

DRAFT

**INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION**

**RIVER ROAD OVER SAN JOAQUIN RIVER BRIDGE REPLACEMENT (AKA HILLS
FERRY ROAD BRIDGE REPLACEMENT)**

STANISLAUS COUNTY, CALIFORNIA



LSA

October 2020

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FERRY ROAD BRIDGE REPLACEMENT)
STANISLAUS COUNTY, CALIFORNIA**

Submitted to:

Stanislaus County Public Works
1716 Morgan Road
Modesto, California 95358

Prepared by:

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Project No. TYL1902



October 2020

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LIST OF ABBREVIATIONS AND ACRONYMS

°F	degrees Fahrenheit
AB	Natural Resources Conservation Service
ac	acre(s)
ADT	average daily traffic
APE	Area of Potential Effects
APN	Assessor Parcel Number
BMP	Best Management Practices
BSA	Biological Study Area
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CGS	California Geological Survey
CIDH	cast-in-drilled-hole
CIWMP	Countywide Integrated Waste Management Plan
County	County of Stanislaus, Department of Public Works
dB	decibel
dBA	A-weighted sound level
dbh	diameter-at-breast-height
DOC	California Department of Conservation
EFH	essential fish habitat
EIR	Environmental Impact Report
ESA	Environmentally Sensitive Area
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring
ft	foot/feet
GHG	greenhouse gas
I-5	Interstate 5
L _{max}	maximum instantaneous noise level
mg/kg	milligrams/kilogram
mph	miles per hour
NAHC	Native American Heritage Commission
NEPA	Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System

NRCS	Natural Resources Conservation Service
parts per million	parts per million
PCE	Primary Constituents Elements
ppm	parts per million
PPV	peak particle velocity
RWQCB	Regional Water Quality Control Board
SJKF	San Joaquin kit fox
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMARTS	Stormwater Multiple Application and Report Tracking System
SPCP	Spill Prevention and Countermeasure Plan
SWPPP	Storm Water Pollution Prevention Plan
U.S.	United States
US-99	United States Highway 99
USACE	United States Army Corps of Engineers
USFWS	U.S. Fish and Wildlife
VdB	vibration velocity decibels
VELB	Valley Elderberry Longhorn Beetle
VMT	Vehicle miles traveled
WPCP	Water Pollution Control Plan

1.0 PROJECT INFORMATION

1. Project Title:

River Road over San Joaquin River Bridge Replacement (aka Hills Ferry Road Bridge Replacement)

2. Lead Agency Name and Address:

Stanislaus County Public Works
1716 Morgan Road
Modesto, CA 95358

3. Contact Person and Phone Number:

Denis Bazyuk, P.E.
(209) 525-4150

4. Project Location:

The project site is located immediately north of the confluence of the San Joaquin and Merced rivers in southern Stanislaus and northwestern Merced counties. Figure 1: Regional Location and Figure 2: Project Vicinity depict the location of the project site on a regional and local scale.

5. Project Sponsor's Name and Address:

Stanislaus County Public Works
1716 Morgan Road
Modesto, CA 95358

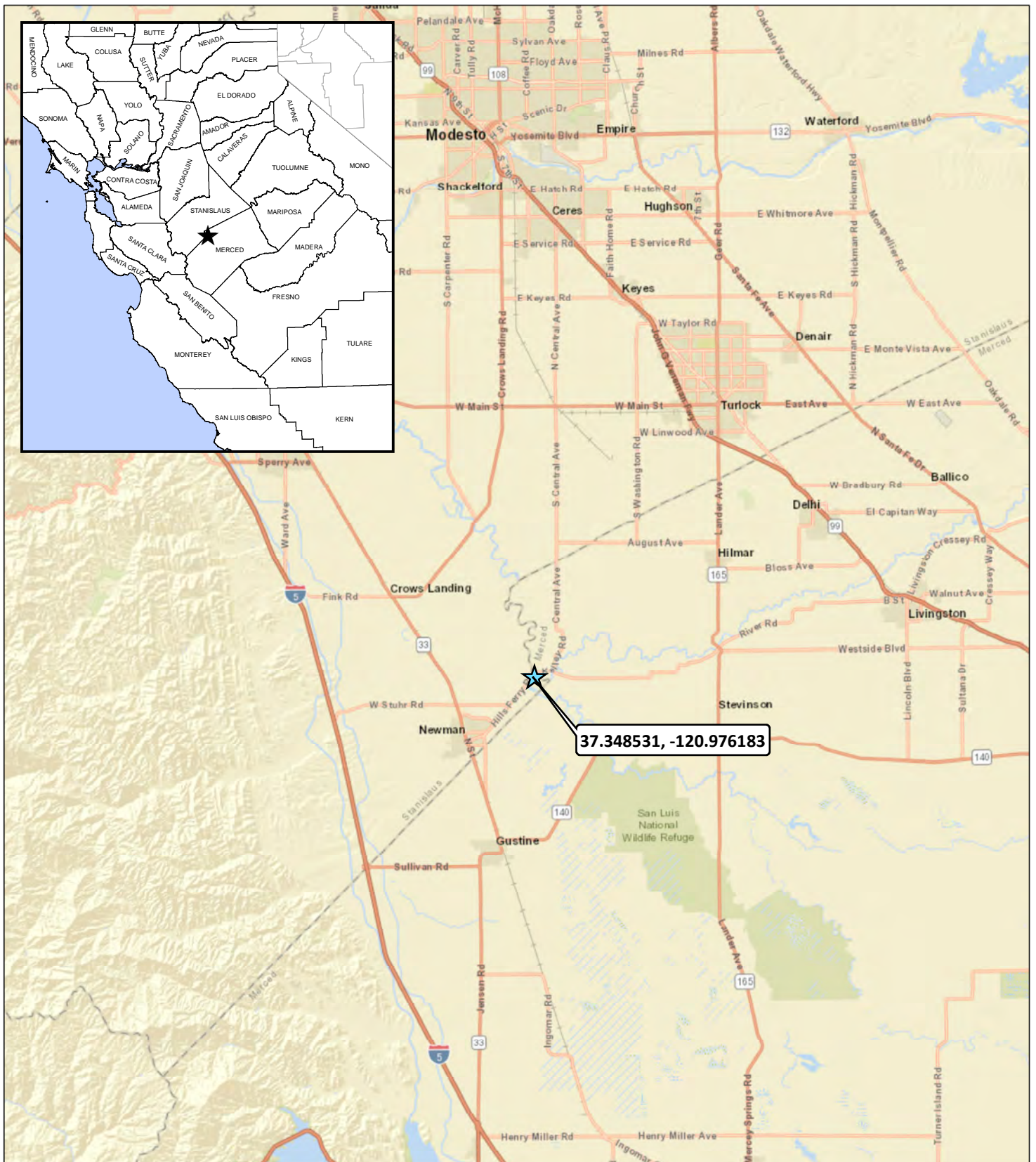
6. General Plan Designation:

River Road is a County-owned right-of-way, and therefore has no land use designation. Surrounding Assessor Parcel Numbers (APNs) 049-037-003 and 049-037-002 are designated Agriculture (Stanislaus County) and APNs 045-280-011-000 and 045-280-012-000 are designated Agricultural (Merced County).

7. Zoning:

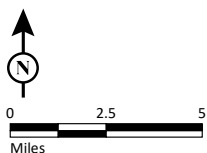
River Road is a County-owned right-of-way, and therefore does not have a zoning classification. Surrounding APNs 049-037-003 and 049-037-002 are zoned Agriculture 40 Acres (A-2-40) in Stanislaus County; and APNs 045-280-011-000 and 045-280-012-000 are zoned General Agricultural (A-1) in Merced County.

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LEGEND

★ Project Location



SOURCE: ESRI World Street Map (05/2019)

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FIGURE 1

*River Road over San Joaquin River Bridge
(Bridge No. 39C0001) Replacement Project
Stanislaus County, California; Caltrans District 10
Federal Project No. BRLSZ-5938(176)*

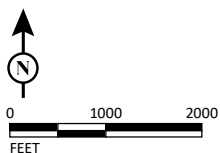
Regional Location

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 Project Area - (23.23 ac)



SOURCE: NAIP Aerial Imagery (08/2016)

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FIGURE 2

*River Road over San Joaquin River Bridge
(Bridge No. 39C0001) Replacement Project
Stanislaus County, California; Caltrans District 10
Federal Project No. BRLSZ-5938(176)
Project Vicinity on Aerial Base*

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8. Description of Project :

The County of Stanislaus, Department of Public Works (County) in cooperation with the County of Merced, Department of Public Works, the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) is proposing to replace the River Road over San Joaquin River Bridge (aka Hills Ferry Road over the San Joaquin River) (Br No. 39C-0001) and to construct the necessary approach roadway improvements to accommodate the bridge replacement. Previous studies concluded that bridge replacement was more cost effective than bridge retrofit.

Funding for the proposed project would be achieved through sources related to the FHWA Highway Bridge Program, State of California Local Bridge Seismic Retrofit Account, Bond Match Funds, and local County funds. The proposed project requires compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The County of Stanislaus is the lead agency for the CEQA process, while Caltrans is the lead agency for the NEPA process.

Introduction

The existing bridge is 647 feet (ft) long and 32 ft wide. The piers and bents are all aligned parallel to the predominant directions of the San Joaquin River flow during low flows and have variable skews due to the curved alignment. The structure is comprised of three reinforced concrete frames with 18 spans. The bridge was constructed in 1961 as a replacement for the original 1901 wood trestle and steel swing-span truss bridge previously located downstream and constructed as part of old State Route 122. The 1961 replacement project realigned Hills Ferry Road from its original tangent alignment by shifting the river crossing south (or upstream) of the original location along a horizontal curve and closer to the confluence of the Merced and San Joaquin Rivers. This action also relocated the original intersection of Hills Ferry Road and River Road southerly by 650 ft to its current location.

A seismic retrofit engineering evaluation was initiated in 1993 by Caltrans and advanced by Stanislaus County from 2001 to 2018. These studies identified significant seismic deficiencies in the existing bridge, including foundation vulnerabilities due to potential liquefaction. Additionally, the bridge has substandard traffic railings and is scour critical due to river migration and channel widening issues. In December 2018, a decision was made to replace the bridge rather than trying to retrofit the old bridge since the cost of retrofit was comparable to the cost of replacement.

Purpose and Need

Hills Ferry Road is a rural major east-west connector between Interstate 5 (I-5) and United States Highway 99 (US-99) between the towns of Patterson and Los Banos, California. The existing two-lane road has a posted speed limit of 55 miles per hour (mph), and based on 2012 traffic data has an average daily traffic (ADT) of 4,470. Based on a 3.5-percent annual traffic growth assumption, the estimated 2017 ADT is 5,310. The existing horizontal alignment and superelevation provides a comfortable design speed that exceeds 65 mph for a two-lane conventional highway in accordance with the current Caltrans Highway Design Manual.

The Hills Ferry Road Bridge is subject to damage or collapse in response to seismic activities. The seismic vulnerability or primary deficiency of the bridge is the predicted damage or collapse of the bridge resulting from subsurface liquefaction and lateral spreading of soils, which may also impact the slope stability of the roadway embankments and the channel bank. In addition, in January 2020, emergency action was taken to repair the accelerated bank erosion at the eastern embankment due to the migration of the Merced River channel. Deep local scour at several piers is also a concern, and Caltrans agreed to reclassify the bridge as scour critical in 2018. Underwater inspection conducted in August of 2019 discovered exposed piling below several of the existing bridge footings.

The primary objective of the project is to provide long-term safe vehicular access across the San Joaquin River. This objective would be met by replacing the seismically and scour critical inadequate existing bridge. Additional objectives include avoiding or minimizing environmental impacts, reducing right-of-way and land use impacts, meeting ADT requirements, and protecting against bank erosion.

Proposed Seismic Safety

The initial direction from Caltrans was to pursue a path of seismic retrofit rather than replacement. However, during the course of engineering investigations and studies it was determined that in addition to seismic vulnerability the bridge was also at risk due to scour. On August 13, 2018, Caltrans reclassified the bridge as being scour critical. A structural rehabilitation plan to mitigate the scour concern was developed to provide additional strengthening to the bridge foundation in addition to that which had previously been determined necessary to address the seismic deficiencies. The combined construction cost for the retrofit project exceeded that of a bridge replacement. T.Y. Lin International prepared an Alternatives Study Report which clearly showed that bridge replacement was less expensive than bridge retrofit (T.Y. Lin International 2018). Based on T.Y. Lin International's recommendation, the County, with Caltrans concurrence, has determined that the best seismic retrofit is to replace the entire bridge.

Bridge Replacement

The proposed bridge replacement project consists of realigning Hills Ferry Road by shifting the centerline at the crossing location of confluence north (downstream) of the existing bridge centerline on a slightly smaller radius horizontal curve. The northerly shift is sufficient to allow a single stage construction operation for the new two-lane crossing while maintaining vehicular access across the river throughout construction using the old bridge. The proposed replacement crossing would be approximately 750 ft in length and would accommodate a usable roadway width of approximately 34 ft (4-ft shoulder/12-ft lane/12-ft lane/6-ft shoulder). Once construction of the replacement crossing is completed, the proposed alignment would tie into the existing Hills Ferry Road alignment, and the existing bridge and foundations would be removed. (Foundation removal limits would be 2 ft below the existing ground line, per normal practice.) The existing roadway embankments would remain in place; however, the existing asphalt concrete would be removed per standard specifications.

The total length of the proposed improvements including the approach roadways and bridge would be approximately 2,100± ft. The length of the approach roadway improvements at both the west and east ends of the bridge are approximately 600 and 650 ft, respectively. The roadway would be superelevated through the curves at 10 percent. The new roadway section would conform to the existing roadway section at the limits of the proposed project improvements. A design exception was approved by the counties to reduce the project design speed from 60 mph to 55 mph in order to obtain adequate stopping sight distance and to reduce the length of the approaches.

The proposed project replaces the existing bridge with a new crossing that raises the profile approximately 5 ft to allow longer and fewer spans than the existing bridge while maintaining the required freeboard above the anticipated flood events.

Embankment fills would be graded at 2H:1V.¹ The toe of embankment slopes would be contained within the proposed right-of-way corridor.

The bridge structure would be approximately 750 ft long using a five-span cast-in-place post-tensioned box girder, with a span configuration of 125 ft/166 ft-8 inches/166 ft-8 inches/166 ft-8 inches/125 ft. The new bridge would be supported on reinforced concrete single-column piers with cast-in-drilled-hole (CIDH) concrete piles and reinforced concrete seat type abutments supported on CIDH concrete piles or cast-in-steel-shell concrete piles. The shells for the cast-in-steel-shell piles at the abutments may be driven into place. Abutments would be aligned parallel with the predominant channel flow direction. Falsework would be required in the floodplain and in the low flow channel. The falsework would consist of a mixture of driven piles and possibly timber support pads in the floodplain. Rock slope protection would be required at the abutments to protect the roadway embankments. The excavation required for the rock slope protection near the abutments could be extensive, as it may have to go as deep as the expected scour elevation.

Construction Activities and Schedule

The proposed project can be constructed in less than two full construction seasons with a potential to be completed in 15-24 months. In Stage 1, the anticipated construction sequencing would involve construction of the two-lane replacement structure in a single operation north of the existing crossing during the initial “in-water” work window, usually from June 15 to October 31. Concurrent with this operation, construction of the western and eastern approach roadways would be completed.

The project footprint includes an additional 40-ft offset from the fill prism to account for any permanent erosion control measures, drainage features, and possible fencing relocation. It is anticipated that a roadside ditch or bioswale would be required on each side of the roadway to treat runoff.

¹ A 2H:1V slope indicates that for every 2 feet horizontally, the grade would increase by a height of 1 foot.

During the initial stage of construction, traffic operations would be maintained on existing Hills Ferry Road using the existing two-lane bridge. Temporary traffic disruptions could occur depending upon the sequencing used to tie the new alignment into the existing alignment at the project conforms. These disruptions would be more substantial at the eastern approach. At the conclusion of Stage 1, traffic operations would be shifted from the existing alignment to the new alignment and the two-lane replacement structure.

In Stage 2, the removal of the required elements of the existing bridge would be completed. Roadway approach embankments may be left in place to provide additional protection to the abutments during high river flow events. Due to environmental work windows and seasonal constraints, the removal of the existing bridge and any portions of the existing roadway paving may require a second season. Total construction duration is estimated to be less than 21 months but may include two “in-water” work windows.

“In-water” construction activities would consist of new construction and demolition activities, both of which may require diversion or channelizing of the flow at the crossing toward the thalweg² and/or construction of temporary work trestles. The need for work trestles and their length would be dependent on the snow and water year that precedes the start of construction. In both 2017 and 2019, there was high water below the bridge (approximately 600 ft from bank to bank) due to snowmelt through June and July. In other low water years, the water surface can be reduced to a 100-ft-wide low water channel by May. For planning and permit purposes, the use of work trestles would be assumed in order to lengthen the available work window. New construction activities would include pier foundation construction; excavation, backfill, and form-reinforce-pour operations for the new bridge substructure elements; and erection (and eventual removal) of an access trestle and falsework/formwork. Removal activities would include demolition of the existing bridge superstructure and substructure elements, including excavation and removal of foundations to approximately 2 ft below grade. Placement of roadway embankment fill at the approaches would occur outside of the ordinary high-water elevation. Form-reinforce-pour operations for the new bridge superstructure would occur above the ordinary high-water elevation.

Two temporary access trestles may be constructed as part of the proposed project construction operations. One trestle would be constructed approximately 90± ft north of the existing bridge centerline to facilitate construction of the replacement structure during Stage 1. A second trestle may be constructed 40± ft south of the existing bridge centerline to facilitate removal of the existing bridge during Stage 2. Both temporary trestles would be removed at the conclusion of the applicable construction stage. Both trestles would likely consist of either pipe piles or H piles driven into the water at approximately 20-ft centers. Steel cap beams and stringers would be attached onto the piles and crane mats placed to form a working surface approximately 40 ft wide. Fingers of additional trestle may be placed perpendicular to the main Stage 1 trestle spanning the waterway to allow construction of the approximately 8-ft diameter CIDH concrete piles for the new piers. The trestle would remain in place to service the construction of the new bridge. Depending on the outcome of hydraulic modeling and what kind of a water year it is, the trestle may remain in place over winter. Since it would be at a lower elevation than the new

² The thalweg is a line drawn to join the lowest points along the entire length of a river/stream.

bridge, the project specifications would require that the deck and stringers of the trestle be removable in case of rising water.

The CIDH concrete piling would likely be constructed using temporary steel casing to keep the drilled holes from collapsing. The casings may be driven, vibrated rotated or oscillated into the soils. If the casings are driven and the water level is high such that water surrounds the casing during driving, then a bubble curtain would likely be required to reduce the magnitude of sound waves through the water in order to protect fish. Due to the expected high water table during pile construction and possible artesian conditions, slurries would likely be needed within the casings and drilled holes. Slurries would be reused from pile to pile and would be stored in Baker tanks. Slurries would not be allowed to enter the water.

Falsework to support the new cast-in-place box girder structure would likely be a combination of driven pipe piling and timber posts on timber pads. The piles would be driven from cranes that would travel on land and on the trestles. Piles would likely be 16-inch-diameter pipe piles at 30-ft centers across the full length of the new bridge construction and at potentially 10-ft centers transversely. Depending on the progress of the contractor, it may be necessary for falsework to remain in place through the winter.

After the new bridge is completed, the work trestle would be used to disassemble the falsework below the new bridge, then the work trestle would be removed in the reverse of how it was constructed, from the middle to the edges. Piles in the falsework or work trestle that cannot be removed by vibrating them out, would be cut off at the mudline.

