

**Initial Study
and Mitigated Negative Declaration
for the
Howsley Road Bridge Replacement Project
Bridge No. 18C-0113, BRLO-5918(101)**

April 2020



Lead Agency:

Sutter County
Development Services Department
1130 Civic Center Boulevard, Yuba City, CA 95993

Prepared By:



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1 Project Contacts and Information

This Project Information, Description, and Environmental Checklist contained herein constitute the contents of an Initial Study in accordance with Section 15063 of the California Environmental Quality Act (CEQA) Guidelines:

Project Title	Howsley Road Bridge Replacement Project
Lead Agency Contact and Address	Sutter County Development Services Department 1130 Civic Center Boulevard Yuba City, CA 95993
Project Sponsor's Name and Address	Sutter County Development Services Department Neal Hay, Director of Development Services (530) 822-4402 (530) 822-7457 fax
Contact Person and Phone Number	Neal Hay, Director of Development Services (530) 822-4402 (530) 822-7457 fax Mark Wolfe, Principal Planner NorthStar (530) 893-1600 ext. 213

2 Project Description

The proposed project involves the replacement of the existing functionally obsolete two-lane bridge, Bridge No. 18C-0113 on Howsley Road that crosses the Pleasant Grove Creek Canal (PGCC). The project site is located in Sutter County, approximately 0.9 miles east of State Route 99 (SR99) and State Route 70 (SR70) and 20 miles north of the City of Sacramento. (**Figure 1-Location Map**).

The proposed project is funded through the Federal State Transportation Improvement Program with funding for preliminary engineering, right-of-way, and project construction.

2.1 Existing Structure

Howsley Road Bridge (Bridge 18C-0113) is located on Howsley Road, approximately 0.9 miles east of SR99/SR70, where it crosses the Pleasant Grove Creek Canal. The existing bridge was constructed in 1935 and widened in 1965, and currently has a sufficiency rating of 45.3 and has been designated as functionally obsolete per the Caltrans Structure Maintenance & Investigation, Local Agency Bridge List from July 2018. The existing bridge consists of two travel lanes and is approximately 25 feet wide where it crosses the Pleasant Grove Creek Canal and approximately 230 feet long with 11 spans. The bridge is comprised of precast inverted channel girders with an asphalt concrete deck supported by reinforced 4-column rigid frame bents with battered exterior columns set on a common reinforced concrete footing. The abutments are reinforced concrete wall-type with strip bearings between the top of the wall and the superstructure end diaphragm with continuous flared wingwalls. The foundation types are assumed to be pile supported. The bridge approach embankments extend into the levee by approximately 50 feet on the west and approximately 170 feet on the east. Near the abutments, the roadway embankments are armored by rock slope protection, refer to **Photos 1-8**.

2.2 Proposed Structure

Sutter County proposes removing the existing bridge and replacing it with a wider, safer three-span cast-in-place post-tensioned box girder. The project area or work limits for the bridge has been defined to include bridge replacement, staging areas, and all areas of ground-disturbing activities, as applicable.

New Bridge Structure

The new bridge structure would be constructed approximately 25 feet south of and immediately adjacent to the existing bridge. The new bridge would be constructed using a cast-in-place post-tensioned box girder using three spans over the Pleasants Grove Creek Canal. Interior supports are anticipated to be two column bents supported on large diameter cast-in-drilled-hole concrete piles. Abutments are anticipated to be reinforced concrete, pile supported seat abutments. The width of the new structure will be approximately 36-feet, including two 12-foot lanes, two 4-foot shoulders, and two 2-foot wide concrete barriers. The length will be approximately 250-feet and will be comprised of spans of 75-feet, 100-feet and 75-feet, refer to **Figure 2 – Project Work Area**

Exposed slopes below and adjacent to the new bridge would be protected by rock slope protection (RSP) placed within the 200-year floodplain. Excavation near the new abutments will be required in order to install the required RSP. Additional bank disturbance and vegetation removal will occur from general clearing and grubbing, the construction of the new bridge abutments and bents, buildup of embankments and roadway approaches, placement of scour projection measures, and development of the construction access into the channel. The maximum depth of excavation is expected to be approximately 8 feet. The maximum depth of the pile shaft foundations is expected to be approximately 100 feet.

