoning of kit foxes and California condor, and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the USFWS. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.

3.8 Vegetation and Wildlife

3.8.1 Affected Environment

Habitat types found in Tulare County include alpine habitat, annual grassland, barren, chaparral, conifer woodland, conifer forest, hardwood/conifer forest, hardwood forest, desert scrub, mixed riparian, urban, vineyard/cropland, open water, and wetlands. The primary habitat types found around Lake Success are annual grassland, open water, and vineyard/cropland.

A total of three eco-region sections exist in Tulare County. These sections apportion the county in a west to east pattern. The majority of the western eco-region of the county comprises the Great Valley Section, the majority of the eastern eco-region of the county is in the Sierra Nevada Section, and a small eco-region between these two sections comprises the Sierra Nevada Foothill Section. Lake Success lies primarily in the Great Valley Section.

The natural vegetation of the Great Valley Section is predominately characterized by the purple needlegrass series, valley oak series, vernal pools and wetland communities, and blue oak series. Fauna associated with this section include mule deer, black-tailed deer, coyotes, jackrabbits, kangaroo rats, kit fox, and muskrats. Birds include waterfowl, hawks, bald eagles, owls, white-tailed kites, herons, western meadowlark, and quail (USFS 2005). Least Bell's vireo

was detected in the woodland near the North Fork of the Tule River in 2014. In addition, burrowing owls were observed on the east side of the reservoir in March 2017.

During the 2019 survey, owls, osprey and a bald eagle were detected nesting around Lake Success. Songbirds utilize the transient woodlands for nesting when they are available, due to shifting water levels. The trees used for nesting are, at minimum, one mile across the lake from the project footprint. The project footprint of the Road Realignment and Right Abutment Spillway Cut (Phase 1) is steep hillside, pastureland and the spillway invert (low point) with low habitability and migratory passage potential for terrestrial motile species. There are currently evidenced burrows from ground squirrels, rabbits and fox on the right abutment slope. The construction activities will prevent new dens from being created, but upon completion of activity would return to normal transient den creation and habitation.

The main dam saddle is characterized by a flat river valley, flanked on the right by a moderately steep hill abutment and on the left by a low wide terrace. The rolling hills around the reservoir are dotted with oaks, sycamores, cottonwoods, and willows. The upstream limit of Lake Success where it currently submerges the Tule River is a variable willow and cottonwood habitat. Higher reservoir levels usually inhibits significant willow growth during normal wet years. As the reservoir level drops during the hot summer months and especially drought years, willows generally survive the harsh summer climates if they are located in saturated reservoir bottom areas. Lake Success has recently experienced several years of drought, and as a result there has been an increase in willow establishment at lower elevations in the reservoir. Willow removal is a part of ongoing operation and maintenance practices at the reservoir in order to ensure that vegetation growth during low water levels does not impact long-term gross pool space within the reservoir. The project footprint contains pasture/grasslands, small regions of very sparse shrubs, and five individual elderberry shrubs.

3.8.2 Environmental Consequences

Basis of Significance. An alternative would be considered to have a significant effect on vegetation and wildlife if it would permanently remove or disturb sensitive native communities, or significantly reduce the amount of native vegetation and wildlife habitat in the project area.

No Action. Under the no action alternative, USACE would not realign the road, nor make the right abutment cut, as proposed in the Road Realignment and Right Abutment Cut (Phase 1) of the Tule River Spillway Enlargement Project. There would be no effects on existing vegetation or wildlife at Lake Success as a result of the no action.

Proposed Action. The proposed action would construct the spillway cut and road realignment, and provide more reliable access to the west side of Lake Success. Subsequent phase of the Tule River Spillway Enlargement Project would support downstream flood protection and storage for irrigation water supply. The slope cut and road would permanently impact approximately 16 acres of pasture/grasslands, including a permanent loss of just over 2 acres to the newly constructed road. No habitat of special concern was observed during pre-construction surveys conducted in the project footprint, therefore there is expected to be less than significant effect to vegetation and wildlife.