After the new bridge is open to traffic, the existing bridge would need to be removed. For portions of the bridge that are not over water during the removal period, those segments would likely be demolished using hydraulic breakers attached to excavators and the debris would be collected after it falls to the ground. For portions to be demolished over water, the demolition would likely be done from another work trestle built upstream of the old bridge or by working from the deck of the old bridge and working backwards during the removal. Removal methods would depend on whether concrete debris would be allowed to fall in the water or not. If concrete debris is not allowed to fall in the water, then the contractor may have to sawcut the bridge into pieces over water and lift them out with a crane. However, some inwater demolition would be required. Some of the existing piers and pile extensions are likely to be in the water year-round and their removal would require debris to fall in the water. Piers would be removed to the top of footing elevation and piles would be broken off at the mudline.

Construction of the proposed replacement project is tentatively planned to begin in spring of 2021 and be completed by October 2023.

Construction Staging Areas

Potential construction staging areas may include:

- An area immediately northeast of the east end of the bridge with temporary construction access on either side of Hills Ferry Road (on APN 045-280-011).

- An area immediately northwest of the west end of the bridge with temporary construction access through APN 049-037-002.

Natural Resources Conservation Service Conservation Easement

In 2001, a conservation easement was established on the James J. Stevinson Ranch properties located on the eastern side of the Hills Ferry Road Bridge in Merced County. The property owner and the United States Department of Agriculture, Natural Resources Conservation Service (NRCS) entered into an agreement to establish a floodplain conservation easement to:

“allow the unimpeded reach and flow of any waters in, over, upon or through the easement area; to retard runoff and prevent soil erosion through the functional values of wetlands, riparian areas, conservation buffer strips and other lands; to conserve natural values including fish and wildlife habitat, water quality improvement, flood water retention, groundwater recharge, open space, aesthetic values and environmental education; and to safeguard lives and property from floods, draught, and the products of erosion.”

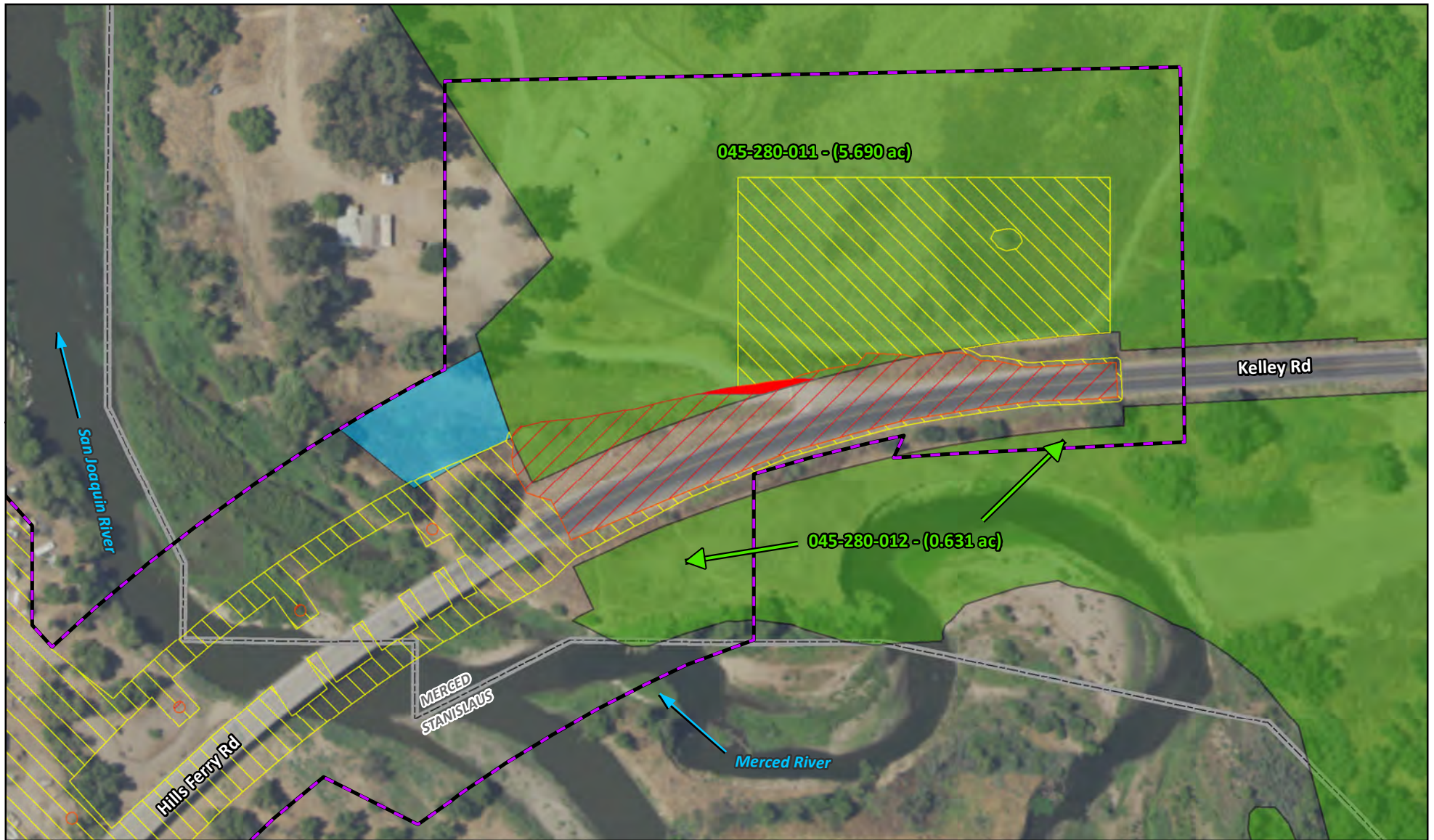
The NRCS conservation easement within the proposed project footprint is located east of the Hills Ferry Road Bridge north of Kelley Road (APN 045-280-011) and south of Kelley Road (APN 045-280-012). See Figure 3, Easement Impact Map.

As shown on Figure 3, 6.321 acres (ac) of land is under the NRCS conservation easement within the project study area. Of the 6.321 ac of existing easement within the project study area, 5.690 ac are within APN 045-280-011 and 0.631 ac are within APN 045-280-012. A proposed 1.8-acre (77,950 square ft) staging area would be located within the existing NRCS easement, as shown in Figure 3. The proposed staging area would be cleared, and at project completion, would be restored to pre-project conditions and/or reseeded with native grasses. The proposed project would require the permanent removal of 0.22 ac (9,412 square ft) of existing NRCS easement due to the proposed eastern roadway approach realignment. As part of the project, suitable replacement lands would be placed under conservation easement at a 1.5:1 ratio. Proposed conservation easement lands are shown on Figure 3.

9. Surrounding Land Uses and Setting:

The project area is located approximately 7.5 miles east of I-5 and 12.5 miles southwest of US-99 within the rural area of southern Stanislaus County and northwestern Merced County. The subject bridge is located immediately north of the confluence of the San Joaquin and Merced rivers.

Additional information concerning surrounding land uses within and adjacent to the project area is included in the Land Use and Planning Section of this Initial Study.



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FEET

LEGEND

- | | |
|---|--|
| Project Area - (23.23 ac) | Non-Compensation Area - (0.021 ac) |
| Permanent Impact Areas - (2.591 ac) | Floodplain Easement Permanent Impacts - (0.217 ac) |
| Temporary Impact Areas - (5.284 ac) | Floodplain Easement Temporary Impacts - (1.737 ac) |
| Floodplain Easement - (6.321 ac) | |
| Proposed Floodplain Easement - (0.325 ac) | |

FIGURE 3

*River Road over San Joaquin River Bridge
(Bridge No. 39C0001) Replacement Project
Stanislaus County, California; Caltrans District 10
Federal Project No. BRLSZ-5938(176)*

Easement Impact Map

SOURCE: Basemap- NAIP Aerial Imagery (08/2016); Mapping- CA Natural Resources Agency (11/2019)

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10. Other Public Agencies Whose Project Approval is Required (e.g., permits, financial approval, or participation agreements):

- Stanislaus County CEQA Approval
- Department of Transportation (Caltrans) District 10
- United States Army Corps of Engineers (USACE)
- State Water Resources Control Board
- California Department of Fish and Wildlife
- National Marine Fisheries Service
- State Lands Commission
- U.S. Department of Agriculture, National Resources Conservation Service

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resource Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

On March 7, 2017, the County sent a letter to the Torres Martinez Desert Cahuilla Indians per Public Resources Code 21080.3.1 (Assembly Bill [AB] 52) describing the project with maps depicting the project study area. Additionally, on March 8 and 9, 2017, LSA sent letters consistent with Section 106 describing the project with maps depicting the project study area to the Native American contacts provided by the Native American Heritage Commission (NAHC) requesting any information or concerns regarding cultural resources in the APE. Letters pursuant to Section 106 were sent to the North Valley Yokuts Tribe, the Southern Sierra Miwuk Nation, and the Tule River Indian Tribe. The County and LSA received no response from the Tule River Indian Tribe or the Torres Martinez Desert Cahuilla Indians; however, the North Valley Yokuts Tribe requested notification before any ground disturbance to ensure that a monitor was present, and the Southern Sierra Miwuk Nation would like to be informed if cultural resources are encountered during project development so the tribe may update their records. Consultation with tribes did not result in the identification of any tribal cultural resources.

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2.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” or “Less Than Significant with Mitigation” as indicated by the checklist in Chapter 3.0.

- | | | |
|---|--|--|
| <input type="checkbox"/> Aesthetics | <input checked="" type="checkbox"/> Agriculture and Forestry Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input checked="" type="checkbox"/> Geology/Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input checked="" type="checkbox"/> Hazards & Hazardous Materials |
| <input checked="" type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input checked="" type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input checked="" type="checkbox"/> Transportation | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

2.1 DETERMINATION

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a “Potentially Significant Impact” or “Potentially Significant Unless Mitigated” impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.


Signature

10/20/20

Date

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3.0 CEQA ENVIRONMENTAL CHECKLIST

3.1 AESTHETICS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.1.1 Impact Analysis

a. *Would the project have a substantial effect on a scenic vista?*

The proposed project is located on the Hills Ferry Road Bridge crossing over the San Joaquin River. The existing bridge straddles the boundary between Stanislaus County and Merced County. The area where the proposed project is located consists of agricultural uses and is not within an area designated as a scenic vista by either county; however, Merced County's General Plan Draft Environmental Impact Report (EIR) notes that the primary scenic resources within Merced County include the rural and agricultural landscapes of non-urbanized areas of the county. The proposed project is located in a non-urbanized area with views of the agricultural landscapes. However, once completed, the proposed roadway realignment and new bridge, although on a higher vertical profile, would be consistent with the existing surroundings and would be similar to existing conditions. This impact would be **less than significant**, and no mitigation is required.

b. *Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

The proposed project is not located on a State scenic highway. The nearest Officially Designated State Scenic Highway is I-5, which is approximately 7.8 miles west of the proposed project (Esri 2017). **No impact** would occur as implementation of the proposed project would not substantially damage scenic resources within a State scenic highway. No mitigation is required.

- c. In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?*

Within the project area, publicly accessible vantage points include views from the roadway and beneath the bridge via boat on the San Joaquin River. Views from these vantage points include the surrounding land uses, such as agricultural uses and the San Joaquin and Merced rivers. The project involves replacing the existing Hills Ferry Road bridge slightly north of the existing alignment with a taller (5 ft taller at the peak of the bridge), 5-span structure that would accommodate 2 lanes of traffic similar to the existing bridge. The driveway access to APN 045-280-011 would be abandoned. The proposed bridge replacement would be visible from the roadway approaches and from the waterway below; however, once constructed, the replacement bridge would be consistent with the existing views from area vantage points. The proposed project would install open rail barriers to minimize obstruction of views for motorists from the bridge as well as for viewers from adjacent areas.

During construction, 20 trees along Hills Ferry Road would be removed, either to provide construction access or to accommodate the proposed project. Of those 20 trees, 2 are Valley oaks with diameter-at-breast-height (dbh) ranging from 4.1 to 24.8 inches, 11 are Fremont cottonwoods with multiple trunks of varying dbh ranging from 3.8 to 32.1 inches, and 7 are Gooding's black willows with dbh 8.2 to 28 inches. The trees that would be removed for the project represent a small proportion of the tree canopy in the project area. Stanislaus County does not have a tree ordinance, while Merced County General Plan Policy NR-1.15 seeks to protect existing trees and Oak Woodland habitat in the county. The project area does not support Oak Woodland habitat; therefore, tree removal mitigation is not required for the proposed project.

The proposed project would not substantially degrade the existing visual character or the quality of public views of the site and its surroundings. This impact would be **less than significant**, and no mitigation is required.

- d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

Sources of light within the project area include vehicle headlights and taillights and light spill from residential and agricultural structures on adjacent properties. The proposed project would increase the vertical profile of the bridge by 5 ft compared to existing conditions; however, the increased elevation would not significantly alter the trajectory of the light spill from headlights/taillights onto adjacent properties. The proposed project would not create a new source of light or glare and would not incorporate lighting elements into the design. Because the project is not capacity-increasing, the new bridge and improvements to the roadway approaches would not generate additional light or glare from additional vehicle traffic headlights/taillights. The proposed project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. This impact would be **less than significant**, and no mitigation is required.

3.2 AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.2.1 Impact Analysis

- a. *Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*

The California Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP) website was accessed to determine if Important Farmland was located in or adjacent to the project site. The DOC FMMP classifies lands based on soil information. Lands with soils best suited for agricultural production are designated as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. Additional classifications include Farmland of Local Importance, Grazing Land, Urban and Built-Up Land, Vacant or Disturbed Land, Nonagricultural and Natural Vegetation, Other Land, and Water. According to the DOC FMMP, the proposed project is in an area designated as Vacant or Disturbed Land, Nonagricultural and Natural Vegetation, and Grazing Land (DOC 2016a,

2016b). As such, implementation of the proposed project would not impact Farmland. **No impact** would occur, and no mitigation is required.

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

Zoning. The agricultural lands within the project area are zoned Agriculture 40 Acres (A-2-40) (Stanislaus County) and General Agricultural (A-1) (Merced County). Implementation of the proposed project would result in 1.43 acre of permanent direct impacts to farmlands zoned AG-2-40 (Stanislaus County) and 1.16 acre of permanent direct impacts to farmlands zoned A-1 (Merced County). The proposed project involves replacing the existing bridge and realigning the roadway approaches, which would require the counties to acquire lands for public rights-of-way. Because the Stanislaus County and Merced County Zoning Codes allow parcels to include the area up to the roadway centerline, the proposed public roadway alignment would be an allowable use. Therefore, the proposed project would not conflict with existing zoning for agricultural use, and impacts associated with zoning conflicts would be **less than significant**.

Williamson Act Contract. The California Land Conservation Act of 1965 (the Williamson Act) is a voluntary program that incentivizes the preservation of farmland. Stanislaus County has approximately 575,000 ac of land under Williamson Act Contract, while Merced County has approximately 464,000 ac under Williamson Act Contract (DOC 2016c). The proposed project would not impact lands subject to Williamson Act Contract in Stanislaus County; however, the lands east of the existing bridge within Merced County are subject to Williamson Act Contract and would be impacted. The proposed project would temporarily impact 1.75 acre of Williamson Act Contract Land within Merced County during project construction, primarily for staging operations. The proposed project would permanently impact (i.e., convert) approximately 1.16 acre of Williamson Act Contract Land within Merced County to accommodate the realignment of the roadway approach on the east side of the bridge. Merced County would be required to follow the DOC's public acquisition notification procedures (refer to **Mitigation Measure AG-1**) to address the conversion of 1.16 acre of land under a Williamson Act Contract to a non-agricultural use. The acreage to be removed from Williamson Act protection is minor and would not result in the total cancellation of a Williamson Act Contract. Therefore, with implementation of **Mitigation Measure AG-1**, impacts to Williamson Act Contract Land would be **less than significant with incorporation of mitigation**.

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

The proposed project is in rural portion of Stanislaus and Merced counties. The land associated with the proposed project is not designated as a forest resources land use and is not zoned as forest land or timberland. As such, implementation of the proposed project would not conflict with this type of land use designations or zoning. **No impact** would occur, and no mitigation is required.

d. Would the project result in the loss of forest land or conversion of forestland to non-forest use?

There is no forest land within the project site as the proposed project is located in a rural portion of Stanislaus and Merced counties. As such, implementation of the proposed project would not result in the loss of forest land or conversion of forest land to non-forest use. **No impact** would occur, and no mitigation is required.

e. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

The replacement of the existing Hills Ferry Road Bridge would not convert Farmland to non-agricultural uses or convert forest land to non-forest use. There is **no impact**, and no mitigation is required.

3.2.2 Mitigation Measures

AG-1: Williamson Act Notification. Prior to construction, County of Merced shall notify the California DOC of its intent to acquire land that is under a Williamson Act Contract for a public improvement project. The notification shall follow the procedures set forth by the California DOC Public Acquisitions of Williamson Act Contracted Land. The notice shall indicate the amount of land that would need to be acquired to implement the proposed project. The notice shall also indicate that the remaining land not required for project implementation would continue to be governed by a Williamson Act Contract.

3.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.3.1 Impact Analysis

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

The project site is located in Stanislaus and Merced counties, within the San Joaquin Valley Air Pollution Control District (SJVAPCD). The San Joaquin Valley Air Pollution Control District is made up of eight counties in California's Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare and the San Joaquin Valley Air Basin portion of Kern. The San Joaquin Valley Air District is a public health agency whose mission is to improve the health and quality of life for all Valley residents through efficient, effective and entrepreneurial air quality management strategies. The Stanislaus Council of Governments is responsible for regional transportation planning and preparing the Air Quality Conformity Analysis for Stanislaus County. This document is used to bring regional emissions into federal and State air quality standards as required by the Clean Air Act.

Air quality is measured against both National Ambient Air Quality Standards and California Ambient Air Quality Standards to protect public health and the climate. "Attainment" status for a pollutant means that the Air District meets the standard set by the U.S. Environmental Protection Agency (federal) or California Environmental Protection Agency (State). The project is located in an area that is currently non-attainment for State ozone and particulate matter (PM_{2.5} [particulate matter less than 2.5 microns in diameter] and PM₁₀ [particulate matter less than 10 microns in diameter]) standards and non-attainment for federal 8-hour ozone and PM_{2.5} standards.

Ozone pollution primarily comes from cars, trucks, buses, and construction and agricultural equipment. Ozone usually is the highest concern during the summertime. Fine particulate matter, which is made up of extremely small particles and liquid droplets, is primarily a concern in the wintertime.

The primary objective of the project is to provide long-term safe vehicular access across the San Joaquin River along Hills Ferry Road. Additional objectives include avoiding or minimizing environmental impacts, reducing right-of-way and land use impacts, meeting ADT requirements, and protecting against bank erosion. The proposed project would not increase roadway capacity or service capabilities that would induce unplanned growth or remove an existing obstacle to growth. The proposed project is consistent with the SJVAPCD's current Plan for the 2008 8-Hour Ozone Standard (2016), which takes into account vehicle miles traveled in order to bring regional emissions into compliance with federal and State air quality standards. The proposed project would not increase long-term traffic levels and there would be no increase in operational air quality emissions. Therefore, the proposed project would not conflict with the region's air quality management plans. This impact would be **less than significant**, and no mitigation is required.

b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

The proposed project would result in minimal air pollutant emissions during the short-term duration of construction. In addition, the proposed project would not result in an increase in operational activities or emissions. Therefore, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard. Consequently, this impact is **less than significant**, and no mitigation is required.