Roadway Approaches

Howsley Road bridge approaches would be realigned approximately 25 feet to the south to accommodate the new bridge alignment. Roadway improvements would extend a maximum of 1,100 feet from the ends of the bridge. The roadway will have two 12-foot lanes and 4-foot shoulders to match the existing shoulder width. The profile will be raised with fill and new embankment slopes will be graded to create stable embankments on the landside of the canal banks where adjacent agricultural land is effectively flat. Side slopes for the embankments will vary between 2:1 and 3:1, depending on whether or not metal beam guard rails are used.

Intersection and Driveway Access Improvements

Two roadways intersect Howsley Road: Pacific Avenue on the northeast side of the bridge and Natomas Road on the southwest side of the bridge. The project will require the improvement of the Howsley Road/Pacific Avenue intersection and the Pacific Avenue roadway to improve its safety and approach visibility. Pacific Avenue would be extended approximately 50 feet to the south to connect to the new approach alignment. The existing driveway access on to the northeast parcel would be relocated further to the north on Pacific Avenue, refer to **Figure 3 – Intersection Improvements**.

The project will require improvements to the Howsley Road/Natomas Road intersection and Natomas Road approach roadway to reconfigure the intersection geometrics. The Howsley Road/Natomas Road intersection will be widened to allow for safe turns to and from Howsley Road. Additionally, the intersection of Howsley Road and Pacific Avenue will be widened to facilitate turning to and from Howsley Road. The approach roadways will be paved with asphalt concrete. Connections to existing levee access roads and private driveways will be restored.

The project will require improvements to a private driveway on the eastern side of the existing bridge. The driveway will be approximately 12 feet wide and the connection to the new approach/Howsley Road will be widened.

Road Closures and Detours

Howsley Road will maintain through traffic during construction, except for limited duration disruptions for grading and paving to reconnect the roadway. The construction period disruptions will affect local traffic temporarily with single lane closures managed during daylight hours and no disruptions during nighttime hours.

Pacific Avenue will maintain open to through traffic during construction, except for a limited duration disruption for embankment build-up, grading, and paving to reconstruct the intersection.

Natomas Road will be closed at the intersections of Howsley Road and Fifield Road through the duration of construction. The construction period disruptions will affect local traffic temporarily with a full closure managed by barricades, detour signage and advanced public notification.

Detours for travelers traveling north on Natomas Road would be routed east on Fifield Road to Pleasant Grove Road. From Pleasant Grove Road, access to SR99/SR70 is provided to the north via Howsley Road or Catlett Road (north of Howsley Road) via East Striplin Frontage Road. South of Fifield Road, both Natomas Road and Pleasant Grove Road provide access to SR99/SR70 via West Riego/Baseline Road.

Utilities

Approximately ten power poles would be relocated as a result of the roadway realignment or roadway embankment prisms. Utility poles would be relocated to the toes of the new embankment slopes within the newly acquired County ROW.

Staging Areas

The staging and material storage areas will be outside of the County's right-of-way along Howsley Road. Potential sites identified are located south of Howsley Road on agricultural parcels and in the northwest residential parcel at the intersection of Howsley Road and Pacific Avenue (**Figure 4 – Staging Areas**). Only one of the potential staging areas will be utilized during bridge construction.

Right-of-Way Acquisition

The project is expected to require the acquisition of right-of-way due to the offset alignment and the increase in bridge elevation to meet CVFPB criteria and temporary construction easements for staging and access. The ROW will be located primarily south of the existing bridge structure.