3.8.3 Mitigation

- All off-road equipment and vehicles used for construction are required to be weed-free. All equipment and vehicles would be cleaned of all attached mud, dirt, and plant parts prior to arriving to the Project Area. This would be done at a vehicle washing station or steam cleaning facility (power or high-pressure cleaning) before the equipment and vehicles enter the Project Area.
- Weed infestations identified before construction that are within the Project Area would be treated.
- Staging areas for equipment, materials, or crews would not be sited in weed infested areas.
- Weed-free equipment, mulches, and seed sources would be used. Salvage topsoil from Project Area for use in onsite revegetation, unless contaminated with noxious weeds.
- The amount of ground and vegetation disturbance in the construction areas would be minimized. Reestablish vegetation on all disturbed bare ground with native forbs and grasses to minimize weed establishment and infestation.
- Down case lighting would be implemented during any potential night work to minimize potential impacts to local wildlife.
- Woody vegetation that needs to be removed within the construction footprint should be removed during the non-nesting season to avoid affecting active bird nests.
- Avoid impacts to migratory birds nesting in trees along the access routes and adjacent to the proposed repair sites by conducting pre-construction surveys for active nests along proposed haul roads, staging areas, and construction sites. This would especially apply if construction begins in spring or early summer. Work activity around active nests should be avoided until the young have fledged. If construction commences during nesting season, a nesting bird survey would be conducted a minimum of a week in advance. Additionally, a survey would be conducted 24 hours in advance of the construction, to ensure no active nests. If active nests are located, USFWS would be contacted for MBTA coordination.
- Avoid future impacts to the site by ensuring that fill materials are free of contaminants, such as invasive weed species or toxic materials.
- Minimize project impacts by reseeding all disturbed areas, including staging areas, at the completion of construction with native forbs and grasses. Reseeding should be conducted just prior to the rainy season to enhance germination and plant establishment. The reseeding mix should include species used by and beneficial for native pollinators.

3.9 Water Quality

3.9.1 Affected Environment

The Tule River and Lake Success are located within the Tulare Lake Basin drainage system. This basin includes the drainage area of the San Joaquin Valley south of the San Joaquin River. The Tulare Lakebed is part of a closed interior drainage system with no access to

discharge into the sea. The lakebed is located towards the south end of the San Joaquin Valley, where it receives water from the Kern, Tule, and Kaweah Rivers, as well as from southern distributaries of the Kings River. It was separated from the rest of the San Joaquin Valley by tectonic subsidence and alluvial fans extending out from Los Gatos Creek in the Coast Ranges and the Kings River in the Sierra Nevada. Above a threshold elevation of 207 to 210 feet, it can overflow into the San Joaquin River; however, no overflows have occurred after 1878 due to increasing diversions of tributary waters for agricultural irrigation and municipal water uses. The Tulare lakebed was dry by 1899, except for residual wetlands and occasional floods. Over time, the decreasing lake size allowed agriculture to move into the productive lakebed deposits in the valley. The basin comprises approximately 10.5 million acres, of which 3.25 million acres are in Federal ownership. The closed nature of the Tulare Lake Basin allows minimal subsurface outflow, which leads to an accumulation of salts due to importation and evaporative uses of water. As a result, the largest water quality problem in the Tulare Lake Basin is the accumulation of salts. Overdrafting groundwater for municipal, agricultural, and industrial use compounds this problem. The lakebed would continue to receive floodwaters from the Tule River, Kern, Kaweah, and parts of the Kings Rivers.

Tulare County is located within the jurisdiction of the Central Valley Regional Water Quality Control Board (CVRWQCB). Tulare County is included in the Water Quality Control Plan for the Tulare Lake Basin. The CVRWQCB attempts to maintain water quality through control of wastewater discharge. To regulate point sources of discharge, the agency administers the National Pollutant Discharge Elimination System permit program. Types of point sources in Tulare County include municipal wastewater, oil field wastewater, winery discharges, solid waste sites, and other industrial uses. Point source discharges must meet wastewater discharge requirements, or obtain a wastewater waiver. Non-point sources include drainage and percolation from agriculture, forestry, recreation, and stormwater runoff. Non-point sources are difficult to identify, but can be mitigated by best management practices. Based on the State of California's 2014/2016 303d list of impaired waterbodies, Lake Success is impaired for pH and the lower Tule River is impaired for Toxicity.

