Richard L. Schafer Dam, Tule River Basin, California; Tule River Spillway Enlargement Project, Draft Environmental Assessment for the Spillway Raise

November 2020

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ACRONYMS

AC-FT	Acre-feet
ACE	Annual Chance Exceedance
ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effects
Caltrans	California Department of Transportation
CAR	Coordination Act Report
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
Corps	United States Army Corps of Engineers
DSAP	Dam Safety Assurance Program
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEIR	Final Environmental Impact Report
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
GHG	Greenhouse Gas
HTRW	Hazardous Toxic and Radiological Waste
Hwy	Highway
LTRID	Lower Tule River Irrigation District
MSL	Mean Sea Level
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
PA	Programmatic Agreement
PMF	Probable Maximum Flood
SCE	Southern California Edison
SEIS	Supplemental Environmental Impact Statement
SHPO	State Historic Preservation Officer
SJVAPCD	San Joaquin Valley Air Pollution Control District
USC	United States Code
USFWS	United States Fish and Wildlife Service

1 PURPOSE AND NEED FOR THE ACTION

The U.S. Army Corps of Engineers, Sacramento District (Corps), prepared this environmental assessment (EA) as the lead federal agency under the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. §4321, et seq). The Lower Tule River Irrigation District (LTRID) is the non-federal sponsor.

1.1 Introduction

Serious flood problems occur along the Tule River downstream of Lake Success, generally as a result of inadequate channel capacities. Under current operations of the existing Richard L. Schafer Dam (formerly known as Success Dam until officially being renamed by Congress in August 2019), releases greater than 3,200 cubic feet per second (cfs) have caused damage to downstream agricultural areas. Agricultural lands west of the City of Porterville are the first areas where property damage and danger to residents have historically occurred during such high flows. Damages from floods in 1966 and 1983 were estimated to be $49 million and $12 million, respectively, at 2020 price levels.

The Corps 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 (Corps 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. Detailed design and construction of the authorized project is currently being implemented in two phases. The first phase of the project is entitled the Richard L. Schafer Dam, Tule River Basin, California; Tule River Spillway Enlargement Project, Road Realignment and Right Spillway Abutment Cut (here after referred to as Phase 1). The road relocation of Worth Drive/Avenue 146 was not described in detail in the 1999 FEIS/FEIR. Based on design refinements for Phase 1, the project had the potential for additional effects to environmental resources. Therefore, the Corps completed an EA for Phase 1. The Draft EA was released for public review on September 27, 2019, and a Finding of No Significant Impact (FONSI) for the Final EA was signed April 14, 2020.

The second phase of the project is entitled the Richard L. Schafer Dam, Tule River Basin, California; Tule River Spillway Enlargement Project, Spillway Raise, referred to as either the Spillway Raise or Phase 2 further in this document to differentiate it from the first phase or the project in total. Phase 2 construction incorporates the remaining project features: raising the spillway by constructing an ogee weir, armoring the bridge abutments of Highway (Hwy) 190, armoring sections of the waterside edge of Frazier Dike, and protecting or relocating recreation facilities and utilities. During development of detailed designs for Phase 2, changes to the designs 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 raise designs, including the ogee weir construction, armoring the Hwy 190 bridge and

Frazier Dike, recreation and utility relocations, and increased lake levels. Specific changes include impacts to land use and federally protected species, as well as updated air quality modeling and Clean Water Act (CWA) compliance.

1.2 Scope of Environmental Analysis

The purpose of this EA is to describe the environmental conditions in the project area, evaluate the environmental effects of the alternative 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 NEPA. 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 Project Location and Study Area

The Richard L. Schafer Dam and Lake Success reservoir are located on the main branch of the Tule River about 6 miles east of Porterville in Tulare County, California, within the foothills of the Sierra Nevada, 50 miles north of Bakersfield and 60 miles southeast of Fresno. The Tule River drains about 390 square miles into Lake Success. It then flows from the reservoir through Porterville and continues for 25 miles through agricultural areas before being completely diverted into irrigation canals. Figure 1 displays the Lake Success area and some of the features of the proposed action.

1.4 Project Background

Lake Success and the Richard L. Schafer Dam is a multi-purpose facility that provides flood damage reduction benefits, irrigation water storage, recreation, and electrical power generation. Construction of the dam was completed in May 1961. The dam provides flood damage reduction benefits to the city of Porterville (population 60,070 in 2020) and to other communities downstream. In addition, the dam helps protect several hundred thousand acres of valuable farmland in the Tulare Lakebed from damaging winter and spring floods. It is part of a system of dams and reservoirs providing flood protection to the Tulare Lakebed and adjacent areas from streams flowing westward out of the Sierra Nevada range. The other dams in this system are Pine Flat Dam on the Kings River, Terminus Dam on the Kaweah River, and Isabella Dam on the Kern River, all operated by the Corps. The Tulare Lakebed is a natural lakebed that largely dried out by the late 1890s due to upstream water diversions. Since then, it has become a valuable farming region. The Tulare Lakebed has no outlet to the ocean and consists of heavy clay soils; therefore, all floodwater entering the lakebed remains until it evaporates or is consumed for irrigation.

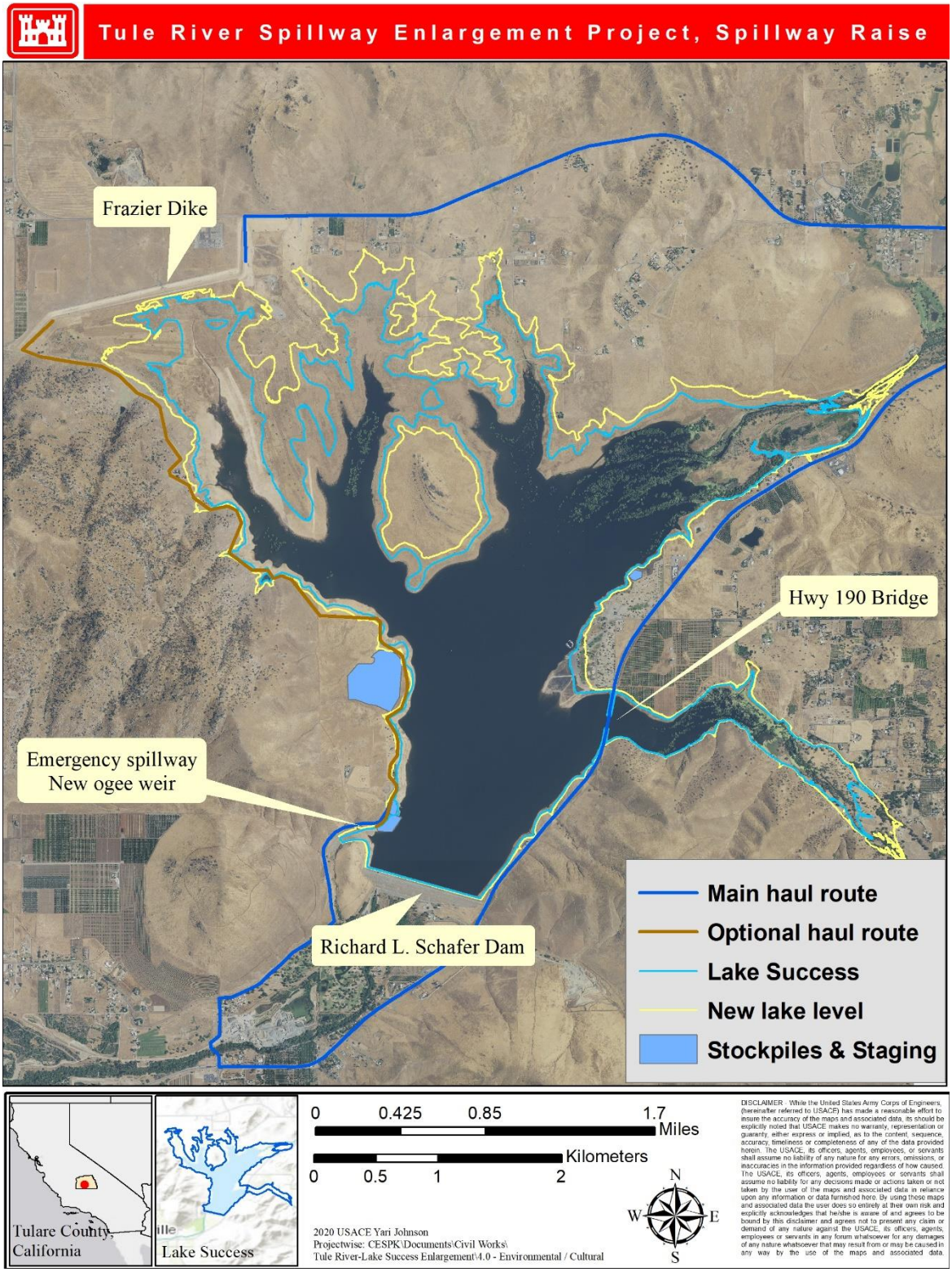

Figure 1. Overview of Lake Success with current (light blue) and new proposed lake level (yellow).

1.5 Project Purpose and Need for Action

Currently, flooding downstream of the Richard L. Shafer Dam can cause extensive damage to residences, agricultural land, and public facilities. Under current operations of the existing dam, releases greater than 3,200 cfs have caused damage to downstream agricultural areas. The downstream channel capacity ranges from 10,000 cfs through the city of Porterville to as little as 3,200 cfs west of the city. Agricultural lands west of the city are where property damage and danger to residents have historically occurred, given a release greater than 3,200 cfs (Corps 2011). The existing dam controls downstream flows by making releases through its outlet works. When the reservoir elevation exceeds the emergency spillway crest elevation (currently 655.1 feet, NAVD88), uncontrolled flows are released into the downstream channel. The existing spillway crest elevation corresponds to a flood event with a 2.2% annual chance exceedance (ACE) (approximately, the "46-year flood"). Thus, the current emergency spillway is undersized and not capable of passing the probable maximum flood (PMF) within present freeboard requirements. Freeboard is the difference in elevation between the crest of the dam (694.1 ft, NAVD88) and the normal reservoir water level as fixed by design requirements. To correct for this, the existing emergency spillway would be widened and raised 10 feet as recommended by the Corps Dam Safety Assurance Program to 665.11 ft. (NAVD88) (DSAP; Corps 2011). This would enable the lake to safely store water from a flood event with a 1% ACE (the "100-year flood"). This would reduce the 100-year flood flow through the spillway from approximately 4,700 to 0 cfs, which would eliminate downstream channel capacity issues during such an event.

1.6 Authority

Authorization for construction of the Tule River Spillway Enlargement Project at Lake Success is provided by the Water Resources Development Act 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.

1.7 Decision Needed

The Corps Sacramento District Commander must decide whether or not the proposed action (Phase 2) qualifies for a Finding of No Significant Impact (FONSI) under NEPA or whether an Environmental Impact Statement (EIS) must be prepared. If the finding of the EA indicates that there will be no significant impact, then the agency can prepare a FONSI to carry on with the proposed action.

2 ALTERNATIVES

Plan formulation results are discussed in detail in the 1999 FEIS/FEIR. Various alternatives, including alternative storage sites, detention basins, construction alternatives, and nonstructural measures were considered and eliminated from further study because (1) they failed to meet the project flood control or water supply goals, (2) the costs exceeded the benefits,

or (3) the associated environmental impacts were excessive (Corps 1999). The main features, plans, and descriptions of the feasible alternatives are summarized below.

2.1 No Action

NEPA requires the lead agency, in this case the Corps, to present a No Action alternative that establishes the baseline conditions against which the action alternatives are compared. Typically, under NEPA the No Action alternative means that no federal actions would take place. However, in this instance, a NEPA document has already been prepared (the 1999 FEIS/FEIR) and construction has begun on Phase 1, which was covered by its own EA completed in April 2020. Therefore, the No Action alternative would be the Phase 2 actions as described in the 1999 FEIS/FEIR: mainly construction of a concrete ogee weir section over the existing broadcrested sill, which would raise the gross pool by 10 feet, and flood-proofing or relocating infrastructure and recreation facilities around the lake (Corps 1999). As a result of the increase in gross pool, Southern California Edison (SCE) would raise 12 transmission towers, relocate two transmission towers and replace 11,800 ft of transmission lines. In addition, the No Action alternative includes the Phase 1 action as described in the April 2020 EA: widening the spillway right abutment 165 feet and relocating Worth Drive/Avenue 146. Under the No Action alternative, the effects of the Phase 2 actions as described in the 1999 FEIS/FEIR to aesthetics and visual resources, air quality, cultural resources, federally protected species, fish, land use, noise, prime and unique farmland, recreation, socioeconomics and environmental justice, traffic, vegetation and wildlife, and water quality would be re-evaluated based on updated regulations and new available information.

For purposes of clarity, all proposed Phase 2 actions are summarized in section 2.2, including those actions that are identical to the actions described in the 1999 FEIS/FEIR. Highlights of the differences between the current design for Phase 2 (this EA) and the 1999 FEIS/FEIR are described in Table 1. The main differences include design refinements, changing the location of the expanded boat ramp and parking lot from the Tule Recreation Area to the Rocky Hill Recreation Area, and changes related to the relocation or removal of several SCE distribution power poles. The northern boat ramp and adjacent parking lot at the Tule Recreation Area were extended/widened in the early 2000s. Therefore, the current design switched the location to the Rocky Hill Recreation Area to better balance recreation use across the lake during high water conditions. The potential relocation or removal of SCE distribution power poles was an oversight from the 1999 FEIS/FEIR.

Table 1. Highlighted differences of project feature from 1999 FEIS/FEIR and Phase 2 EA.

Project Features	**1999 FEIS/FEIR (No Action)**	**Phase 2 EA (Current Design/Proposed Action)**
Spillway raise	10-foot tall concrete ogee weir	10-foot tall concrete ogee weir
Highway 190	Protect road approach slopes of bridge with rock	Place 10 feet of rock revetment (riprap) along bridge abutments; rock revetment would come from off-site

Project Features	1999 FEIS/FEIR (No Action)	Phase 2 EA (Current Design/Proposed Action)
Frazier Dike armoring	Excavated material from Phase 1 used to provide added protection to the levee road and slopes of the dike	Place rock slope protection (riprap), bedding materials, and filter up to elevation of proposed gross pool plus wave runup; rock revetment would extend roughly 13.5 feet above the current gross pool elevation and 3.5 feet above the proposed, higher gross pool elevation; use blast rock material from Phase 1 or commercial quarry; encase drain pipe
Tule Recreational facilities	Construct replacement parking lot above 662.5 ft msl (665.1 feet NAVD88); extend one boat ramp above new gross pool elevation, widened to match existing boat ramp; relocate or flood-proof recreation facilities, including restrooms; provide portable toilets during high water periods	Relocate restroom; protect existing pumphouse and storage tank by building 3.5-foot-tall earthen berm (Northern boat ramp and adjacent parking lot were extended/widened in early 2000s)
Rocky Hill Recreational facilities	Restroom to be protected by flood-proofing in place and temporary toilets to be provided during high water periods; relocate or flood-proof recreation facilities	Flood-proof restroom; relocate pumphouse, storage tank, well, and metal shed to higher elevation; widen boat ramp 48 ft, lengthen to 100-150 ft with a 12-15 percent slope; construct replacement gravel parking lot above new gross pool
SCE Transmission line	Raise 12 towers, relocate 2 towers; replace 11,800 ft of transmission lines	Replace 15 towers with 14 taller towers and 11,800 ft of transmission lines; relocate or remove approximately 20 distribution power poles surround Lake Success, and four distribution poles along the eastern edge of the Hwy 190 bridge to avoid higher lake levels
Staging areas	Not discussed in document	Existing Rocky Hill parking lot and adjacent 10 acres; additional 39-acre stockpile to the north of the parking lot; use existing staging area north of Tule Recreation Area for work on the east side of the lake
Haul routes	Not discussed in document	Main haul route on existing roads (Worth Dr to Hwy 190 to Ave 176); optional temporary haul road to and from Frazier Dike utilizing existing fire/maintenance roads
Increase in maximum lake inundation area	659 acres (Updated to 605 acres due to refined topography data for Lake Success from recent lidar surveys)	605 acres

2.2 Proposed Action – Spillway Raise

The Corps and the non-federal sponsor, LTRID, are proposing to construct a 10 foot-high concrete ogee weir across the emergency spillway at Richard L. Shafer Dam, which would raise Lake Success' gross pool elevation from 655.1 feet to 665.1 feet NAVD88 (652.5 feet and 662.5 feet NGVD29, respectively). The gross pool elevation is reached when the water level in the reservoir is at the crest of the spillway and generally represents the elevation where all flood storage in the reservoir is filled (Corps 2016). Due to the increased gross pool elevation, land or flowage easements would be acquired around the lake by LTRID. The California Hwy 190 bridge that passes over the lake would be armored with additional rock revetment and rock slope protection would be added to Frazier Dike. Several existing structures and supporting utilities at both the Rocky Hill and Tule Recreation Areas would need to be relocated or flood-proofed. A gravel seepage berm with trenches would be constructed below the left abutment of the dam to reduce underseepage. Phase 2 construction also consists of replacing 15 existing SCE lattice steel transmission towers with 14 new, higher H-frame structures and approximately 11,800 feet of transmission lines to meet minimum clearance criteria resulting from the increased gross pool.

Figure 2 shows an overview of the components of the proposed action for Lake Success. Points 1-3 consist of Phase 1 actions, which are currently under construction: (1) location of the emergency spillway that is being widened from 200 feet to 365 feet, (2) relocation of the existing road, Worth Drive/Avenue 146, through the spillway to the new road bench constructed as part of the spillway widening, and (3) restoration of the lower third of the spillway to its original design grade using excavated material from the spillway widening. Points 4-13 cover components of Phase 2: (4) location of the new 10-foot high concrete ogee weir over the existing spillway sill, (5) flood-proofing restrooms at the Tule and Rocky Hill recreation areas, (6) extending/widening the boat ramp and (7) enlarging parking capacity at Rocky Hill Recreation Area, (8) protecting in place the Tule Recreation Area well and storage tank with an earthen berm, (9) relocating the Rocky Hill Recreation Area storage tank, well, and metal shed to higher ground, (10) placing rock revetment along the State Hwy 190 bridge abutments for erosion protection, (11) placing rock revetment (approximately 2,500 linear feet) along Frazier Dike for erosion protection, (12) replacing 15 transmission towers and 11,800 feet of power lines to meet minimum clearance criteria, and (13) remediating seepage by constructing a gravel seepage berm with trenches on the left abutment of the dam, downstream of the embankment toe.

Raising the emergency spillway would be achieved by constructing a 10-foot tall concrete ogee weir (Figure 3). The crest of the ogee weir would match the new gross pool elevation (665.1 feet NAVD88). To construct the ogee weir, the existing emergency spillway would be excavated about 8.5 feet to a maximum depth of 648 feet (NAVD88) elevation. Self-leveling concrete would be poured to create the base for the ogee weir (Figure 4). A concrete apron would extend about 150 feet downstream from the bottom crest of the ogee weir. A 2.5-foot thick concrete wall would extend 50 feet upstream and downstream on either side from the ogee weir, except for the left downstream side which would extend 93 feet beyond the ogee weir. The wall would have a maximum height of 688 feet elevation (NAVD88) on both the left and right side of the spillway (Figure 3). 1,250 cubic yards of concrete back fill would be used to create the concrete wall on both the right and left abutments and finish the 1:1 slope (horizontal to vertical distance).