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors are facilities and land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as young children, the elderly, and people with illnesses. The project is located in a rural area of Stanislaus and Merced counties; however, single-family residential units are located near the western boundaries of the project site. Construction activities occurring on the project site may expose residents to airborne particulates and fugitive dust, as well as a small quantity of pollutants associated with the use of construction equipment (e.g., diesel-fueled vehicles and equipment). Such emissions would occur on a short-term basis during the construction period. Implementation of **Mitigation Measure AIR-1** would reduce construction-related emissions to a less-than-significant level, thus minimizing potential exposure of sensitive receptors to substantial pollutant concentrations. As discussed in Section 3.3.1(b), the proposed project would not result in increased pollutant emissions during operation since implementation of the proposed project would not increase traffic along Hills Ferry Road. Therefore, the nearby sensitive receptors would not be exposed to substantial pollutant emissions during project operation. Impacts would be **less than significant with mitigation incorporated**.

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Generally, the types of projects or activities that pose potential odor problems include refineries, chemical plants, wastewater treatment plants, landfills, composting facilities, and transfer stations. The proposed project is a bridge replacement project that is located within a rural area and would not create objectionable odors affecting a substantial number of people. This impact would be **less than significant**, and no mitigation is required.

3.3.2 Mitigation Measures

AIR-1: The project contractor, on behalf of Stanislaus County, shall prepare a Dust Control Plan for demolition and construction activities at the project site pursuant to the requirements and regulations of the SJVAPCD, including Regulation VIII. The project contractor shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of construction and maintenance activities at the project site. The Dust Control Plan shall include, at a minimum, the following measures:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
- When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.

- Within urban areas, trackout shall be immediately removed when it extends 50 or more ft from the site and at the end of each workday.
- An owner/operator of any site with 150 or more vehicle trips per day, or 20 or more vehicle trips per day by vehicles with three or more axles shall implement measures to prevent carryout and trackout.

3.4 BIOLOGICAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.4.1 Impact Analysis

The Biological Study Area (BSA), totaling 23.23 acres (ac), is approximately 0.51 mile (mi) in length and extends along Hills Ferry Road and Kelly Road over the confluence of the San Joaquin and Merced Rivers. The BSA was defined to include all areas that could potentially be impacted by the project plus a buffer to accommodate any changes to project limits and project design that may occur during project development. The BSA is located in both Stanislaus County and Merced County. The BSA lies in the Central Valley, which is characterized by large flat areas of agricultural farmland interspersed with urban population centers. The majority of the land in the area is privately owned and appears to be similar to the BSA in use and vegetative characteristics. The majority of the BSA consists of developed or disturbed areas, ruderal areas or developed areas; however, two natural communities, black willow riparian and riverine, are also present. Both communities are associated with the San Joaquin River (and a small area of the Merced River). Annual grassland are also present in portions of the BSA.

- a. *Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

No special status plant species are expected to occur in the project area because the project area consists of agricultural farmland that has been largely disturbed; therefore, no impacts are expected to occur to special status plants.

After evaluation of the special status wildlife species with potential to occur in the project area, the following wildlife species were determined to have a reasonable likelihood of occurring in the project area and, therefore, may be affected by the project:

- Bats
- San Joaquin Pocket Mouse
- San Joaquin Kit Fox
- Tricolored Blackbird
- Burrowing Owl
- Swainson's Hawk
- Northern Harrier
- Loggerhead Shrike
- Western Pond Turtle
- Central Valley Steelhead
- Valley Elderberry Longhorn Beetle

Bats

There are four species of special-status bats that could occur in the BSA: the pallid bat (*Antrozous pallidus*) and the western red bat (*Lasiurus blossevilli*) – listed as California Species of Special Concern; and the hoary bat (*Lasiurus cinereus*) and Yuma myotis (*Myotis yumanensis*) – listed as a California Special Animal. During a habitat assessment and survey in May 2018, Greg Tatarian of WRA observed small numbers of Mexican free-tailed bats (*Tadarida brasiliensis*) and big brown bats (*Eptesicus fuscus*) roosting behind retainer plates on the underside of the existing bridge. LSA biologists made similar observations while monitoring geotechnical boring activities in July 2017 and August 2019. These areas constitute day roost (crevice) habitat for bats. The retainer plates were located over the west and east banks of the San Joaquin River, near the joint between the girder and slab sections.

In addition to the bridge providing day roost habitat, the girder sections at each end of the bridge provide suitable night roost habitat. Urine staining was observed in some areas, though not in large quantities. The natural communities in the project area also provide suitable foraging habitat for bats, as do the adjacent agricultural lands, and several large trees along the banks of the rivers provide potential roost habitat.

Removal of the existing bridge would remove suitable day and night roost habitat for bats and would temporarily displace bats currently utilizing this roost habitat. The project would permanently impact 1.229 ac and temporarily impact 3.160 ac containing a mixture of annual grassland, riverine, black willow, pasture, and ruderal areas, which are all potential foraging habitat for bat species. Permanent impacts would occur as a result of project cut and fill activities; temporary impacts would occur as a result of project access and staging during construction activities. Implementation of **Mitigation Measure BIO-1** would reduce impacts to bats to **less than significant with mitigation incorporated**.

San Joaquin Pocket Mouse

San Joaquin pocket mouse (*Perognathus inornatus*) is a California Special Animal; it has no State or federal status. This species can be found in the San Joaquin, Sacramento, and Salinas valleys, as well as the surrounding foothills of the western Sierra Nevada mountains and the western Mojave Desert. The San Joaquin pocket mouse inhabits open grasslands, savanna, and desert shrub communities. They often live in areas with sandy washes and finely textured soils.

There are two California Natural Diversity Database records for San Joaquin pocket mouse within the 9-quadrangle search area, dated 1990 and 1996, located approximately 7 miles west of the project area. The annual grassland community within the project area provides marginal habitat for San Joaquin pocket mouse. This species was not observed during the field visits but cannot be precluded from occurring in the project area.

The project would permanently impact 0.257 ac and temporarily impact 2.011 ac of annual grasslands that is potential habitat for the San Joaquin pocket mouse. Permanent impacts would occur as a result of project cut and fill activities associated with the eastern abutment and local access road; temporary impacts would occur as a result of project access and staging during construction. The project could also directly impact individuals of this species if they are present when construction begins. Implementation of **Mitigation Measure BIO-2** would reduce impacts to San Joaquin pocket mouse to **less than significant with mitigation incorporated**.

San Joaquin Kit Fox

The San Joaquin kit fox (*Vulpes macrotis mutica*) (SJKF) is a federal endangered and State threatened species. This species inhabits annual grasslands or other open areas with scattered vegetation, and requires loose-textured soils for burrowing. SJKF construct their own dens, but may also modify burrows constructed by other animals, such as California ground squirrels (*Otospermophilus beecheyi*) and coyotes (*Canis latrans*). They also den in human-made structures, such as culverts and abandoned pipes.

The annual grassland community within the project area provides marginal foraging habitat for SJKF but no suitable burrows were observed. SJKF could utilize the river as a movement corridor. This species was not observed during the field visits but cannot be precluded from occurring in the project area.

The project would permanently impact 0.257 ac and temporarily impact 2.011 ac of annual grasslands that provide marginal habitat for the SJKF. Permanent impacts would occur as a result of project cut and fill activities associated with the eastern abutment and local access road; temporary impacts would occur as a result of project access and staging during construction. No suitable burrows for SJKF were observed in the project area so it is not expected this species occurs in the project area on a permanent basis. However, the project could also directly impact SJKF individuals if they are using the rivers as a movement corridor as there would be substantial disturbance during construction. Implementation of **Mitigation Measure BIO-3** would reduce impacts to SJKF to **less than significant with mitigation incorporated**.

Tricolored Blackbird

The tricolored blackbird is a State threatened species while nesting; it has no federal status. Tricolored blackbirds are highly colonial, gregarious in all seasons, and nomadic in fall. They are largely endemic to the lowlands of California, and prefer to nest in freshwater marshes with dense growths of herbaceous vegetation, such as mustard, blackberry, and thistle. Willow and cottonwood riparian areas are also used for nesting. A nesting area must be large enough to support a minimum colony of about 50 pairs. They feed in flocks even when breeding; foraging in grassy fields, crops, flooded areas and edges of ponds, and eating insects, seeds, and cultivated grains.

The annual grassland community within the project area provides potential foraging habitat for this species but no suitable nesting habitat is present. This species was not observed during the field visits but cannot be precluded from occurring in the project area.

The project would permanently impact 0.257 ac and temporarily impact 2.011 ac of annual grasslands that are potential foraging habitat for tricolored blackbird. Permanent impacts would occur as a result of project cut and fill activities associated with the eastern abutment and local access road; temporary impacts would occur as a result of project access and staging during construction. It is not expected that tricolored blackbirds would be directly impacted by construction activities during foraging as this species has the ability to move (fly) away. Implementation of **Mitigation Measure BIO-2** would reduce impacts to tricolored blackbird to **less than significant with mitigation incorporated**.

Burrowing Owl

Burrowing owl (*Athene cunicularia*) is a California Species of Special Concern with no federal status. Burrowing owls occur in warm valleys; open, dry grasslands; deserts; and scrublands associated with agriculture and urban areas that support populations of California ground squirrels. Burrowing owls nest below ground, using abandoned burrows of other species (most commonly ground squirrel) and feed on insects and small mammals.

The annual grassland community within the project area provides potential foraging habitat for this species but no suitable burrows were present; therefore, this community does not provide suitable nesting habitat. This species was not observed during the field visits but cannot be precluded from occurring in the project area.

The project would permanently impact 1.220 ac and temporarily impact 2.382 ac of annual grasslands, pasture, and ruderal communities that are potential habitat for burrowing owl. Permanent impacts would occur as a result of project cut and fill activities associated with both abutments and local access road associated with the eastern abutment; temporary impacts would occur as a result of project access and staging during construction. No suitable burrows for western burrowing owl were observed in the project area but this species could potentially migrate into the project area prior to construction. Implementation of **Mitigation Measure BIO-4** would reduce impacts to burrowing owl to **less than significant with mitigation incorporated**.

Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) is a State threatened species. It has no formal federal status. Most Swainson's hawks are long distance migrants, leaving California by the end of October to winter in South America, and returning north to nest by the end of March. A few individuals overwinter in the Sacramento-San Joaquin Delta region. In California, Swainson's hawks nest on the Modoc Plateau and the Great Basin, and throughout the Central Valley from about the Red Bluff area south to Kern County. Nests are built in the tops of large trees, often those associated with riparian habitats, or isolated trees in agricultural areas. They are known to forage up to 10 miles from their nest sites.

There are numerous California Natural Diversity Database records for Swainson's hawk within the 9-quadrangle search area, including several as recent as 2018. The closest record is located approximately 0.8 mile southeast of the project area. The annual grassland community within the project area provides potential foraging habitat for this species, as do the agricultural lands in the vicinity. There are also several suitable nest trees located within and near the project area. Swainson's hawk was not observed during the field visits but cannot be precluded from occurring in the project area.

The project would permanently impact 0.257 ac and temporarily impact 2.011 ac of annual grasslands that is potential foraging habitat for the Swainson's hawk. Areas of the pasture that would be impacted were not included as potential foraging habitat since they are sliver areas located adjacent to ruderal and developed area, thus degrading the habitat value. Permanent impacts would occur as a result of project cut and fill activities associated with the eastern abutment and local access road; temporary impacts would occur as a result of project access and staging during construction.

The project would permanently impact 0.005 ac and temporarily impact 0.383 ac of the black willow community that is potential nesting habitat for Swainson's hawk. Permanent impacts would occur as a result of construction of the support columns for the new bridge; temporary impacts would occur as a result of project access for construction of the new bridge and demolition of the existing bridge.

The project could also directly impact individuals of this species if they are nesting when construction begins. Implementation of **Mitigation Measure BIO-5** would reduce impacts to Swainson's hawk to **less than significant with mitigation incorporated**.

Northern Harrier

The northern harrier is a California Species of Special Concern; it has no federal status. This species breeds in wide-open habitats that range from Arctic to grasslands to marshes. Nests are placed on the ground, usually in a dense clump of vegetation such as willows, grasses, sedges, and cattails. This species is most commonly found in large, undisturbed areas of wetlands and grasslands. Flying low over the ground, harriers eat small mammals, reptile, birds, and amphibians.

The annual grassland community within the project area provides suitable nesting and foraging habitat for the northern harrier. This species was not observed during the field visits but cannot be precluded from occurring in the project area.

The project would permanently impact 0.257 ac and temporarily impact 2.011 ac of annual grasslands that is potential foraging and nesting habitat for northern harrier. Areas of the grasslands that would be impacted were not included as potential foraging habitat since they are sliver areas located adjacent to ruderal and developed area, thus degrading the habitat value. Permanent impacts would occur as a result of project cut and fill activities associated with the eastern abutment and local access road; temporary impacts would occur as a result of project access and staging during construction.

The project could also directly impact individuals of this species if they are nesting when construction begins. Implementation of **Mitigation Measure BIO-6** would reduce impacts to northern harrier to **less than significant with mitigation incorporated**.

Loggerhead Shrike

Loggerhead shrike (*Lanius ludovicianus*) is a California Species of Special Concern; it has no federal status. Loggerhead shrikes are predatory songbirds, which feed on insects, lizards, rodents, and smaller birds. They often impale their prey on barbwire fences or thorny vegetation, and so they require habitats with at least one or the other. Nests tend to be built in dense trees or shrubs where the nests can be above ground and well hidden.

The black willow community within the project area provides suitable nesting and foraging habitat for loggerhead shrike, and the annual grassland community provides marginal foraging habitat. This species was not observed during the field visits but cannot be precluded from occurring in the project area.

The project would permanently impact 0.257 ac and temporarily impact 2.011 ac of annual grasslands that are potential foraging habitat for the loggerhead shrike. Areas of the grasslands that would be impacted were not included as potential foraging habitat since they are sliver areas located adjacent to ruderal and developed area, thus degrading the habitat value. Permanent impacts would occur as a result of project cut and fill activities associated with the eastern abutment and local access road; temporary impacts would occur as a result of project access and staging during construction.

The project would permanently impact 0.005 ac and temporarily impact 0.383 ac of the black willow community that is potential nesting habitat for loggerhead shrike. Permanent impacts would occur as a result of construction of the support columns for the new bridge; temporary impacts would occur as a result of project access for construction of the new bridge and demolition of the existing bridge.

The project could also directly impact individuals of this species if they are nesting when construction begins. Implementation of **Mitigation Measure BIO-6** would reduce impacts to loggerhead shrike to **less than significant with mitigation incorporated**.

Western Pond Turtle

The western pond turtle (*Emys marmorata*) is a State species of concern; it has no federal status. The western pond turtle ranges from western Washington State south to northwestern Baja California. The pond turtle is a highly aquatic species, found in ponds, marshes, rivers, streams, and irrigation ditches that typically have rocky or muddy bottoms and support aquatic vegetation. Eggs are laid at upland sites, away from the water, from April through August.

The riverine community associated with the San Joaquin and Merced Rivers provides suitable aquatic habitat for pond turtles. This species was not observed during the field visits but cannot be precluded from occurring in the project area.

The project would permanently impact 0.004 ac and temporarily impact 0.395 ac of the riverine community in the San Joaquin River that is potential habitat for western pond turtle. Permanent impacts would occur as a result of construction of the support columns for the new bridge; temporary impacts would occur as a result of project access for construction of the new bridge and demolition of the existing bridge. Implementation of **Mitigation Measure BIO-7** would reduce impacts to western pond turtle to **less than significant**.

Central Valley Steelhead and Central Valley Steelhead Critical Habitat

The Central Valley steelhead (*Oncorhynchus mykiss irideus*) Distinct Population Segment was listed as federally threatened on March 19, 1998, and reaffirmed on January 5, 2005. Critical habitat was designated for this species on September 2, 2005, and includes the Sacramento and San Joaquin Rivers. The Central Valley Distinct Population Segment includes all natural-occurring steelhead in the Sacramento River and San Joaquin River watersheds.

All steelhead stocks in the Central Valley of California are winter-run steelhead (McEwan and Jackson 1996). Most Central Valley steelhead spawning migration occurs from October to February and spawning occurs from December to April. Newly emerged fry move to shallow stream margins to escape high water velocities and predation (Barnhart 1986). Juveniles emigrate episodically from natal streams during fall, winter and spring high flows.

Central Valley steelhead can occur in the reaches of the San Joaquin and Merced Rivers within the project area during several life stages including adult migration, juvenile rearing, and juvenile migration. The reaches of the San Joaquin and Merced Rivers within the project area do not provide suitable spawning or natal rearing habitat for Central Valley steelhead.

The reach of the San Joaquin and Merced Rivers within the project area is within designated critical habitat for Central Valley steelhead. Primary Constituents Elements (PCE) for this species in the subject reach of the San Joaquin and Merced Rivers include the water column for movement, protection, foraging, and the adjacent riparian zone which provides shade (i.e., thermoregulation).

Implementation of the project would result in permanent and temporary impacts to the water column PCE for Central Valley steelhead. The project would permanently impact 0.004 ac and temporarily impact 0.395 ac of the riverine community in the San Joaquin River that is aquatic habitat for Central Valley steelhead. Permanent impacts would occur as a result of construction of the support columns for the new bridge; temporary impacts would occur as a result of project access for construction of the new bridge and demolition of the existing bridge. However, removal of the existing bridge concrete piles would result in 0.018 ac of additional steelhead aquatic habitat and an overall net increase of 0.014 ac to this habitat when considering the 0.004 ac of permanent impact.

Implementation of the project would also result in permanent and temporary impacts to the adjacent riparian zone PCE for Central Valley steelhead necessary for thermoregulation. The project would permanently impact 0.005 ac and temporarily impact 0.383 ac of the black willow community associated with the San Joaquin River that is potential shading habitat for Central Valley steelhead. Permanent impacts would occur as a result of construction of the support columns for the new bridge; temporary impacts would occur as a result of project access for construction of the new bridge and demolition of the existing bridge. However, removal of the existing bridge concrete piles would result in 0.008 ac of additional steelhead shaded riverine habitat and an overall net increase of 0.003 ac to this habitat when considering the 0.005 ac of permanent impact.

The project could also directly impact individuals of this species if they are present when construction begins, due to increased noise levels during in-water work (e.g., pile installation).

The new bridge would be 4 ft wider than the existing bridge, resulting in a nominal increase in shaded area. Consequently, the additional shading from the new bridge is considered a negligible impact to Central Valley steelhead and designated critical habitat. Implementation of **Mitigation Measure BIO-8** and **Mitigation Measure HYD-1** would reduce impacts to Central Valley steelhead to **less than significant**.

Valley Elderberry Longhorn Beetle

The Valley Elderberry Longhorn Beetle (VELB) is federally listed as threatened. The only designated critical habitat is located approximately 75 miles north along the American River in Sacramento County.

This species ranges from Redding to Madera County, into the western foothills of the Sierra Nevada, and into the eastern foothills of the Coast Range. Critical habitat was designated for VELB in Sacramento County; essential habitat for the recovery of the species also exists in Solano County. The VELB is typically found in mature riparian vegetation associated with large river systems, but its range extends from the valley floor to 3,000 ft elevation.

The beetle is dependent on its host plant, blue elderberry, which is a common component of Central Valley riparian forests. VELB larvae feed and mature within elderberry stems 1 inch or larger in diameter, and exit prior to metamorphosing to the pupal stage. The life cycle takes 1 to 2 years to complete. The beetle spends most of its life in the larval stage, living within the stems of an elderberry plant. Adults emerge from late March through June, about the same time the elderberry produces flowers. The larval beetles cannot be detected within the stems, and the adult stage is short-lived; generally, the only evidence of beetle use is the exit holes in the stems created by the emerging larvae. According to the USFWS 2017 Framework, the presence of exit holes in a shrub increases the likelihood that the shrub is occupied by VELB; however, a lack of exit holes does not preclude occupancy by VELB. Furthermore, if elderberry shrubs are found on or within 165 ft of the project footprint within riparian habitat, that habitat is to be considered occupied by VELB.