Construction and Demolition

The construction schedule will take into account the affected species at the site and incorporate the anticipated work periods specified in the required state and federal agency permits. The construction is expected to take one and one-half years (two seasons) beginning in the Spring and ending in the Fall of the following year. Embankment build up, rough grading, temporary levee road reconnection, and staging area and construction access development would begin once the first work period begins. Based on the proposed span layout, a water diversion may not be required to install the cast-in-drilled-hole concrete piling at the bents since Bent 2 is located near the edge of the existing low flow channel and Bent 3 is outside of the low flow channel. Since the water table is high, the bent piling will likely be constructed in the wet using slurry displacement methods or cased holes. If slurry methods are used, the contractor will store the slurry in Baker tanks (large portable water tank) during construction of the piling. Slurry is then recycled from hole to hole and when all the piling are complete, the slurry is pumped to a settling basin to evaporate. After approximately two months, the abutments and bent piling would be constructed, while the cast-in-place concrete superstructure falsework is also erected. Temporary driven steel piling would be used to support the falsework in the low flow channel. Timber falsework pads will likely be used to support the falsework outside of the low flow channel. August and September would see the placement and finishing of the concrete superstructure. The formwork, falsework, and any water diversion will be removed in October. By November 1, the Central Valley Flood Protection Board would require all construction materials to be out of the channel, subject to two-week extensions based on site conditions at that time. Depending on whether time extensions are granted, the rock slope protection required to protect the abutments can be placed. However, if there is not enough time, this work could occur in the following work period. Also, in October, the finish grading of the roadway approaches and adjacent intersection will occur. The placement of the asphalt concrete pavement roadway and striping will occur in November. In December, barriers and railings will be installed and traffic will be shifted to the new structure and alignment. A winter stoppage of work can occur at this time.

Once the second Work Period begins, the existing bridge and the remnant footings from the precursor bridge will be demolished, final levee road reconnections constructed, and staging areas restored. The channel banks will be regraded, and the appropriate environmental mitigation, such as hydroseeding, would be implemented.

Work within the low flow channel of the canal will be required to remove the existing concrete bridge support bents and abutments as well as foundation remnants from a previous structure that catch debris and impeded flow in the canal.

Bank disturbance and vegetation removal will occur at the ends of the existing bridge abutments to accommodate bridge removal and regrading of the channel.

Tree Removal

Approximately 15 non-native trees of varying sizes will need to be removed to accommodate the new approaches to the proposed bridge. The trees are located southeast of the existing bridge south of Howsley Road and are primarily comprised of eucalyptus.

Stream Diversion and Dewatering

The Pleasant Grove Creek Canal can be divided into two distinct channel areas depending on the season, 1) low-flow channel and 2) active floodplain. During the dry season, water levels are primarily contained within in the low-flow channel. The top of bank of the low-flow channel is the Canal's OHWM. During the rainy season, water fills the Canal and the area above the OHWM, becomes the active floodplain within the Canal.

The project will require work within the low-flow channel to remove the existing concrete bridge support bents and abutments as well as foundation remnants from a previous structure that catch debris and impeded flow in the canal. Additionally, new abutments, support bents, and form work/false work will be required in both the low-flow channel and active floodplain. For the construction of Abutment 1, which includes rock slope protection (RSP) and installation of Bent 2 for the proposed bridge, construction activities will require the relocation of approximately 275 linear feet of the low-flow channel between proposed Bents 2 and 3. Therefore, dewatering of the low-flow channel would be necessary. Dewatering techniques may include sheetpiling, the use of culverts, large sandbags, berms, bladder dams, or other commonly used dewatering practices. The design width of the new low flow channel will be fixed at 40 feet and excavated to a depth and kind of the original channel as required to accommodate the largest anticipated flows observed during the low flow portion of the year.

For the installation of the Abutment 1, there are two anticipated methods that may be used for dewatering:

- 1) Excavate and relocate the low-flow channel between proposed Bents 2 and 3, occlude channel ends to divert water into the new low-flow channel. Depending on flows within the channel and active floodplain, the new channel would need to accommodate fluctuating flows from the Sacramento River as well as rainfall and agricultural drainage.
- 2) Excavate and relocate the low-flow channel between proposed Bents 2 and 3 and install corrugated steel culverts within the new channel.