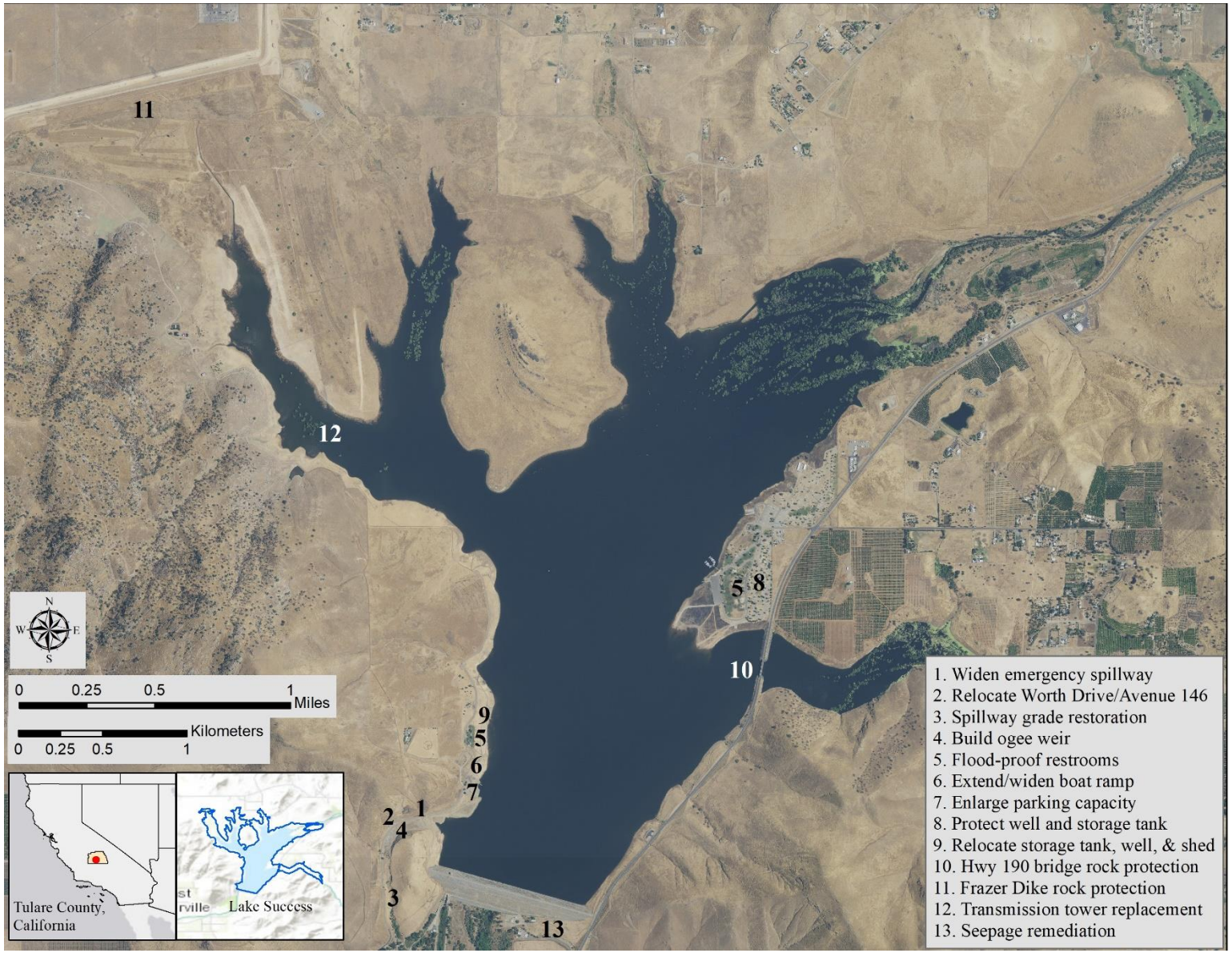

Figure 2. Overview of Lake Success with components of the proposed action numbered as described in the text.

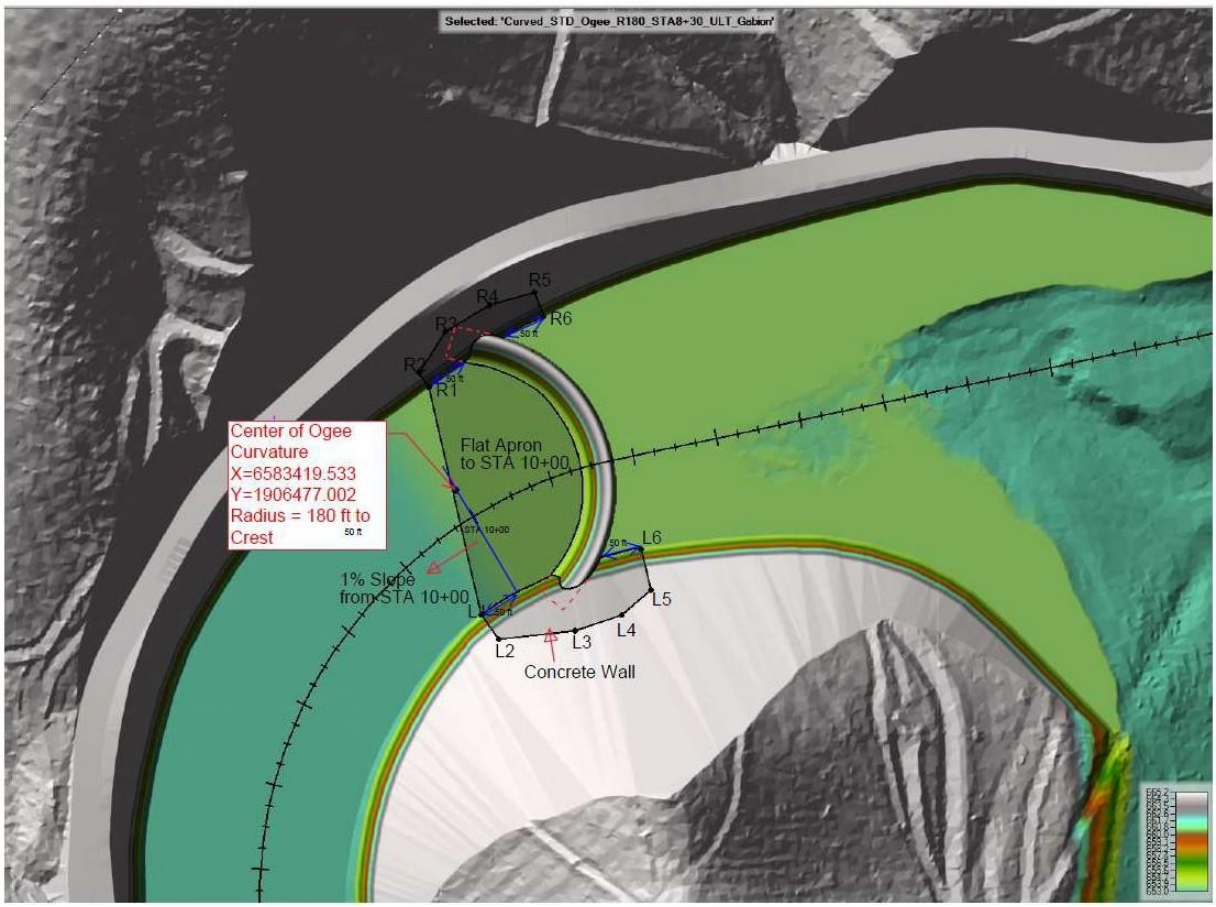

Figure 3. Configuration of the 10-foot tall concrete ogee weir across the widened emergency spillway. Concrete wall elevations: R2=670'; R3, R4=688'; R5=678'; L2=670'; L3, L4=688'; and L5=678'. Downstream concrete apron extent: line connecting R1 and L1 from the ogee. Standard radius of curvature = 180'.

The left abutment of the new ogee weir does not have as much competent rock as the right abutment. Current Corps hydraulic models show that the spillway could safely pass a PMF event without cutting into the left abutment. However, rocks would fall off the left slope. Therefore, to prevent rock fall, the left abutment would be flattened to a 1:1 slope from the existing 0.5:1 slope. About 6,000 cubic yards of rock would be excavated from the left abutment to achieve the proper slope.

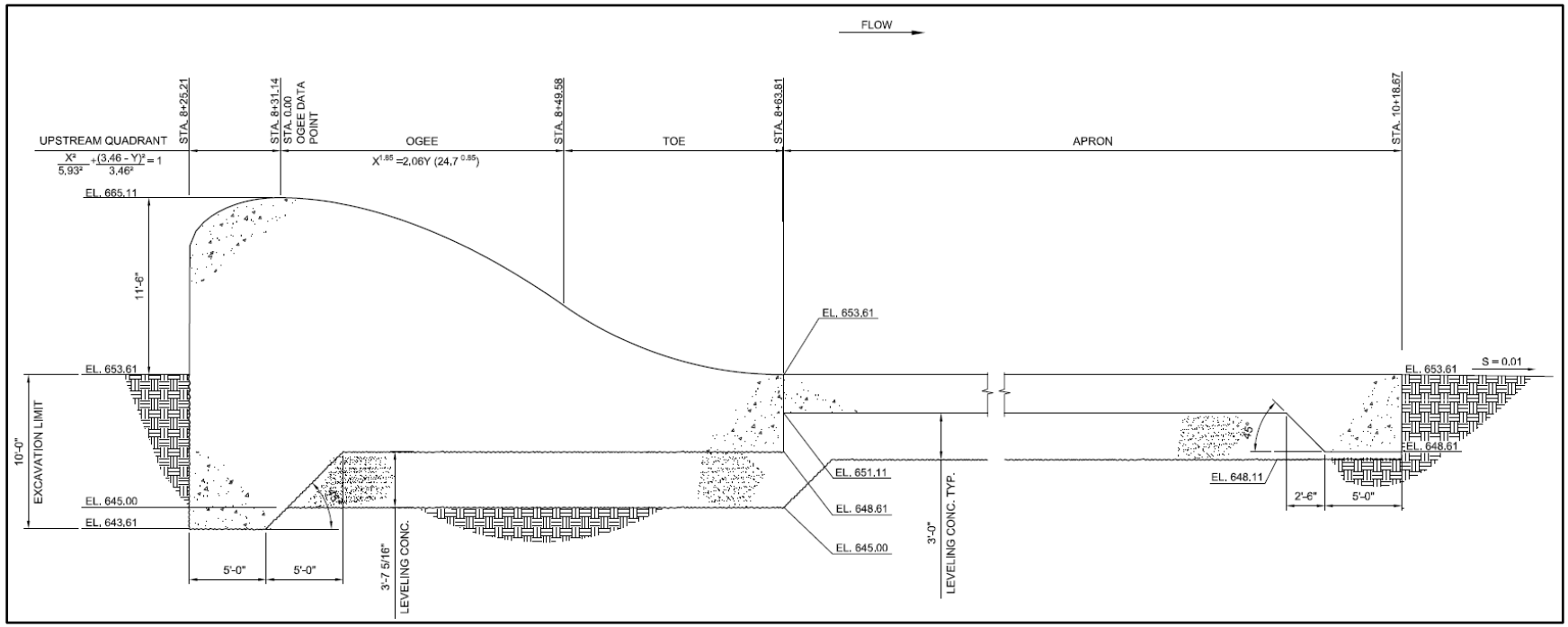

Figure 4. Side view cross-section of the proposed spillway ogee weir with downstream apron.

Four staging/stockpile areas would be used for Phase 2 (Figure 1). The main staging area (1.7 acres) would be in the Rocky Hill Recreation Area parking lot. Adjacent to the staging area would be a 10-acre temporary sorting area. A larger 39-acre stockpile area from Phase 1 would also be available. An existing staging area on the east side of the lake at the northern end of the Tule Recreation Area would be used to support Phase 2 work on that side of the lake.

Raising the gross pool would add 28,000 acre-feet of joint-use flood risk management and irrigation water storage space in the reservoir, increasing storage capacity from 82,300 to 110,300 acre-feet (Corps 1999). Future dam operations and water management (*e.g.*, timing of release) would remain consistent with current operations. Based on updated lidar and on-the-ground surveys, the reservoir surface area would increase by 605 acres. The greater storage capacity would increase the level of protection from one event in 46 years to one flood event in approximately 100 years for downstream communities. Recreation opportunities would increase in the months of August and September during the years when there is more water stored in the reservoir, dependent upon regional precipitation patterns. There would be short-term loss of parking areas during periods of inundation. The Corps would create a new road base (gravel) parking area at the Rocky Hill Recreation Area to offset parking lost during these periods of higher gross pool levels (denoted by the 6 shown on Figure 2). The boat ramp would be widened and extended to allow use during periods of higher gross pool levels. Additional parking was added in the early 2000s at the Tule Recreation Area in anticipation of the proposed spillway raise causing a loss of parking at lots with lower elevation. The adjacent boat ramp was also widened and extended at the same time to enabled continued use during higher lake levels.

The existing maximum lake level (aka gross pool elevation) has been exceeded seven times since the dam was constructed in 1961: 1966, 1967, 1969, 1982, 1998, 2017, and 2019 (Figure 5). The event in December 1966 was caused by a historic amount of rainfall in the local area over a three day period (Goodridge 1996). The emergency spillway was first used during the December 1966 event. Since then a barrier has been used to prevent flood waters from going through the spillway to reduce downstream flooding and store more irrigation water. The barrier, typically sandbagging, allowed water levels to be above the current gross pool elevation of 655.1 ft NAVD88 (652.5 NGVD29) from 25 to 58 days, with an average of 46 days (Figure 5). All six of these high water events occurred in the summer. Runoff from spring and early summer snowmelt, usually from April through June, causes these high water events. The proposed ogee weir serves as a permanent replacement to these barriers. With the proposed spillway raise, there is less than a 1% chance each year that water would flood up to the new gross pool elevation of 665.1ft NAVD88 (662.5 NGVD29). Therefore, increasing the maximum lake level by 10 feet does not represent a permanent inundation. Based on the last 60 years of hydrologic data for Lake Success, it would be an infrequent inundation lasting less than two months, about once every eight years (Figure 5). In summary, there would be a 12% chance each year that lake levels would rise above the current gross pool elevation and less than 1% chance each year that lake levels would reach the new proposed gross pool elevation.

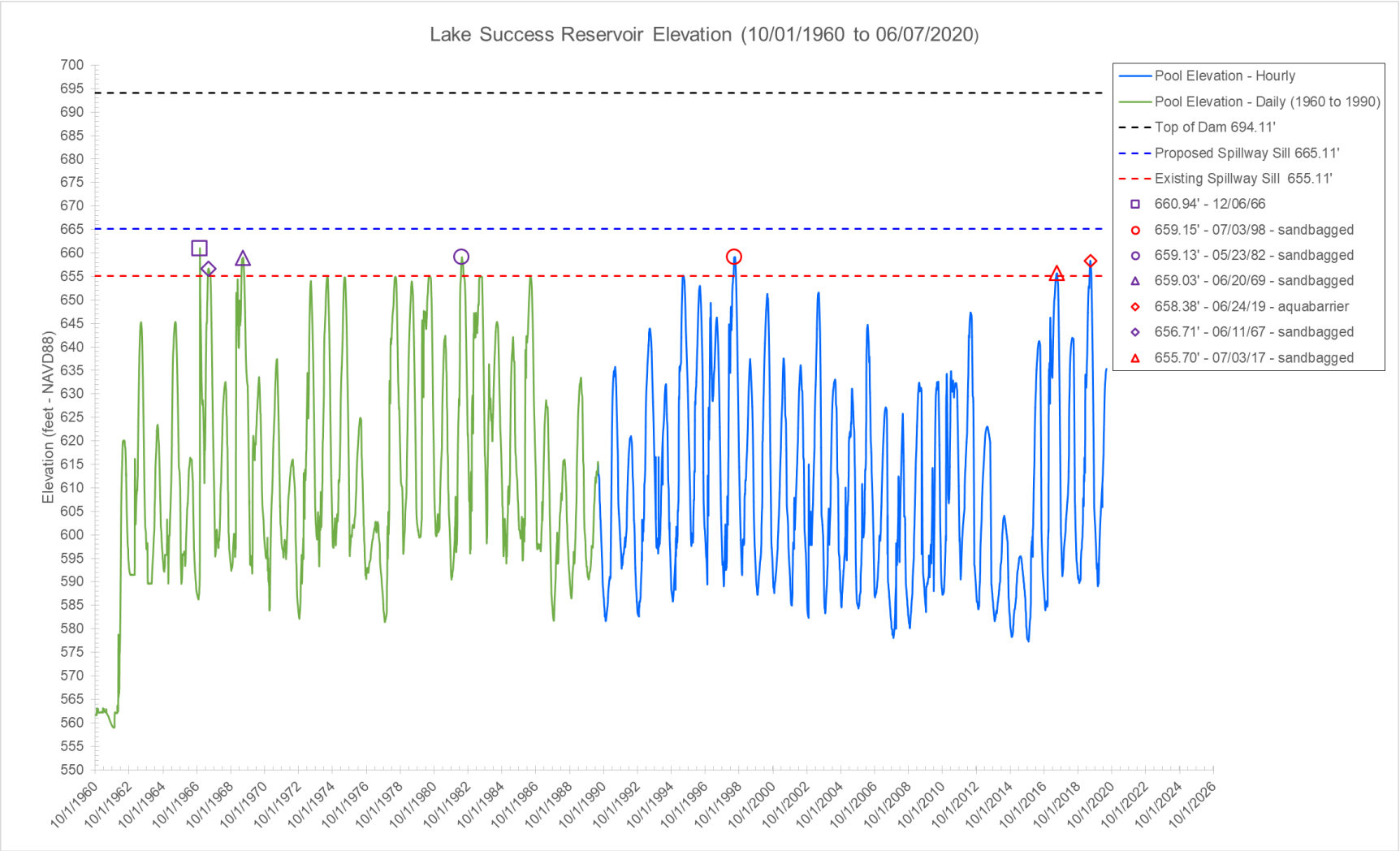

Figure 5. Lake Success reservoir elevation levels over the past 60 years. Red dashed horizontal line represents the current spillway height (655.1 ft NAVD88; 652.5 ft NGVD29), while the blue dashed line represents the proposed spillway height (665.1 ft NAVD88; 662.5 ft NGVD29).

Due to the increased gross pool elevation, LTRID would purchase land in fee, or in a few select cases acquire flowage easements, around the lake up to approximately 668.3 feet (NAVD88) in elevation. This higher elevation beyond the proposed gross pool elevation takes into account the wind and wave runup from the new, higher lake level resulting from high water events. Wave runup is the maximum vertical extent of wave uprush on a beach or structure above the new gross pool elevation, representing the extent that water could theoretically reach. A total of 44 parcels and about 452 acres of private land would be impacted by the proposed action. After completion of the construction for the proposed action, LTRID would transfer these lands over to the Corps for ownership, operation and maintenance.

The Hwy 190 bridge (located at post mile 23.9) would be impacted by the increased gross pool. To accommodate for this, 10 feet of rock revetment (riprap) would be placed along the bridge abutments for erosion protection (see Figure 6) above the existing rock revetment. The rock revetment is required to protect the bridge abutments against wave action and would come from an off-site location. Approximately 3,000 linear feet of riprap, bedding, and filter material would be placed from 659.1 to 669.1 feet elevation (NAVD88), totaling approximately 5,000 cubic yards. Figure 7 shows the typical cross-section for rock revetment (riprap) placement. There are four SCE distribution poles located on the east side of the bridge that would be relocated up the bridge abutment out of the water.

To remediate seepage under the dam, a gravel berm with trenches would be constructed on the left abutment of the dam, downstream of the embankment toe. This area currently gets saturated at high pool levels, which potentially increases risk to slope stability. The ground saturation makes it difficult to operate equipment in this area during inspection or emergency operations. The seepage berm would consist of approximately 15,000 cubic yards of free draining gravels and cover an area of approximately 250 by 400 feet. The gravel would be 3.5 feet thick from the existing ground, which is mostly an equipment staging area with maintenance roads. The existing top layer of soil would be removed. Four trenches would be constructed from near the toe of the dam in a downstream direction towards a natural drainage swale. The trench lengths would vary from 280 to 400 feet long. The trenches would be 5 feet deep from the excavated ground surface and would be 3.5 feet wide.

Figure 6. Proposed additional 10 feet of rock revetment placement along the Highway 190 bridge abutments for erosion protection in Phase 2 of the Tule River Spillway Enlargement Project.

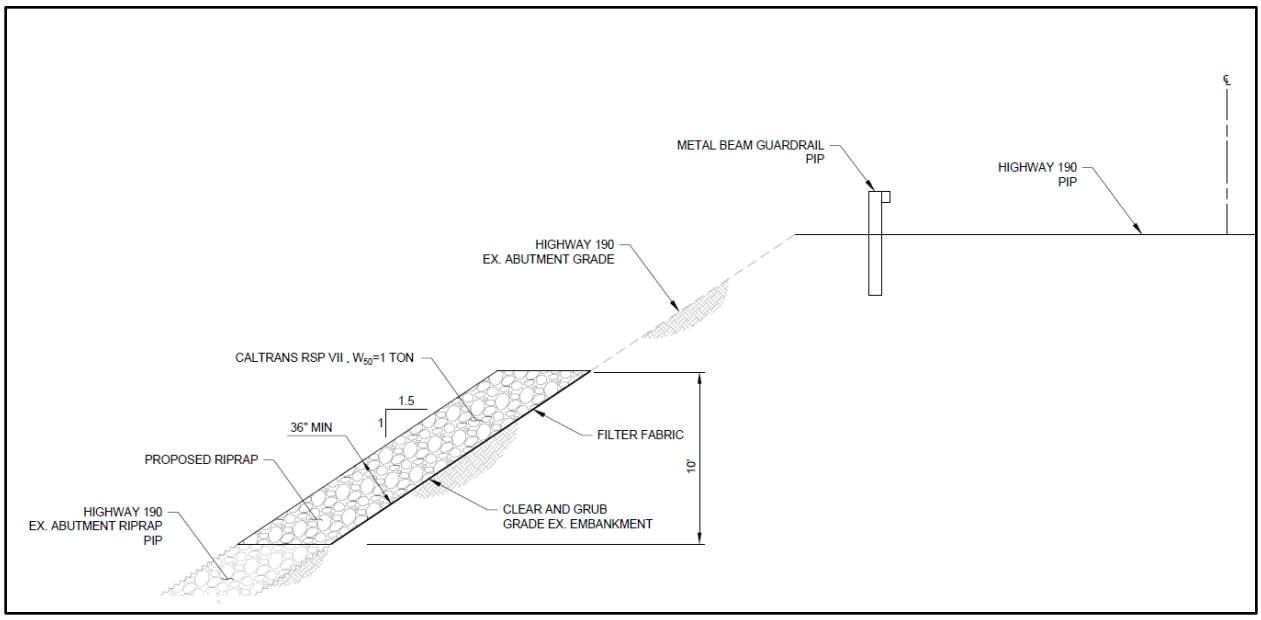

Figure 7. Typical cross-section for rock revetment (riprap) placement along the Highway 190 bridge abutments.