Lake Success is the only water of the United States (WOTUS) within the footprint of the proposed action. The Ordinary High Water Mark (OHWM) for this waterbody would be considered the elevation of the existing spillway's sill.

3.9.2 Environmental Consequences

Basis of Significance. An alternative would be considered to have a significant effect on water quality if it would violate water quality standards or waste discharge requirements, result in the loss of surface or groundwater sources, or interfere with existing beneficial uses or water rights.

No Action. Under the no action alternative, USACE would not realign the road, nor make the right abutment cut, as proposed in the Road Realignment and Right Abutment Spillway Cut (Phase 1) of the Tule River Spillway Enlargement Project. There would be no effects on water quality at Lake Success, or the Tule River downstream of the dam.

Proposed Action. The proposed action would construct the spillway cut and road realignment. While excavation to widen the spillway would occur at the OHWM elevation, all construction activities would occur in the dry. The proposed action would not place fill into WOTUS; however, temporary land disturbance of greater than one acre would result from project construction. Stormwater runoff and spills of petroleum based products during construction activities have the potential to effect water quality conditions at Success Lake and downstream on the Tule River. The construction contractor would be required to obtain a general construction permit to comply with the Clean Water Act (CWA) Section 402 National Pollutant Discharge Elimination System requirements because of land disturbance of greater than 1 acre. With implementation of BMPs required in the general construction permit and the water quality certification, as applicable, effects to water quality are expected to be less than significant.

3.9.3 Mitigation

Prior to construction, the contractor would be required to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) as part of the general construction permit from the CVRWQCB. This would also include a spill prevention plan detailing the construction activities to take place, BMPs to be implemented to prevent any discharges of stormwater into waterways, and inspection and monitoring activities that would be conducted to address spills and maintain stormwater BMPs. The contractor will be required to implement the following standard BMPs to avoid and minimize the potential effects on water quality, ensuring that construction of the proposed action would have less than significant effects on these resources:

- Appropriate erosion control measures would be incorporated into the SWPPP by the construction contractor in order to prevent sediment from entering waterways and to minimize temporary turbidity impacts. Examples include, but are not limited to: straw bales/wattles, erosion blankets, silt fencing, silt curtains, mulching, revegetation, and temporary covers. Sediment and erosion control measures would be maintained by the contractor during construction at all times. Control measures would be inspected periodically by the construction contractor, particularly during and after significant rain events.
- The contractor would use a water truck or other appropriate measures to control fugitive dust on haul roads, construction areas, and stockpiles.
- A fuels spill management plan would be developed for the project by the construction contractor and would be implemented by the contractor.
- Construction equipment and vehicles would be fueled and maintained in specified staging areas only, which would be designed to capture potential spills. These areas cannot be near any ditch, stream, or other body of water or feature that may convey water to a nearby body of water.
- Fuels and hazardous materials would not be stored on site. Any spills of hazardous material would be cleaned up immediately by the construction contractor.
- Construction vehicles and equipment would be inspected frequently and appropriately maintained by the construction contractor to help prevent dripping of oil, lubricants, or any other fluids.

- Construction activities would be scheduled by the contractor to avoid as much of the wet season as practicable. Construction personnel would be trained in storm water pollution prevention practices by the construction contractor.
- In areas proposed for revegetation, initiation and completion of revegetation work would be done by the contractor in a timely manner to control erosion.

4 CUMULATIVE AND GROWTH-INDUCING EFFECTS

4.1 Growth-Inducing Effects

The spillway cut and road realignment would not induce growth in or near the project area. Implementing the proposed action would not impact local development planning efforts. In addition, the proposed action would not require an increase in employment at the reservoir.

4.2 Cumulative Effects

NEPA requires the consideration of cumulative effects of the proposed action combined with the effects of other projects. NEPA defines a cumulative effect as the effect on the environment which results from the incremental effect of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (CFR 40 Part 1508.7). The extent of the geographic area that may be affected varies depending on the resource under consideration. Each of the projects considered below are limited to those that have similar potential effects and could interact with impacts generated by the proposed action. The 1999 FEIS/FEIR contains a thorough cumulative impacts analysis, but given the age of the EIS, the EA is updating the cumulative impacts analysis as it relates to Phase 1 (Road Realignment and Right Abutment Spillway Cut).