The installation of Bent 2 could include either of the dewatering methods outlined above or use of a cofferdam within the low-flow channel to isolate construction activities.

The new low flow channel system shall be constructed in its entirety, with upstream and downstream plugs/barriers separating the original low flow channel from the excavated new low flow channel. A permanent plug shall be installed in the original waterbody channel, at the inflow confluence of the original waterbody channel and the new low flow passage system, to fully divert the water to flow through the new low flow passage system. A permanent plug shall be installed in the original waterbody

channel, at the outflow confluence of the new low flow passage system and the original waterbody channel, to prevent backflow into the original waterbody channel. The majority of excavation for the new low flow channel will be conducted in dry areas prior to relocating the low flow channel. Excavated soils from the new low flow channel as well as other approved fill will be used to fill the old low flow channel as necessary to allow the bridge construction and placement of RSP.

Excavation for the abutments prior to installing RSP may encounter groundwater infiltrate. In this case, dewatering will likely be needed in combination with other water control options. The preferred method is land based discharge. This will be accomplished by segregating an area of the staging area by building a berm. This area will then act as a discharge basin which will be created as far away from the canal as practicable while still within the temporary construction easement. Equipment and materials shall not be stored within the discharge basin. A sump system will be installed within the excavation(s) along with hose running from the sumps to the discharge basin to transport any ground water infiltrate from the excavation(s) to the discharge basin. Once in the discharge basin the water will be absorbed or evaporate off.

If dewatering an excavation(s) to the discharge basin is not feasible, a Baker tank (or equivalent) may be utilized to capture sediment laden water. For captured water to be discharged back into the channel, it must be accompanied by and meet the quality standards laid forth in a RWQCB Waste Discharge Permit. If this is the case, supernatant will be pumped from the Baker tank (or equivalent) and returned to the canal or the water may be pumped into the discharge basin if volume is sufficient.

Following construction, any materials that consist of foreign fill (cofferdams, sheet piles, aggregate, culverts, impermeable layers, etc.) would be removed from the channel. Where surface areas have been disturbed or regraded, the slope shall be restored to pre-construction condition and stabilized by seeding with native grasses (strictly avoiding noxious weeds) per direction from the CDFW and USACE requirements. The new low flow channel will be left in place following construction as the new permanent low flow channel. It is believed this will result in less sedimentation and be less damaging to the waters than attempting to restore the original low flow channel.

Geotechnical Sampling

Additional geotechnical sampling in the channel will be conducted for bent designs. The sampling will generally include gaining access from the eastern bank into the channel, boring at two individual locations, collecting soil samples, and backfilling the exploratory borings. The proposed borings are located approximately 60 feet south of the existing bridge at stations 23+00 and 24+00. A rubber track or truck-mounted drill rig will be used to advance four- to eight-inch diameter borings to a depth of 100 feet below the channel bottom. Typical drill rigs are maximum 26-feet long and 8-feet wide and weigh a maximum of 23,000 pounds. Auger drilling will be used to advance the boring then once groundwater is encountered mud rotary techniques will be used to advance the bore to the required depth. Upon completion of drilling, the borings will be backfilled with neat cement grout to within approximately five feet of the channel bottom per Sutter County Environmental Health Department requirements. The upper five feet will be allowed to collapse or be backfilled with native soil cuttings generated from drilling operations to approximate the existing creek bottom. The remaining drill cuttings will be drummed and disposed of at an approved off-site facility. No construction will take place to complete this work and no water will be drafted or released to Pleasant Grove Creek Canal. All activities will be confined to daylight hours.

2.3 Environmental Setting

The Howsley Road Bridge Replacement Project is located in Township 11N, Sections 3, 4, 9, and 10, Range 02E of the Verona United States Geological Survey (USGS) 7.5-minute quadrangle. The project is located approximately 0.9 miles east SR 99 near the town of Pleasant Grove in Sutter County, California. The project primarily occurs along Howsley Road where it crosses the Pleasant Grove Creek Canal, the project occurs both within the County's right-of-way and adjacent to the ROW. Right-of-way will need to be acquired south of the existing bridge and road alignment. The project area begins approximately 1,000 feet east of the existing bridge and the Pleasant Grove Creek Canal and ends approximately 1,000 feet west of the existing bridge.