Frazier Dike was constructed to protect the valley northwest of Lake Success from flooding in case of a PMF event (Corps 1999). The dike is 7,760 feet long, extending southwest from Avenue 176. Under existing conditions, a small portion of the lakeside toe is at the current gross pool elevation (Figure 8 and 9). Rock slope protection would be added along 2,200 feet of the dike to prevent erosion from higher lake levels (Figure 8 and 10). The rock revetment would extend roughly 13.5 feet above the current gross pool elevation and 3.5 feet above the proposed, higher gross pool elevation. Since the new gross pool elevation is 665.1 feet (NAVD88), rock slope protection (riprap), bedding materials, and filter would be placed to approximately 668.5 feet elevation (NAVD88) as shown in Figure 10. This higher elevation accounts for wind and wave runup. Approximately 11,000 cubic yards of soil would be excavated from the dike to properly anchor in the rock slope protection, including 2,200 cubic yards below the current gross pool elevation. Approximately 9,000 cubic yards of rock revetment, 1,800 cubic yards of bedding material, and 1,100 cubic yards of filter material would be used. This rock revetment and bedding material could be composed of blast rock material created during the Phase 1 spillway widening and right abutment cut. Alternatively, all material could be imported from a commercial quarry. Excavated material could be used as bedding material if it meets the appropriate specifications. Any remaining material would either be stored at the main stockpile for future maintenance use or disposed off-site at a permitted facility. The most cost-effective option would be selected in each case.

A drainage outlet through Frazier Dike acts to drain water back into the reservoir that may pool on the landside of the dike. The outlet consists of a 250-foot long and 36-inch wide (10 gage) corrugated metal pipe (CMP) exiting at the upstream toe of the dike at an invert elevation. The existing flap gate would be replaced and up to 20 feet of the existing pipe would be cut. The end of the existing CMP would be encased by a new reinforced concrete headwall structure (Figure 11).

Figure 8. Design of rock revetment placement along Frazier Dike, shown as dark grey hashed section.

Figure 9. Photo of typical current conditions along Frazier Dike.

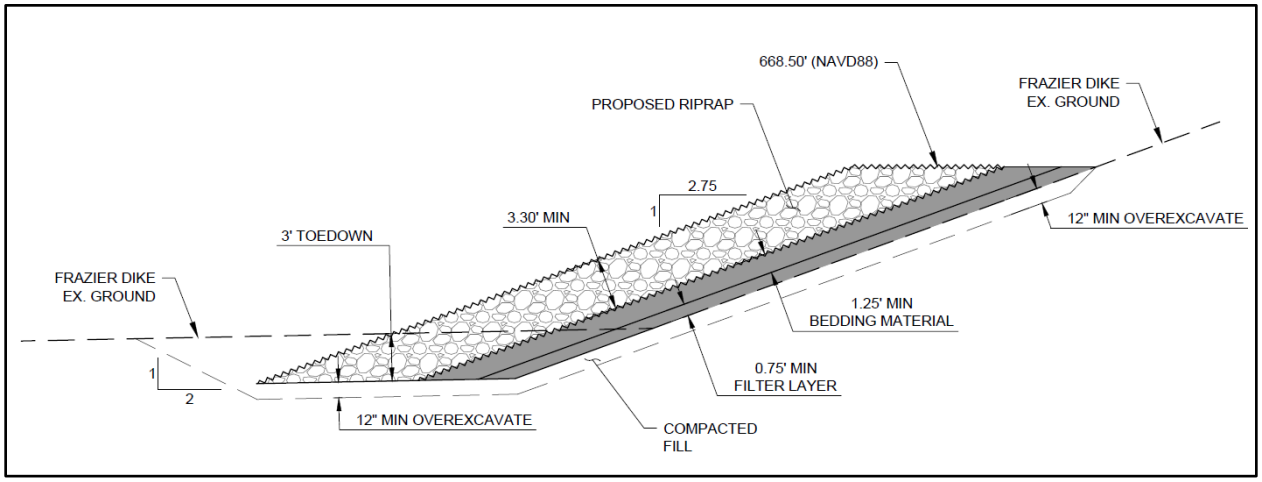

Figure 10. The current gross pool reaches the toe of the dike. Typical cross section of rock revetment (riprap) placement along Frazier Dike. The rock revetment would extend 13.5 feet above the current gross pool elevation and 3.5 feet above the proposed, higher gross pool elevation.

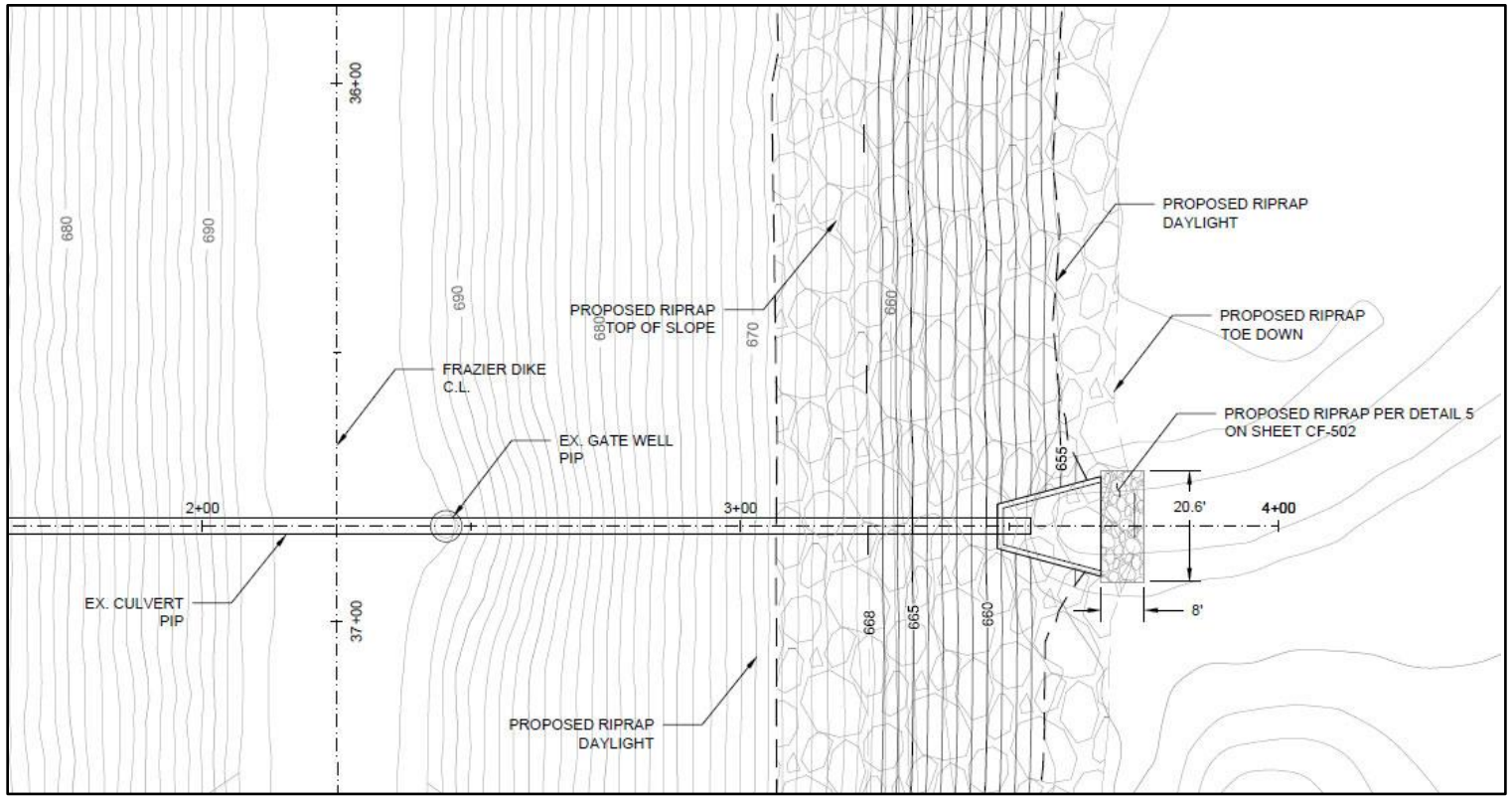

Figure 11. Top view of Frazer Dike showing how the end of the existing CMP would be encased by a new reinforced concrete headwall structure.

Raising the gross pool causes the need for structures and supporting utilities at both the Rocky Hill and Tule Recreation Areas to be relocated or flood-proofed. The northern boat ramp at the Tule Recreation Area has already been widened and extended to allow continued use during higher lake levels resulting from the increase in gross pool. The northern parking area adjacent to this boat ramp has been expanded to mitigate for the periodic seasonal inundation of the southern parking lot. This expansion provided additional space for approximately 50 automobiles and 50 automobiles with trailers.

The Corps would protect the existing pumphouse and storage tank at the Tule Recreational Area in place by building a 3.5-foot tall earthen berm (Figure 12). The restroom immediately west of the pumphouse would be periodically inundated by the new, higher lake levels and would be relocated further away from the water (Figure 13). In addition, the existing sewer force main would be relocated to serve the new restroom (Figure 13). Relocations and flood-proofing would be designed to minimize impacts to ornamental trees and existing landscaping.

At the Rocky Hill Recreational Area, the pumphouse, storage tank, well, and metal shed would be relocated to higher elevation above the new gross pool levels (Figure 2 & 14). The boat launching ramp, located in Rocky Hill Recreational Area, would not be relocated, but extended and widened, to match the existing ramp and ensure use at the new gross pool elevation. The boat ramp would be widened to 48 feet and would be lengthened from 100 to 150 feet with a 12 to 15 percent slope. Concrete similar to the existing ramp would be used for the construction. The parking would be enlarged to mitigate for parking lost by the higher gross pool. The existing restroom in the Rocky Hill Recreational Area would be protected in place so that it can be inundated periodically by the new gross pool and then cleaned after the pool recedes (Figure 2). Electrical lines needed for the restroom would be replaced as necessary. The Corps has no provisions to replace picnic areas and instead, picnicking areas would be reconditioned following seasonal flooding. At both recreation areas, a total of 30 family and six group picnic sites would be subject to seasonal inundation under the proposed action (Corps 1999). The road to Rocky Hill Recreational Area is being relocated as part of Phase 1 to allow continued access and use during future higher lake levels.

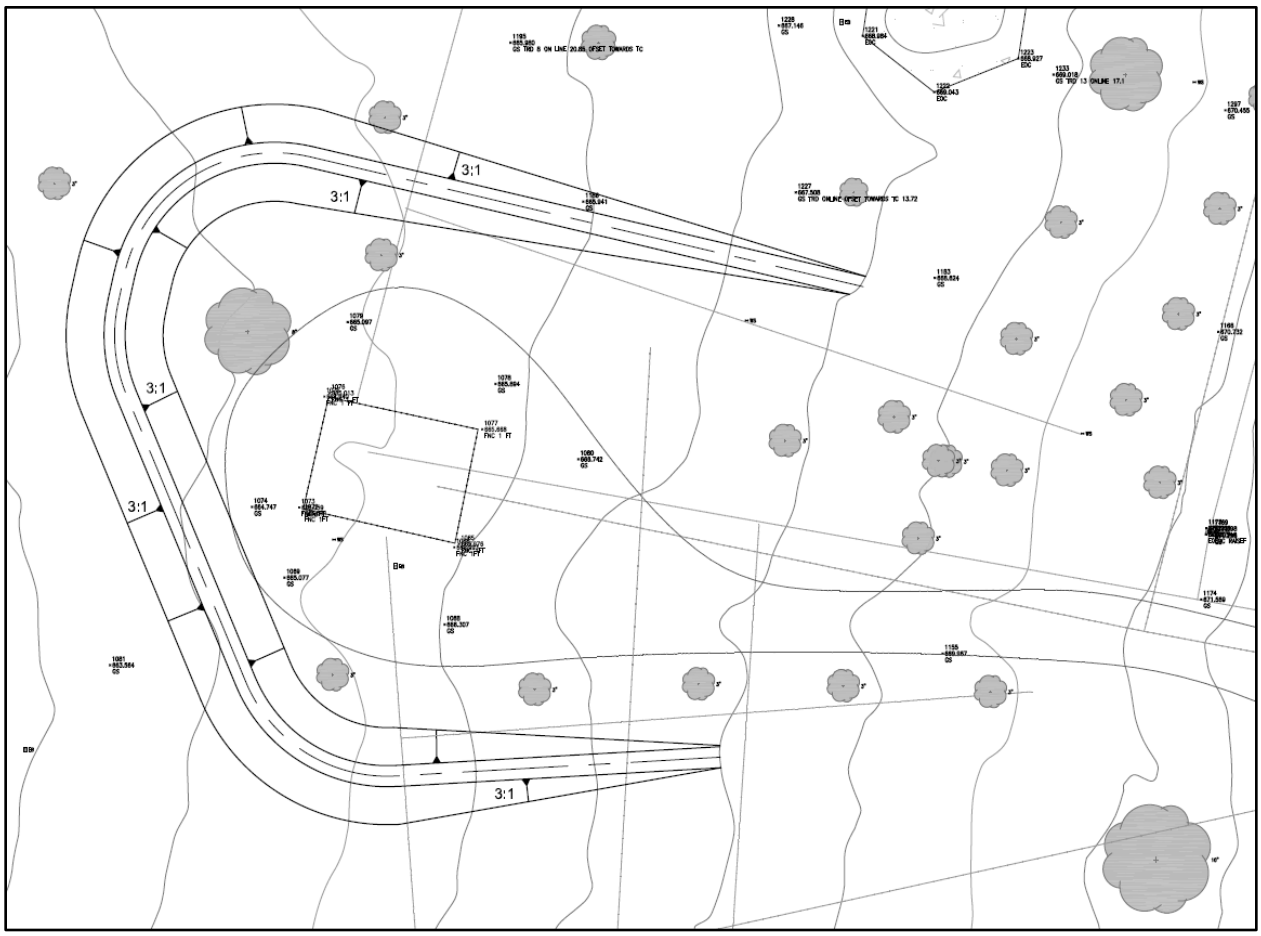

Figure 12. Proposed 3.5-foot tall earthen berm to protect existing Tule Recreation Area pumphouse.

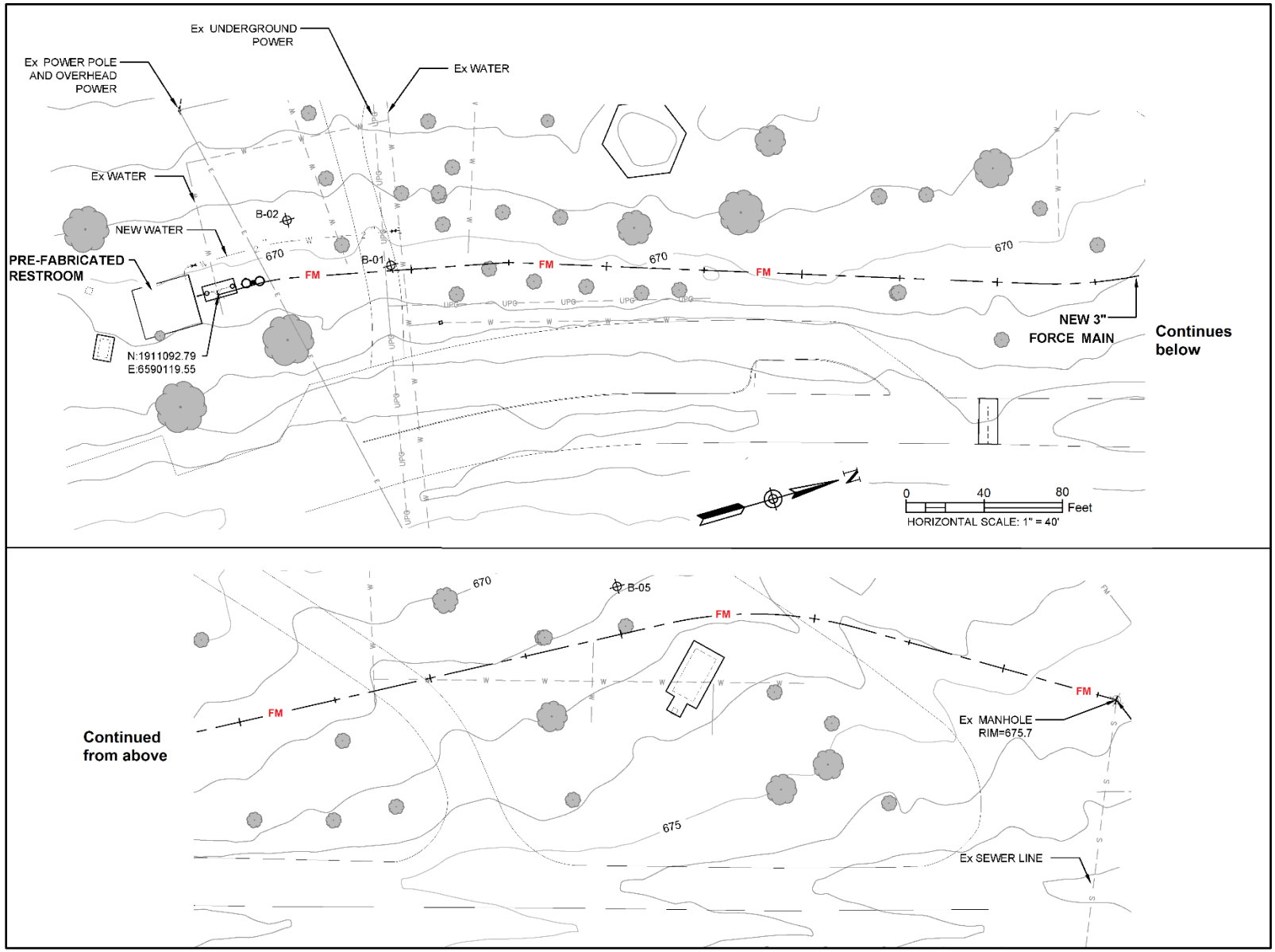

Figure 13. Proposed sewer force main (denoted by red "FM") for the relocated Tule Recreation Area restroom (shown left).

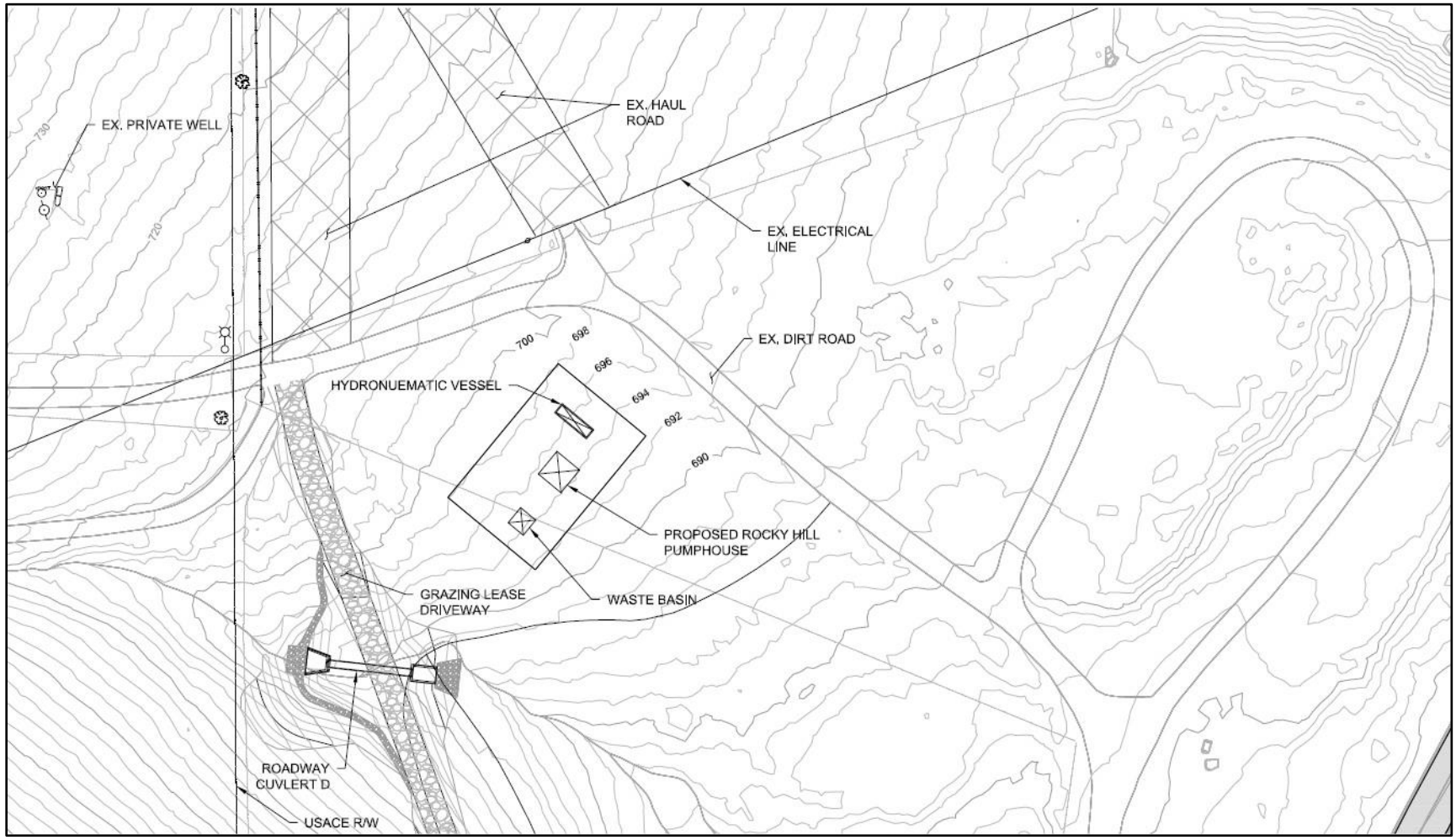

Figure 14. Relocated Rocky Hill pumphouse on the western side of Lake Success.