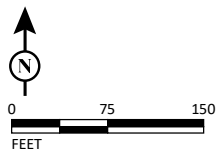
Seven elderberry shrubs, the host plant for VELB, were observed in the project area during the general biological survey. These elderberry shrubs were all located on the east bank of the San Joaquin River, north of Kelley Road. All of the shrubs had at least one stem that measured 1 inch in diameter at ground level, which is considered suitable habitat for VELB. Due to the overgrown understory at the time of the survey, the shrubs were not thoroughly assessed for the presence of exit holes.

Per the VELB Guidelines, complete avoidance of VELB consists of no ground disturbing activities within 100 ft of the drip line of any elderberry shrub providing suitable VELB habitat (stems greater than 1-inch diameter at ground level). Ground disturbance within 100 ft of the dripline of elderberry shrubs providing suitable habitat may affect VELB and ground disturbance within 20 ft of the dripline of an elderberry shrub providing suitable VELB habitat is considered a direct adverse effect to VELB.

Four of the seven elderberry shrubs identified in the project area are located in the project footprint and would be removed (Figure 4), Elderberry Shrub Impact Map. Of the remaining three elderberry shrubs, one shrub is located within the staging area, another is directly adjacent to the northeast road realignment, and one shrub is located approximately 80 ft from the limits of ground disturbance. The elderberry shrubs located within the staging area and adjacent to the road realignment would be protected in place; where feasible, ground disturbing activities would not encroach within 20 ft of the shrubs. Nevertheless, these three shrubs could be indirectly impacted by the project. Implementation of **Mitigation Measures BIO-9** and **BIO-10** would reduce impacts to VELB to **less than significant with mitigation incorporated**.



FIGURE 4



LEGEND	
Project Area - (23.23 ac)	Elderberry Shrub - (Count: 7)
Permanent Impact Areas - (2.591 ac)	To Be Avoided - (Count: 3)
Temporary Impact Areas - (5.284 ac)	To Be Removed - (Count: 4)

*River Road over San Joaquin River Bridge
(Bridge No. 39C0001) Replacement Project
Stanislaus County, California; Caltrans District 10
Federal Project No. BRLSZ-5938(176)
Elderberry Shrub Impact Map*

SOURCE: Basemap- NAIP Aerial Imagery (08/2016); Mapping- CA Natural Resources Agency (11/2019)

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

The proposed project area supports two sensitive natural communities: black willow and riverine.

The black willow community is a riparian community associated with the San Joaquin River. The dominant plant species include black willow, Fremont cottonwood, and olive tree. Riparian communities are considered sensitive under CEQA and are regulated by California Department of Fish and Wildlife (CDFW) pursuant to Section 1602 of the California Fish and Game Code. This riparian community also contains wetlands, which are regulated by the USACE and Regional Water Quality Control Board (RWQCB). Permanent impacts to the black willow riparian community, totaling 0.005 ac, would occur as a result of bridge pier installation on the west bank of the San Joaquin River. However, removal of the concrete pile caps for the existing bridge piers would result in a 0.008-ac reduction in the overall bridge footprint, thereby expanding the area within which the black willow community can grow, and resulting in an overall net increase of 0.003 ac to this community when considering the 0.005 ac of permanent impact.

Temporary impacts, totaling 0.383 ac, would occur as a result of installation of the temporary access ramp, temporary work trestle, removal of the existing bridge and temporary access. With implementation of **Mitigation Measure BIO-11**, this impact would be **less than significant with mitigation incorporated**.

The riverine community consists of open waters associated with the San Joaquin and Merced rivers. Riverine communities are considered sensitive under CEQA and are regulated by the USACE and RWQCB. The reaches of the San Joaquin and Merced Rivers in the project area are classified as essential fish habitat (EFH) under the Magnuson-Stevens Fishery Conservation and Management Act. Only the riverine community associated with the San Joaquin River would be impacted by construction of the proposed project. Permanent impacts to the riverine community, totaling 0.004 ac, would occur as a result of construction of the support columns for the new bridge. However, removal of the existing bridge concrete piles would result in 0.018 ac of additional riverine habitat and an overall net increase of 0.014 ac to this habitat when considering the 0.004 ac of permanent impacts. Temporary impacts, totaling 0.395 ac, would occur as a result of project access for construction of the new bridge and demolition of the existing bridge. The project would not result in impacts to the riverine community associated with the Merced River. With implementation of **Mitigation Measure BIO-12**, this impact would be **less than significant with mitigation incorporated**.

Additionally, the Pacific Coast Salmon Fishery Management Plan covers salmon fisheries stocks off the coasts of Washington, Oregon, and California. The identification of Pacific Salmon EFH in the Fishery Management Plan is based on the habitat utilized by Coho, Chinook, and pink salmon. The San Joaquin River within the project area is designated as EFH for Chinook salmon (*Oncorhynchus tshawytscha*). EFH has not been identified for Central Valley steelhead. With implementation of **Mitigation Measure BIO-8** and **Mitigation Measure HYD-1**, this impact would be **less than significant with mitigation incorporated**.

- c. *Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

Potential wetlands in the project area are located on the east bank of the San Joaquin and Merced rivers and consist entirely of fringe seasonal wetlands within the ordinary high-water mark of the rivers. Wetlands are dominated by a variety of hydrophytic vegetation including common knotweed, narrowleaf dock, jungle rice, Gooding's black willow, bog rush, cocklebur, and California mugwort.

Permanent impacts to wetlands, totaling 0.003 ac, would occur as a result of bridge pier installation on the east bank of the San Joaquin River. Temporary impacts, totaling 0.203 ac, would occur as a result of installation of the temporary access ramp, temporary work trestle, and removal of the existing bridge and temporary access. Impacts to potential jurisdictional waters including wetlands are shown in Figure 5, Potential Jurisdictional Waters. With implementation of **Mitigation Measures BIO-13** and **BIO-14**, this impact would be **less than significant with mitigation incorporated**.