Land surrounding the project is generally agricultural in nature with associated agricultural maintenance buildings and residential structures. Row crops are located northeast of the project area. Active rice cultivation can be found southeast and southwest of the project area. Additionally, several rural single-family residences are present north of Howsley Road. Within 0.5 miles west of the bridge, three single-family residences and associated grazing/agricultural facilities are located north of Howsley Road. Four single-family residential units are located on Pacific Avenue northeast of the existing bridge. A newly planted orchard is located further north on Pacific Avenue. Approximately 1 mile east of the bridge is an approximately 3-acre cemetery.

Pre-jurisdictional Waters of the United States were delineated within the project boundaries and is comprised of the Pleasant Grove Creek Canal and a few small seasonal wetlands. The hydrological regime on the site is heavily influenced by several creeks that contribute flow into Pleasant Grove Creek Canal. Pleasant Grove Creek, Howsley Creek, and Curry Creek all contribute to the hydrology present within the survey area. The Pleasant Grove Creek Canal joins the East Side Canal to form the Cross Canal, which discharges to the Sacramento River. High flows in the Sacramento River during the winter can also contribute to the hydrology observed in the survey area. Water is present in the canal year-round, however, flows during the summer and early fall months are much lower than winter and spring flows, thus creating both low flow and high flow channels, refer to **Photos 7-8**. Additionally, seasonal precipitation events during the winter months and localized runoff from the surrounding area likely contribute to the hydrology seen on the site.

Using the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) 1988 *Soil Survey of Sutter County, California* and the NRCS Web Soil Survey for the project area, not including water, three soil map units were identified within the survey area, Capay silty clay, 0-2% slopes, Clear Lake silt loam, 0-2% slopes, and Marcum clay loam, 0-2% slopes. The Capay silty clay 0 to 2 percent slopes soil map unit dominates the project area comprising approximately 80% of the project area.

In general, vegetation observed above the active floodplain along the levees was typical of disturbed areas found in the northern Central Valley. Ground cover included mostly non-native and invasive grasses and herbs. Herbaceous species encountered included winter vetch (*Vicia villosa*), Bermuda grass (*Cynodon dactylon*), foxtail chess (*Bromus madritensis*), annual blue grass (*Poa annua*), hairy crabgrass (*Digitaria sanguinalis*), cutleaf geranium (*Geranium dissectum*), common groundsel (*Senecio vulgaris*), bur clover (*Medicago polymorpha*), and seashore vervain (*Verbena litoralis*), milk thistle (*Silybum marianum*), Italian thistle (*Carduus pycnocephalus*), field mustard (*Brassica rapa*), yellow star thistle (*Centaurea solstitialis*), ripgut brome (*Bromus diandrus*), slender wild oat (*Avena barbata*), valley mayweed (*Matricaria occidentalis*), miniature lupine (*Lupinus bicolor*), common fiddleneck (*Amsinckia intermedia*), California plantain (*Plantago erecta*), and chicory (*Cichorium intybus*).

Vegetation occurring below the active floodplain was typical of emergent marsh and riparian habitats within the northern Central Valley. Dominant species encountered included hardstem bulrush (*Schoenoplectus acutus*), common cattail (*Typha latifolia*), curly dock (*Rumex crispus*), cocklebur (*Xanthium strumarium*), pale spike rush (*Eleocharis macrostachya*), water primrose (*Ludwigia hexapetala*), watergrass (*Echinochloa crus-galli*), and tall cyperus (*Cyperus eragrostis*).

Several tree species typical of riparian systems are present within the canal including Goodding's black willow (*Salix gooddingii*), sandbar willow (*Salix exigua*), arroyo willow (*Salix lasiolepis*), Fremont cottonwood (*Populus fremontii*). Additionally, a mulberry (*Morus alba*) and an almond (*Prunus dulcis*) are present near the eastern abutment of the current bridge. Several other tree species are found adjacent to the project area including eucalyptus (*Eucalyptus* sp.), atlas cedar (*Cedrus deodara*), and fruitless mulberry (*Morus alba* 'fruitless'), and tree of heaven (*Ailanthus altissima*).