Table 2 denotes the quantities and details of material that would be used for the 10 foot-high concrete ogee weir across the emergency spillway, the armoring of the California Hwy 190 bridge that passes over the lake with additional rock revetment, rock slope protection for Frazier Dike, and the relocation or flood-proofing of several existing structures and supporting utilities at both the Rocky Hill and Tule Recreation Areas. The asphalt concrete paving represents the worst-case scenario if all impacted areas had to be resurfaced due to damages caused directly by construction.

Table 2. Proposed Action material quantities (cy = cubic yards; sy = square yards).

Construction Action	Quantity	Unit
Excavated material (rock/soil)	55,000	cy
Imported soil	2,919	cy
Concrete	14,920	cy
Riprap/rock revetment	15,795	cy
Filter fiber	4,480	sy
Gravel for seepage berm	15,000	cy
Steel reinforcement	550	tons
Asphalt concrete paving	41,950	sy

Due to updated standards and to address corrosion, SCE already had plans to replace the towers for the section of the Vincent 220 kV Transmission Line that crosses over the western edge of Lake Success. This historic transmission line is part of the Big Creek Hydroelectric Project to provide electricity to Los Angeles. The line runs almost 200 miles from Big Creek in Fresno County to the Vincent substation in Los Angeles County. SCE has been updating segments of the transmission line for the past 15 years as part of a series of transmission system improvements. The timing, total number of towers, and tower height are being influenced by the proposed increase in gross pool elevation. Therefore, the effects of the SCE transmission line project are analyzed in this NEPA document. SCE refers to this section as the Magunden-Springville No. 1 and No. 2 220-kV Transmission Lines.

To comply with Corps Engineering Regulation (ER) 1110-2-4401, the SCE transmission line would have to be raised to a minimum height of 52 feet to accommodate sailboats. SCE would replace approximately 15 lattice steel transmission towers with 14 new, higher H-frame hybrid transmission structures (Figure 15). Approximately 36 temporary "shoo-fly" poles would be installed to facilitate transferring the transmission lines from the old towers to the new structures. This work would occur after the ogee weir construction is complete when lake levels are low to avoid in-water work. The minimal amount of soil disturbed during replacement of the transmission towers would be hydroseeded with a native seed mix. The new towers would be spaced to avoid construction work in the seasonal wetlands that form in some parts of the dry lakebed. In addition, about 20 distribution power poles surround Lake Success, and 4 distribution poles along the eastern edge of the Hwy 190 bridge would need to be relocated a few feet to avoid the higher lake levels (Figure 16).

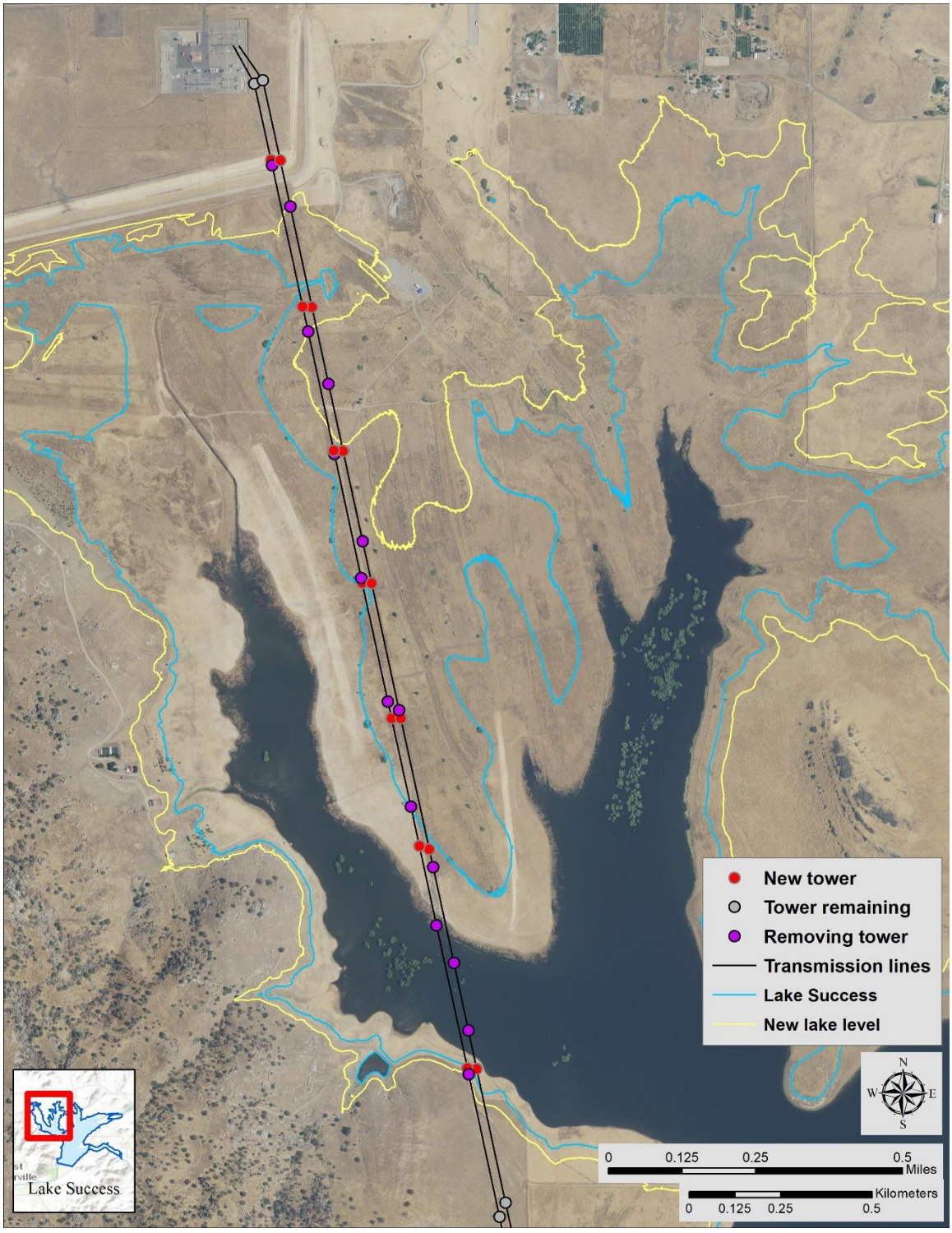

Figure 15. SCE would replace 15 transmission towers (purple) with 14 taller transmission towers (red); new gross pool elevation (yellow) and existing gross pool (light blue).

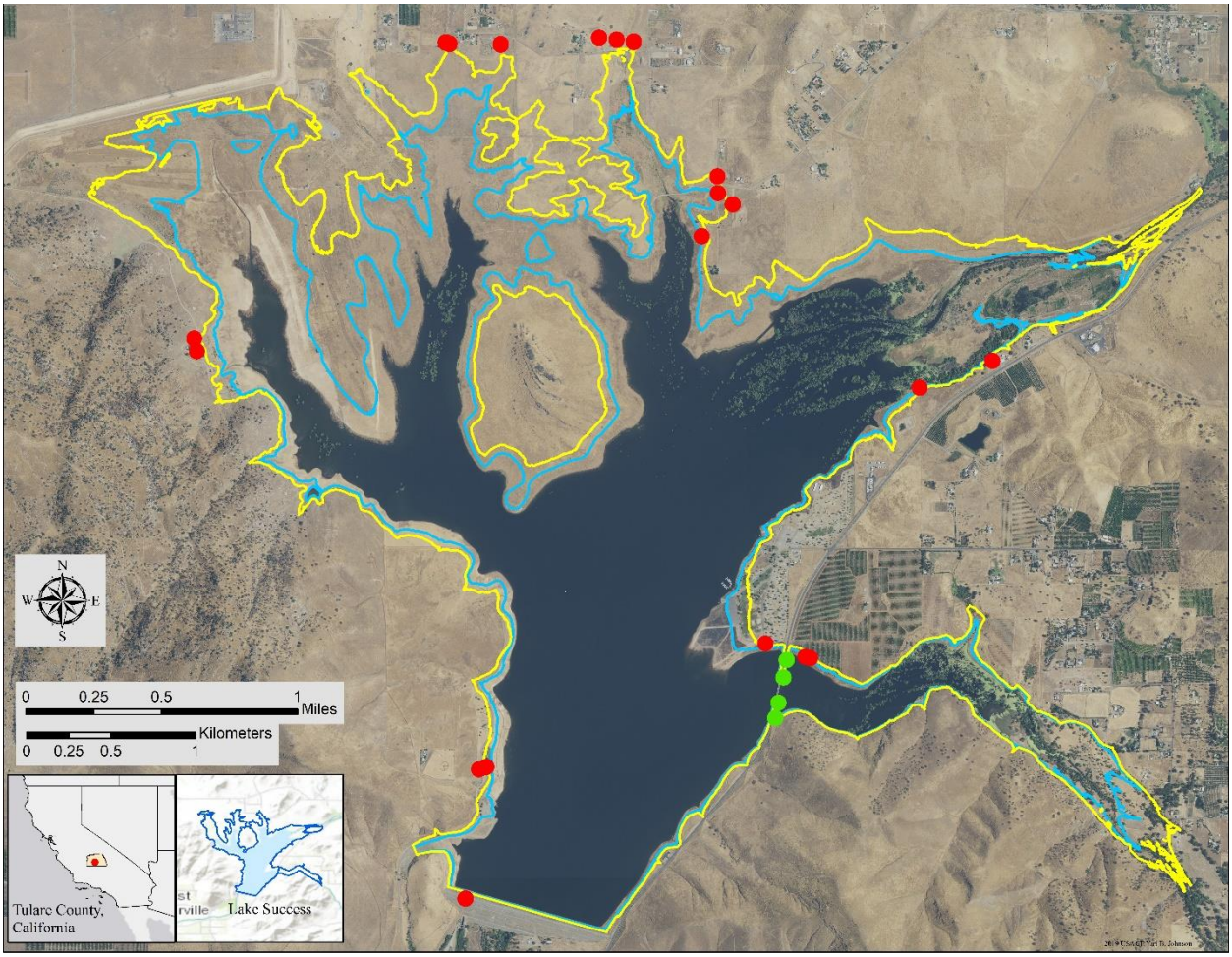

Figure 16. SCE power distribution poles (red dots) surrounding Lake Success potentially affected by the higher lake levels. In addition, four distribution poles (green dots) along the east side of the Hwy 190 bridge would need to be relocated closer to the road to avoid the higher lake levels.

Phase 1 covered widening the spillway from 200 to 365 feet by blasting and cutting the right abutment and realigning Worth Drive/Avenue 146 from the spillway to a newly cut road bench along the right abutment of the spillway (Figure 2). Separate from Phase 1 and 2, the north boat ramp at the Tule Recreation Area has been extended and widened in recent years in anticipation of the higher lake levels. This action helped to mitigate loss of ramp access due to higher lake levels as described in section 4.2.2 of the 1999 FEIS/FEIR (Corps 1999).

2.2.1 Phase 2 Schedule

- Real Estate Procurement: October 2020 – June 2021
- Environmental Mitigation: 2020-2031
    - Land acquisition: December 2020 – June 2021
    - Contract award: summer 2021

  - Site preparation: summer/fall 2021
  - Planting: fall 2021
  - Maintenance and management: 2021-2024 (Corps); 2024 – 2031 (LTRID)
- Construction Start: July 2021
  - Rocky Hill Recreation Area and pumphouse: July 2021 – May 2022
  - Frazier Dike: July 2021 – October 2021
  - Tule Recreational Area: February 2022 – September 2022
  - Hwy 190 bridge abutments: October 2021 – November 2021
  - Excavation and blasting left abutment and ogee base: August 2021 – March 2022
  - Ogee spillway: February 2022 – October 2022
  - SCE transmission line replacement: October 2021 – October 2022
- Construction Completion: November 2022

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the environmental resources in the project area, as well as any effects of the No Action and Proposed Action alternatives on those resources. Mitigation measures to avoid, minimize, and/or compensate for potential adverse effects are also identified. The significance thresholds used in this Draft 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

The resources below, except for climate change, were sufficiently analyzed in the 1999 FEIS/FEIR. Based on recent updates to the resources analyzed in the 1999 FEIS/FEIR, evaluation of the effects of the project indicated that there would likely be little to no effect. These resources are discussed below to add to the overall understanding of the proposed action and project area.

3.1.1 Climate Change

An alternative would be considered to have a significant effect on climate change if it would generate greenhouse gas (GHG) emissions that may cause a significant net increase in emissions; do not comply with any applicable threshold of significance; or 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 Tule River Spillway Enlargement Project are transportation and construction emissions from fuel combustion. GHG emissions would be emitted due to fuel combustion from onsite construction vehicles, as well as indirect emissions from the electricity used to operate machinery. In addition to the construction vehicles, there would be GHG emissions from the vehicles used for worker commutes.

Currently, there are no known federal, state, or local GHG emissions thresholds in place for transportation and construction emissions sources. Given the diversity of development projects occurring in the San Joaquin Valley, it is not feasible to develop a single set of standards that would be applicable to all development projects (SJVAPCD 2009). Instead, SJVAPCD has established a list of GHG emission reductions measures with pre-quantified GHG emission reduction effectiveness. Projects implementing these reduction measures/Best Management Practices (BMPs) would be considered to have a less than significant individual and cumulative impact on global climate change (SJVAPCD 2009). BMPs to reduce emissions associated with construction and transportation are the same as those for Air Quality, as described in section 3.2.3. Therefore, the proposed action would have little to no effect on Climate Change from GHG emissions sources.

The 1999 FEIS/FEIR did not address Climate Change/GHGs in its assessment. The Spillway Enlargement Project does not present significant new circumstances or information regarding the nature and scope of effects to Climate Change associated with the proposed action. To determine the significance of Climate Change/GHG impacts, the context and intensity of the impacts were determined based on consideration of state and local requirements for protection of the environment identified in the California Environmental Quality Act (CEQA) Guidelines and in guidance issued by SJVAPCD. The CEQA Guidelines were used as a proxy to determine significance under the applicable NEPA regulations. According to the CEQA Guidelines, a project could result in significant impacts if it would do any of the following:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment;
- Exceed a threshold that is applicable to the project; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

The proposed action would generate some GHG emissions from transportation and construction, but since these would be limited to the duration of the project, the effect on the environment would be minor. After construction is complete, local GHG emission levels would return to pre-project conditions. Since there are no known federal, state, or local GHG emissions thresholds in place for transportation and construction emissions sources, the proposed action would not exceed any threshold that is applicable to the project. The proposed action would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. The proposed action would support downstream flood protection by storing any additional runoff water caused by potential increases in snowmelt and precipitation associated with Climate Change. By providing decreased risk of catastrophic flooding with associated loss of infrastructure, the proposed action could prevent extra carbon production associated with demolition, repair, and reconstruction of flood-induced infrastructure losses. In conclusion, the proposed action considered in this Draft EA would have little to no effect on Climate Change.

3.1.2 Hazardous, Toxic and Radioactive Waste

Hazardous, toxic and radioactive wastes (HTRW) were evaluated in the 1999 FEIS/FEIR, in sections 3.3.4 and 4.5. The 1999 FEIS/FEIR concluded that the proposed action could potentially affect three underground storage tanks at the Lakeside Minnit Mart and wells, septic tanks, and leach fields located on residential properties within the new gross pool. The three underground storage tanks at the Lakeside Minnit Mart would not be impacted by the updated proposed action since the new maximum lake level is further than six hundred feet away. Wells, septic tanks, and leach fields located on residential properties would be addressed by LTRID prior to the U.S. government acquiring fee title to the properties. Based on newer HTRW investigations (Corps 2010), updated records search, and communication with Lake Success operations staff, there have been no changes regarding HTRW within the expanded gross pool as investigated in 1998.

LTRID would conduct further HTRW investigations during property fee acquisitions. For cost-shared projects, the non-federal sponsor is responsible for ensuring that the development and execution of federal, state, and/or locally required HTRW response actions are accomplished at 100 percent non-project cost. An Environmental Site Assessment would be conducted to identify recognized environmental conditions, including the presence or likely presence of any hazardous substances or petroleum products under conditions that indicate an existing release, a past release, or the material threat of a release into structures, the ground, and groundwater or surface waters of the property. The Environmental Site Assessment would be prepared in accordance with the American Society for Testing and Materials (ASTM 2005); Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process; and ER 1165-2-132, HTRW Guidance for Civil Works Projects. Any required cleanup would have to be completed prior to the U.S. government acquiring fee title to the property.

3.1.3 Prime or Unique Farmlands

The 1999 FEIS/FEIR concluded that the proposed action would not result in the permanent conversion of a substantial acreage of farmland and that the land inundated by the increased gross pool did not meet the criteria of prime farmland. Based on the updated proposed action, approximately 1.5 acres of citrus orchards are within the new gross pool and would be acquired by LTRID. About 0.59 acres of these orchards are prime farmland (Soil Survey Staff). The Corps consulted with the Natural Resources Conservation Service to determine whether the Farmland Protection Policy Act of 1981 (Public Law 97-98, December 22, 1981) applied to the prime farmland. Since the Land Evaluation and Site Assessment score for the site (see Appendix A for rating sheet) was lower than 160, the Farmland Protection Policy Act does not apply, no mitigation is required, and the impacts to prime or unique farmlands are deemed minor.

3.1.4 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 5 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.

This upper watershed consists of steep, mountainous terrain. Below the dam, the foothills transition into an alluvial fan and flatlands that gently slope to the Tulare lakebed. Steep terrain, cliffs, and rock outcroppings occupy much of the southeastern shore of Lake Success, as well as a lesser portion of the southwestern shore. The remaining shoreline areas typify a rolling terrain with moderate slopes (Corps 2006, 2010).

All rock within the area, with the exception of alluvium, is part of the "bedrock complex" of the Sierra Nevada. Soils occurring in the region are residual soils, formed by weathering of the bedrock complex, terrace deposits, and slope wash where movement of the residual soils by gravity has occurred. Alluvial materials occurring at the dam site are recent alluvium, older alluvium, terrace deposits, and alluvial fan deposits (Corps 2006, 2010).

As stated in the 1999 FEIS/FEIR, the proposed ogee weir construction within the spillway and increased reservoir levels would have no effect on topography, geology, and soils. The proposed transmission line raise and improvements in the recreation areas would have temporary impacts to soil. After construction, soil formation processes would continue as normal and there would not be a substantial loss of soils through removal or natural erosion, or an introduction of contaminants into surface or subsurface soils.

3.1.5 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 (Corps 1999). 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 late fall with catchable-sized trout. These are quickly caught and do not survive into spring due to high water temperatures (Corps 1999). As explained in the 1999 FEIS/FEIR, since the spillway raise project features would not affect the lake, 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. SCE would replace the transmission towers in the fall, when the lake is at its lowest levels, to avoid in-water work. The minor amount of disturbed land would be properly revegetated once work is complete and would regrow before higher lake levels return in late spring/early summer. The lowest transmission tower that SCE would remove is at an elevation of 640 feet (NAVD88), a level that the lake only reaches every other year on average (Figure 5). The expanded boat ramp and armoring of Frazier Dike would alter roughly 0.1 acres of land within the current gross pool. These minor impacts would be greatly offset by the creation of 605 acres of periodic fish habitat caused by the spillway raise increasing the gross pool elevation from 655.1 to 665.1 feet (NAVD88) during wetter years. Other aspects of the proposed action would occur above the current gross pool and would be completed several years before the lake level rises to the new gross pool.