0 100 200
FEET

LEGEND

- Project Area - (23.23 ac)
- Data Points
- ~~~~~ Ordinary High Water Mark - (63 feet*)
*elevation above mean sea level

Potential Jurisdictional Waters - (4.72 ac)

- Non-Wetland Waters - (3.76 ac)
- Wetland - (0.97 ac)

FIGURE 5

*River Road over San Joaquin River Bridge
(Bridge No. 39C0001) Replacement Project
Stanislaus County, California; Caltrans District 10
Federal Project No. BRLSZ-5938(176)
Potential Jurisdictional Waters*

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d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

The Pacific Coast Salmon Fishery Management Plan covers salmon fisheries stocks off the coasts of Washington, Oregon, and California. The identification of Pacific Salmon EFH in the Fishery Management Plan is based on the habitat utilized by Coho, Chinook, and pink salmon. The San Joaquin River within the project area is designated as EFH for Chinook salmon. EFH has not been identified for Central Valley steelhead.

Implementation of the project would result in permanent and temporary impacts to the water column PCE for Central Valley steelhead. The project would permanently impact 0.004 ac and temporarily impact 0.395 ac of the riverine community in the San Joaquin River that is aquatic habitat for Central Valley steelhead. Permanent impacts would occur as a result of construction of the support columns for the new bridge; temporary impacts would occur as a result of project access for construction of the new bridge and demolition of the existing bridge. However, removal of the existing bridge concrete piles would result in 0.018 ac of additional steelhead aquatic habitat and an overall net increase of 0.014 ac to this habitat when considering the 0.004 ac of permanent impact.

Implementation of the project would also result in permanent and temporary impacts to the adjacent riparian zone PCE for Central Valley steelhead necessary for thermoregulation. The project would permanently impact 0.005 ac and temporarily impact 0.383 ac of the black willow community associated with the San Joaquin River that is potential shading habitat for Central Valley steelhead. Permanent impacts would occur as a result of construction of the support columns for the new bridge; temporary impacts would occur as a result of project access for construction of the new bridge and demolition of the existing bridge. However, removal of the existing bridge concrete piles would result in 0.008 ac of additional steelhead shaded riverine habitat and an overall net increase of 0.003 ac to this habitat when considering the 0.005 ac of permanent impact.

The project could also directly impact individuals of this species if they are present when construction begins, due to increased noise levels during in-water work (e.g., pile installation).

The new bridge would be 4 ft wider than the existing bridge, resulting in a nominal increase in shaded area. Consequently, the additional shading from the new bridge is considered a negligible impact to Central Valley steelhead and designated critical habitat. Implementation of **Mitigation Measure BIO-8** and **Mitigation Measure HYD-1** would reduce impacts to Central Valley steelhead to **less than significant with mitigation incorporated**.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Stanislaus County does not currently have a tree conservation ordinance. However, the Open Space and Conservation Element of the Stanislaus County General Plan calls for all discretionary projects with potential impacts to have an Oak Woodland Management Plan and for the adoption of an ordinance for protection of Oak Woodlands. Additionally, the Merced County General Plan Policy

NR-1.15 seeks to protect existing trees and Oak Woodland habitat in the county. The project area does not support Oak Woodland habitat. This impact would be **less than significant**, and no mitigation is required.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

There are no regional conservation plans such as a Habitat Conservation Plan or Natural Community Conservation Plan which apply to project activities; therefore, there would be **no impact**.

3.4.2 Mitigation Measures

BIO-1: The following measures shall be implemented to avoid and minimize effects to bats.

1. Prior to bridge demolition, bats shall be excluded from potential day roost habitat on the existing bridge. Exclusion shall occur only during seasonal periods of bat activity when no non-volant young or overwinter bats are present so that no bats are trapped inside the roost features. In this region, the first annual appropriate season to conduct humane eviction is between approximately March 1 and April 15 (or after evening temperatures rise above 45°F, and less than 0.5 in rainfall in 24 hours occurs). The next annual season is after maternity season and prior to winter torpor or hibernation; September 1 through about October 15 (or before evening temperatures fall below 45°F, and prior to greater than 0.5 in rainfall within 24 hours).
2. Under guidance of a qualified bat biologist experienced with humane bat exclusion procedures on bridges, bat exclusion measures shall be installed during the daytime and shall consist of one-way structures that allow the bats to exit the roost but not re-enter. The exclusion measures shall remain in place and function until the existing bridge deck is removed. The number of exclusion measures installed at each roost location shall be sufficient to allow complete evacuation of all bats.
3. A qualified biologist with experience assessing trees for bat roosts shall survey all trees to be removed during construction for suitability as bat roosts. Any trees suitable as bat roost shall be removed between the same periods (and conditions) specified in measure 1.
4. The follow process shall be followed to remove trees identified in measure 3.
 - a. A qualified biologist shall conduct a night emergence survey of the suitable roost tree 1-2 nights prior to tree removal using night vision and/or IR-sensitive camera equipment and bioacoustic recording equipment. If surveys are negative, trees shall be removed between the same periods (and conditions) specified in measure 1.

- b. If night emergent surveys are positive, trees shall be removed using a two-step process on two consecutive days, and shall be monitored by a qualified biologist. The first day, small branches and small limbs that do not contain potential roost habitat (e.g., cavities, crevices, exfoliating bark) shall be removed using chainsaws. The second day, the remainder of the tree shall be removed. The disturbance caused by chainsaw noise and vibration, coupled with the physical alteration of the tree will cause colonial bat species to abandon the roost tree after nightly emergence for foraging. Removing the tree the next day prevents re-habitation and re-occupation of the altered tree.
5. In-kind replacement of day and night roost habitat shall be provided on the new bridge commensurate with the amount of each habitat identified on the existing bridge, as determined by a qualified biologist with experience assessing bat habitat on bridges.
6. Demolition of the existing bridge shall not occur until after the new bridge is completed and replacement bat habitat has been installed.

BIO-2: The following measure shall be implemented to reduce impacts to San Joaquin pocket mouse and tricolored blackbird:

1. Annual grassland temporarily disturbed during construction shall be revegetated with the seed mix specified in Table 1.

Table 1: Native Seed Mix

Scientific Name	Common Name	Rate (pounds per acre)	Minimum Percent Germination
<i>Artemisia douglasiana</i>	Mugwort	2.0	50
<i>Bromus carinatus</i>	California brome	5.0	85
<i>Elymus trachycaulus</i>	Slender wheatgrass	2.0	60
<i>Elymus X triticum</i>	Regreen	10.0	80
<i>Eschscholzia californica</i>	California poppy	2.0	70
<i>Hordeum brachyantherum</i>	California barley	2.0	80
<i>Lupinus bicolor</i>	Bicolored lupine	4.0	80

- BIO-3:** The following measures from the USFWS's Standard Recommendations for the Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (June 1999) shall be implemented as part of the project:
1. A preconstruction/pre-activity survey shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the SJKF.
 2. If a natal/pupping den is discovered within the project area or within 200 ft of the project boundary, the USFWS and CDFW shall be immediately notified and under no circumstance should the den be disturbed or destroyed without prior authorization.
 3. Project-related vehicles should observe a 20-miles per hour speed limit in all project areas, except on county roads and State and federal highways; this is particularly important at night when SJKF are most active. To the extent possible, night-time construction should be minimized. Off-road traffic outside of the BSA should be prohibited.
 4. To prevent inadvertent entrapment of SJKF or other animals during the construction phase of the project, all excavated, steep-walled holes or trenches more than 2 ft deep should be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured SJKF is discovered, the procedures under number 12 of this measure must be followed.
 5. SJKF are attracted to den-like structures such as pipes and may enter stored pipe becoming 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 period should be thoroughly inspected for SJKF before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a SJKF is discovered inside a pipe, that section of pipe should not be moved until the USFWS and CDFW has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.
 6. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in closed containers and removed at least once a week from the BSA.
 7. No firearms shall be allowed in the BSA.

8. To prevent harassment, mortality of SJKF or destruction of dens by dogs or cats, no pets should be permitted in the project area.
9. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of SJKF and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and federal legislation, as well as additional project-related restrictions deemed necessary by the USFWS. If rodent control must be conducted, zinc phosphide should be used because of proven lower risk to SJKF.
10. A representative shall be appointed by Stanislaus County who will be the contact source for any employee or contractor who might inadvertently kill or injure a SJKF or who finds a dead, injured, or entrapped individual. The representative shall be identified during the employee education program. The representative's name and telephone number shall be provided to the USFWS and CDFW.
11. An employee education program shall be conducted. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and agency personnel involved in the project. The program should include the following: a description of the SJKF and its habitat needs; a report of the occurrence of SJKF in the project area; an explanation of the status of the species and its protection under the Federal Endangered Species Act and California Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the above-mentioned people and anyone else who may enter the BSA.
12. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc., should be recontoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but that after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the USFWS and CDFW and revegetation experts.
13. In the case of trapped animals, escape ramps, or structures should be installed immediately to allow the animal(s) to escape, or the USFWS and CDFW should be contacted for advice.

Additional minimization measures include:

14. In the event that a SJKF or its sign is observed in the project area, or it is otherwise determined that SJKF may be affected by the proposed action during work on the bridge, Caltrans (on behalf of the FHWA) and the USFWS and CDFW must be notified immediately to determine whether additional consultation is necessary.

BIO-4: The following measures shall be implemented to reduce impacts to burrowing owls:

1. Preconstruction surveys for western burrowing owl shall be conducted by a qualified biologist in accordance with CDFW's 2012 Staff Report on Burrowing Owl Mitigation.
2. If burrowing owls are identified during the preconstruction survey, passive exclusion shall be implemented per CDFW's 2012 Staff Report on Burrowing Owl Mitigation (including avoidance of occupied burrows during the breeding season).
3. Annual grassland, pasture, and ruderal areas temporarily disturbed during construction shall be revegetated with the seed mix specified in Mitigation Measure BIO-2.

BIO-5: The following measures shall be implemented to reduce potential impacts to nesting Swainson's hawks and impacts to suitable foraging habitat:

1. If work begins between February 1 and August 31, an early season preconstruction survey for nesting Swainson's hawks shall be conducted between January and March in the BSA and immediate vicinity (an approximately 0.25-mile radius) by a qualified biologist when tree foliage is relatively sparse and nests are easy to identify. A second preconstruction survey for nesting Swainson's hawks shall be conducted in the BSA and immediate vicinity (an approximately 0.25 mile radius) by a qualified biologist no more than 14 days prior to initiation of earthmoving activities.
2. If nesting Swainson's hawks are found within the survey area, a qualified biologist shall evaluate the potential for the project to disturb nesting activities. CDFW shall be contacted to review the evaluation and determine if the project can proceed without adversely affecting nesting activities. CDFW shall also be consulted to establish protection measures such as buffers. Disturbance of active nests shall be avoided until it is determined by a qualified biologist that nesting is complete and the young have fledged, or that the nest has failed. If work is allowed to proceed, at a minimum, a qualified biologist shall be on-site during the start of construction activities during the nesting season to monitor nesting activity. The monitor shall have the authority to stop work if it is determined the project is adversely affecting nesting activities.

3. Worker environmental awareness training shall be conducted by a qualified biologist for all construction personnel. This training instructs workers to recognize Swainson's hawks and their habitat(s).
4. Brightly colored Environmentally Sensitive Area (ESA) fencing shall be placed along the limits of work to prevent unnecessary encroachment into adjacent areas. Fencing shall be maintained in good condition for the duration of construction activities.
5. Annual grassland temporarily disturbed during construction shall be revegetated with the seed mix specified in Mitigation Measure BIO-2.

BIO-6:

The following measures shall be implemented to reduce potential impacts to nesting northern harriers, loggerhead shrike and impacts to suitable foraging habitat:

1. If work begins between February 1 and August 31, a preconstruction survey for nesting northern harriers and loggerhead shrike shall be conducted by a qualified biologist no more than 14 days prior to initiation of earthmoving activities. The survey shall include the BSA and suitable nesting habitat within 500 ft.
2. If nesting northern harriers or loggerhead shrike are found within the survey area, a qualified biologist shall evaluate the potential for the project to disturb nesting activities. CDFW shall be contacted to review the evaluation and determine if the project can proceed without adversely affecting nesting activities. CDFW shall also be consulted to establish protection measures such as buffers. Disturbance of active nests shall be avoided until it is determined by a qualified biologist that nesting is complete and the young have fledged, or that the nest has failed. If work is allowed to proceed, at a minimum, a qualified biologist shall be on-site during the start of construction activities during the nesting season to monitor nesting activity. The monitor shall have the authority to stop work if it is determined the project is adversely affecting nesting activities.
3. Worker environmental awareness training shall be conducted by a qualified biologist for all construction personnel. This training instructs workers to recognize northern harriers, loggerhead shrike and their habitat(s).
4. Brightly colored ESA fencing shall be placed along the limits of work to prevent unnecessary encroachment into adjacent areas. Fencing shall be maintained in good condition for the duration of construction activities.
5. Annual grassland temporarily disturbed during construction shall be revegetated with the seed mix specified in Mitigation Measure BIO-2.

BIO-7: The following measures shall be implemented to reduce impacts to western pond turtle:

1. Prior to the start of construction activities in the San Joaquin River, the reach of the river within the BSA shall be surveyed by a qualified biologist for the presence of western pond turtles. If western pond turtles are observed in the BSA, they shall be relocated outside of the work area by a qualified biologist.
2. Following completion of the new bridge, all fill slopes, temporary impact and/or otherwise disturbed areas shall be restored to preconstruction contours (if necessary) and revegetated with the native seed mix specified in Mitigation Measure BIO-2.
3. Measures consistent with the current Caltrans' Construction Site Best Management Practices (BMP) Manual (including the Storm Water Pollution Prevention Plan [SWPPP] and Water Pollution Control Plan [WPCP] Manuals) shall be implemented to minimize effects to Pacific pond turtle suitable habitat resulting from erosion, siltation, etc. during construction.
4. Brightly colored ESA fencing shall be placed along the limits of work to prevent unnecessary encroachment into the San Joaquin River. Fencing shall be maintained in good condition for the duration of construction activities.

BIO-8: The following measures shall be implemented to reduce impacts to Central Valley steelhead:

1. All in-water work associated with the proposed project shall be conducted between June 1 and October 15, which is within the seasonal work window recommended by National Marine Fisheries Service to minimize effects to steelhead.
2. Brightly colored ESA fencing shall be placed along the limits of work to prevent unnecessary encroachment into the San Joaquin River. Fencing shall be maintained in good condition for the duration of construction activities.
3. The project shall retain a qualified fishery biologist prior to construction to inspect the temporary steel casings prior to installation. The temporary steel casings will be utilized during construction of the CIDH pilings to contain spoils during drilling and to keep the drilled holes from collapsing. The temporary steel casings shall have wire mesh, netting, or equivalent material attached to the bottom of the casings, prior to the casings being lowered into the water. The wire mesh, netting, or equivalent material shall have openings small enough to prevent juvenile salmonids from being trapped in the casing during installation. Prior to installation, the temporary steel casings shall be inspected by a qualified fishery biologist. When and if necessary, a qualified fishery biologist may halt work activity and recommend measures for avoiding adverse effects to

salmonids and their habitat and inform National Marine Fisheries Service of any such occurrences.

4. Water collected in the CIDH casings shall be pumped into settling basins on the bank or into trucks for off-site disposal.
5. During removal of any part of the existing bridge, a debris collection device (e.g., heavy tarps, chain link mats) shall be installed below the bridge to prevent debris from falling into the San Joaquin River and left in place until removal is complete.
6. Measures consistent with the current Caltrans' Construction Site BMP Manual (including the SWPPP and WPCP Manuals) shall be implemented to minimize effects to steelhead during construction.
7. A SWPPP shall be prepared by the contractor in accordance with typical provisions associated with a Regional General Permit for Construction Activities (on file with the Central Valley RWQCB). The SWPPP shall contain a Spill Response Plan with instructions and procedures for reporting spills, the use and location of spill containment equipment, and the use and location of spill collection materials. Implementation of the SWPPP will minimize effects to salmonids and their habitat from potential spills associated with construction activities.
8. Any emergent or submergent aquatic vegetation shall be retained. Other vegetation shall be retained as practical within the constraints of the proposed project. Where vegetation removal is necessary, rapidly sprouting plants, such as willows, shall be cut off at the ground line and the root systems left intact.

BIO-9:

The following measures are consistent with the provisions of the USFWS "Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle" dated May 2017 and shall be implemented for the project:

1. ESA fencing shall be established along the limits of construction to exclude construction activities from avoided habitat. Activities that may damage or kill an elderberry shrub (e.g., trenching, paving, etc.) may need an avoidance area of at least 20 ft from the drip-line, depending on the type of activity. Trucks and other vehicles shall not be allowed to park in and equipment shall not be stored in, an ESA. No storage or dumping of oil, gasoline, or other substances shall be permitted within an ESA. All ESAs shall be clearly delimited with yellow caution tape or temporary fencing prior to commencement of construction activities.
2. Signs shall be installed along the edge of the ESA and shall read the following: "This area is habitat of the Valley Elderberry Longhorn Beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines,

and imprisonment.” The signs should be clearly readable from a distance of 20 ft and must be maintained for the duration of construction.

3. All temporarily disturbed areas shall be restored to approximate pre-construction contours and revegetated, either through hydroseeding or other means, with native species.
4. To prevent fugitive dust from drifting into adjacent habitat, all clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, demolition activities, or other dust generating activities shall be effectively controlled for fugitive dust emissions utilizing application of water or by presoaking.
5. Prior to the start of construction, a qualified biologist shall survey for elderberry shrubs within 165 ft of the disturbance area. If the survey documents any shrubs with stem diameter greater than 1 inch that were not identified during the May 14, 2019 survey conducted within the BSA, Caltrans shall contact the USFWS. The USFWS and Caltrans shall work to determine a way to proceed without take or Caltrans shall reinitiate consultation with the USFWS to update the Biological Opinion to obtain an Incidental Take Statement that includes any additional take that may occur.
6. All construction personnel shall attend environmental awareness training. During the environmental awareness training, construction personnel shall be briefed on the status of the beetle, the need to avoid damage to the elderberry host plant, and the possible penalties for not complying with these requirements.
7. Herbicides shall not be used within the drip-line of the elderberry shrubs. Insecticides shall not be used within 30 meters (98 ft) of an elderberry shrub. All chemicals will be applied using a backpack sprayer or a similar direct application method.
8. A qualified biologist shall monitor the work area at project appropriate intervals to assure that all avoidance and minimization measures are implemented.

BIO-10: In accordance with the 2017 VELB Framework, direct impacts to elderberry shrubs within riparian habitat shall be compensated at a minimum 2:1 ratio. Additionally, elderberry shrubs that will be removed shall be transplanted, if feasible, to a USFWS-approved location. The VELB compensatory mitigation approach is shown in Table 2.

Table 2: VELB Compensation

Number of Shrubs to be Removed	Compensation Ratio	Total Credit Purchase ¹	Acres of Credits
4	2:1	8	0.328 ac

¹ One credit (unit) = 1,800 sq. ft. or 0.041 acre

As shown in Table 2, the purchase of a total of 8 credits will be required. In addition, all four elderberry shrub will require transplanting to a USFWS-approved location.

BIO-11: The following measures shall be implemented to reduce impacts to black willow community:

1. Work in the black willow community shall be minimized to the extent possible. Work in the live channel of the San Joaquin River shall also be minimized to the extent possible.
2. Brightly colored ESA fencing shall be placed along the limits of work to protect the adjacent black willow community. Fencing shall be maintained in good condition for the duration of construction activities.
3. Staging areas, access routes, and construction areas shall be located outside of wetland and riparian areas to the maximum extent practicable.
4. Worker environmental awareness training shall be conducted by a qualified biologist for all construction personnel. The training shall instruct workers about the purpose of ESA fencing and the resources being protected.
5. Measures consistent with the current Caltrans' Construction Site BMP Manual (including the SWPPP and WPCP Manuals) shall be implemented to minimize effects to the red willow thickets community resulting from erosion, siltation, etc. during construction.
6. A SWPPP shall be prepared by the contractor in accordance with typical provisions associated with a Regional General Permit for Construction Activities (on file with the Central Valley RWQCB). The SWPPP shall contain a Spill Response Plan with instructions and procedures for reporting spills, the use and location of spill containment equipment, and the use and location of spill collection materials.
7. All upland areas temporarily impacted during project construction shall be restored to preconstruction contours (if necessary) and revegetated with native species as specified in Mitigation Measure BIO-2. Invasive exotic plants shall be controlled to the maximum extent practicable.

Prior to issuance of a grading permit or other authorization to proceed with project construction, the County shall obtain any regulatory permits that are required from the USACE, RWQCB, and/or CDFW.

BIO-12: The following measures shall be implemented to reduce impacts to riverine habitat:

1. All in-water work associated with the proposed project shall be conducted between June 1 and October 15.
2. Brightly colored ESA fencing shall be placed along the limits of work to prevent unnecessary encroachment into the San Joaquin River. Fencing shall be maintained in good condition for the duration of construction activities.
3. During removal of any part of the existing bridge, a debris collection device (e.g., heavy tarps, chain link mats) shall be installed below the bridge to prevent debris from falling into the San Joaquin River and left in place until removal is complete.
4. Measures consistent with the current Caltrans' Construction Site BMPs Manual (including the SWPPP and WPCP Manuals) shall be implemented to minimize effects to steelhead during construction.
5. A SWPPP shall be prepared by the contractor in accordance with typical provisions associated with a Regional General Permit for Construction Activities (on file with the Central Valley RWQCB). The SWPPP shall contain a Spill Response Plan with instructions and procedures for reporting spills, the use and location of spill containment equipment, and the use and location of spill collection materials. Implementation of the SWPPP shall minimize effects to salmonids and their habitat from potential spills associated with construction activities.
6. Any emergent or submergent aquatic vegetation shall be retained as practical within the constraints of the proposed project.
7. Prior to issuance of a grading permit or other authorization to proceed with project construction, the County shall obtain any regulatory permits that are required from the USACE, RWQCB, and/or CDFW.

BIO-13: The following measures shall be implemented to reduce impacts to wetlands:

1. To the extent practicable, the project shall include design features such as retaining walls, non-standard slope gradients, etc. to avoid and minimize impacts to wetlands.
2. Worker environmental awareness training shall be conducted by a qualified biologist for all construction personnel. The training shall instruct workers about the purpose of ESA fencing and the resources being protected.

BIO-14: Compensatory mitigation for impacts to wetlands and other waters of the U.S. and State shall be accomplished using one of the following methods, or by a combination of these methods:

1. Preservation, creation, and/or restoration in accordance with the USACE Mitigation Monitoring Program Guidelines (2015). The Mitigation Monitoring Program shall address, at minimum, the following: a project site impact assessment, compensatory mitigation site selection, compensatory mitigation site design, compensatory mitigation site construction, long-term compensatory mitigation site maintenance and monitoring, and long-term site management.
2. Purchase of credits at an approved mitigation bank.
3. Payment of in-lieu fees pursuant to an approved in-lieu fees program.
4. Appropriate mitigation ratios shall be established in coordination with the USACE during the permitting process to ensure no net loss of acreage or value of waters of the U.S.

3.5 CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.5.1 Impact Analysis

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

LSA prepared an *Archaeological Survey Report* to determine whether or not sensitive historical or Native American sites are located within the Area of Potential Effects (APE) or within 0.5 mile of the project site. The APE was defined to include the disturbance footprint for the proposed project. The Archaeological Survey Report consisted of archival and background research; field surveys of the APE on January 7, 2017, May 14, 2019, and August 27, 2019, by LSA; and consultation with potentially interested parties.

The Central California Information Center records search did not identify any previously recorded archaeological cultural resources within the APE, but did identify one built environment cultural resource within the 0.5-mile search radius: the historic Merced River Bridge (Bridge No. 39C0003) located near the intersection of Kelley Road and River Road. After an intensive pedestrian survey of the APE, no cultural resources, either historic or prehistoric were found. Inactive segments of Old River Road, including an abandoned bridge, were identified as a result of the field survey; however, Old River Road is exemptible per Attachment 4 of the Section 106 Programmatic Agreement and is not a historical resource pursuant to CEQA.

On January 23, 2017, LSA sent a letter describing the project and maps depicting the APE to the McHenry Museum and Stanislaus County Historical Society requesting any information or concerns they may have about the project. No response has been received to date.