4.2.1 Federal Projects

The Success Dam Seismic Remediation Project (USACE 2006) would not be implemented during road relocation and right abutment cut construction. The future status of the Success Dam Seismic Remediation Project is unknown at this time. It is currently on hold indefinitely. The footprint of the Success Dam Seismic Remediation Project would be primarily limited to the Dam itself, so there would be no overlap in physical impact area with the proposed road relocation or right abutment cut (USACE 2006). If the Success Dam Seismic Remediation Project were to be constructed in the foreseeable future, there could be long term impacts to air quality, sensitive species, visual resources/aesthetics, vegetation and wildlife, and cultural resources (USACE 2006).

4.2.2 Local Projects

Based on a review of the Tulare County Resource Management Agency's planning projects list (TCRMA 2019), there do not appear to be any reasonably foreseeable future local projects planned in the vicinity of the proposed action. The state-owned Porterville Development Center is slated to close in 2021. However, there are no current plans for future development of the Center (CDDS 2019).

4.2.3 Effects Analysis

The Road Realignment and Right Abutment Spillway Cut (Phase 1) as described in this EA is currently scheduled for construction. Therefore, if implemented, the impacts to cultural resources, recreation, Federally listed species, traffic, vegetation and wildlife, and water quality addressed in this EA would be permanent with potentially additional effects from additional flooded footprint. The analysis of effects resulting from the Tule River Spillway enlargement (Phase 2) would be updated as needed with future implementation of the project.

Air Quality/Climate Change. The proposed action would result in a temporary direct effect on air quality and minor GHG emissions from construction-generated criteria air pollutants and precursor compounds. As stated in Section 4.2.2, there are currently no local projects planned in the vicinity of the proposed action. Thus, the cumulative impacts to air quality would be less than significant.

Cultural Resources. Cumulative impacts to cultural resources would be primarily related to other construction projects that could occur during the same timeframe as those considered for this project and within the same vicinity as this project. A cumulative overall impact to cultural resources is not likely, since the project does not have significant cultural resources. Thus, the cumulative impacts to cultural resources would be less than significant.

Noise. Implementation of the project has the potential to contribute to noise related impacts. Cumulative noise impacts are primarily related to construction projects that could occur during the same time frame as those considered for this project and within the same vicinity as this project. Planned project mitigation measures, described in Section 3.4.3 above, would limit adverse impacts to a less-than-significant level. Temporary construction effects would be minimized through procedural modifications and coordination with the contractor, the public and local agencies ensuring that any cumulative effects would be minimized.

Federally Listed Species. Implementation of the project does not have the potential to contribute to the overall loss or degradation of sensitive habitats, but it is likely to adversely affect two Federally listed species, San Joaquin kit fox and adobe sunburst. However, the planned project mitigation measures, described in Section 3.8.3, would limit potential adverse impacts to a less-than-significant level. Phase 2 of the Tule River Spillway Enlargement project would stochastically create new grassland, wetland, and woodland habitats dependent on rainfall in the watershed. The spillway raise would increase the maximum reservoir elevation during years of excessive rainfall, but it would not change the water levels during droughts and the micro-environments created with lower water levels. Other Federal projects occurring in the area are required to comply with the requirements of the Endangered Species Act, while State and local projects are required to comply with Section 10 of the Endangered Species Act. Currently, there are no other known Federal, state, county, local, or private actions that are reasonably certain to occur with adverse impacts to Federally listed species. Thus, there would not be a significant contribution from the proposed action on cumulative effects to Federally listed species.

Recreation. The proposed action will have temporary impacts on recreation and education, due to the road closure accessing the Rocky Hill Recreation Area. Cumulative impacts to recreation are primarily related to other construction projects that could occur during the same time frame as those considered for this project and within the same vicinity as this project. Temporary construction effects would be minimized through traffic control and coordination with the public and recreation agencies ensuring that any residual effects would be minimized. All obstacles and hazards to recreational users would be clearly identified by signs, flagging, and buoys. Therefore, the project would not result in significant cumulative impacts to recreation.

Traffic. Construction of the proposed action would not likely overlap with the construction activities of other local projects that could result in short-term cumulative traffic level increases on some local and regional roadways. It is expected that traffic impacts from projects in the City of Porterville would be similar to the current projects in that impacts would be primarily from equipment and material hauling to and from the proposed action sites.