3.1.6 Aesthetics and Visual Resources

Aesthetic and visual resources are those natural resources, landforms, vegetation, and built structures in the regional and local environment that generate one or more sensory reactions and evaluations by the viewers. The proposed action would result in short-term and long-term impacts from construction activities to the visual character of the primarily natural environment. Short-term impacts would include introducing construction equipment, workers, and materials to the project area. Other short-term impacts would occur while the SCE transmission line was being raised. Depending on sequencing of the work, old transmission towers, new towers, and shoo-fly poles could occur simultaneously. This would deviate from the existing conditions but the effects would be temporary. Long-term impacts would result from the addition of the 10-foot ogee weir to the existing broadcrested sill, as well as an increased inundation area should the reservoir reach maximum capacity. Under the proposed action, adverse effects to the aesthetics and visual resources of the area would not exceed the levels described in the 1999 FEIS/FEIR, which mirrored the impacts mentioned above.

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 US Environmental Protection Agency (EPA) is responsible for overseeing implementation of the Federal Clean Air Act. The California Air Resources Board (CARB) 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” (Table 3).

Locally, the SJVAPCD is responsible for ensuring compliance with federal, state, and local air quality regulations. Specifically, SJVAPCD issues permits and enforces regulations to protect the public health and environment in accordance with federal and state Clean Air Acts through guidelines developed by federal and state agencies. The current threshold 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 B 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 C.F.R. § 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 Counties, 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 residences, located 0.35 and 1.9 miles away, respectively, and local wildlife and recreationists using the reservoir area. The closest residence is not going to be occupied for the duration of Phase 2 construction. The prior tenants recently moved out and the owners do not plan to rent the residence out in the future.

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

Pollutant		Primary/Secondary	Averaging Time	Level	Form
		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 Road Construction Emissions Model (RCEM), Version 9.0.0 (Table 2), was used to evaluate air quality effects and to help determine potential mitigation measures.

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 on a long-term basis.

No Action. Under the No Action alternative, the project would proceed as described in the 1999 FEIS/FEIR along with the Phase 1 actions as described in the 2020 EA (spillway widening and relocation of Worth Drive/Avenue 146) and SCE would replace towers on the Vincent 220kV Transmission Line. Impacts to air quality would be updated using new information, modeling procedures, and regulations. Under the No Action alternative, the project would occur in one year, with SCE work occurring concurrently (Table 4). However, the distribution poles would not be removed or relocated since this action was not described in the 1999 FEIS/FEIR.

The Phase 1 actions were determined in the 2020 EA to have a less than significant effect on air quality by using Tier 4 mitigation for off-road equipment and requiring on-road equipment to meet model year 2010 or newer emission standards. According to the 1999 FEIS/FEIR, the Corps would use standard operating procedures that include BMPs for air quality. Current, updated Corps air quality BMPs would be used for the No Action alternative and would be the same as those described in section 3.2.3. With these mitigation measures, the No Action alternative would not violate any ambient air quality standard (Table 4). Due to the limited duration of the project, it would not contribute on a long-term basis to an existing or projected air quality violation. Since the modeled emissions estimates are below the thresholds and there are no sensitive receptors near the ogee weir, where the bulk of the emissions would be produced, the No Action alternative would not expose sensitive receptors to substantial pollution concentrations. Finally, based on modeled emission estimates, the No Action alternative conforms to applicable federal, state, and local standards on a long-term basis. Therefore, the No Action alternative would not have a significant effect on air quality.

Table 4. Modeled emissions estimates and thresholds (tons/year) for the No Action.

	CO	**NO_x**	**ROG**	**PM_{10}**	**$PM_{2.5}$**
RCEM Estimate (Corps)	16.26	21.65	2.03	5.10	1.71
RCEM Estimate (SCE)	2.45	2.73	0.34	11.02	1.27
No Action Total	**18.71**	**24.38**	**2.37**	**16.12**	**2.98**
SJVACMD Threshold	100	10	10	15	15
Threshold Exceeded?	No	**Yes**	No	**Yes**	No
de minimis Threshold	100	25	25	100	100
Threshold Exceeded?	No	No	No	No	No
RCEM Estimate w/Mitigation (Corps)	20.11	7.72	1.00	4.35	1.01
RCEM Estimate w/Mitigation (SCE)	1.98	1.74	0.36	6.72	0.70
No Action Total w/Mitigation	**22.09**	**9.46**	**1.36**	**11.07**	**1.71**

Note: Modeled emissions values for SCE obtained from the unpublished administrative draft of the SCE Proponents EA/Environmental Impact Report.

Proposed Action. In comparison to the No Action alternative, the proposed action would have slightly more total emissions due to additional construction activities (Table 5) caused by SCE removing or relocating distribution power poles; however, the activity would be spread out over two construction years. With implementation of the BMPs identified in section 3.3.2, the modeled emissions estimates would remain below the thresholds. The other effects would not deviate from those described in the No Action alternative. Therefore, the effects of the proposed action on air quality would be less than significant.

Table 5. Modeled emissions estimates and thresholds (tons/year) by project year for the Proposed Action, which is based on two rolling 12-month periods.

	CO	NO_x	ROG	PM_{10}	$PM_{2.5}$
YR 1 RCEM Estimate (Corps)	6.77	10.57	0.94	3.52	1.03
YR 1 RCEM Estimate (SCE)	1.27	1.41	0.18	5.76	0.66
YR 1 Total	**8.04**	**11.98**	**1.12**	**9.28**	**1.69**
YR 2 RCEM Estimate (Corps)	9.49	11.08	1.09	1.58	0.68
YR 2 RCEM Estimate (SCE)	1.27	1.41	0.18	5.76	0.66
YR 2 Total	**10.76**	**12.49**	**1.27**	**7.34**	**1.34**
SJVACMD Threshold	100	10	10	15	15
Threshold Exceeded?	No	**Yes**	No	No	No
de minimis Threshold	100	25	25	100	100
Threshold Exceeded?	No	No	No	No	No
YR 1 RCEM Estimate w/Mitigation (Corps)	8.77	6.07	0.45	3.16	0.70
YR 1 RCEM Estimate w/Mitigation (SCE)	1.03	0.92	0.19	3.61	0.38
YR 1 Total w/Mitigation	**9.80**	**6.99**	**0.64**	**6.77**	**1.08**
YR 2 RCEM Estimate w/Mitigation (Corps)	11.34	1.65	0.55	1.19	0.31
YR 2 RCEM Estimate w/Mitigation (SCE)	1.03	0.92	0.19	3.61	0.38
YR 2 Total w/Mitigation	**12.37**	**2.57**	**0.74**	**4.80**	**0.69**
Proposed Action Total w/Mitigation	**22.17**	**9.56**	**1.38**	**11.57**	**1.77**

Note: Modeled emissions values for SCE obtained from LTRID's 2020 Draft Supplemental Environmental Impact Report.

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. The Corps 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 dust emissions from entrained road dust from unpaved roads (SMAQMD 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 including 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:

- 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 Corps 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. Corps 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.
- Submit to the Corps 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 Corps 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.
- 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 the Corps.
- Throughout duration of the project, on-road heavy-duty diesel trucks or equipment with GVWR of 19,500 pounds or greater must comply with EPA 2010 on-road emissions standards for Particulate Matter (PM) and Nitrogen Oxide (NOx) (0.01 g/bhp-hr and at least 1.2 g/bhp-hr respectively). Contractor must demonstrate good faith effort to use Model Year 2010 (or emissions-equivalent) equipment in the case that equipment is scarce or unavailable.
- 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 Cultural Resources

Cultural resources are broadly defined as buildings, structures, objects, archaeological sites, districts, and traditional cultural properties created through human activity and systems of belief. Cultural resources that are included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) are referred to as "historic properties." The Corps uses effects determinations arrived at through compliance with Title 54 U.S.C. § 306108, commonly known as Section 106 of the National Historic Preservation Act (NHPA), to assess effects to cultural resources under NEPA and to mitigate for adverse effects under both laws.

The NHPA (54 U.S.C. § 300101 et seq.) is the primary Federal legislation governing the preservation and protection of significant cultural resources. Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties and to 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).

The process for implementing Section 106 of the NHPA is described at 36 C.F.R. § 800. For any Federal action that has the potential to cause effects on historic properties, compliance with Section 106 of the NHPA requires a good faith effort by the responsible Federal agency to identify historic properties in the area of potential effects (APE) for the undertaking and to resolve of any adverse effects on such properties through a consultative process involving the agency, the State Historic Preservation Officer (SHPO), Native American Indian tribes, and other consulting parties. As noted above, the Corps also uses effects determinations arrived at through Section 106 compliance to assess effects to cultural resources under NEPA, and to mitigate for adverse effects under both laws.

3.3.1 Affected Environment

There are known cultural resources, including historic properties, in the project area. These include Native American cultural resources, such as bedrock milling features, and historic-era cultural resources, including water impoundment and conveyance structures, mining features, ranching refuse, roadways, and a segment of the historical SCE Vincent 220kV Transmission Line.

Native American Cultural Resources. For the purposes of the following discussion, "pre-contact" refers to the time period prior to the arrival of Spanish and Euro-American explorers and settlers in the region. During the pre-contact period, Native American populations resided throughout what is now the state of California.

Based on archaeological and linguistic evidence, Native Americans ancestral to present-day Yokuts tribes have lived in the area surrounding what is now Lake Success for 5,000 to 7,000 years. This area, where forks of the Tule River converge, provided a rich economic base for subsistence and settlement. Archaeological materials point to an increase in acorn processing and consumption throughout California by around 3,000 years ago and the acorn was a dietary

staple for many Native American populations by 2,000-1,500 years before present (BP). In the southern San Joaquin Valley and foothills, the increased use of this dietary staple, and a corresponding increase in residential mobility, is seen by archaeologists as related to a period of widespread climate change known as the Medieval Climatic Anomaly. By around 800 years ago, when the current climate regime began, Native Americans throughout much of the state more commonly lived in permanent or semi-permanent villages. While archaeological investigations within the immediate project area have been limited, given the rich natural resource base and archaeological site densities, relatively high pre-contact populations for the region are surmised (Berryman and Elsasser 1966:7).

As documented by Euro-American ethnographers in the late 19th and early 20th century, the current project area is located near the convergence of Southern Valley Yokuts and 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. Several Southern Valley Yokuts groups lived along the lower Tule River, in the vicinity of Porterville (Reddy et al. 2008). 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. While the project area is within known Yokuts boundaries, trade and interaction with other ethnically and linguistically distinct groups, such as the Mono and Tübatulabal, was common.

In the 1850s, many 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.

Historic-era Cultural Resources. In this section "historic-era" refers to the time period during and subsequent to the arrival of Spanish and Euro-American explorers and settlers in the region. In general, historic-era cultural resources refer to buildings, structures, objects, and sites produced by non-Native Americans.

Spanish explorers first arrived in California's Central Valley in the late 1700s. Contact between Native American populations and Europeans in the general project area 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. Conflicts between the European and Native American populations became more frequent during the subsequent Mexican period of California history (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 the years that followed, 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 a 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 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 that 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.

In addition to mining, agriculture and ranching also grew in economic importance during the late 1800s. The establishment of agriculture and ranching enterprises in the Success Valley during that period prompted the construction of several irrigation projects, including excavation of the Pioneer Ditch, which initially provided water to a local flour mill and later was used to turn turbines for electricity production and to divert water for flood control (Meighan et al. 1988). The railroad also contributed to the economic development and population growth in the area. The Southern Pacific Railroad was the first to reach Porterville in 1888. As a result, the town experienced increases in exported fruit production, economic prosperity, and population (Reddy et al. 2008). The arrival of automobiles brought a new method of transportation, and economic opportunities, to the region. In the late 1920s, SCE built its state of the art Vincent 220kV Transmission Line through what later would become a portion of Lake Success.

Construction on Success Dam, now known as the Richard L. Schafer Dam, began in 1958 and was completed in 1961. The dam was constructed by the Corps for flood control and other purposes, including the impoundment of water for irrigation, recreation, and power generation. During Section 106 consultation regarding Phase 1 of the Tule River Spillway Enlargement Project, the Corps evaluated the dam for NRHP eligibility and determined it did not meet the criteria for listing in the NRHP. The SHPO concurred that the dam is not eligible for the NRHP via correspondence dated November 5, 2019.

3.3.2 Environmental Consequences

Basis of Significance. Impacts to cultural resources would be considered significant under NEPA if they would alter, directly or indirectly, 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.

No Action. Under the No Action alternative, the project would be implemented based on the 1999 FEIS/FEIR and the Phase 1 2020 EA. This alternative would construct the 10-foot tall concrete ogee weir within the enlarged emergency spillway and intermittently raise the gross pool elevation of Lake Success. Other activities would take place within the recreation areas, utility corridors, along Frazier Dike, on the Hwy 190 bridge abutments, and in other project areas. SCE would replace towers on the Vincent 220kV Transmission Line. These various activities have the potential to cause effects on historic properties, as described at 36 C.F.R. § 800.3(a), and the Corps has found, through Section 106 identification and evaluation efforts, that

the project would have an adverse effect on historic properties, pursuant to 36 C.F.R. § 800.5(d)(2).

Historic properties that would be affected by the project were identified through background research and pedestrian surveys conducted by Far Western Anthropological Research Group, Inc., (Far Western) under contract with the Corps and evaluated pursuant to NRHP criteria at 36 C.F.R. § 63. These historic properties comprise a Native American archaeological district that consists of 14 sites containing bedrock milling features and associated materials, designated by Far Western as the Rocky Hill District; the Bartlett Magnesite Mine site, on the south fork arm of Lake Success, which was determined eligible for NRHP inclusion in 2002 and again in 2017; and the Vincent 220kV Transmission Line, which was listed on the NRHP in 2016 (Ugan and McGuire 2020). The Corps determined that raising the gross reservoir pool would result in direct effects to pre-contact and historic-era properties through erosive forces caused by changing lake levels and indirect effects associated with increased recreational access and impacts to sensitive sites. In particular, these effects could adversely impact the integrity of the setting, materials, feeling, and association of historically significant archaeological materials and the built environment. The Corps also determined that the removal of several SCE's Vincent 220KV Transmission Line towers, which comprise character-defining features of that property, would similarly result in an adverse effect under Section 106.

Proposed Action. The proposed action would not result in effects to historic properties beyond those identified under the No Action alternative. As described above, the adverse effects of the project are related to increased reservoir capacity and the removal of historically significant transmission line towers. While details associated with these project elements have been refined since the 1999 FEIS/FEIR, they remain essentially the same: the maximum gross pool elevation of Lake Success would increase by 10 feet in elevation upon project completion and multiple transmission towers would need to be removed and replaced to safely operate under these changed conditions. The Corps has completed surveys within the Rocky Hill and Tule Recreation Areas, where recreation facilities and utilities would be relocated, and determined no historic properties would be affected in these locations. The Corps would conduct additional surveys for the SCE distribution pole locations, as needed, once those locations are finalized. Any adverse effects from proposed action elements would be resolved through mitigation measures established for Section 106 compliance, as detailed in section 3.3.3.

3.3.3 Mitigation

The Corps conducted preliminary Section 106 historic properties identification efforts to inform the 1999 FEIS/FEIR (Corps 1999) but did not complete project-specific Section 106 compliance at that time. The compressed schedule for final planning, engineering, and design of the current project, and its phased construction approach, required the Corps to negotiate a programmatic agreement (PA) with the SHPO to allow for a phased approach to Section 106 compliance, as allowed for under 36 C.F.R. § 800.14(b)(1)(ii).

To comply with Section 106 of the NHPA, the Corps executed a PA for the project with the California SHPO on December 13, 2019 (Appendix C). Section 106 compliance for Phase 1 of the project concluded upon receipt of SHPO concurrence with the Corps finding of no historic

properties affected for that phase of the project, on March 4, 2020. Pursuant to the PA, the Corps initiated consultation with the SHPO on a finding of adverse effect to historic properties for Phase 2 of the project, on which the SHPO concurred via correspondence dated August 18, 2020.

As described in the PA, the Corps will resolve the adverse effects of the undertaking through treatments identified in a Historic Properties Treatment Plan (HPTP), developed in consultation with the SHPO and interested Native American Tribes. The Corps 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 parties regarding this undertaking and the PA. To date, the Tule River Indian Tribe and Santa Rosa Rancheria Tachi Yokut Tribe have requested consulting party status. The Corps will continue to consult with the SHPO and consulting Tribes on development of the HPTP and the resolution of adverse effects resulting from project implementation.

As required under the PA, the Corps must identify appropriate mitigation in coordination with these Section 106 consulting parties, complete any fieldwork portion of agreed to mitigation measures and treatments, and accept a fieldwork summary report and schedule for final report completion, as needed, prior to issuing any Notice to Proceed with Phase 2 construction. By fulfilling the requirements specified in the PA, the Corps will have taken into account the effects of the undertaking on historic properties and resolved the adverse effects of the proposed action on such properties under Section 106 of the NHPA. The mitigation and treatment measures implemented under Section 106 of the NHPA also will serve to mitigate for adverse effects to cultural resources under NEPA.

3.4 Federal Special Status Species

3.4.1 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 C.F.R. Part 17). This act is administered by the USFWS and the National Marine Fisheries Service (NMFS). A Biological Opinion (BO) for this project was issued December 1999, entitled “Formal Section 7 Consultation on the Proposed Permanent 10-foot Dam Elevation Increase at Lake Success in Tulare County, California” (1-1-99-F-0085; USFWS 1999a). Informal consultation with USFWS, Mr. Harry Kahler, was reinitiated in December 2018. Re-initiation was pursued because of modifications to the proposed action since the original consultation in 1999 and changes regarding listed species referenced in the BO (USFWS 1999a). In July 2019, the Corps transmitted a Biological Assessment to USFWS and requested to re-initiate formal Section 7 consultation. After further consultation, the Corps submitted an updated Biological Assessment in December 2019 (Appendix D). USFWS issued a Biological Opinion in February 2020 (Appendix E).

The Corps requested a list of federally listed, candidate species, and species of concern that may be affected by the project via the USFWS Information for Planning and Consultation (IPaC) website (USFWS 2019). Additionally, the Corps searched the California Natural

Diversity Database (CNDDB) in 2019 and 2020 for occurrences of federal and state listed species near the project area within the 'Success Dam' U.S. Geological Survey quadrangle. 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 updated December 2019 Biological Assessment:

- 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
- Valley Elderberry Longhorn Beetle (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. Most of the project area is one mile south of the southern extent of the condor's critical habitat. Placement of armoring along Frazier Dike would occur within the designated critical habitat. However, there is no appropriate nesting habitat for the condor and the USFWS has only documented transient condor visits to the project area (USFWS 2015, unpublished GPS telemetry data). As a result, the Corps has determined that the proposed action would have no effect on the condor. Keck's checker-mallow and striped adobe lily (*Fritillaria striata*, a state listed species) populations are near the reservoir, but both are outside of the inundation area and not within the project area. These species would not be affected by the proposed action and therefore are not further discussed.

Though not listed above, both the bald and golden eagle are protected by the Bald and Golden Eagle Protection Act. 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 enough to not cause any disturbance to any potential bald or golden eagles, but monitoring would occur to assess the disturbance level of this nest and any others discovered in pre-construction surveys.

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. BMPs and mitigation would avoid, minimize, or reduce interactions with kit fox to less than significant.	May affect, and is likely to adversely affect Not likely to jeopardize
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
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						

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
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. Based on CNDDB, the areas around Lake Success fall outside the modeled predicted habitat range.	No Effect
Insects						
Valley Elderberry Longhorn Beetle (VELB) (*Desmocerus californicus dimorphus*)	Threatened (August 8, 1980: 45 FR 52803-52807)	USFWS	Outside DCH	N/A	Proposed action is >85 miles away from current species range (USFWS 2019b). 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. One adjacent to the main stockpile and one where the realigned road is being constructed. Field surveys by a trained Corps botanist in 2019 & 2020 determined that the species is no longer present where the realigned road would go, but it is near the main stockpile. The stockpile would avoid this species. However, this action would directly, adversely affect known habitat.	May affect, and is likely to adversely affect Not likely to jeopardize

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 Corps 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

The Corps coordinated with the USFWS on the federally endangered least Bell's vireo due to updated information indicating the potential presence of the vireo in the Lake Success area. As a result of re-initiation with USFWS, the biological opinion was 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 ACE-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 17 displays the general nesting timeline for the Lake Success area.