Although archival research and field survey did not identify the presence of cultural resources within the APE, it is possible that during ground-disturbing activities historic or prehistoric resources may be discovered. Implementation of **Mitigation Measure CULT-1**, which requires archaeological monitoring by a qualified archaeologist during all ground-disturbing activities, would reduce impacts to previously undiscovered resources to **less than significant with mitigation incorporated**.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Geoarchaeologically, the APE has an overall high sensitivity for buried archaeological cultural resources based on soil analysis and underlying depositional landform. Generally, the San Joaquin Valley is composed of Quaternary-aged alluvium. This eroded material originated from the Coast Range and accumulated after continued tectonic uplift and weathering caused severe erosion and dissection of older deposits in the Diablo Range. The portion of the project area west of the San Joaquin River is composed of Pedcat clay loam, which exists typically on 0-2 percent slopes, is rarely flooded, and is associated with a Late Pleistocene to Early Holocene-aged landform, which is moderately sensitive for buried archaeological cultural resources. A small peninsular portion of the project area west of the San Joaquin River and south of Hills Ferry Road Bridge, as well as the area east of the San Joaquin River in Merced County, is composed of Columbia fine sandy loam, which is frequently prone to flooding. This soil type is formed from mixed rock alluvium and is commonly found in flood plains topographically associated with natural bar, channel, or levee areas. The Columbia soil series is associated with a Late Holocene-aged landform, which has very high sensitivity for buried archaeological cultural resources (California Soil Resource Lab 2015; Rosenthal and Meyer 2004). Since there would be ground-disturbing work, it is possible to cause adverse significant change to archaeological resources. If, however, such resources are discovered, implementation of **Mitigation Measure CULT-1**, would reduce potential impacts to **less than significant with mitigation incorporated**.

c. Would the project disturb any human remains, including those interred outside of formal cemeteries?

No human remains are known to exist within the APE. Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the County Coroner has determined whether or not the remains are subject to the coroner's authority. There is no indication that human remains are present within the APE. Implementation of **Mitigation Measure CULT-2**, below, would reduce the potential for impacts to unknown buried human remains, should they be encountered, to **less than significant with mitigation incorporated**.

3.5.2 Mitigation Measures

CULT-1: During construction, if any archaeological deposits are encountered, all work within 25 ft of the discovery shall be redirected and a qualified archaeologist contacted (if one is not present) to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. The County with jurisdiction over the location of the find shall also be notified. Project personnel shall not collect or move any archaeological materials.

Any adverse impacts to the finds shall be avoided by project activities. If avoidance is not feasible, the archaeological deposits shall be evaluated to determine if they qualify as a historical resource or unique archaeological resource, or as historic

property. If the deposits do not qualify, avoidance is not necessary. If the deposits do qualify, adverse impacts on the deposits shall be avoided, or such impacts shall be mitigated. Mitigation may consist of, but is not limited to, recovery and analysis of the archaeological deposit; recording the resource; preparing a report of findings; and accessioning recovered archaeological materials at an appropriate curation facility. Educational public outreach may also be appropriate.

Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the archaeological deposits discovered. The report shall be submitted to Stanislaus and/or Merced County, as appropriate.

CULT-2: During construction, in the event that human remains are encountered, work within 50 ft of the discovery shall be redirected and the Stanislaus and/or Merced County Coroner notified immediately. At the same time, a qualified archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the coroner shall notify the NAHC within 24 hours of this identification. The NAHC shall identify a Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations of the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the Most Likely Descendant. The report shall be submitted to the County, in which the remains were found, and the California Historical Resources Information System.

3.6 ENERGY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.6.1 Impact Analysis

- a. *Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?*

Transportation-related activities account for approximately 40 percent of all the energy consumption, including petroleum products, in California (Energy Information Administration 2017). While State and federal policies, such as the California Low-Emission Vehicle Program and the Federal Energy Policy Act of 1992, require the increased use of alternative-fuel and low-emission vehicles, the consumption of non-renewable resources, such as fossil fuels, remains high and data suggests the need to conserve such energy resources.

The project would result in temporary use of energy as fuels for construction equipment. During construction of the proposed project, construction vehicles, including worker commuter vehicles and heavy construction equipment, would require the use of gasoline and diesel fuel for power. In addition, most bridge materials would be fabricated offsite and transported to the project site for assembly. Construction of the project is anticipated to last 15-21 months and would not create a wasteful or significant increase in demand for fuel supplies. Once constructed, a negligible amount of energy would be used as fuel for maintenance vehicles and equipment, but would not cause a significant increase in energy consumption. The use of energy for the construction of the project is minimal and would not require the construction of new sources of energy or energy infrastructure for implementation of the project. The impact to energy resources would be considered **less than significant** and no mitigation is required.

- b. *Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

The project would not conflict with any energy efficiency policies or standards. **No impact** would occur and no mitigation is required.

3.7 GEOLOGY AND SOILS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.7.1 Impact Analysis

a. *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:*

- i. *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.*

The California Department of Conservation, California Geological Survey (CGS), Earthquake Zones of Required Investigation website (DOC 2018) was accessed on July 29, 2019, to determine if the proposed project is located on a delineated Alquist-Priolo Earthquake Fault Zone. According to the CGS website, the proposed project is not located on an Alquist-Priolo Earthquake Fault Zone. The closest fault zone to the project site is the Ortigalita Fault, located approximately 17 miles to the southwest. As such, **no impact** would occur and no mitigation measures are required.

ii. Strong seismic ground shaking?

According to the Stanislaus County General Plan Draft EIR, the ground shaking hazard in the county ranges from moderate to low, is highest in the western portion of the county near the Diablo Range (more than 30 miles west of the proposed project area), and diminishes eastward across the county. The Merced County General Plan Draft Programmatic EIR notes that the ground shaking hazard in Merced County is fairly low since only one fault system has been identified within the county, and it is located along the foot of the western Coast Range (also more than 30 miles west of the project area). According to the DOC Data Viewer, the project area could be subject to shaking potential of 0.55 peak ground acceleration during seismic events, which is considered moderate seismic ground shaking (CGS 2016). The proposed project would be designed with Caltrans standard BMPs that would reduce the risk of failure during seismic ground shaking. As such, with implementation of such BMPs, impacts would be **less than significant**. No mitigation measures are required.

iii. Seismic-related ground failure, including liquefaction?

Earthquake-induced liquefaction usually occurs in low-lying areas with soils composed of unconsolidated, saturated, clay-free sands and silts, but it can also occur in dry, granular soils or saturated soils with some clay content. Liquefaction hazard areas have not been identified in either Stanislaus County or Merced County; however, the Merced County General Plan Draft Programmatic EIR states that the potential for liquefaction exists due to unconsolidated sediments and a high water table in the wetlands adjacent to the San Joaquin River. According to the United States Department of Agriculture Soil Conservation Service, there are two soil types in the project area. Table 3 summarizes the characteristics of the soils.

Table 3: Soil Types

Soil	Hydrologic Group	Drainage Class	Hydric Status
Columbia	A/D	Somewhat poorly drained	Partially hydric
Pedcat	D	Poorly drained	Partially hydric

Source: United States Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey. Website <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm> (accessed July 2019).

Saturated soil deposits that have been created by sedimentation in rivers and lakes (fluvial or alluvial deposits), deposition of debris or eroded material (colluvial deposits), or deposits formed by wind action (aeolian deposits) can be very liquefaction susceptible. These processes sort particles into uniform grain sizes and deposit them in a loose state, which tend to densify when shaken by earthquakes. The tendency for densification leads to increasing pore water pressure and decreasing strength. Although soils within the project area may be susceptible to liquefaction, project construction would comply with California Building Code seismic design requirements, which would reduce potential impacts from seismic related ground failure, including liquefaction, to **less than significant**. No mitigation measures are required.

iv. Landslides?

According to the Stanislaus County General Plan Draft EIR, landslide hazard is greatest along the western portion of the county in the Diablo Range. The project area is more than 10 miles east of the foot of the Diablo Range and would not be at risk of a landslide. Additionally, the Merced County General Plan Draft Programmatic EIR indicates that the risk of landslides in Merced County is considered low, so the risk of landslide on the eastern portion of the project area is not anticipated. This impact would be **less than significant** and no mitigation measures are required.

b. Would the project result in substantial soil erosion or the loss of topsoil?

Information regarding the type of soil that underlies the project site and the soils' erosion potential is shown in Table 4.

Table 4: Soils Underlying the Project Site

Soil ID	Soil Name	Erosion Potential
CeA	Columbia soils, channeled, 0 to 3 percent slopes	Moderate
153	Columbia fine sandy loam, channeled, partially drained, 0 to 2 percent slopes, frequently flooded	Moderate
330	Pedcat clay loam, 0 to 2 percent slopes, rarely flooded	Moderate

Source: United States Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey. Website <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm> (accessed July 2019).

The project site has soils with moderate erosion potential. Ground-disturbing activities during project construction could result in soil erosion and associated topsoil loss, particularly during strong rain events. However, during construction, construction contractors would be required to comply with federal, State, and local regulations and guidelines to minimize the potential for soil erosion, including the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, 2009-0009-DWQ (General Construction Permit).

Erosion control measures and BMPs that are consistent with Caltrans and City requirements would be identified in required grading plans, and a SWPPP would be prepared in accordance with the NPDES General Construction Permit. Therefore, as part of project construction, erosion control measures and BMPs would be implemented to manage sediment and prevent discharge of sediments from the project site to storm drains and surface waterways, and to prevent wind and water erosion during construction activities. Implementation of required erosion control measures and BMPs would minimize the potential for soil erosion and the loss of topsoil. As such, impacts would be **less than significant** and no mitigation measures are required.

- c. Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

Earthwork during grading and construction activities would temporarily create slopes that could be unstable if improperly designed or constructed. However, according to the Department of Conservation CGS Information Warehouse: Landslides, very few landslides occur in the vicinity of the project site. According to the CGS website, the nearest landslide-prone area is approximately 30 miles west of the project area. The probability of landslides occurring on the project site is very low. With adherence to all applicable codes and regulations, including the 2019 California Building Code, the project's impacts associated with on- or off-site landslide would be minimized. The impact would be **less than significant** and no mitigation measures are required.

- d. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?*

The Columbia soil types and the Pedcat soil type present in the project area have shrink-swell potentials of low and high, respectively. Design of the proposed project would be consistent with and comply with infrastructure development regulations of the counties and Caltrans for development in areas with moderately expansive soil conditions. Implementation of such design features would ensure that the proposed project is not impacted by expansive soils. As such, impacts would be **less than significant** and no mitigation measures are required.

- e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?*

The design of the proposed project does not include the installation of septic tanks or alternative wastewater disposal systems where sewers are not available. As such, **no impact** to soils supporting such systems would occur with implementation of the proposed project. No mitigation measures would be required.

- f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

Paleontological resources are the fossilized evidence of past life found in the geologic record. Despite the tremendous volume of sedimentary rock deposits preserved worldwide, preservation of plant or animal remains as fossils is an extremely rare occurrence. Because of the infrequency of fossil preservation, fossils – particularly vertebrate fossils – are considered to be nonrenewable resources. Because of their rarity, and the scientific information they can provide, fossils are considered highly significant records of ancient life.

A search of the University of California Museum of Paleontology collections database identified 1,659 occurrences in Stanislaus County and 381 occurrences in Merced County. Based on the database search, no paleontological resources have been identified in the project area. No known paleontological resources or unique geologic features exist within the project site. Given the level of

disturbance within the project area, the proposed project is not likely to destroy, either directly or indirectly, a unique paleontological resource or site, or geological feature. As described in **Mitigation Measure GEO-1** below, if such a resource should be encountered during construction, work would stop until the resource can be evaluated and a determination made of its significance and need for recovery, avoidance, and/or mitigation. Therefore, the proposed project would result in a **less-than-significant** impact on paleontological resources or unique geologic features.

3.7.2 Mitigation Measures

GEO-1: During construction, if paleontological resources are encountered, all ground-disturbing activities shall be redirected within 50 ft of the find until a qualified paleontologist can be contacted to evaluate the find and make recommendations. If found to be significant and proposed project activities cannot avoid the paleontological resources, a paleontological evaluation and monitoring plan shall be implemented. Adverse impacts to paleontological resources shall be mitigated, which may include monitoring, data recovery and analysis, a final report, and the accession of all fossil material to a paleontological repository. Upon completion of project ground-disturbing activities, a report documenting methods, findings, and recommendations shall be prepared and submitted to the paleontological repository.

3.8 GREENHOUSE GAS EMISSIONS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.8.1 Impact Analysis

- a. *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

The purpose of the proposed project is to remove the existing structurally deficient structure and replace it with a new bridge designed to current structural and geometric standards while minimizing adverse impacts to the San Joaquin River and the surrounding riparian corridor. As the proposed project would not include additional through lanes, the proposed project would not increase roadway facilities or service capabilities that would induce unplanned growth or remove an existing obstacle to growth. Consequently, the proposed construction project is considered small, short-term in nature, and would not generate substantial air quality (including greenhouse gas [GHG] emissions) pollutant concentrations as discussed in Section 3.3 of this Initial Study/Mitigated Negative Declaration. The proposed project would not increase long-term traffic levels and there would be no operational impacts associated with greenhouse gas emissions. Impacts are considered **less than significant**. No mitigation measures are required.

- b. *Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

California's primary legislation for reducing greenhouse gas emission is the California Global Warming Solutions Act (AB 32). The SJVAPCD adopted the Climate Change Action Plan in August 2008, which is intended to reduce federal, State, and local GHG emissions by targeting the largest emitters of GHGs: the transportation and energy sectors. The proposed project includes the replacement of an existing bridge on Hills Ferry Road at the San Joaquin River crossing. The proposed project would not generate any new vehicle trips during operation and would not conflict with transportation reduction measures. In addition, the proposed project does not propose any development that would substantially increase energy demand, thus generating more GHG emissions. The proposed project would not conflict with the State goal of reducing GHG emissions, nor would it conflict with the AB 32 Scoping Plan or the SJVAPCD Climate Change Action Plan. The proposed project would be subject to all applicable permit and planning requirements. As such, the proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. Impacts would be **less than significant**. No mitigation measures are required.

3.9 HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.9.1 Impact Analysis

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Hazardous materials are chemicals that could potentially cause harm during an accidental release and are defined as being toxic, corrosive, flammable, reactive, an irritant, or a strong sensitizer. Hazardous substances include all chemicals regulated under the United States Department of Transportation's "hazardous materials" regulations and the Environmental Protection Agency's "hazardous waste" regulations. Hazardous wastes require special handling and disposal because of their potential to damage public health and the environment. The severity of any such exposure is dependent upon the type, amount, and characteristics of the hazardous material involved; the time, location, and nature of the event; and the sensitivity of the individual or environment affected.

Project construction would involve the incidental transport and use of common hazardous materials, such as oils, lubricants, and fuels, as well as specific materials for bridge construction, such as concrete and asphalt. Such transport and use would be subject to State and local regulations, which would reduce potential risk of hazard to the public or the environment.

In addition, implementation of Mitigation Measure HAZ-1 would require the preparation of a Spill Prevention and Countermeasure Plan (SPCP), and Mitigation Measure HYD-2 (provided in Section 3.10, Hydrology and Water Quality) would include the preparation of a SWPPP to minimize potential contamination to downstream waterways. With implementation of **Mitigation Measure HAZ-1** and **Mitigation Measure HYD-2**, the proposed project would result in **less than significant impacts with mitigation incorporated**.

b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

The incidental transport and use of oils, lubricants, fuels, and other common hazardous materials during construction may present a temporary potential hazard to the public and the environment. In addition, the Initial Site Assessment completed by Blackburn identified potential hazardous materials within the project vicinity, including lead- and chromium-based paints.

The Environmental Protection Agency, National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 61 – Nov. 20, 1990, requires an owner or operator of a demolition or renovation project to thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation would occur for the presence of asbestos-containing material prior to the commencement of that project.” The proposed project includes the demolition of an existing structurally deficient bridge. The bridge was built in 1961 and could include asbestos-containing materials, lead-based paint, or aerially deposited lead. As the bridge was built during a period where asbestos was heavily used, removal of the bridge may cause risk of exposure to asbestos. Paint used in traffic striping and bridge components could contain lead-based paint and chromium. In addition, as the bridge was constructed and utilized by motorized vehicles using lead-based fuels, aerially deposited lead may exist in soils within the project site.

The County commissioned a pre-demolition assessment on September 20, 2019 for the proposed project. The test results indicate that asbestos is not present in the materials sampled from the bridge and approach structures at the existing Hills Ferry Road Bridge (Blackburn 2019).

Sampling of the yellow and white traffic stripes indicated that lead and chromium levels in the traffic stripes were below accepted limits. Lead was detected at concentrations of 30 parts per million (ppm) in the yellow traffic striping, below the California Total Threshold Limit Concentration of 1,000 milligrams/kilogram (mg/kg). Chromium was not detected above the detection limit of 30 ppm in the yellow traffic striping, and lead and chromium were not detected above their respective detection limits (20 ppm and 30 ppm) in white traffic striping (Blackburn 2019).

Industrial paints, such as those used on the structural steel columns of the bridge, can contain lead and chromium. Test results indicate that lead was detected at a concentration of 2,700 ppm, which exceeds the TTLC of 1,000 mg/kg. Additionally, chromium was detected at a concentration of 2,600 ppm, which exceeds the TTLC of 2,500 mg/kg.

Therefore, based on these findings, demolition of the existing bridge would likely require disposal of paint material containing lead and chromium. Implementation of **Mitigation Measure HAZ-2** would require worker training for the transport, use, and disposal of hazardous material and would reduce the risk of a significant hazard.

Once operational, potentially hazardous materials, such as fuels and solvents, may be used during routine maintenance activities. However, maintenance activities would be similar to those currently being conducted for the existing bridge and would be conducted in compliance with existing government regulations. Operation of the proposed project would not produce hazardous emissions or require handling, transport, or disposal of acutely hazardous materials, substances, or waste.

The proposed project would result in **less than significant impacts with mitigation incorporated** associated with creating a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

The proposed project would involve the temporary transport and use of common hazardous materials required during construction of the new bridge and demolition of the existing bridge. The nearest school is Hurd Barrington Elementary School, which is located more than 2.5 miles southwest of the proposed project site. Because the nearest school is located more than one-quarter mile from the proposed project site, there would be **no impact** and no mitigation measures are required.

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

An Initial Site Assessment (Blackburn 2020) was prepared for the proposed project that included an extensive database records search for the project site and properties within a 1-mile radius of the project site. Blackburn reviewed the database records search for sites at or adjacent to the acquisition parcels or considered close enough to the project site to potentially impact the project. The records search did not indicate the presence of known and/or potential recognized environmental conditions within the project limits; however, two sites were identified with potential hazardous material conditions adjacent to the project site. The first site, in 1999, was a dump site for an illegal drug lab located in the area. Impacts to the nearby watershed were reported; however, upon site visit, no evidence of discarded items remained. It was reported that there was no threat to waterways at the time of incident. In 2005, the California Hazardous Materials Resource System reported the presence of two 50- gallon drums of 'Round Up' that may have been discharged into the San Joaquin River at the second site. The effects of the chemicals were not determinable at the time of discovery and no evidence of the chemicals remain. Because the proposed project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, this impact is **less than significant** and no mitigation is required.

- e. Would the project be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

Gustine Municipal Airport, located at 26467 W. Highway 140, Gustine, is approximately 6 miles south of the proposed project site. The project site is not within the boundary of the Gustine Municipal Airport Land Use Plan or within 2 miles of this airport (Merced County 2012). Therefore, implementation of the proposed project would not result in a safety hazard from airport uses for people residing or working in the project area. **No impact** would occur and no mitigation measures would be required.

- f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Construction of the proposed project may require temporary travel lane closure or full closure of the bridge to allow for removal of the existing deficient bridge and installation of the new bridge. To ensure adequate emergency response, Stanislaus and Merced counties would prepare a Traffic Management Plan and would work with emergency service providers to inform them of potential closures and detours during project construction activities (as required by **Mitigation Measures TRANS-1 and TRANS-2**; see Section 3.17, Transportation). Once the proposed project is operational, improvements along Hills Ferry Road (Stanislaus) and Kelley Road (Merced) would not interfere with any emergency response plan or emergency evacuation plan. Impacts would be **less than significant with mitigation incorporated**.

- g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?*

The proposed project is located within a Local Responsibility Area Moderate Zone according to the Fire Hazard Severity Zone Map. Zones are classified based on a combination of how a fire would behave and the probability of flames and embers threatening buildings, as well as the likelihood of the area burning. Since lands surrounding the project vicinity consist of large agricultural parcels and the project area is bisected by the river channel, which maintains flows year-round, the risk of wildland fires would be **less than significant** and no mitigation is required.

3.9.2 Mitigation Measures

- HAZ-1:** The contractor shall prepare a SPCP. The SPCP must be submitted to Stanislaus County for review and approval prior to the commencement of construction activities. The SPCP shall include information on the nature of all hazardous materials that would be used on site. The SPCP shall also include information regarding the proper handling of hazardous materials and cleanup procedures in the event of an accidental release. The phone number of the agency overseeing hazardous materials and toxic cleanup shall be provided in the SPCP.

HAZ-2: The contractor shall prepare and implement a Lead Compliance Plan for removal and disposal of traffic stripes and industrial paint. The Lead Compliance Plan shall require the contractor to use trained personnel and comply with all Cal/OSHA regulations and requirements. Employee training should include guidelines that prevent or minimize worker exposure to lead-based paint and chromium-based paint. The training shall include (but not be limited to) protocols for environmental and personal monitoring, requirements for personal protective equipment, and other health and safety protocols and procedures for the demolition of existing structures.

3.10 HYDROLOGY AND WATER QUALITY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. Result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.10.1 Impact Analysis

- a. *Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?*

The State Water Resources Control Board requires dischargers whose projects disturb 1 or more acres of soil to obtain coverage under the State Water Resources Control Board's NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWG and 2012-0006-DWQ, NPDES No. CAS000002) (Construction General Permit). Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation.

Construction of the proposed Hills Ferry Road Bridge and associated road improvements, in addition to utility relocation and demolition of the old bridge, would require excavation, grading, construction, and paving within and adjacent to the San Joaquin River. Construction activities involving soil disturbance, excavation, cutting/filling, and grading activities could result in increased erosion and sedimentation to the San Joaquin River and waters downstream. Construction materials such as asphalt, concrete, and equipment fluids could be exposed to precipitation and subsequent runoff. If precautions are not taken to contain contaminants, construction could produce

contaminated storm water runoff (nonpoint source pollution), a major contributor to the degradation of water quality.