The Contractor would be responsible for preparing a Traffic Control Plan to minimize traffic flow interference from construction activities. The Plan would include appropriate placement of signs, flaggers, barricades, and traffic delineation to minimize disruption and ensure public safety. The Contractor would also be responsible for coordination with Tulare County, the City of Porterville, CalTrans, and other responsible agencies to reduce adverse effects on traffic (to include the development and implementation of a traffic mitigation plan). Additionally, the Contractor would be responsible for obtaining all applicable permits (including a Construction Encroachment Permit for work that would be performed on the public ROW). Although there would be an increase in traffic in the Project Area during construction, this increase would be short-term and would be reduced to less-than-significant levels with implementation of mitigation measures. Therefore, the proposed action would not significantly contribute to cumulative impacts on traffic and circulation.

Vegetation and Wildlife. Construction of the proposed action would not likely overlap with the construction activities of other local projects and would not result in short-term cumulative vegetation and wildlife impacts. The minimization and avoidance measures would be implemented during construction to minimize impacts to biological resources by reducing the spread of non-native plant species to the greatest extent practicable. As a result, the proposed action, Road Realignment and Right Abutment Spillway Cut would not contribute to a cumulative impact on vegetation and wildlife.

Water Quality. Construction activities have the potential to temporarily degrade water quality through the direct release of soil and construction materials into water bodies or the indirect release of contaminants into water bodies through activities. Related projects are not likely to be under construction during the same timeframe as this project. As Lake Success is on Federal land, and the proposed action would be at the outflow of the lake, concurrent activities that could affect water quality are under the jurisdiction of the USACE, and would be appropriately coordinated. However, if construction occurs downstream of the proposed action during the same timeframe water quality could be diminished primarily due to increased turbidity, if the proposed action's BMPs fail.

Projects that further urban development could increase runoff as the amount of impervious surfaces is increased. Potential new housing developments may cause more stormwater runoff laden with contaminants common in urban/suburban areas (i.e. pesticides, lawn fertilizers, hydrocarbons). The increased volume of municipal sewage from the new developments could also introduce more pollutants to waters within the Tulare Basin. The method by which treated wastewater is discharged would determine the severity of the impact to water quality from new and proposed residential subdivisions near the project area. All projects would be required to coordinate with the RWQCB and overall water quality would be required to meet the Basin Plan objectives. The proposed action activities associated with the Road Realignment and Right Abutment Spillway Cut (Phase 1) would result in less-than-significant effects to water quality. There will be no in-water work during the abutment cut and road relocation. Degradation of water quality from the project would be short term and limited to the construction period. The project would not cumulatively contribute to long-term adverse effects that may result from development projects.

5 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Clean Air Act of 1972, as amended (42 U.S.C. 7401, et seq.) *Full compliance*. The proposed action would not violate any Federal air quality standards, exceed the US EPA's general conformity *de minimis* threshold, or hinder the attainment of air quality objectives in the local air basin. USACE has coordinated with San Joaquin Valley Air Pollution Control District to evaluate the potential impacts of the road relocation and abutment cut.

Clean Water Act of 1972, as amended (33 U.S.C. 1251, et seq.) *Partial compliance.* The proposed action would not violate any Federal regulations. No discharge of dredge or fill materials into navigable waters or adjacent wetlands would occur under the project; therefore, a Section 401 water quality certification is not required. The proposed construction area is greater than 1 acre, therefore the contractor would be required to obtain a NPDES permit and prepare a Stormwater Pollution Prevention Plan. Full compliance would occur when the contractor has procured their General Construction Permit for NPDES Section 402, as applicable.

Endangered Species Act of 1973, as amended (16 U.S.C. 1531, et seq.) *Full compliance.* In 1999, USFWS provided a biological opinion for the Tule River Enlargement Project. In December 2018, the USACE obtained an initial list from USFWS of Federally listed and proposed species likely to occur in the Road Realignment and Right Abutment Spillway Cut (proposed action) project area. After reviewing the species list and conducting a biological field survey of the potential project area, USACE determined that two listed species have the potential to be affected by the proposed action: the San Joaquin kit fox, and San Joaquin adobe sunburst. An updated species list was obtained again in July 2019. No additional species were identified in the project area or immediate vicinity. In July 2019, USACE transmitted a biological assessment to USFWS and requested to reinitiate formal Section 7 consultation on the Road Realignment and Right Abutment Spillway Cut. USACE received a request for additional information from the USFWS and submitted a revised biological assessment in December 2019. A biological opinion was received in February 2020 (Appendix E).