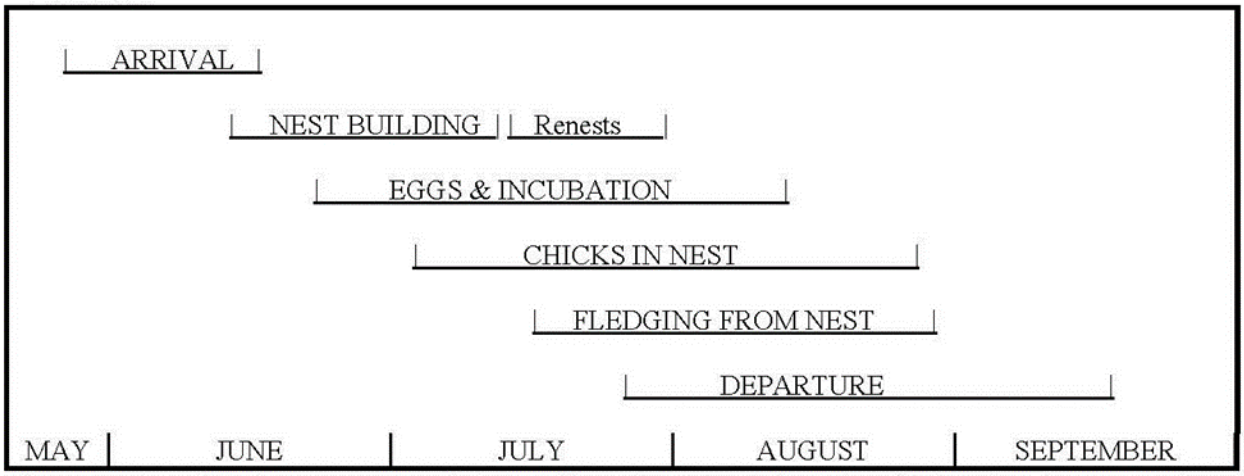

Figure 17. General Willow Flycatcher Breeding Chronology for Central and Northern California.

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 humans. 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 1998a).

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 quality, 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.

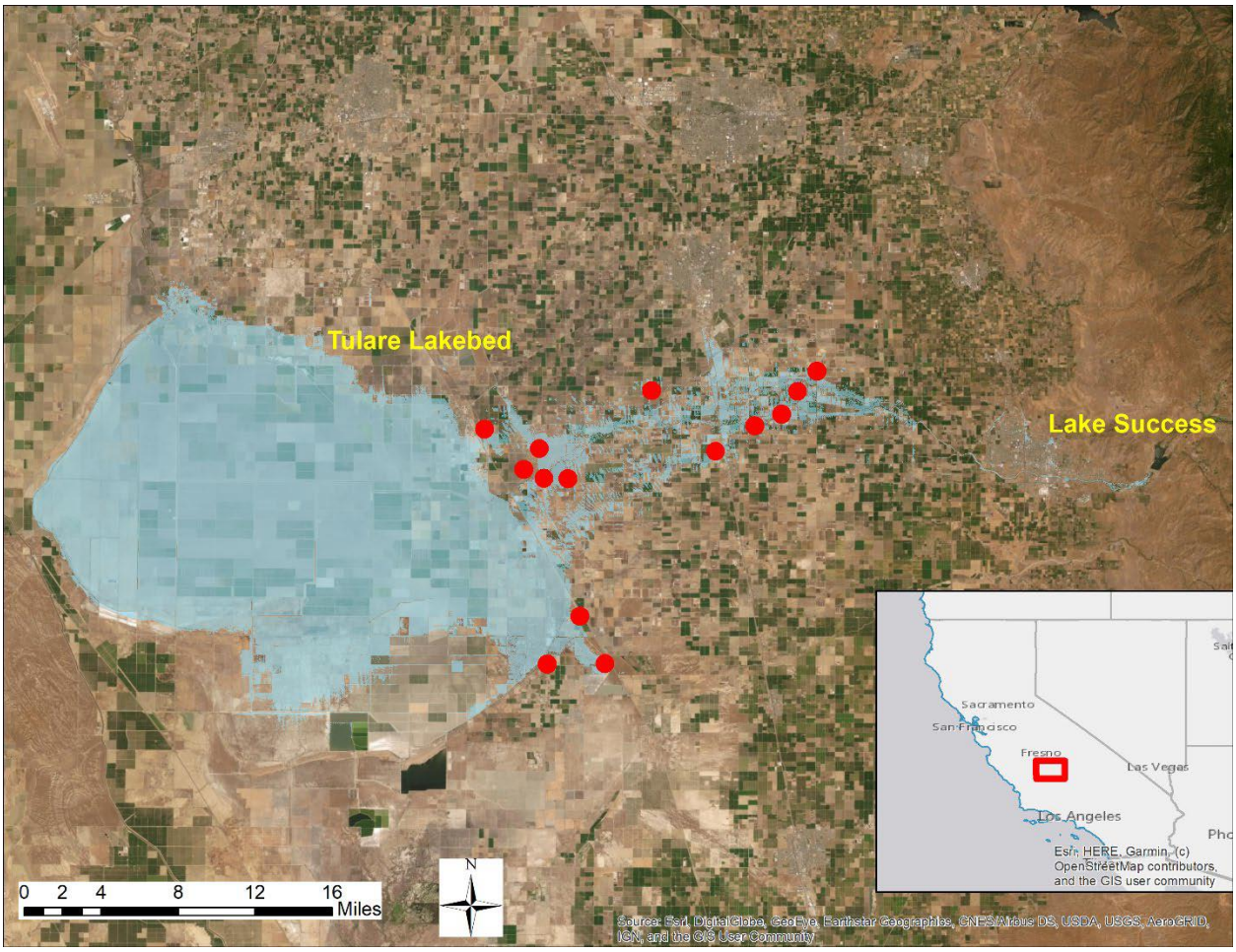

Figure 18. Occurrence of kit fox within and adjacent to the lower Tule River floodplain and Tulare Lakebed. All occurrences within the lower Tule River floodplain are from the early 1970s; one occurrence (third from bottom) adjacent to Tulare Lakebed is from 2002.

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; Corps 2009).

San Joaquin adobe sunburst successfully blooms during locally high rain years at Lake Success. The local populations of the plant are not dependent on the lake's flow regime or the pool elevation. Based on recent intensives surveys conducted by the Corps in 2019 and 2020 during the flowering season, the single population within the Phase 1 construction footprint no longer exists, possibly due to grazing by cows and horses on private land and by goats and/or sheep on Corps lands. During the 2019 surveys, the Corps discovered two new populations of San Joaquin adobe sunburst. Both are outside the Phase 1 and 2 construction limits and they are above the lake's new proposed gross pool elevation. There is one population near the main stockpile area. This population was first mapped in 2006 by Corps contracted botanists. Corps surveys in 2020 revealed that this population had expanded over a larger area since 2006.

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 1998b).

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 1998b).

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 (Corps 2014).

3.4.2 Environmental Consequences

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

- adverse effects to designated critical habitat,
- unauthorized take of a federally-listed threatened or endangered species, or

- substantial effects on any other special status species, including degradation of its habitat to the degree of jeopardizing the continued existence of the species or critical habitat.

No Action. Under the No Action alternative, the project would proceed as described in the 1999 FEIS/FEIR along with the Phase 1 actions as described in the 2020 EA (spillway widening and relocation of Worth Drive/Avenue 146). The Corps would construct a 10-foot tall concrete ogee weir within the newly enlarged spillway and raise the gross pool elevation. Flood-proofing, protection, and relocation of existing infrastructure would occur within the recreation areas. Either imported material from commercial quarries or blasted rock material from Phase 1 would be used to armor Frazier Dike and the abutments of the Hwy 190 bridge. SCE would implement its project to replace towers on the Vincent 220kV Transmission Line. Impacts to federally listed species and their habitats would be updated using new information and regulations. Under the No Action alternative, the project would occur in one year, with SCE work occurring concurrently. However, the SCE distribution poles would not be removed or relocated since this action was not described in the 1999 FEIS/FEIR.

The following federally listed species are potentially affected by project activities at Lake Success and were considered in the Biological Assessment (Appendix D):

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

The No Action alternative would not have an adverse effect on any of the above four species' designated critical habitats since none occur within the action area. Due to the stochastic nature of future water level fluctuations, and therefore suitable habitat, the short duration of this project, and the avoidance of all riparian vegetation during project construction activities, the effects on southwestern willow flycatcher and least bell's vireo are expected to be less than significant. The actions may result in short-term avoidance by kit fox due to construction. However, these actions would mainly take place during late fall and winter, reducing the likelihood of encountering a kit fox. Furthermore, USFWS protocol-level kit fox surveys conducted before initiation of Phase 1 construction failed to locate any kit foxes within or near the project area. Long-term intermittent impacts from periodic inundation of potential kit fox foraging habitat could occur when the lake rises above the existing gross pool elevation. However, it is not possible to determine if this would be a negative or positive effect on any potential kit fox foraging in the area. A 25-foot buffer would be created around the San Joaquin adobe sunburst population near the main stockpile using exclusionary fencing to protect the plants. The 2020 USFWS Biological Opinion concluded that the project is not likely to jeopardize the continued existence of the kit fox or the adobe sunburst. The conservation measures detailed in section 3.4.3 would further help avoid, minimize, or reduce interactions with the above federally listed species to less than significant.

Proposed Action. The proposed action would not result in any additional impacts to federally protected species beyond those described in the No Action alternative. The Corps conducted surveys in both 2018 and 2019 to look for rare plants around the lake between the

existing gross pool and the new, higher proposed gross pool. Most of the lake perimeter is comprised of non-native grasses and weedy species. The survey team, supported by a Corps botanist, did not find any native plant communities outside of the riparian areas. All of the SCE distribution poles that would be impacted by water from the 10-foot spillway raise are within disturbed areas dominated by non-native plant species. Thus, the proposed action would not adversely affect designated critical habitat, permit unauthorized take of a federally-listed threatened or endangered species, or substantially affect any other special status species, including degradation of its habitat to the degree of jeopardizing the continued existence of the species or critical habitat. The conservation measures detailed in section 3.4.3 would further help avoid, minimize, or reduce interactions with the above federally listed species to less than significant.

3.4.3 Mitigation

Implementation of the following conservation measures would help to avoid and minimize effects to federally listed species and ensure that the effects of the proposed action on federally listed species are less than significant. Consultation with the USFWS regarding these measures was completed in February 2020.

- 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, San Joaquin adobe sunburst, California condor, bald and golden eagles, and migratory birds by persons knowledgeable in biology and legislative protection. The program would 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.
- A Corps botanist would 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, the Corps would 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 would be hand dug and transplanted outside the construction footprint under the guidance of a qualified botanist or restoration ecologist; (c) transplanted plant locations would 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 would be collected in a 6-foot buffer around the plants to help secure the seedbank; (e) collected topsoil would be placed in six to twelve-inch wide, circular, shallow pits near the transplanted plants; (f) during Phase 1 & 2 construction, transplanted plants would 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 would 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 would be protected with exclusionary fencing for the duration of the project.

- A representative would be appointed to 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 if any listed species are affected.
- A certified kit fox biologist, considered qualified by the USFWS, would 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 would 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 would 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 wattles, 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 would be allowed on the project site.
- No pets, such as dogs or cats, would be permitted on the project site to prevent harassment, mortality, or destruction of dens or burrows.
- To prevent inadvertent entrapment of kit foxes, or other animals, during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep would 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 would be thoroughly inspected for trapped animals. If at any time a trapped or injured animal is discovered, the USFWS would be contacted.
- In the case of trapped animals, escape ramps or structures would be installed immediately to allow the animal(s) to escape, or the USFWS would 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 would 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 would not be moved until the USFWS 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 prevent 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 would 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.

3.5 Vegetation and Wildlife

3.5.1 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 (USFS 2005). 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 eco-region 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 Corps and USFWS surveys, 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. There are currently evidenced burrows from ground squirrels, rabbits and fox on the right abutment slope. The construction activities would 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.

The spillway is mostly devoid of vegetation and is composed of bedrock and gravel. The land surrounding the lake that would be occasionally inundated by the raised spillway is composed mostly of grasslands with nonnative cool-season grasses, with an exception of the wildlife areas, which have a few junipers. Based on surveys in 2019 and 2020, the SCE transmission line right of way is most composed of a monoculture of wild black mustard (*Brassica nigra*) with some occasional cockleburs (*Xanthium strumarium*) in lower areas, which are wetter. The Frazier Dike levee is mostly bare soil with spotty ruderal vegetation. Current routine maintenance involves periodic removal of herbaceous vegetation. The abutments of the Hwy 190 bridge are currently dominated by wild radish (*Raphanus sativus*), tumbleweed (*Salsola* spp.), and protective riprap.

3.5.2 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. The No Action alternative would involve constructing a 10-foot concrete ogee weir over the existing broadcrest sill which would increase storage capacity of the reservoir. Based on new lidar and on-the-ground surveys in 2019 of the entire perimeter of Lake Success, expanding the capacity of the lake would occasionally inundate approximately 421 acres of grassland, 44 acres of riparian woodland, and 97.6 acres of *Atriplex* scrub habitat during periods of high water (Figure 19). There would be a 12% chance each year that lake levels would rise above the existing gross pool elevation and less than 1% chance each year that lake levels would reach the new proposed gross pool elevation. The inundated acreage for riparian woodland and *Atriplex* scrub would be less than what was estimated in the 1999 FEIS/FEIR. The minor amount of land disturbed by SCE for the transmission line work would be properly revegetated once work is complete and would regrow before higher lake levels return in late spring/early summer.

Since the No Action alternative could permanently remove or disturb sensitive native communities, or significantly reduce the amount of native vegetation and wildlife habitat in the project area, mitigation would be required to reduce these effects below a significant level. Compensation acres were subsequently updated based upon the net change in average annual habitat units from the existing condition to the predicted future conditions under the No Action alternative. Based on these changes, the Corps would provide compensation for the potential loss of 421 acres of grassland around the perimeter of the lake from periodic inundation, by acquiring and preserving 293 acres of grassland. This grassland would be fenced and managed for wildlife. The Corps would provide compensation for the loss of 97.6 acres of *Atriplex* grassland habitat, which is now in the Kincade Cove Wildlife Management Area, by planting

Atriplex community species on 28.6 acres of lands adjacent to or within the remaining wildlife management area, above the new gross pool (Figure 19). The area would be fenced to protect the plantings from livestock grazing. All plantings would be watered until they become established, which is typically three years. These lands would not be managed specifically for kit fox habitat, but would provide some kit fox habitat. The Corps has reinitiated coordination with the USFWS, under the Fish and Wildlife Coordination Act, to confirm these updated mitigation commitments. Based on this coordination, there could be changes to the final compensation acres. If this happens, these changes would be reflected in the Final EA.

It is difficult to quantify the effects on the 44 acres of riparian woodland since riparian areas already experience periodic inundation. The downstream side of the affected riparian woodland would be covered by up to 10 feet of lake water at infrequent times, roughly once every eight years, for up 25 to 60 days. The upstream side of the affected riparian woodland would be covered by less than one inch of water infrequently for up to three to five days roughly once every one hundred years. The areas in between would be flooded at depths and durations between these two extremes based on the local topography. Mature cottonwood (*Populus fremontii*), sycamore (*Platanus racemosa*), and willow (*Salix* spp.) trees can tolerate flooding up to and beyond 60 days without high levels of mortality (Walters et al. 1980). Immature cottonwood saplings are not as flood tolerant and can have as much as 50% mortality after two weeks of flooding (Auchincloss et al. 2012). Thus cottonwood saplings could suffer periodic mortality on an infrequent basis, which could alter the current composition of the riparian woodland. Appropriate mitigation for these effects would be determined by the USFWS under the Fish and Wildlife Coordination Act.

According to updated Corps hydrology and hydraulics modeling, the areas downstream of Lake Success would not be significantly affected by the No Action alternative. Minimal to no effects to downstream habitat or wetlands would occur, and the average change in water level during major floods across the Tulare Lakebed would be a reduction of only 0.001 inches. Dam operations would continue as normal. There would not be any anticipated changes to winter releases. Water volumes would continue to reach and flood fallow fields in the Tulare Lakebed that are used by waterfowl and other migratory birds.

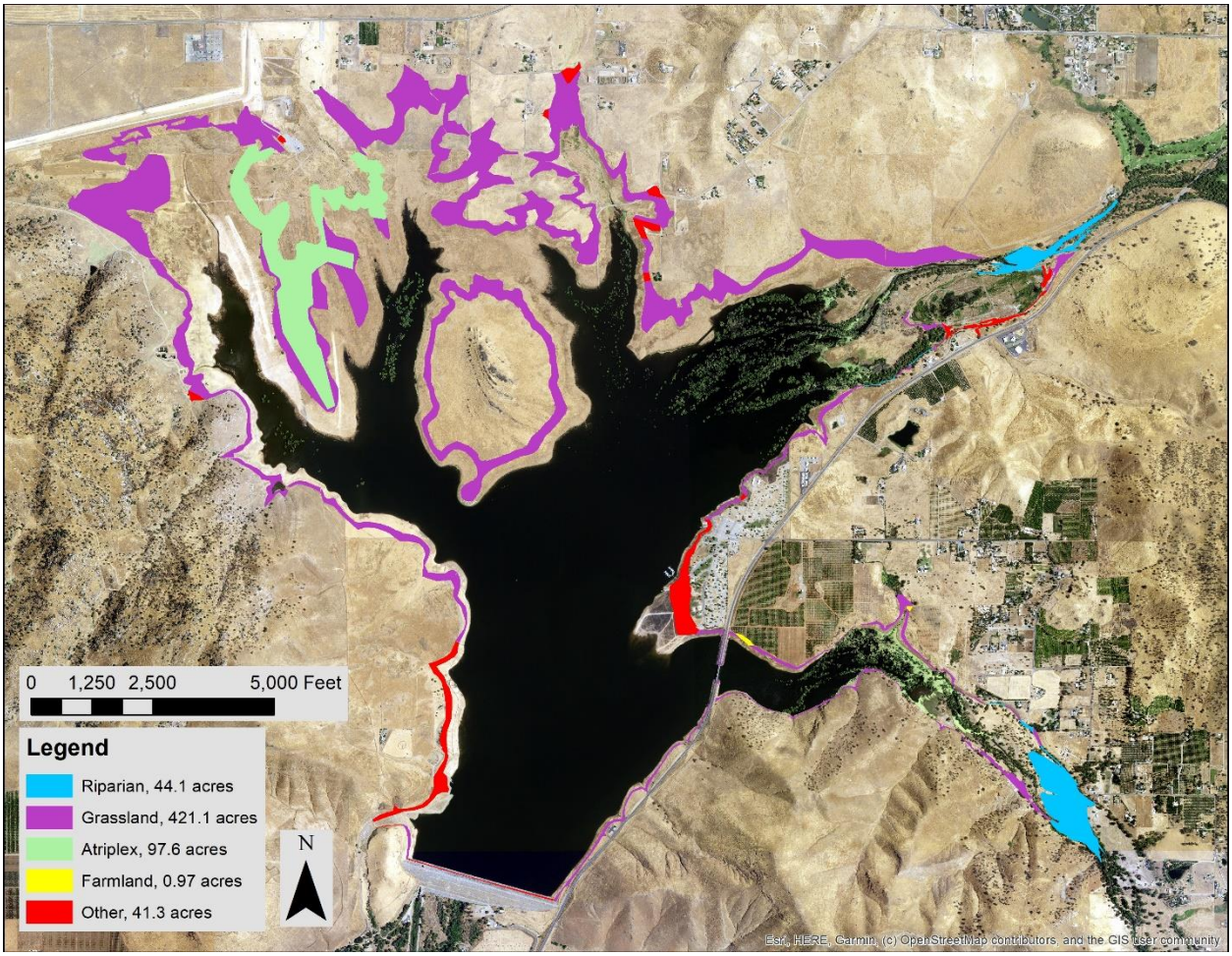

Figure 19. Periodically inundated habitat around Lake Success between the existing and proposed gross pool elevation. "Other" represents mowed lawn, roads, and parking lots.

Proposed Action. The proposed action would not have additional effects beyond those described by the No Action alternative. The expanded boat ramp, parking lot, and relocated pumphouse at the Rocky Hill Recreation Area would add about 0.5 acres of permanent impacts to pastured grasslands beyond the No Action alternative. However, these impacts would be more than offset by reduced impacts from the SCE transmission line work. Under the proposed action, SCE would use H-frame transmission towers, which only have two legs compared to four legs for the existing transmission towers. The new towers would reduce permanent impacts compared to the current transmission towers by about 5 acres. Under this alternative, portions of the existing SCE transmission line right of way would be temporarily cleared of vegetation, mostly grasslands dominated by wild black mustard. Existing dirt/gravel maintenance and access roads would be used to the extent possible. About 2.4 acres would be temporarily disturbed within the existing right of way to provide access from existing roads to the location of the new transmission towers. Removing each existing transmission tower would temporarily disturb a 50-foot x 100-foot area for a total of about 17 acres. Installation of each shoo-fly pole and H-frame tower would temporarily disturb a 220-foot x 220-foot area for a total of about 43 acres. Additional general temporary disturbance within the right of way would total about 20 acres for laydown/work areas. SCE would use laydown and work areas that minimize impacts to

trees and other vegetation. All of the SCE distribution poles that could be impacted by high water levels from the 10-foot spillway raise are within disturbed areas dominated by non-native plant species. Therefore, relocation or removal of the SCE distribution poles would not remove or disturb sensitive native communities, or significantly reduce the amount of native vegetation or wildlife habitat. Finally, all areas disturbed by SCE would be revegetated using an appropriate native seed mixture.