Several construction activities associated with the project are likely to encounter ground water because of the high water table. Prior to in-channel construction activities, the area of the channel where construction activities would occur would be dewatered. Pile construction, which would require drilled shaft depths greater than 100 ft, would likely utilize a temporary steel casing to keep the upper portions of the holes open due to expected caving conditions. Such casings are advanced as the holes are drilled. In order to equalize the water pressures during excavation of the pile and to reduce the chances of caving, a slurry is typically used inside the casings. Slurry is typically made using water taken from the river or a nearby potable water source, if available. The slurry is stored in tanks and is added to the hole as the hole is excavated. Approximately 50,000 gallons of slurry would be needed to construct a pile. Once the desired depth of the pile is achieved and the concrete has been added to the pile, the slurry is displaced or pumped out of the hole and back into the tanks where it is recycled and used for the next hole. Typically, the temporary casing would be withdrawn from the ground as the concrete in the pile is placed. At the completion of drilling, most polymer type slurries are pumped to a settling basin constructed on-site, and the water is allowed to evaporate and soak into the ground. As an alternative, the slurry may be trucked off-site for disposal.

If dewatering is necessary in areas where groundwater is encountered within the planned depth of excavation, depending on surface and groundwater levels at the time of construction, a permit for discharge of the extracted groundwater would be obtained from the Regional Water Quality Control Board (RWQCB). This discharge would be required to be consistent with RWQCB requirements and as such would not result in a violation of water quality standards or waste discharge requirements.

Although the contractor would conduct construction activities during low-flow or dry conditions, water is present in the San Joaquin River year-round. In order to protect water quality in the San Joaquin River during dewatering activities, **Mitigation Measure HYD-1** would be implemented. Implementation of **Mitigation Measure HYD-1** would reduce impacts to water quality to a **less-than-significant level with mitigation incorporated**.

In order to place the rock needed to protect the embankments from erosion due to the flowing river, the rock slope protection (RSP) needs to be installed to a depth significantly below the existing ground. Excavations approximately 10 ft deep are anticipated near the toe of each abutment embankment. During most summers, the San Joaquin River water surface elevation would be well below the anticipated depth of the excavations needed to install the RSP, suggesting there would be no water in the excavations. However, if water is encountered, and depending on the inflow rate, there are still several ways to install the RSP. For small amounts of water entering the excavation, sump pumps would pump the water out of the excavations and into nearby settling basins. If the water inflow rate is too great for the contractor to control with pumping, the RSP would be placed with the hole full of water. In this case the equipment operator would place the rock underwater on the excavated area. After the RSP is placed and as the hole is backfilled with native soils, the displaced water would be pumped to settling basins.

Soil removed during construction would be stored and controlled to reduce soil erosion and sedimentation of downstream waterways. Pollutants and hazardous materials, such as gasoline, diesel fuel, oil, solvents, and trash would be stored and used during construction of the proposed project. However, implementation of **Mitigation Measure HAZ-1** (provided in Section 3.9 Hazards and Hazardous Materials) and best management practices would reduce the potential for materials to enter drainages and degrade downstream water quality. In addition, incorporation of **Mitigation Measure HYD-2** would require that coverage be obtained under the Construction General Permit, which requires the preparation and implementation of a SWPPP and implementation of best management practices to control and reduce potential pollutants to stormwater runoff. Implementation of **Mitigation Measure HYD-3** would require the preparation of an Erosion Control Plan approved by the County to ensure compliance with the County's Standards and Specifications (2014).

The proposed project would result in a net increase of 0.09 ac of impervious surface. Impervious surfaces within the project area would be flanked by a roadside ditch/bioswale on each side of the project to treat runoff before it outfalls into the river. With biofiltration features incorporated as part of the project design, the proposed project would not violate water quality or waste discharge requirements during operation.

Project impacts associated with water quality standards or waste discharge requirements or any potential to otherwise substantially degrade surface or groundwater quality would be **less than significant with mitigation incorporated**.

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

The project site is underlain by the Mendota, Merced, and Turlock Groundwater Sub-Basins in the San Joaquin Valley Groundwater Basin. Depths of the groundwater ranges from 40-60 ft below the ground surface (California Department of Water Resources 2017). The project is considered to have high natural recharge potential because of its proximity to the river. The project would result in a net increase of 0.09 ac of impervious surface that could prevent water from infiltrating into the groundwater; however, the project would not result in direct additions or withdrawals to existing groundwater. Given the small amount of water required for construction activities, groundwater supplies would not be decreased, and the project would not cause interference with groundwater recharge due to water usage during construction. Once operational, the proposed project would not require the use of water as no irrigation for landscaping would be included. Therefore, operation of the proposed project would not decrease groundwater supplies. De-watering may be required if groundwater is encountered during excavation. Dewatering, if necessary, would be conducted in compliance with the permit conditions of the RWQCB; therefore, the impact to groundwater from dewatering would be less than significant. No wells would be constructed, and construction activities would not intercept or alter groundwater recharge, discharge, or flow conditions; therefore, the proposed project would have a **less-than-significant** impact on groundwater resources and no mitigation measures are required.

c. *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:*

i. *Result in substantial erosion or siltation on- or off-site;*

During construction, any soil removed would be stored and controlled to reduce any potential erosion or siltation. In addition, implementation of **Mitigation Measures HYD-2 and HYD-3** would ensure compliance with the Construction General Permit, preparation of a Stormwater Pollution Prevention Plan, and compliance with the County's Standards and Specifications (2014). As such erosion of disturbed soil areas during construction would be reduced. Replacement of the Hills Ferry Road Bridge would require realignment of the existing roadway and would result in an increase in impervious surfaces. However, design of the proposed project and implementation of construction site best management practices would ensure this increase in impervious surfaces would not substantially alter existing drainage patterns or result in substantial erosion or siltation on or off site. The proposed project would result in **less than significant impacts with mitigation incorporated** related to drainage patterns and erosion or siltation.

ii. *Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;*

Replacement of the existing bridge would result in increased impervious surfaces which would result in an increase in the rate and volume of stormwater runoff. However, project design would ensure that drainage patterns are maintained and implementation of construction site best management practices would reduce the increase in the amount or rate of surface runoff. The proposed project is not located within a flood hazard zone and any drainage improvements would be appropriately sized to manage any increase in runoff. The increase in the rate and volume of stormwater runoff would not be substantial and would not result in flooding. The proposed project would not result in flooding on or off site and would have a **less than significant** impact related to surface runoff. No mitigation measures would be required.

iii. *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or*

Replacement of the existing bridge would result in a slight increase in impervious surfaces. However, this increase in impervious surfaces is anticipated to have a minimal effect on stormwater runoff. The proposed project would not create any substantial increase in stormwater, and the capacity of existing stormwater drainage within the project area would be adequate. Impacts would be **less than significant**, and no mitigation measures would be required.

iv. *Impede or redirect flood flows?*

The proposed project is located within a FEMA-designated 100-year floodplain. The existing bridge would be removed as part of the project and replaced with a wider bridge. The replacement bridge would include fill in the floodplain associated with the new abutments, piers, approach roadways, and embankments. However, as demonstrated by HEC-RAS hydraulic modeling in the Floodplain

Evaluation Report (WRECO 2020), the proposed bridge would result in a decrease in the water surface elevation just upstream of the bridge up to 0.08 ft for the 100-year design flow. Construction of the new bridge would not adversely affect flow capacity. Therefore, there is a low potential for the proposed project to contribute to adverse flood control functions. This impact would be **less than significant** and no mitigation measures are required.

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

As discussed in Section 3.10.1(c), the proposed project is located within a FEMA-designated 100-year floodplain. The existing bridge would be removed as part of the project and replaced with a wider bridge. The replacement bridge would include fill in the floodplain associated with the new abutments, piers, approach roadways, and embankments. However, as demonstrated by HEC-RAS hydraulic modeling in the Floodplain Evaluation Report (WRECO 2020), the proposed bridge would result in a decrease in the water surface elevation just upstream of the bridge up to 0.08 ft for the 100-year design flow. The proposed project would not result in an increased risk of flood hazard. The project site is not located near an enclosed body of water or the ocean. As such, the proposed project would not be susceptible to inundation by a seiche or tsunami. The proposed project would not risk release of pollutants due to project inundation and **no impact** would occur. No mitigation measures would be required.

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The Sacramento River/San Joaquin River Basin Plan provides groundwater quality objectives and beneficial uses for the entirety of its jurisdictional boundary. Unless otherwise designated by the RWQCB, all ground waters in the Sacramento/San Joaquin River Basin Plan's jurisdictional boundary are considered suitable or potentially suitable, at a minimum, for municipal and domestic water supply; agricultural resources; industrial service supply; and, industrial. The Sacramento River/San Joaquin River Basin Plan identifies objectives for bacteria, chemical constituents, radioactivity, taste and odors, and toxicity in groundwater. Additionally, the Basin Plan identifies both contact and noncontact recreation uses for the San Joaquin River in the project area. Runoff from the site during construction would drain into the San Joaquin River. In compliance with the Construction General Permit, the County would be required to prepare a SWPPP (**Mitigation Measure HYD-2**) and implement Construction BMPs aimed at reducing pollutants of concern in stormwater runoff. Therefore, the potential for short-term water quality impacts during construction to adversely affect the various uses of the river is considered to be very low. The proposed project would result in **less than significant impact with mitigation incorporated**.

3.10.2 Mitigation Measures

- HYD-1:** The construction contractor shall implement the following dewatering BMPs to reduce water quality impacts to the San Joaquin River and downstream waters.
- During high water conditions, a temporary work trestle may be required to support the pile drilling equipment and to service construction of the new bridge.
 - Visibility permitting, all excavations shall be inspected for sensitive aquatic wildlife prior to dewatering. Wildlife found in excavations shall be allowed to leave passively or shall be relocated by a qualified biologist (BIO-8).
 - If dewatering of an excavation is needed, all dewatering pump intakes shall be fitted with filter screening to prevent impacts to aquatic wildlife that may accidentally enter excavations.
 - Where feasible (e.g., landowner approval is provided, sufficient space with permeable surfaces is available, slopes are gentle enough to allow control of potential sediment transport), all stormwater or groundwater removed from excavations shall be discharged overland into well-vegetated areas to promote the settling of sediment. If overland discharge is not possible, then water removed from excavations shall be collected, treated, and disposed of consistent with requirements of the RWQCB and any other agencies with jurisdiction over the activity.
 - The contractor shall have on hand, at all times, sufficient pumping equipment, filter sleeves, hoses and machinery in good working condition and shall have available, at all times, competent personnel for the implementation of dewatering. Adequate standby equipment and supplies shall be kept available at all times to ensure efficient dewatering and maintenance of dewatering operation during power failure.
 - Dewatering shall commence at an appropriate time prior to commencing excavation (if possible), or immediately upon encountering groundwater, and shall be continuous until the work is completed and backfilled.
 - The contractor shall comply at all times with the project SWPPP.
 - The contractor shall be responsible to design and control the dewatering operations such that disposal of water does not cause erosion or other damage and such that water to be disposed of is free from silt and other objectionable materials. Settling basins and/or other means shall be used as necessary. Groundwater shall be disposed of and treated, as necessary, so as not to create environmental nuisance or harm.

- Work shall be conducted within areas of the project allowed by the permits and as shown on the plans. Stanislaus County shall ensure that all contractor personnel understand all permit and plan requirements that affect dewatering.
- The termination of dewatering operations shall be performed in such a manner as to maintain the undisturbed state of the natural soils and prevent disturbance of compacted backfill.
- The contractor shall implement a monitoring plan to ensure that applicable water quality release standards are met. The contractor shall document in a report to be submitted to the permitting agencies that the water quality standards have been met.

HYD-2: Prior to commencement of construction activities, the proposed project shall obtain coverage under the State Water Resources Control Board's NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) Order No. 2009-0009 DWQ, as amended by 2010-0014-DWG and 2012- 0006-DWQ, NPDES No. CAS000002, or any other subsequent permit. This shall include submission of Permit Registration Documents (PRDs), including a Notice of Intent for coverage under the permit to the State Water Resources Control Board via the Stormwater Multiple Application and Report Tracking System (SMARTS). Construction activities shall not commence until a Waste Discharge Identification Number is obtained from SMARTS. The proposed project shall comply with the Risk Level 2 requirements of the Construction General Permit. A SWPPP shall be prepared and implemented to address all construction-related activities, equipment, and materials that have the potential to impact water quality. The SWPPP shall identify the sources of pollutants that may affect the quality of storm water and include BMPs to ensure that the potential for soil erosion, sedimentation, and spills is minimized and to control the discharge of pollutants in storm water runoff as a result of construction activities. Upon completion of construction, a Notice of Termination shall be submitted via SMARTS.

HYD-3: Prior to construction, the contractor shall prepare an Erosion Control Plan. The Erosion Control Plan shall be reviewed and approved by Stanislaus County and implemented by its designated contractor in compliance with the provisions of the Stanislaus County Standards and Specifications. The Erosion Control Plan shall indicate the proposed methods for the control of runoff, erosion, and sediment movement during project construction.

3.11 LAND USE AND PLANNING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.11.1 Impact Analysis

a. Would the project physically divide an established community?

The new bridge would be constructed slightly north of the existing bridge, and the bridge would provide connectivity between Stanislaus and Merced counties via Hills Ferry Road. The project would consist of the replacement of the existing bridge along Hills Ferry Road over the San Joaquin River. The project would be consistent with existing land uses and would not divide an established community. **No impacts** would occur, and no mitigation measures would be required.

b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Project construction would occur mainly within existing right-of-way. The proposed project would require approximately 0.58 acre of parcel acquisition (0.33 acre from APN 049-037-002 and 0.25 acre from APN 049-280-011) and establishment of 0.325 ac of permanent easement on adjacent parcels. As discussed in Section 1.0 of this Initial Study/Mitigated Negative Declaration, the proposed project would require the permanent removal of 0.22 ac of existing NRCS easement due to the proposed eastern roadway approach realignment. The project would place suitable replacement lands under conservation easement at a 1.5:1 ratio (0.325 ac of permanent easement). The proposed project would not conflict with any land use plans, policies, and regulations; as such, impacts would be **less than significant**, and no mitigation measures would be required.

3.12 MINERAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.12.1 Impact Analysis

- a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

The predominant mineral resources in Stanislaus County are sand and gravel. The Stanislaus County General Plan Draft EIR states that there were 12 mines in operation as of 2016. Mining activities occur primarily within fluvial deposits along river and stream drainages. According to the United States Geological Survey online Mineral Resource Data System (2019), the nearest sand and gravel operation is approximately 5 miles west of the proposed project. The proposed project area is zoned Agriculture 40 Acres (A-2-40) in Stanislaus County and General Agricultural (A-1) in Merced County; therefore, aggregate mining activities would not be consistent with the current zoning. No aggregate mining activities exist or are planned in the area (United States Geological Survey 2019); therefore, the project would have **no impact** on the availability of known mineral resources and no mitigation measures are required.

- b. Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?*

The project site is located in an agricultural area. The project is not located near a mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Therefore, the project would have **no impact** on the loss of availability of a locally important mineral resource recovery site and no mitigation measures are required.

3.13 NOISE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.13.1 Impact Analysis

- a. *Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological damage and/or interfere with communication, work, rest, recreation, or sleep. Several noise measurement scales exist that are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. The 0 measurement on the dB scale is based on the lowest sound levels that the healthy, unimpaired human ear can detect. Noise level changes of 3 dB or less are only perceptible in laboratory environments.

Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a tenfold increase in acoustic energy, while 20 dB is 100 times more intense and 30 dB is 1,000 times more intense. Each 10 dB increase in sound levels is perceived as approximately a doubling of loudness. Sound intensity is normally measured through the A-weighted sound level (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. The day-night average noise level is the energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dBA added to the A-weighted sound levels occurring between 10:00 p.m. and 7:00 a.m. (defined as sleeping hours).

The proposed project is located in rural portions of central southern Stanislaus County and central northern Merced County and therefore would need to comply with both County noise standards during both the construction and operational periods. Chapter 10.46 of the Stanislaus County Code (the Noise Control Ordinance) limits construction noise to 75 dBA at any sensitive receptor between the hours of 7:00 p.m. and 7:00 a.m. Section 10.46.080(J) of the Noise Control Ordinance provides the following exemption which would be applicable to the proposed project: "Public Entity or Public

Utility Activity: This chapter shall not apply to construction or maintenance activities performed by or at the direction of any public entity or public utility.”

Section 18.41.070 of the Merced County Code indicates that noise levels during construction may be temporarily elevated. In urban areas, where construction activities occur, the County Code limits construction hours to daytime work, from 7:00 a.m. to 6:00 p.m. The County Code also requires that all construction equipment be properly muffled and maintained to reduced elevated noise levels during construction.

Two types of site-specific short-term noise impacts would occur during project construction: (1) equipment delivery and construction worker commutes; and (2) project construction activities.

The first type of short-term construction noise would result from transport of construction equipment and materials to the project site and construction worker commutes. These transportation activities would incrementally raise noise levels on access roads leading to the site. It is expected that larger trucks used in equipment delivery would generate higher noise impacts than trucks associated with worker commutes. The single-event noise from equipment trucks passing at a distance of 50 ft from a sensitive noise receptor would reach a maximum level of 84 dBA maximum instantaneous noise level (L_{max}). However, the pieces of heavy equipment for grading and construction activities would be moved on-site just once and would then remain for the duration of each construction phase. This one-time trip, when heavy construction equipment is moved on- and off-site, would be temporary and would not add to the daily traffic noise in the project vicinity. Furthermore, the projected traffic from the construction worker commutes would be temporary and minimal when compared to existing traffic volumes within the project vicinity, and its associated long-term noise level change would not be perceptible. Therefore, equipment transport noise and construction-related worker commute impacts would be short-term and would not be substantial.

The second type of short-term noise impact is related to noise generated during project construction. Construction is performed in discrete steps, each having its own mix of equipment and consequently its own noise characteristics. These various sequential phases would change the character of the noise generated, as well as the noise levels in the study area, as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Normal construction activity may generate high noise levels from an active construction area. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

The project area consists of undeveloped land occupied by natural vegetation, the San Joaquin and Merced rivers, Hills Ferry Raceway, single-family residential units on large lots with livestock pens, Hills Ferry Road, and River Road. Two single-family residential units are located in proximity to the proposed project. The first residential unit, located at 27136 River Road (APN 049-037-002), is located 300 ft west of the nearest project construction activity location, and 353 ft west of the nearest pile driving activity location. This residence is located within 125 ft of the northern limit of the Hills Ferry Raceway, which regularly holds gokart and motorcycle racing events. The second residential unit, located at 3129 Hills Ferry Road (APN 049-045-028), is located 576 ft west of the nearest project construction activity location, and 1,288 ft west of the nearest pile driving activity

location. Both of these noise sensitive receptors are located in Stanislaus County; there are no noise sensitive receptors located in Merced County that would be affected by the proposed project.

The closest residential unit, the single-family home at 27136 River Road (APN 049-037-002), is located 53 ft from closest construction staging area, 300 ft from the closest construction activity area, and 353 ft from potential pile driving activities. The Technical Noise Memorandum prepared for the proposed project (LSA 2020) found that this residence may be subject to short-term noise reaching 73 dBA L_{max} generated by general construction activities, 78 dBA L_{max} during pile driving operations, and 79 dBA L_{max} should pile driving and general construction occur simultaneously. The short-term construction related noise levels that the single-family residence would be exposed to do not exceed Caltrans construction noise requirements of 86 dBA L_{max} at a distance of 50 ft from the construction site, and would be exempt from the Stanislaus County Noise Control Ordinance, based on Section 10.46.080(J). The Merced County Noise Control Ordinance would not be applicable as there are no noise sensitive receptors located in the County's jurisdiction in close proximity to the proposed project. Mitigation measures would not be required to reduce construction noise levels in order to comply with County and Caltrans noise requirements; however, standard construction noise avoidance and minimization measures are recommended in **Mitigation Measure NOI-1** to further reduce noise levels generated by construction equipment in the general area of the project. Therefore, construction period impacts would be **less than significant with mitigation incorporated**.

The proposed project does not include new traffic lanes nor would it increase traffic volumes beyond existing conditions. Because the proposed project would not generate an increase in vehicular traffic, noise levels from vehicular traffic are anticipated to be comparable to existing conditions. Although the project would result in a 5-ft vertical increase at the bridge compared to existing conditions, a 5-ft vertical change is not a substantial change in the vertical alignment because such a change would not result in any perceptible noise change at the nearest receptor (approximately 300 ft from the location of the new bridge). A perceptible noise change is considered a change greater than 3.0 dBA, which is not expected to occur with implementation of the proposed project, as the existing traffic volume using the road/bridge would not change, and the proposed project would not remove shielding between the traffic noise source and the sensitive receptor. Therefore, operation period impacts would be **less than significant**.

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Vibration is a form of noise with energy carried through structures and the earth, whereas noise is simply carried through the air. Thus, vibration is generally felt rather than heard. Some vibration effects can be caused by noise (e.g., the rattling of windows from passing trucks). This phenomenon is related to the coupling of the acoustic energy at frequencies that are close to the resonant frequency of the material being vibrated. Typically, ground-borne vibration generated by human activities attenuates rapidly as the distance from the source of the vibration increases. Vibration, which spreads through the ground rapidly, diminishes in amplitude with distance from the source.

The ground motion caused by vibration is measured as peak particle velocity (PPV) in inches per second. PPV is the speed at which a particle of earth moves and is expressed in units of inches per second. Vibration is also measured as the root-mean-square amplitude of a motion over a 1-second period. For ease, the logarithmic dB scale is used to describe the vibration velocity level relative to a reference level of 10^6 inches per second and is expressed as vibration velocity decibels, or VdB.

The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity of 75 VdB is considered the approximate threshold between barely and distinctly perceptible levels for many humans. Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or slamming of doors. Typical sources of perceptible ground-borne vibration include construction equipment, steel-wheeled trains, and traffic on rough roads. Ground-borne vibration from traffic is barely perceptible if a roadway is smooth.

Analysis regarding ground-borne vibration for bridge replacement projects is typically focused on construction activities. Once operational, these projects do not generate ground-borne vibration. Construction activities can result in varying degrees of ground vibration, depending on the equipment and methods employed. Operation of construction equipment causes vibrations that spread through the ground and diminish in strength with distance. Structures built on the soil in the vicinity of the construction site respond to these vibrations with varying results, ranging from no perceptible effects at the lowest levels to low rumbling sounds and perceptible vibrations at moderate levels, and slight damage at the highest levels.

Ground vibrations from construction activities do not often reach the levels that can damage structures, but they can achieve the audible and feelable ranges in buildings very close to the site. A possible exception is the case of fragile buildings, many of them old, where special care must be taken to avoid damage. The construction activities that typically generate the most severe vibrations are blasting and impact pile-driving. Various types of construction equipment have been measured under a wide variety of construction activities, with an average of source levels reported in terms of velocity. Table 5 shows the vibration levels of typical construction equipment measured in PPV and VdB at a distance of 25 ft from the equipment.

Table 5: Vibration Source Levels for Typical Construction Equipment