Section 7 consultation will not be initiated with the National Marine Fisheries Service as there are no anadromous fish species present in Success Lake or the Tule River. During wet years, the Tule River terminates by flowing into Lake Tulare, a historic endorheic lake (a lake with no outflow to the sea). In dryer year, the Tule River dries up before reaching the Tulare Lake lakebed. Additionally, Lake Success and the Tule River have been chemically treated to remove all fish species in 1961, 1981, and 1987, leaving no indigenous genetic populations. Therefore, the proposed action has no effect under the National Marine Fisheries Service's jurisdiction.

Executive Order 11988, Floodplain Management. *Full compliance*. EO 11988 was signed into law on May 24, 1977, requiring that Federal agencies provide leadership and take action to restore and preserve the natural and beneficial values served by floodplains. Before proposing, conducting, supporting, or allowing an action in the floodplain, each Federal agency must determine if planned activities would affect the floodplain and evaluate the potential effects of the intended action on the floodplain's functions.

Guidelines for compliance with EO 11988 identify an eight-step process for agencies to use in determining how projects would have potential impacts to or within the floodplain. As described in this guidance, if a proposed action is located within the base floodplain (Step 1), where the "base floodplain" is the area which has a one percent or greater chance of flooding in any given year (also referred to as the "100-year Flood Zone," "Flood Hazard Area," or "0.01 Exceedance Area"), agencies should conduct early public review (Step 2), identify and evaluate practicable alternatives to locating in the base floodplain (Step 3), identify impacts of the proposed action (Step 4), develop measures to minimize the impacts and restore and preserve the floodplain as appropriate (Step 5), reevaluate alternatives (Step 6), and present the findings and a public explanation (Step 7), with the final step being to implement the action (Step 8) (FEMA 2012).

Since the proposed action for Phase 1 is not located in based floodplain, it is in compliance with EO 11988.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. *Full compliance*. This EO states that Federal agencies are responsible for conducting their programs, policies, and activities that substantially affect human health of the environment in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons from participation in, denying persons the benefits of, or subjecting persons to discrimination under such programs, policies, and activities because of their race, color, or national origin.

The road relocation and spillway cut would not have an effect on minority or low-income populations. However, during years with heavy precipitation and an extremely large snowpack, floodwater volume to the Tulare Lakebed typically increases and results in flooding of additional land and thus loss of agriculture. Implementation of the spillway raise, which requires the spillway cut and road realignment, would reduce the frequency and magnitude of flooding events on downstream residents, including minority or low income populations.

Migratory Bird Treaty Act (15 U.S.C. 701, et seq.) *Full compliance.* Construction would be timed to avoid physical destruction of active bird nests or young of birds that breed in the area. USACE surveyed for presence of migratory birds and bald and golden eagles in the action area, and will do so prior to construction. If nesting birds are detected, USACE would coordinate with the USFWS to develop appropriate avoidance and minimization measures. With the completion of these surveys and implementation of any required measures, the project is in full compliance with this Act.

Bald and Golden Eagle Protection Act (16 U.S.C. 668, et seq.) *Full compliance.* During the February 2019 survey of Lake Success, a bald eagle was observed nesting up the South Fork of the Tule River, slightly over two miles away from the project footprint with an intervening hill. The distance should be sufficient to attenuate disturbance, but monitoring would occur to assess the disturbance level of this nest and any others discovered in pre-construction surveys.

Fish and Wildlife Coordination Act of 1936, as amended (16 U.S.C. 661, et seq.) *Partial compliance.* The USFWS completed a Coordination Act Report (CAR) in 1999. Due to changes in species and design, the USFWS is creating a supplemental CAR. The supplemental CAR will cover both Phase 1 and 2 actions. The USFWS shared a draft supplemental CAR with USACE in December 2019. These preliminary recommendations and the relevant ones from the 1999 CAR have been incorporated into the plans and specification for Phase 1. The final CAR is expected in February 2021. The USFWS was contacted for informal consultation in December 2018 regarding both phases of activity, and funding has been established for the Services' efforts. The proposed action would achieve full compliance with the Fish and Wildlife Coordination Act when the USFWS issues the final supplemental CAR and USACE incorporates the recommendations into the proposed action to the fullest extent practicable.