3.5.3 Mitigation

Impacts to approximately 421 acres of grassland, 44 acres of riparian woodland, and 97.6 acres of *Atriplex* scrub habitat would be mitigated for based on the recommendations of the USFWS. This mitigation coupled with the following BMPs would reduce impacts on wildlife and vegetation from the proposed action to less than significant:

- 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 located 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 would need to be removed within the construction footprint would 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 would 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 Migratory Bird Treaty Act 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.

3.6 Land Use

3.6.1 Affected Environment

The Corps administers 4,178 acres of federal land for the Lake Success project. These lands are available for recreation use except for those areas immediately adjacent to the dam, emergency spillway, and at Frazier Dike. The Corps leases a portion of the lands for livestock grazing provided that such grazing activities do not interfere with other project purposes (Corps 1977).

Using the Division of Land Resource Protection's land use planning data from the California Department of Conservation, a 0.5 mile buffer was created around Lake Success and the project area. The results of the query are displayed in Table 7 below. Based on this search, the land use within the vicinity of the reservoir consists primarily of grazing land and natural vegetation. Farmland of local importance exists around the north, middle, and south forks of the Tule River Basin (DOC 2019).

Table 7. Land use allocation with 0.5 mile buffer around Lake Success.

DESCRIPTION	PERCENT	TOTAL ACRES
Urban and Built-up Land	2.1	189.2
Grazing Land	35.2	3222.4
Farmland of Local Importance	12.1	1106.1
Non-agricultural or Natural Vegetation	16.1	1469.9
Prime Farmland	0.6	55.1
Rural Residential Land	3.2	297
Farmland of Statewide Importance	0.3	24.1
Semi-agricultural and Rural Commercial Land	0.1	7.8
Unique Farmland	2.8	258.5
Vacant or Disturbed Land	0.4	37.8
Water Area	27.1	2473.7

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.

The Tulare County General Plan essentially only permits agricultural uses in the vicinity of Lake Success. Exceptions to this are the areas bordering the northeastern reaches of the lake and a corridor which begins immediately south of the dam and extends southeasterly along Hwy 190; subject to approval by the county, limited residential and commercial development is permitted in these specific areas.

With the project, residential properties would be affected within the reservoir area. Three homes would have to be acquired because of the proposed increase in water level at Lake Success. Public Laws 91-646 and 100-17 require that individuals relocated from Federal projects be compensated for any losses. People who live within the new flowage easements would be eligible for compensation by the non-Federal sponsor. Tenants as well as property owners are eligible for compensation. These laws provide for relocation assistance and possibly severance damages.

3.6.2 Environmental Consequences

Basis of Significance. An alternative would be considered to have significant effect on land use if it would result in land uses that are incompatible with existing and planned land uses in the area, or if it would result in inconsistency with land use designations or goals.

No Action. Under the No Action alternative, the lake's gross pool elevation would be raised and would affect approximately 605 acres of land around the lake (Figure 19). The Corps already owns about 4,178 acres of land near Lake Success, of which 153 acres would be within the proposed increase in gross pool elevation. The affected Corps land does not include the 130.9-acre Boat Island located in Lake Success. An additional 452 acres of private land would be inundated. Most of the private land is grassland; about 1 acre is citrus orchard. Pending further coordination with the USFWS, roughly 365 acres of land would need to be set aside for habitat mitigation. Most of these mitigation lands would come out of the 452 acres of private land that that would be acquired due to inundation. However, due to the mitigation requirements, some additional private land beyond the 452 acres might need to be acquired. These mitigation acres would be managed for wildlife and would be protected in perpetuity. The No Action alternative would not have a significant effect on land use since it would not result in land uses that are incompatible with existing and planned land uses in the area, nor would it result in inconsistency with land use designations or goals as set forth in the Tulare County General Plan.

Proposed Action. The proposed action would not result in any additional effects to land use beyond those described in the No Action alternative.

3.6.3 Mitigation

The following mitigation would reduce impacts to land use: coordinate construction schedules with local businesses and other users, including providing temporary access during

construction, if needed; providing notice of access and utility disruptions; and implementing efforts to minimize construction noise, dust, and glare from lighting. As there would be no other effects on land use, no additional mitigation is necessary.

3.7 Socioeconomics and Environmental Justice

Socioeconomics describes the social and economic characteristics of the study area for the Spillway Raise. Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Information regarding employment, personal income, education and environmental pollution were obtained from the EPA Environmental Justice Screening and Mapping Tool. Several demographic variables were analyzed to characterize the effect of the proposed action on the community and surrounding area, including population size and distribution, the means and amount of employment, and income generation.

Regulatory Setting. Executive Order 12898 (1994) on Environmental Justice is the only social or economic requirement that is applicable to the project. This Executive Order requires that environmental analyses of proposed federal actions address any disproportionately high and adverse human health or environmental effects on minority and low-income communities. Federal agencies' responsibility under this order shall also apply equally to Native American programs. In addition, each federal agency must ensure that public documents, notices, and hearings are readily accessible to the public.

Social Vulnerability. Characteristics that generally define and influence social vulnerability include age, gender, race, and socioeconomic status. Other characteristics identify special needs populations or those that lack the normal social safety nets necessary in recovery, such as the physically or mentally challenged, non-English speaking immigrants, transients, and seasonal tourists. The quality of human settlements (housing type and construction, infrastructure, and lifelines) and the built environment are also important in understanding social vulnerability, especially as these characteristics influence potential economic losses, injuries, and fatalities from natural hazards.

3.7.1 Affected Environment

Regional Conditions. Centrally located within the State of California, Tulare County is situated in a geographically diverse region. Tulare County is one of the largest counties in the San Joaquin Valley. The county includes an area of 4,863 square miles. Mountain peaks of the Sierra Nevada range rise to more than 14,000 feet in its eastern half. Meanwhile, the extensively cultivated and fertile valley floor in the western half has allowed Tulare County to become the third-leading producer of agricultural commodities in the United States (Tulare County Farm Bureau). In addition to substantial packing/shipping operations, light and medium manufacturing plants are increasing in number and are becoming an important factor in the county's total economic picture.

Porterville is located about six miles west of the Richard L. Schafer Dam. Porterville is the focal point of this study as it is the city that is the primary beneficiary of flood protection, recreational use, and water supply provided by Lake Success. The Tule Indian Reservation boundary, which crosses the South Fork of the Tule River, is approximately five miles upstream of the project area.

As of January 1, 2019, there were 59,145 people and 16,364 housing units within the city of Porterville. The racial makeup of the city is 77.3% White, 0.8% African American, 0.9 % Native American, 4.5% Asian, 0.2% Pacific Islander, 22.6 % from other races, and 2.8% from two or more races. 65.4 % of the population was Hispanic or Latino of any race. 30.1% of the population is living below the poverty line (Census 2019).

Project Area Conditions. According to the Environmental Justice Screening and Mapping Tool, the local area surrounding the project site is sparsely populated, and has a higher percentage of population with low-income, less than high school education, and higher levels of $PM_{2.5}$ compared to the state average. With the project, residential properties would be affected within the reservoir area. Three homes would have to be acquired because of the proposed increase in water level at Lake Success. Public Laws 91-646 and 100-17 require that individuals relocated from Federal projects be compensated for any losses. People who live within the new flowage easements would be eligible for compensation by the non-federal sponsor. Tenants, as well as property owners, are eligible for compensation. These laws provide for relocation assistance and possibly severance damages.

3.7.2 Environmental Consequences

Basis of Significance. For the proposed action to have a significant effect on socioeconomics, it would need to result in population changes, residential relocations, business or job losses, and/or changes in public services that are incompatible with local agency goals or projections.

No Action. Under the No Action alternative, the higher gross pool elevation combined with wind and wave runup caused by the spillway would inundate a total of 44 privately owned parcels comprising 452 acres around the lake. LTRID would acquire fee title for the impacted parcels. In limited circumstances, a flowage easement could be used instead of fee title acquisition. The majority of the parcels are owned by five individuals. Three homes would be acquired by LTRID and the residents would be relocated. It is possible that flood-proofing two of the homes could be an option instead of acquiring fee title and relocating the residents. The No Action alternative would not result in population changes, residential relocations, business or job losses, and/or changes in public services that are incompatible with local agency goals or projections.

Short-term impacts could occur when the reservoir levels rise above the existing gross pool elevation. The reduction in parking areas at Lake Success could result in limited short-term effects to local businesses that provide goods and services to recreational users. However, these effects are expected to be less than significant as a result of the improvements to both the Tule and Rocky Hill Recreation Areas.

Proposed Action. The proposed action would not result in any additional effects beyond those described in the No Action alternative.

3.7.3 Mitigation

Impacts to the three houses would be mitigated by fee acquisition and possible reimbursement of relocation expenses for the occupants. Mitigation would also include acquiring and compensating the owners of 44 parcels. Fee acquisitions would be implemented under the provisions of the Uniform Relocation and Real Property Policies Act of 1970, as amended, which requires the Government to compensate property owners at fair market value and provide relocation assistance in accordance with the Act. This mitigation would reduce the effects to less than significant. There are no other significant impacts to the socioeconomics of the area, therefore, no additional mitigation is required.

3.8 Noise and Vibration

3.8.1 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.

Existing Conditions**.** The area surrounding Lake Success is largely open space. The nearest sensitive receptors to the spillway are two residences, located 0.35 and 1.9 miles away, and local wildlife and recreationists using the reservoir area. The closest residence is not currently occupied and the owners do not plan to occupy it for the next few years. The nearest sensitive receptors to Frazier Dike and the SCE transmission line right of way are two residences, located more than 0.5 miles away, and local wildlife. 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., Hwy 190 and 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.

3.8.2 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. Impacts were considered significant if the alternative would result in an increase in ambient noise levels for adjoining areas. The significance of temporary noise effects is evaluated with reference to existing noise levels, the duration of the noise, and the number of sensitive receptors affected.

No Action. Under the No Action alternative, the project would proceed as described in the 1999 FEIS/FEIR along with the Phase 1 actions as described in the 2020 EA (spillway widening and relocation of Worth Drive/Avenue 146). SCE would implement its project to replace towers on the Vincent 220kV Transmission Line. Impacts to noise and vibration would be updated using new information and current Tulare County noise level performance standards. Under the No Action alternative, the project would occur in one year, with SCE work occurring concurrently (Table 4). However, the distribution poles would not be removed or relocated since this action was not described in the 1999 FEIS/FEIR.

Noise and vibration impacts would be limited to short-term construction with limits in time and location. There would not be a permanent increase in ambient noise levels for adjoining areas. Noise and vibration would be generated by heavy equipment during daytime hours, Monday through Saturday from 7:00 a.m. to 7:00 p.m. The noise would be limited to the area surrounding the construction sites at the spillway, recreation areas, transmission line right of way, Frazier Dike, and Hwy 190 bridge. Most human sensitive receptors in these areas would be more than 300 feet away and therefore noise impacts would be negligible. The Corps would attempt to time construction in recreation areas to non-peak use periods to the extent practicable to further reduce effects from noise.

The effect of noise and vibration on wildlife is highly variable due to specific attenuation 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 noise and vibration would be waterbirds (ducks, egrets, pelicans, etc.). The likelihood of resident wildlife would be minimal near the spillway and Frazier Dike once soil stripping begins, leaving transient predators such as birds and lizards. Some wildlife may be dissuaded from nesting/denning in the local area if nesting/denning coincides with the heaviest periods of construction. It is possible that some migratory songbirds, raptors, waterbirds and shorebirds may have their migratory patterns shifted due to the disturbance. Most birds acclimatize quickly to disturbance if they are in resting or nesting activities, but perching and foraging birds will more often adjust their behavior if the disturbance affects their activity. The disturbance to the animals decreases over repeated

exposure if there are no negative effects noticed by the animals. 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).

Recommended mitigation measures, including BMPs, to reduce potential noise impacts are described in section 3.8.3. Even without the implementation of these measures and BMPs, it is anticipated that most of the localized noise impacts from the short-term construction activities would remain less than significant.

Proposed Action. In comparison to the No Action alternative, the proposed action would have slightly more effects from noise due to additional construction activities (Table 5) caused by SCE removing or relocating distribution power poles. However, these additional effects would be temporary and short duration. Recommended mitigation measures, including BMPs, to reduce potential noise impacts are described in section 3.8.3. Even without the implementation of these measures and BMPs, it is anticipated that most of the localized noise impacts from the short-term construction activities would remain less than significant.

3.8.3 Mitigation

The following mitigation measures and BMPs are to be implemented:

- All contractor construction equipment would comply with Tulare County noise level performance standards (Tulare County 2012). All construction would 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.
- 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.
- 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 a.m. to 5 p.m. (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.

3.9 Recreation

3.9.1 Affected Environment

Water-based recreational opportunities for 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. 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 a day, and the summer night bass fishing is reported to be 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 860,000 visits (Table 8), 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 about 350,000 recreation visitor-days are spent in and around Lake Success.

Table 8. 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)

3.9.2 Environmental Consequences

Basis of Significance. An alternative would be considered to have a significant impact on recreational resources if it would result in the loss of recreational facilities, cause substantial disruption of recreational opportunities, or substantially diminish the quality of recreational experiences.

No Action. The No Action alternative would periodically increase the boating capacity of the reservoir by expanding the inundation area at maximum lake levels by nearly 450 net acres. The South Fork of the Tule River would be impassable to motorboats east of the Hwy 190 bridge during new, higher gross pool elevations, which would slightly reduce the overall increase in capacity for motorboats but would still result in a net increase. The South Fork arm of the lake would still be available to kayakers and paddle boarders. This alternative would not cause substantial disruption of recreational opportunities, or substantially diminish the quality of recreational experiences. The Corps determined in the 2020 EA that impacts to recreation from Phase 1 would be less than significant.

Under this alternative the Corps would construct a replacement parking lot above 665.1 feet NAVD88 and extend the southern boat ramp above the new gross pool elevation at the Tule Recreation Area. The Corps would relocate or flood-proof recreation facilities, including restrooms and provide portable toilets during high water periods. The northern boat ramp and adjacent parking lot at the Tule Recreation Area were already been widened and extended in the early 2000s to allow continued use during higher lake levels resulting from the increase in gross pool. There would be some temporal interruption of visitation at the Rocky Hill Recreation Area, occurring from July 2021 through May 2022 during construction. 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. The construction at the Tule Recreation Area would occur after the work is completed at the Rocky Hill Recreation Area to reduce the minimal effects from this work on recreation. The impact to recreation would be reduced to less than significant with improved

facilities post-construction that give recreationists opportunities to still use the lake when at gross pool elevation.

Proposed Action. The proposed action would not have any detrimental effects to recreation beyond those described in the No Action alternative. Under the proposed action, post-project recreation use during periods of high lake levels would be more balanced across the lake since there would be one high-water capable boat ramp and parking lot at both the Tule Recreation Area and the Rocky Hill Recreation Area. This would reduce congestion during high lake levels.

3.9.3 Mitigation

The following mitigation measures would be implemented to minimize effects on recreation that may occur during the proposed action to less than significant:

- Impacted restrooms would either be flood-proofed or relocated.
- The Rocky Hill Recreational Area boat launching ramp would be extended and widened to ensure use at the new gross pool elevation. The boat ramp would be widened to 48 feet and would be lengthened from 100 to 150 feet with a 12 to 15 percent slope. Concrete similar to the existing ramp would be used for the construction.
- The existing Rocky Hill Recreational Area parking lot would be enlarged to mitigate for parking lost by the higher gross pool.
- 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.
- All obstacles and hazards to recreational users would be clearly identified by signs, flagging, and buoys.

3.10 Traffic

3.10.1 Affected Environment

State Hwy 190 is a lightly traveled highway going from Porterville, along Lake Success, to Springville and Eagle Mountain Casino (Figure 20). The casino, whose entrance is about 10 miles north of Lake Success, is operated on the Tule Indian Reservation. Hwy 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 Hwy 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 supports 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.

3.10.2 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 area roadways, or cause substantial deterioration of the physical condition of the area roadways.

No Action. The No Action alternative would result in a short-term increase in traffic on public roadways that could potentially cause delays. The main haul route to Frazier Dike and the Hwy 190 bridge would follow Hwy 190 (Figure 20). Armoring the bridge abutments would cause traffic delays for approximately one to two weeks, with periodic lane closures as required to place the erosion protection along the abutments. Each stage of the project (grubbing/land clearing, grading/excavation, drainage/utilities/sub-grade, SCE transmission work, and paving to repair roads damaged by the project) would have different levels of impact on traffic. The greatest impact to traffic would be on Hwy 190 from hauling rock and soil for Frazier Dike during the grading/excavation phase of the project. This is a temporary impact that would increase daily traffic by about 1.5% (Appendix F), which is not a substantial increase in traffic volume. After construction is complete, traffic and transportation resources are expected to resume normal operating conditions. The No Action alternative would not impede traffic on Worth Drive/Avenue 146 during the ogee weir construction since this road would already be relocated as part of Phase 1. The No Action alternative would not increase safety hazards on area roadways. The project contractor would develop and follow a Traffic Control Plan to ensure safety on area roadways. Additional mitigation measures are described in section 3.10.3. As described in section 2.2, any damage to roadways caused by the project would be repaired. As a result, short-term, construction-related effects on traffic would be less than significant.

Proposed Action. The proposed action effects to traffic would be similar to the No Action alternative. Under the proposed action, there would be a minor increase in traffic during the SCE distribution power pole removal and relocation (approximately two more vehicles each day) compared to the No Action alternative. Relocating the four distribution poles along the Hwy 190 bridge (see Figure 16) would cause additional traffic delays for approximately one to two days due to periodic lane closures. During this work, SCE would coordinate with Tulare County, the City of Porterville, the California Department of Transportation (Caltrans), and other responsible agencies to reduce adverse effects on traffic. Therefore, with the implementation of the mitigation measures described in section 3.10.3, short-term, construction-related effects on traffic patterns would be less than significant.

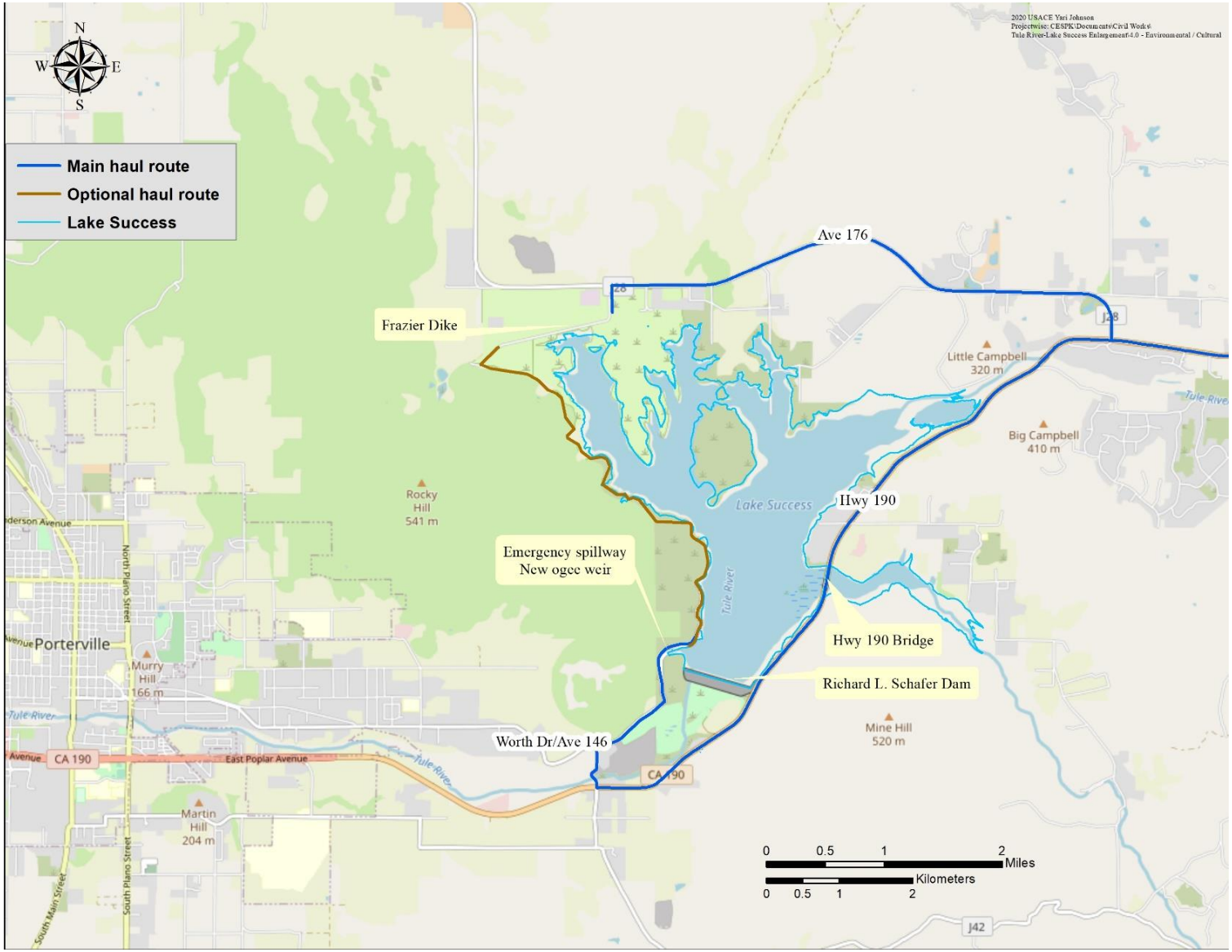

Figure 20. Major roads and haul routes around Lake Success and the City of Porterville.