Construction Equipment		PPV at 25 feet (inches per second)	PPV at 300 feet (inches per second)
Pile Driver (impact)		0.644	0.0155
Pile Driver (sonic)		0.170	0.0041
Clam Shovel Drop (slurry wall)		0.202	0.005
Hydromill (slurry wall)	In Soil	0.008	0.00055
	In Rock	0.017	0.00041
Vibratory Roller		0.210	0.0051
Hoe Ram		0.089	0.00214
Large Bulldozer		0.089	0.00214
Caisson Drilling		0.089	0.00214
Loaded Trucks		0.076	0.00183
Jackhammer		0.035	0.00084
Small Bulldozer		0.003	0.00072

Source: United States Department of Transportation Federal Transit Administration (2018). Calculated using the following formula:
 $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$, where: PPV (equip) = the peak particle velocity in inch per second of the equipment adjusted for the distance; PPV (ref) = the reference vibration level in inch per second from Table 7-4 of the Federal Transit Authority Transit Noise and Vibration Impact Assessment Guidelines (September 2018); D = the distance from the equipment to the receiver
 in/sec = inches per second VdB = vibration velocity decibels
 PPV = peak particle velocity

Stanislaus County regulates vibration during construction through the Stanislaus County Code Chapter 10.46 Noise Control, Section 10.46.070 Vibration. According to the code, "Operating or permitting the operation of any device that creates vibration that is above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property, or at [150] ft from the source if on a public space or public right-of-way is prohibited. Vibration perception threshold means the minimum ground-borne or structure-borne vibration motion necessary to cause a reasonable person to be aware of the vibration by such direct means as, but not limited to, sensation by touch or visual observation of moving objects, or a measured motion velocity of 0.01 in/sec over the range of one to one hundred Hertz (0.01 inches/second RMS [root-mean-squared])." The threshold of 0.01 inches/second RMS equates to 0.04 inches/second PPV.

During construction activities at the proposed project site several different types of construction equipment would be used that could generate groundborne vibrations that could impact adjacent residential uses. The nearest adjacent residential use is approximately 300 ft from the nearest area of proposed construction. During construction on the proposed project site construction crews would use pile drivers and haul/dump trucks. These two types of construction equipment would generate the highest levels of groundborne vibration compared to the other construction equipment that would be used during construction activities. Pile drivers used on the construction site would generate a vibration level of 0.644 PPV as measured from 25 ft; haul/dump trucks used on the project site would generate vibration levels of 0.076 as measured from 25 ft.

The nearest sensitive receptor (residential unit) is 300 ft from proposed construction activities (but 353 ft from proposed pile driving activities). Vibration levels generated by pile driver usage would be 0.0155 PPV (as calculated for a distance of 300 ft) and haul/dump truck usage would be 0.00183 PPV (as calculated for a distance of 300 ft) as shown above in Table 5. Groundborne vibrations generated

by construction equipment on the proposed project site would be within the Stanislaus County standard of 0.04 inches/second PPV. Therefore, impacts would be **less than significant**.

The County has not adopted a vibration damage threshold. As such, vibration damage potential threshold criteria from Caltrans are used for this analysis. Table 6 shows vibration threshold criteria for different types of structures.

Table 6: Guidelines Vibration Damage Threshold Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, and ancient monuments	0.12	0.08
Fragile Buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: *Caltrans Transportation and Construction Vibration Guidance Manual*, Chapter 7: Vibration Prediction and Screening Assessment for Construction Equipment, Table 19 Guideline Vibration Damage Potential Threshold Criteria, pg. 38, September 2013.

Notes: Transient sources, such as blasting or drop balls, create a single isolated vibration event. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Construction activities associated with implementation of the proposed project are not expected to result in groundborne vibrations that would damage nearby buildings. During construction, general construction equipment is expected to be used, including: off-highway trucks, off-highway tractors, cranes, pile drivers, excavators, crawler tractors, graders, rough-terrain forklifts, pavers, backhoes, rollers, and cement and mortar mixers. Pile drivers would be used during project construction during daytime hours only (7:00 a.m. to 7:00 p.m.) and would generate the highest levels of vibration. Pile-driving activity would occur within 353 ft of the single-family home at 27136 River Road (APN 049-037-002). Assuming a standard reduction of 9 VdB per doubling of distance (Federal Transit Authority 2006), the project-related construction vibration level at the nearest receiver would be between 66 and 75 VdB (0.03 in/sec PPV). This level of vibration is well below the Caltrans vibration standards of 0.08 in/sec PPV residential buildings, as shown above in Table 6.

Thus, the project would not expose persons to, or generation of, excessive groundborne vibration or groundborne noise levels. As a result, project-generated vibration levels would be less than significant. As such, construction-generated vibrations are not expected to cause damage to nearby buildings or sensitive receptors.

Once operational, the replacement bridge would not increase roadway capacity and would include smooth surface paving. The project would not result in an increase in traffic or sources of groundborne vibrations above existing conditions. Smooth surface paving would ensure vibration from rubber-tired traffic is rarely perceptible.

Given the above, impacts related to groundborne vibrations would be **less than significant**, and no mitigation measures would be required.

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Gustine Municipal Airport, located at 26467 W. Highway 140, Gustine, is approximately 6 miles south of the proposed project site. The project site is not within the boundary of the Gustine Municipal Airport Land Use Plan or within 2 miles of this airport (Merced County 2012). Therefore, implementation of the proposed project would not result in excessive noise from airport uses for people residing or working in the project area. No impact would occur and no mitigation measures would be required.

3.13.2 Mitigation Measures

NOI-1: The following minimization measures shall be incorporated when construction activities occur within 300 ft of any noise sensitive use:

- The Contractor shall use an alternative warning method instead of a sound signal unless required by safety laws.
- The Contractor shall equip all internal combustion engines with the manufacturer-recommended muffler and shall not operate any internal combustion engine on the job site without its appropriate muffler.

3.14 POPULATION AND HOUSING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.14.1 Impact Analysis

- a. *Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

The proposed project includes replacement of a deficient bridge. Bridge replacement projects such as this do not induce population growth, as they do not include new housing or businesses that encourage growth. The proposed project would also not indirectly induce growth, as it is not a road extension or other infrastructure project. **No impact** would occur, and no mitigation measures would be required.

- b. *Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

The proposed project would require the acquisition of sliver portions of parcels. The areas of parcels that would be acquired are not occupied by housing. Remaining areas of project construction would be conducted within existing road right-of-way where no houses exist. As such, implementation of the proposed project would not result in the displacement of existing housing or people. **No impact** would occur and no mitigation measures would be required.

3.15 PUBLIC SERVICES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i. Fire protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii. Police protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.15.1 Impact Analysis

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

i. Fire protection?

The western portion of the project area is within the jurisdiction of the West Stanislaus Fire Protection District (Stanislaus LAFCO 2007). The eastern portion of the project area is within the jurisdiction of the Merced County Fire Department. The nearest fire station in either county is located approximately 3 miles southwest of the project area at 1121 N Street, Newman, Stanislaus County. This station is operated by the Newman Fire Department, which is independent from West Stanislaus Fire Protection District operations.

During construction of the proposed project, travel lanes may be reduced temporarily to implement installation of the new bridge and removal of the deficient bridge. County staff would work with emergency service providers to inform them of potential closures and detours during project construction activities through the preparation of a Construction Period Emergency Access Plan, as required by **Mitigation Measure TRANS-2**, listed in Section 3.17, Transportation. Once the proposed project is operational, emergency response times would be comparable to existing response times. Therefore, impacts would be **less than significant with mitigation incorporated**.

ii. Police protection?

The proposed project site is under the jurisdiction of the Stanislaus County Sheriff's Department and the Merced County Sheriff's Department. Temporary traffic disruptions may be required depending upon the sequencing used to tie the new alignment into the existing alignment at the project conforms. During construction of the proposed project, traffic operations would be maintained on existing Hills Ferry Road using the existing two-lane bridge. The County and/or their construction contractor would work with emergency service providers to inform them of potential closures and detours during project construction activities through the preparation of a Construction Period Emergency Access Plan, as required by **Mitigation Measure TRANS-2**, listed in Section 3.17, Transportation. Once the proposed project is operational, emergency response times would be comparable to existing response times. Therefore, impacts would be **less than significant with mitigation incorporated**.

iii. Schools?

iv. Parks?

v. Other public facilities?

Hurd Barrington Elementary School is located at 838 Eucalyptus Avenue, Newman, approximately 2.5 miles southwest of the nearest project construction area. There are no parks within or adjacent to the proposed project. The proposed project would not physically alter existing schools, parks, or other public facilities and would not require additional facilities or services in order to meet performance objectives for any of the public services. **No impact** would occur, and no mitigation would be required.

3.16 RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.16.1 Impact Analysis

- a. *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*
- b. *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

The proposed project includes the removal of an existing deficient bridge on Hills Ferry Road at its crossing of the San Joaquin River, replacement with a new bridge, and roadway approach work to the west and east of the new bridge on Hills Ferry Road. No change in population would occur, and no increase in the use of existing parks or other recreational facilities would occur. The proposed project does not include development of a park or recreational facility as part of its design, and implementation of the proposed project would not require the removal of such a facility from Stanislaus County's or Merced County's inventory. As such, **no impact** would occur, and no mitigation measures would be required.

3.17 TRANSPORTATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.17.1 Impact Analysis

a. Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

The proposed project would provide adequate and safe vehicle access and provide a structure that would meet current design standards for the traffic utilizing the bridge. The proposed project would not create additional lanes, so the ADT volume is expected to be consistent with current volumes on the existing bridge. The project would not create any long-term impacts to traffic circulation in the area, as the proposed project would not increase roadway capacity or change traffic patterns. The proposed project would not conflict with any plan or policy established for measuring the performance of the circulation system. Additionally, the proposed project would not result in any changes to level of service along Hills Ferry Road/Kelley Road. Implementation of **Mitigation Measure TRANS-1**, which would require the construction contractor to prepare and implement a standard Traffic Management Plan to minimize traffic disruption would ensure adequate access is maintained to adjacent properties. Therefore, this impact would be **less than significant with mitigation incorporated**.

b. Would the project conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?

As discussed in CEQA Guidelines §15064.3(b)(2), transportation projects that have no impact on vehicle miles traveled (VMT) should be presumed to cause a less-than-significant transportation impact. The proposed project includes the removal of an existing deficient bridge on Hills Ferry Road at its crossing of the San Joaquin River, replacement with a new bridge, and roadway approach work to the west and east of the new bridge on Hills Ferry Road. The proposed project would not increase capacity nor would the project, once operational, increase VMT beyond existing conditions. This impact would be **less than significant**.

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Replacement of the structurally deficient Hills Ferry Road Bridge would result in alterations to roadway approaches on both the east and west sides of the bridge. The alterations would result in a shift of up to 65 ft north of the existing center line and would ensure that the Hills Ferry Road approaches line up correctly with the new bridge. The proposed project is compatible with surrounding land uses and does not include any hazards, such as sharp curves or dangerous intersections. As such, **less than significant** impacts would occur, and no mitigation measures would be required.

d. Would the project result in inadequate emergency access?

During construction of the proposed project, traffic operations would be maintained on existing Hills Ferry Road using the existing two-lane bridge. Temporary traffic disruptions may be experienced depending upon the sequencing used to tie the new alignment into the existing alignment at the project conforms. The County would work with local emergency responders to provide advance notification of potential traffic disruptions. Once operational, improvements to the roadway and bridge would benefit emergency access and result in adequate access. Implementation of **Mitigation Measure TRANS-2** would reduce impacts to **less than significant with mitigation incorporated**.

3.17.2 Mitigation Measures

- TRANS-1:** Prior to the start of construction, the construction contractor for the proposed project shall prepare and implement a standard Traffic Management Plan to minimize traffic disruption and ensure adequate access is maintained. Temporary disruptions shall be minimized by coordinating construction activities to provide alternative access points and/or by coordinating construction phasing to reduce disruptions. Notification of any temporary disruptions to roadway access shall be posted along local roadways.
- TRANS-2:** Prior to the start of construction, the construction contractor shall coordinate with the Stanislaus County Sheriff's Department, the Merced County Sheriff's Department, and local public and private ambulance and paramedic providers in the area to prepare a Construction Period Emergency Access Plan. The Emergency Access Plan shall identify phases of the proposed project and construction scheduling, as well as appropriate alternative emergency access routes.

3.18 TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.18.1 Impact Analysis

- a. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:*
- i. *Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or*
 - ii. *A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.*

As mentioned in Section 3.5, Cultural Resources, Stanislaus County conducted tribal consultation in accordance with AB 52. The records search did not identify any pre-contact (tribal) resources within the APE, and no such resources were identified during the field survey. No resources listed or eligible for listing the California Register of Historical Resources were identified. On November 7, 2016, LSA sent a letter describing the project with maps depicting the APE to the NAHC asking them to review their Sacred Lands File for any Native American cultural resources that might be affected by the project. The NAHC informed LSA that a search of the Sacred Lands File yielded "negative

results” and provided a list of Native Americans who might have additional information or concerns about the project. The list included contacts for Stanislaus and Merced counties.

On March 7, 2017, the County sent a letter to the Torres Martinez Desert Cahuilla Indians per Public Resources Code 21080.3.1 (AB 52) describing the project with maps depicting the APE. Additionally, on March 8 and 9, 2017, LSA sent letters consistent with Section 106 describing the project with maps depicting the APE to the Native American contacts provided by the NAHC requesting any information or concerns regarding cultural resources in the APE. Letters pursuant to Section 106 were sent to the North Valley Yokuts Tribe, the Southern Sierra Miwuk Nation, and the Tule River Indian Tribe. The County and LSA received no response from the Tule River Indian Tribe or the Torres Martinez Desert Cahuilla Indians; however, the North Valley Yokuts Tribe requested notification before any ground disturbance to ensure that a monitor was present, and the Southern Sierra Miwuk Nation would like to be informed if cultural resources are encountered during project development so the tribe may update their records. Consultation with tribes did not result in the identification of any tribal cultural resources. With coordination with local Native American tribes, impacts to tribal cultural resources would be less than significant. Implementation of **Mitigation Measures CULT-1** and **CULT-2**, as presented in Section 3.5, Cultural Resources, would further reduce any potentially significant impacts from the proposed project to tribal cultural resources (including human remains, which may be inadvertently discovered during construction activities) to **less than significant with mitigation incorporated**.

3.19 UTILITIES AND SERVICE SYSTEMS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.19.1 Impact Analysis

- a. *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*

The proposed project would replace the existing Hills Ferry Road Bridge. Construction-related activities may result in temporary increases in water use (by water trucks), wastewater generation (from construction crews), and electrical power, though any construction-related uses would be temporary and are expected to be accommodated by service providers. Operation of the new bridge would not generate an increase in water, wastewater, electric power, natural gas, or telecommunications. This impact would be **less than significant**, and no mitigation is required.

- b. *Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*

The proposed project involves the replacement of the existing Hills Ferry Road Bridge. It is anticipated that river water would be used for dust control during construction. Once operational, the proposed project would not require any water supplies. As such, the proposed project would have sufficient water supplies to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years and **no impact** to available water supplies would occur. No mitigation measures would be required.

- c. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

As discussed above, any wastewater generated during construction of the proposed project would be hauled away and treated off site. Once operational, the proposed project would not result in the generation of any wastewater. The proposed project would not exceed wastewater treatment capacity. **No impact** would occur, and mitigation measures would not be required.

- d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

The proposed project would require the removal of an existing bridge and would generate construction and demolition debris. Construction-related solid waste would include wood, asphalt, concrete, and mixed municipal solid waste from construction waste. It is anticipated that approximately 100 cubic yards of solid waste would be generated during bridge demolition and replacement. Non-hazardous construction waste generated by the proposed project would be handled by the Fink Road Landfill. At a permitted maximum tonnage on 2,400 tons per day, the landfill is estimated to have an estimated remaining capacity of the Class III disposal area, which is permitted to accept construction and demolition waste, of 23,744,900 tons (CalRecycle 2020 and Stanislaus County 2016a). The estimated closure date of the landfill is 2050. As such, construction waste generated by the proposed project would be less than 0.0001 percent of the remaining Class III disposal area capacity and solid waste generated during construction of the proposed project would not exceed landfill capacity. In addition, no solid waste would be generated once the proposed project is operational. Therefore, the proposed project would not exceed the existing capacity of the landfill or impair solid waste reduction goals. This impact would be **less than significant**, and no mitigation measures would be required.

- e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

Stanislaus County and the cities of Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock and Waterford developed a Countywide Integrated Waste Management Plan (CIWMP) that identified strategies for meeting the State's mandate to reduce the amount of material sent to landfill disposal by 50 percent (AB 939). The CIWMP consists of: Source Reduction and Recycling Elements, Household Hazardous Waste Elements, Non-Disposal Facility Elements for each individual jurisdiction, and a countywide Siting Element and Summary Plan. As discussed in the 2016 CIWMP Summary Report: "Industrial solid waste includes waste originating from...construction and demolition debris.... In many cases, waste generated from these types of sources tend to be fairly homogenous and, consequently, offer good opportunities for recycling." The CIWMP discusses strategies for recycling construction and demolition debris, such as monetary incentives to control waste entering the landfill.

As stated above, the proposed project would result in 100 cubic yards of construction and demolition waste. The proposed project would divert construction and demolition debris to the degree possible; therefore, the proposed project would be consistent with the 2016 CIWMP. Additionally, the project would comply with all federal, State, and local management and reduction statutes and regulations related to solid waste. This impact would be **less than significant**, and mitigation measures would not be required.

3.20 WILDFIRE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.20.1 Impact Analysis

a. Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

In 2019, Stanislaus County prepared the *Stanislaus County Emergency Operations Plan, Basic Plan* (2019), which addresses the County's planned response to natural disasters or human-caused emergencies in or affecting Stanislaus County. The plan focuses on operational concepts and would be implemented relative to large-scale disasters that can pose major threats to life, property and the environment requiring unusual emergency responses. The Plan discusses establishing evacuation and transportation plans in the event of an emergency.

The proposed project would be consistent with the approaches discussed in the Plan through implementation of **Mitigation Measure TRANS-1** and **TRANS-2**, which would require the construction contractor to prepare a Traffic Management Plan and to work with emergency service providers to inform them of potential closures and detours during project construction activities. Once the proposed project is operational, the proposed project would not interfere with any emergency response plan or emergency evacuation plan. Impacts would be **less than significant with mitigation incorporated**.

- b. Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

The California Department of Forestry and Fire Protection maps areas of significant fire hazards in the State. These areas are identified based on weather, topography, fuels, and other factors. Fire hazards are greatest in areas with steep slopes, volatile vegetation, and windy conditions. The California Department of Forestry and Fire Protection Fire Severity Zone Maps indicate that the Stanislaus County and Merced County portions of the project area are within Local Responsibility Areas and are categorized as moderate fire hazards (CalFire 2007a and CalFire 2007b). The proposed project would not provide a new ignition source (such as additional vegetation) that would exacerbate wildfire risks nor would it increase infrastructure, housing, or businesses that could experience impacts from pollutant concentrations from a wildfire. Therefore, the project would not exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations. Impacts would be **less than significant**, and mitigation measures would not be required.

- c. Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

The proposed project would include the construction of a new bridge, demolition of an existing bridge, and would not result in additional travel lanes or roadway capacity. As such, new roads, fuel breaks, emergency water sources, power lines or other utilities would not be required. Fire risk would not be exacerbated and would result in **no impact**. Mitigation measures would not be required.

- d. Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

The proposed project would include the replacement of an existing bridge to increase bridge structural sufficiency. The proposed project would not alter the topography, runoff, or drainage at the project site and therefore the proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides. As demonstrated by HEC-RAS hydraulic modeling in the Floodplain Evaluation Report (WRECO 2020), the proposed bridge would result in a decrease in the water surface elevation just upstream of the bridge up to 0.08 ft for the 100-year design flow. Construction of the new bridge would not adversely affect flow capacity. **No impact** would occur and mitigation measures would not be required.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

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

3.21.1 Impact Analysis

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

The proposed project would include the replacement of an existing bridge on Hills Ferry Road/Kelley Road over the San Joaquin River. As described in this Initial Study, implementation of the proposed project would have the potential to adversely impact bats, San Joaquin kit fox, nesting birds, western pond turtle, protected fish species, and Valley Elderberry Longhorn Beetle, and previously undiscovered cultural resources and/or human remains. With implementation of **Mitigation Measures AG-1, AIR-1, BIO-1 through BIO-14, CULT-1, CULT-2, GEO-1, HAZ-1, HAZ-2, HYD-1, HYD-2, NOI-1, TRANS-1, and TRANS-2**, compliance with Stanislaus and Merced County requirements, and application of standard practices, development of the proposed project would not: (1) degrade the quality of the environment; (2) substantially reduce the habitat of fish or wildlife species; (3) cause a fish or wildlife population to drop below self-sustaining levels; (4) threaten to eliminate a plant or animal community; (5) reduce the number or restrict the range of a rare or endangered plant or animal; or (6) eliminate important examples of the major periods of California history or prehistory. Project impacts would be **less than significant with the incorporation of previously described mitigation measures**.

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

Section 15065(a)(3) of the CEQA Guidelines states that a project's cumulative impacts are the possible environmental effects that may be cumulatively considerable when considered with other reasonably foreseeable projects. Cumulatively considerable impacts occur when the incremental effects of a particular project or program are significant when viewed in connection with the effects of other past, current, or reasonably foreseeable future projects. Section 15355 of the CEQA Guidelines defines a cumulative impact as an impact which is created as a result of the combination of the project evaluated in the CEQA document together with other projects causing related impacts. The proposed project would include the replacement of an existing bridge on Hills Ferry Road/Kelley Road at the San Joaquin River crossing. All environmental impacts that could occur as a result of the proposed project would be reduced to a less than significant level with implementation of the mitigation measures recommended throughout this Initial Study. The impacts of the proposed project would be localized and confined to the immediate project area. Therefore, when project-specific impacts are viewed in conjunction with other closely related past, present, or reasonably foreseeable future projects, impacts of the proposed project would not be considerable. As such, cumulatively considerable impacts would be **less than significant**, and no further mitigation measures would be required.

- c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

The purpose of the proposed project is to replace the structurally deficient bridge on Hills Ferry Road/Kelley Road at the San Joaquin River crossing. As described in this Initial Study, implementation of the proposed project could result in potential agricultural, air quality, biological, cultural, geology, hazardous waste, hydrology, noise, and transportation impacts. Implementation of the mitigation measures recommended in this Initial Study, compliance with County regulations, and application of standard construction practices would ensure that the proposed project would result in **less than significant** impacts and would not cause substantial direct or indirect adverse impacts on human beings.

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4.0 LIST OF PREPARERS

This Draft IS/MND was prepared by LSA in cooperation with the other members of the environmental study team. The Draft IS/MND technical team and other environmental study team members provided technical expertise, as presented below.

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