National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321, et seq.) *Full compliance.* Effects during construction would either be less than significant or mitigated to less than significance using avoidance and minimization measures as indicated in the topical sections. Therefore a supplemental EIS is not necessary. The Final EA and FONSI are complete and thus the proposed action is in compliance with this act. The Draft EA and a draft FONSI were circulated for a 30-day public review. No comments were received.

National Historic Preservation Act of 1966, as amended (16 U.S.C. 470, et seq.) *Full compliance.* The proposed action (Phase 1 of the Tule River Spillway Expansion Project) requires compliance with 54 U.S.C. § 306108, commonly known as Section 106 of the NHPA. The process for complying with Section 106 of the NHPA is described at 36 CFR Part 800. Pursuant to 36 CFR § 800.1(c), the Section 106 process must be completed prior to the approval of the expenditure of Federal funds on an undertaking. USACE determined that both phases of the Tule River Spillway Expansion Project constitute a single Federal undertaking that has the potential to cause effects on historic properties, and that phasing the Section 106 process through execution of a Programmatic Agreement (PA), as outlined at 36 CFR § 800.4(b)(2), would be required. USACE consulted with the California SHPO on the development of the PA for the project and invited the Tule River Indian Tribe, Santa Rosa Rancheria Tachi Yokut Tribe, Kern Valley Indian Community, Tubatulabals of Kern Valley, and Wuksache Indian Tribe/Eshom Valley Band to participate as consulting and concurring parties to the PA. The project PA was

executed between USACE and the SHPO on December 13, 2019. USACE will continue to consult with the SHPO and Native American interested parties throughout project construction as described in the PA.

6 COORDINATION AND REVIEW OF THE DRAFT EA

The Draft EA and FONSI were circulated for 30 days to agencies, organizations and individuals known to have a special interest in the project. Copies of the Draft EA were posted on the USACE website and made available for viewing at the Porterville and Springville public libraries and the USACE Recreation Center at Lake Success. Additional hard copies were provided by mail upon request. This project has been coordinated with all the appropriate Federal, State, and local government agencies, including the USFWS and SHPO.

NEPA Lead Agency - U.S. Army Corps of Engineers, Sacramento District
Local Sponsor - Lower Tule River Irrigation District

In Coordination with:
California State Historical Preservation Office
Central Valley Regional Water Quality Control Board
San Joaquin Valley Air Pollution Control District
U.S. Fish and Wildlife Service

A list of agencies, organizations and individuals known to have a special interest are appended to the Final EA. A public notice was distributed from the USACE Public Affairs Office indicating the availability of this document. Copies were made available at the Springville and Porterville Libraries and online at: www.spk.usace.army.mil/Missions/Civil-Works/Tule-River-Spillway-Enlargement-Project-Success-Dam/. A preliminary public meeting for the project was held on 4 February 2019. The public comment meeting specifically for the Draft EA was held on 8 October 2019. No comments on the Draft EA were received.

7 FINDINGS

This Final EA evaluated the environmental effects of the proposed spillway cut and road realignment. Potential adverse effects to the following resources were evaluated in detail: climate change, air quality, noise, traffic, recreation, cultural resources, Federally listed species, vegetation and wildlife, and water quality. Results of the Final EA, field visits, and coordination with other agencies indicate that the proposed action would have no significant effect on environmental or cultural resources. Effects during construction would either be less than significant or mitigated to less than significance using avoidance and minimization measures as indicated in topical sections.

Based on this evaluation, the proposed action meets the definition of a FONSI as described in 40 CFR 1508.13. A FONSI may be prepared when an action would not have a significant effect on the human environment and for which an environmental impact statement would not be prepared. Therefore, the USACE Sacramento District Commander, following the public review and comment period of the Draft EA, has determined that a FONSI is appropriate.

8 LIST OF PREPARERS

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