3.10.3 Mitigation

The following mitigation measures would be implemented to minimize effects on traffic that may occur during the spillway raise 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.
- Implement a Traffic Control Plan to be developed by the contractor and approved by the Corps prior to the initiation of construction. The plan would include appropriate placement of signs, flaggers, barricades, and traffic delineation to minimize disruption and ensure public safety.
- The Contractor would be responsible for coordination with Tulare County, the City of Porterville, the California Department of Transportation (Caltrans), and other responsible agencies to reduce adverse effects on traffic (to include the development and implementation of the Traffic Control Plan). For example, the Contractor would adhere to City of Porterville requirements to avoid hauling during peak traffic in the morning and afternoon.

3.11 Water Quality

3.11.1 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.

Regulatory Setting. The CWA is the federal law that regulates the discharge of pollutants into navigable waters. State water quality programs and regulations are chiefly the products of federal mandates put into effect through the CWA and managed by the EPA. The CWA requires

states to establish numerical water quality criteria for a host of toxic discharges. In-stream water quality objectives and standards are contained in the state's region-based water quality control plans, more often referred to as basin plans. The regional water quality control board (WQCB) administers each hydrologic basin and associated basin plan. The Central Valley Regional Water Quality Control Board (CVRWQCB) administers Section 401 requirements of the CWA and the Water Quality Control Plan for the Tulare Lake Basin. The CVRWQCB attempts to maintain water quality through control of wastewater discharge.

In addition to the basin plans, the regional water quality control boards administer the EPA's National Pollutant Discharge Elimination System (NPDES) permits required by the CWA. In part, this regulation requires that discharges of stormwater associated with construction activity disturbing more than one acre is regulated as an individual discharge and must be permitted.

The Corps regulates structures and work in navigable waters of the U.S. that affect the navigable capacity of such waters under Section 10 of the Rivers and Harbors Act of 1899. The Corps also regulates the discharge of dredged or fill material into all regulated waters of the U.S., including wetlands, under Section 404 of the CWA. The EPA and the Corps both have responsibilities in administering this program. The EPA has an oversight role under Section 404, and the Corps issues permits for these regulated activities. Although the Corps does not issue itself permits for its own Civil Works projects, Corps regulations state that the Corps must apply the guidelines and substantive requirements of Section 404 to its activities.

Tulare County is located within the jurisdiction of the Central Valley Regional Water CVRWQCB. 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, Success Lake 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 (655.1 feet NAVD88) and work under the OHWM falls under the jurisdiction of the CWA.

3.11.2 Environmental Consequences

Basis of Significance. Impacts from an alternative would be considered significant 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 water uses or water rights.

No Action. The No Action alternative would construct a 10 foot-high concrete ogee weir across the emergency spillway, armor the bridge on Hwy 190 that passes over the lake, add rock slope protection to Frazier Dike to accommodate the increase in gross pool, adjust or flood-protect current recreation facilities, and relocate utilities. This alternative would also extend and widen the Tule Recreation Area boat ramps; raise and relocate 14 towers; and replace 11,800 feet of transmission lines to meet minimum clearance criteria resulting from the increased gross pool. Some of this work would occur below the OHWM, which is equivalent to the current gross pool elevation and would fall under the CWA. Temporary land disturbance of greater than one acre would result from project construction; therefore, the contactor would be required to prepare a NPDES storm water permit (Section 402 of the CWA, 33 U.S.C. § 1342; 40 C.F.R. § 122.26). Stormwater runoff and spills of petroleum-based products during construction activities have the potential to affect water quality conditions at Success Lake and downstream on the Tule River. The Corps is required to obtain a 401 Water Quality Certification and conduct a 404(b)(1) evaluation to comply with the CWA (33 U.S.C. § 1341, 1344). The application for the 401 Water Quality Certification is underway and the Corps has started its 404(b)(1) analysis, both would be finished in December 2020 before the Phase 2 Final EA is completed.

Construction activities would include enlarging Lake Success by raising the spillway elevation 10 feet with an ogee weir and excavating to widen the spillway from 200 feet to 365 feet. These changes would increase the capacity of the reservoir by 28,000 acre feet. In compliance with the CWA and to avoid impacts, a site specific plan with measures addressing proper disposal of silt, debris, refuse, or other pollutants associated with construction on the water side of the spillway would be implemented to prevent fill or rock material and road surface runoff from spilling into the reservoir. Impacts from this alternative would not violate water quality standards or waste discharge requirements, result in the loss of surface or groundwater sources, or interfere with existing beneficial water uses or water rights. With implementation of the BMPs required in the construction general permit, the water quality certification, and other measures, as applicable, effects to water quality are expected to be less than significant.

Proposed Action. The effects to water quality from the proposed action would be consistent with the No Action alternative. Changing the boat ramp and parking lot expansions from the Tule Recreation Area to the Rocky Hill Recreation Area would not affect water quality beyond those effects described in the No Action alternative. Impacts from this alternative would not violate water quality standards or waste discharge requirements, result in the loss of surface or groundwater sources, or interfere with existing beneficial water uses or water rights. With implementation of the BMPs required in the construction general permit, the water quality certification, and other measures, as applicable, effects to water quality are expected to be less than significant.

3.11.3 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. SCE would obtain its own SWPPP. The SWPPPs 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 following standard BMPs would be expected to be implemented 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 raise project, including the construction of the ogee weir, recreation, armoring Hwy 190 bridge and Frazier Dike, and utility relocations, would not induce growth in or near the project area. Implementing the proposed action would not impact local development planning efforts, and 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 (40 C.F.R. 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 provides a thorough cumulative impacts analysis. The Phase 1 2020 EA also looked into cumulative impacts. The cumulative impacts analysis in this EA is focused only on additional cumulative impacts associated with the Tule River spillway raise project beyond what was analyzed in the 1999 FEIS/FEIR and the Phase 1 2020 EA.

4.2.1 Federal Projects

The Success Dam Seismic Remediation Project (Corps 2006) would not be implemented during the spillway raise construction. The future status of the Success Dam Seismic Remediation Project is unknown at this time. This project aims to reduce the risk of a dam failure in the event of a seismic event. In late 2015, the Corps downgraded the Schafer Dam's dam safety action classification rating from II (urgent: unsafe or potentially unsafe) to III (high priority: conditionally unsafe) based on interim study results. 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 (Corps 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 (Corps 2006).

The only other federal project in the area is Phase 1 of the Tule River Spillway Enlargement project. The bulk of Phase 1 construction consists of widening the spillway. This will mostly occur in 2020, with final road construction occurring into 2021.

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 large-scale future 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). In the summer of 2021, Caltrans will replace culverts at seven locations and guardrails at two locations on state Hwy 190 between Springville and Camp Nelson in Tulare County, which is about 10 miles from Lake Success.

4.2.3 Effects Analysis

The Spillway Raise (Phase 2) as described in this Draft EA is currently scheduled for construction. Implementation of the proposed action could have adverse cumulative effects on

aesthetics and visual resources; air quality; cultural resources; federal special status species; hazardous, toxic, and radiological waste; noise and vibration; recreation, traffic; vegetation and wildlife; and water.

Aesthetics and Visual Resources. Phase 1 and 2 proposed actions would result in short and long-term impacts from construction activities to the visual character of the primarily natural environment surrounding Lake Success. Short-term impacts would include introducing construction equipment, workers, and materials to the project area. Long-term impacts would result from the addition of the 10-foot ogee weir to the existing broadcrested sill, increased inundation area should the reservoir reach maximum capacity, a wider spillway, and a road that is located next to the spillway rather than inside of the spillway. Adverse effects to the aesthetics and visual resources of the area around Lake Success would be reduced to less than significant by revegetating disturbed areas. The Caltrans road project will not alter aesthetics and visual resources nor would the closure of the Porterville Development Center. The former project will maintain consistency of conditions along Hwy 190, while the latter project is not visible from the road or other areas open to the general public. The main characteristics of the area that appeal to visitors (the lake and hills with the mountains in the distance) would stay consistent with present conditions. For these reasons, implementation of the current and future projects would not have a significant cumulative effect upon aesthetics and visual resources.

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. Based on the construction schedule and air quality modeling from the Phase 1 2020 EA, the bulk of the work from Phase 1, and the resultant emissions, would occur in 2020 during the blasting and excavation phase. Only paving and final road work would occur in 2021. The combined emissions from both Phase 1 and 2 for 2021 would be below the local thresholds with BMPs (see Table 4 and Appendix C of the Phase 1 2020 EA). As stated in Section 4.2.2, there are currently no local major projects planned in the vicinity of the proposed action. Any unforeseen projects are anticipated to implement BMPs and/or mitigation measures to reduce those effects to the extent practicable. Thus, the cumulative impacts to air quality would be less than significant.

Cultural Resources. Cultural resources are non-renewable resources and, therefore, at particular risk for incremental or cumulative effects. The current project would affect cultural resources within the higher Lake Success reservoir pool, primarily through erosion. Past reservoir operations have had little to no direct effects on these particular cultural resources, although other cultural resources below the current gross reservoir pool elevation have been subject to effects from inundation since the dam was constructed. With regard to reasonably foreseeable impacts to cultural resources from future projects, it is extremely unlikely that projects with the potential to affect such resources would occur in the same exact project area (i.e., within the new gross reservoir pool) or pose impacts to the same resources beyond those described in this document. Future projects in the general project area, outside the current APE, could cause impacts to other cultural resources, but any project that involves Federal or other public agency oversight would be subject to compliance with NEPA, the NHPA, and/or CEQA. Adverse effects to cultural resources from such projects would be mitigated pursuant to the requirements of applicable Federal and/or state law, resulting in less than significant impacts to

cultural resources. There is always a possibility that cultural resources could be impacted by the actions of private property-owners on non-public lands in the general project area; however, the Corps has no knowledge of current or future projects that necessarily would result in cumulative impacts to cultural resources. Thus, the cumulative impacts to cultural resources would be less than significant.

Federal Special Status Species. Implementation of the project does not have the potential to contribute to the overall loss or degradation of sensitive habitats and is not likely to adversely affect federally listed species. Planned project mitigation measures, described in Section 3.4.3, would limit potential adverse impacts to a less-than-significant level for special status species. 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.

Cumulative impacts to special status species would be temporary, lasting two to three years, and once construction is complete, fish and wildlife resources should recover to pre-project conditions with the implementation of the mitigation measures. The current proposed action would not add to these cumulative effects, as the majority of the project impacts would be temporary, and disturbed areas would be revegetated. For these reasons, implementing current (Phase 1) and future projects (Phase 2, Caltrans road work, and closure of the Center) would not result in a significant cumulative effect to special status species.

Hazardous, Toxic, and Radiological 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. The 1998 investigation showed no underground storage tanks in range of the project footprint. LTRID would conduct further HTRW investigations during property fee acquisitions. An Environmental Site Assessment (ESA) would be conducted to identify recognized environmental conditions, including the presence or likely presence of any hazardous substances or petroleum products under conditions that indicate an existing release, a past release, or the material threat of a release into structures, the ground, and groundwater or surface waters of the property. Cumulative impacts relating to HTRW would be minimized to less than significant through use of BMPs. Response actions would need to be acceptable to the U.S. Environmental Protection Agency and applicable state regulatory agencies, such as the California Environmental Protection Agency and the Regional Water Quality Control Board.

Noise and Vibration. 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, such as those described in Section 3.7.3 above, would limit cumulative impacts to a less-than-significant level, if all local

projects followed them or similar actions. 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.

Recreation. The proposed action would have temporary impacts on recreation due to the closure of public access to the Rocky Hill Recreation Area during construction for both Phase 1 and Phase 2. Once flood-proofing work is complete at the Rocky Hill Recreation Area in February 2022, due to the newly relocated road from Phase1, limited public access could continue while work on the ogee weir continued until the end of the year. Once construction is complete at the end of 2022, recreation opportunities would return to the current baseline. The other local projects are not anticipated to have any impacts on recreation. 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 the same local and regional roadways. The Caltrans project is occurring 10 miles away in a rural location east of Springville within the Sequoia National Forest. Combined work from the Caltrans project and Phase 2, could cause slight delays if work occurs at the same time. These delays would impact tourists and would be temporary in nature, lasting less than one season. 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. There will be a short-term cumulative impact on vegetation and wildlife in the immediate area surrounding the spillway during Phase 1 and Phase 2 construction. Wildlife will avoid the area during construction due to human activity. There are no anticipated impacts to wildlife or vegetation from the Caltrans work on Hwy 190. There are no detailed plans on future land use after closure of the Center. It is not possible at this moment to anticipate impacts from the closure on vegetation and wildlife. Overall, cumulative impacts to vegetation and wildlife would be temporary, lasting two to three years, and once construction is complete,

fish and wildlife resources should recover to pre-project conditions with the implementation of the mitigation measures. For these reasons, implementing current (Phase 1) and future projects (Phase 2, Caltrans road work, and closure of the Center) would not result in a significant cumulative effect to special status species.

After construction is complete, disturbed areas would be revegetation. 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. Pre-construction surveys and BMPs would further reduce impacts from Phase 1 and Phase 2 to wildlife. As a result, the proposed action 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 Phase 1 of 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 Corps, 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 Spillway Raise would result in less-than-significant effects to water quality. Degradation of water quality from the project would be short term and limited to the construction period. The project would not cumulatively contribute to 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. Corps has coordinated with SJVAPD to evaluate the potential impacts of the spillway raise.

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. Due to extending and widening the Tule recreation area boat ramps and raising 15 transmission towers, a Section 401 water quality certification is 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. The Corps would obtain a 401 certification from the CVRWQCB and conduct a 404(b)(1) evaluation, both are expected to be completed in December 2020. Full compliance would be obtained when the 404(b)(1) evaluation is complete and the state issues the 401 certification.

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 Spillway Enlargement Project. In December 2018, the Corps obtained an initial list from USFWS of Federally listed and proposed species likely to occur in the Spillway Raise (proposed action) project area. After reviewing the species list and conducting a biological field survey of the potential project area, Corps 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. In July 2019, Corps transmitted a biological assessment to USFWS and requested to reinitiate formal Section 7 consultation on the Spillway Raise. Corps received a request for additional information from the USFWS and submitted a revised biological assessment in December 2019, which analyzed impacts to two additional species, the least bell vireo and southwestern willow flycatcher. A biological opinion covering both Phases 1 and 2 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 Lake Success 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 years, the Tule River dries up before reaching the Tulare Lake lakebed. Additionally, Lake Success and the Tule River were 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).

Based on the above qualifiers, it has been determined that the proposed spillway raise would be in compliance with EO 11988, since the proposed action is not located in a base floodplain. To comply with this Executive Order, the policy of the Corps is to formulate projects which, to the extent possible, avoid or minimize adverse effects associated with use of the without-project flood plain, and avoid inducing development in the existing flood plain unless there is no practicable alternative. The Tule River Basin Investigation is in compliance with this Executive Order. The project provides 100-year flood protection to a portion of the Porterville area downstream of the dam. Currently, any downstream flooding that occurs, manifests as one to two feet sheet flow. A standard foundation currently elevates buildings above the 100-year flood plain. Current growth projections for Porterville were determined to be the same for with- and without- project conditions. Therefore, the project would not be inducing any development in the base flood plain. Local entities with oversight of development activities downstream comply with state-mandated resource protection including the state's Endangered Species Act. Accordingly, the natural and beneficial values of the downstream flood plains would be protected as further urban development continues.

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 spillway raise 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 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. The Corps surveyed for presence of migratory birds and bald and golden eagles in the action area, and would do so again prior to construction. If nesting birds are detected, the Corps 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 would cover both Phase 1 and 2 actions. The USFWS shared a draft supplemental CAR with the Corps in December 2019. These preliminary recommendations and the relevant ones from the 1999 CAR have been incorporated into the plans and specification for Phase 2. 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 the Corps 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.) *Partial compliance*. This Draft EA is in partial compliance with this act. The Draft EA and a draft FONSI would be circulated for a 30-day public review. Comments received during the review period will be incorporated into the final EA, as appropriate, and considered in either finalizing a FONSI or preparing a Supplemental Environmental Impact Statement (SEIS). Unless a SEIS is determined to be necessary, the proposed action would be considered to be in full compliance with NEPA when the FONSI is signed by the District Commander.

National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101, et seq.) *Full compliance.* The Corps has executed a PA with the California SHPO, which allows for a phased approach to compliance with Title 54 U.S.C. § 306108, commonly known as Section 106 of the NHPA. The Corps will continue to consult with the SHPO and other Section 106

consulting parties, including Native American Indian Tribes, to implement all requirements of the PA as stipulated. Through implementation of the PA stipulations, the Corps will remain in full compliance with this law.

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 U.S.C. § 4601, et seq.) *Full compliance*. This Act provides for uniform and equitable treatment of persons displaced from their homes, businesses, or farms by Federal and Federally assisted programs and to establish uniform and equitable land acquisition policies for Federal and Federally assisted programs. The proposed action is in compliance with the provisions of this Act.

6 COORDINATION AND REVIEW OF THE DRAFT EA

This Draft EA and FONSI will be circulated for 30 days to agencies, organizations and individuals known to have a special interest in the project. A public notice will be distributed from the Corps Public Affairs Office indicating the availability of this document. The Corps will post the Draft EA on the project website (www.spk.usace.army.mil/Missions/Civil-Works/Tule-River-Spillway-Enlargement-Project-Success-Dam) and make copies available at the Lake Success Headquarters Office. Additional hard copies will be provided by mail upon request. The Corps 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
Natural Resources Conservation Service
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 will be appended to the Final EA. Any comments received will be addressed, as appropriate, in the Final EA and considered by the Corps Sacramento District Commander before deciding whether to sign a FONSI or prepare an SEIS for the proposed action.

7 FINDINGS

This Draft EA evaluated the environmental effects of the proposed spillway raise. 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, land use, socioeconomics and environmental justice, and water quality. Results of the Draft 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. Table 9 compares the effects of the alternatives on wildlife habitat and federally protected species and summarizes the proposed mitigation.

Table 9. Comparison of effects to habitat and special status species with proposed mitigation.

	Affected acres			**Compensation acres**		
Habitat	**1999 FEIS/FEIR**	**2020 No Action**	**2020 Proposed Action**	**1999 FEIS/FEIR**	**2020 No Action**	**2020 Proposed Action**
Grassland	421	421	421	425	293	293
Atriplex grassland	167	97.6	97.6	150	28.6	28.6
Riparian woodland	71	44	44	82	44[1]	44[1]
Oak trees	10 trees	10 trees	10 trees	100 seedlings[2]	100 seedlings[2]	100 seedlings[2]
Mineshafts for bats	Two mineshafts	N/A	N/A	Build berms to protect from higher lake levels	N/A[3]	N/A[3]
Flooded agricultural land in Tulare Lakebed[4]	867	N/A	N/A	247	N/A	N/A
Elderberry shrub	12 shrubs	N/A	N/A	1.5	N/A	N/A
San Joaquin adobe sunburst	5 plants	N/A	N/A	N/A[5]	N/A	N/A

1. Coordination on mitigation acreage is ongoing; final acreage may vary.
2. To be planted on project mitigation lands along main and south forks of the Tule River.
3. Based on updated lidar and on-the-ground surveys, the mineshaft entrances are above the new proposed gross pool and are no longer at risk from flooding

4. Based on the 1999 FEIS/FEIR, the spillway raise would reduce periodic flooding of agricultural lands, which could reduce usage by waterfowl and shorebirds. Updated hydrologic models shows no change in flooding of Tulare Lakebed under the 2020 No Action or Proposed Action.
5. Based on the 1999 FEIS/FEIR, Corps would mitigate for inundation of 5 San Joaquin adobe sunburst plants by protecting three 0.5-acre parcels of government-owned land from cattle with exclusionary fencing.

Based on this evaluation, the proposed action meets the definition of a FONSI as described in 40 C.F.R. § 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. The Corps Sacramento District Commander, following public review and comment period of the Draft EA, would determine whether a FONSI is appropriate.

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