NorthStar prepared a Natural Environment Study (NES, **Appendix A**) which includes a list of special-status plants and wildlife species from information provided by the U.S. Fish and Wildlife Services (USFWS) species list, the California Department of Fish and Wildlife Natural Diversity Database (CNDDB), and the California Native Plant Society (CNPS) species list. The information was evaluated to determine the likelihood of each species' occurrence in and near the project and the potential impacts from the proposed bridge replacement project (NorthStar, May 2019). Four special-status species have at least a moderate potential to occur on-site, including giant garter snake (GGS, *Thamnophis gigas*), northwestern pond turtle (*Actinemys marmorata*), Swainson's hawk (*Buteo swainsoni*), Modesto population of song sparrow (*Melospiza melodia*) and migratory birds protected by the Migratory Bird Treaty Act (MBTA). Numerous cliff swallow (*Petrochelidon pyrrhonota*) and several barn swallow (*Hirundo rustica*) nests were present beneath the bridge. Suitable nesting habitat for a variety of species protected under the MBTA occurs adjacent to the project area.

Due to the potential for GGS, NorthStar prepared a Biological Assessment (BA) (**Appendix B**) to initiate informal consultation with the USFWS to request concurrence that the proposed project may affect, but is not likely to adversely affect the federally-listed as threatened GGS. The proposed project is not within designated or proposed critical habitat for any federally-listed species. The project will incorporate the Avoidance and Minimization Measures identified by regulatory agencies to avoid impacts to GGS (NorthStar, June 2019). No other federally listed special-status species are expected to occur in the project area.

No special-status plant species were determined to have potential to occur within the project area. Due to the disturbed nature of the area, relatively few native plant species occur on the site. Soils within the project area are highly compacted due to past roadway and road shoulder construction, canal construction, and adjacent agricultural practices. Based on the CNDDB data, the only special-status plant species that occurs within five miles of the site is woolly rose-mallow (*Hibiscus lasiocarpus* var. *occidentalis*). Although the canal could provide suitable habitat for this species it was not encountered during biological surveys of the ESL.

The mean annual precipitation is approximately 21 inches per year with most falling between November and March. The mean annual air temperature during the summer is approximately 77°F, and approximately 48°F during the winter months. (WRCC 2018). The site is approximately 49 feet above sea level.

2.4 Other Public Agencies Whose Approval is Required/Obtained

Sutter County Development Services Department

- Grading Plan/Pollution Control Plan
- Best Management Practices (BMPs)
- Standard Mitigation Measures/Best Available Mitigation Measures (SMM/BAMM)

Regional Water Quality Control Board

- Section 401 Clean Water Act (CWA) Water Quality Certification
- Notice of Intent for Dewatering and Other Low Treat Discharges to Surface Waters

Central Valley Flood Protection Board

- Section 14 of the Rivers and Harbors Act (33 USC 408), Section 408 Permission
- CA Construction General Permit

United States Army Corps of Engineers

- Section 404 CWA, Nationwide Permit #14 Linear Transportation Project
- USFWS Section 7 Endangered Species Act (ESA) Determination

California Department of Fish and Wildlife-Fish and Game Code

- Section 1600 Lake and Streambed Alteration Agreement
- Section 2080.1 Notification and Consistency Determination

Photos



Photo 1: Upstream side (south side) of the Howsley Road Bridge as viewed from within the Pleasant Grove Creek Canal looking north.



Photo 2: Upstream side of the bridge as seen from the western abutment looking east.



Photo 3: Downstream side (north side) of the Howsley Road Bridge as viewed from within the canal looking southwest.



Photo 4: Downstream side of Bridge as viewed from canal near western abutment looking east.



Photo 5: Eastern approach to Howsley Road Bridge looking west.



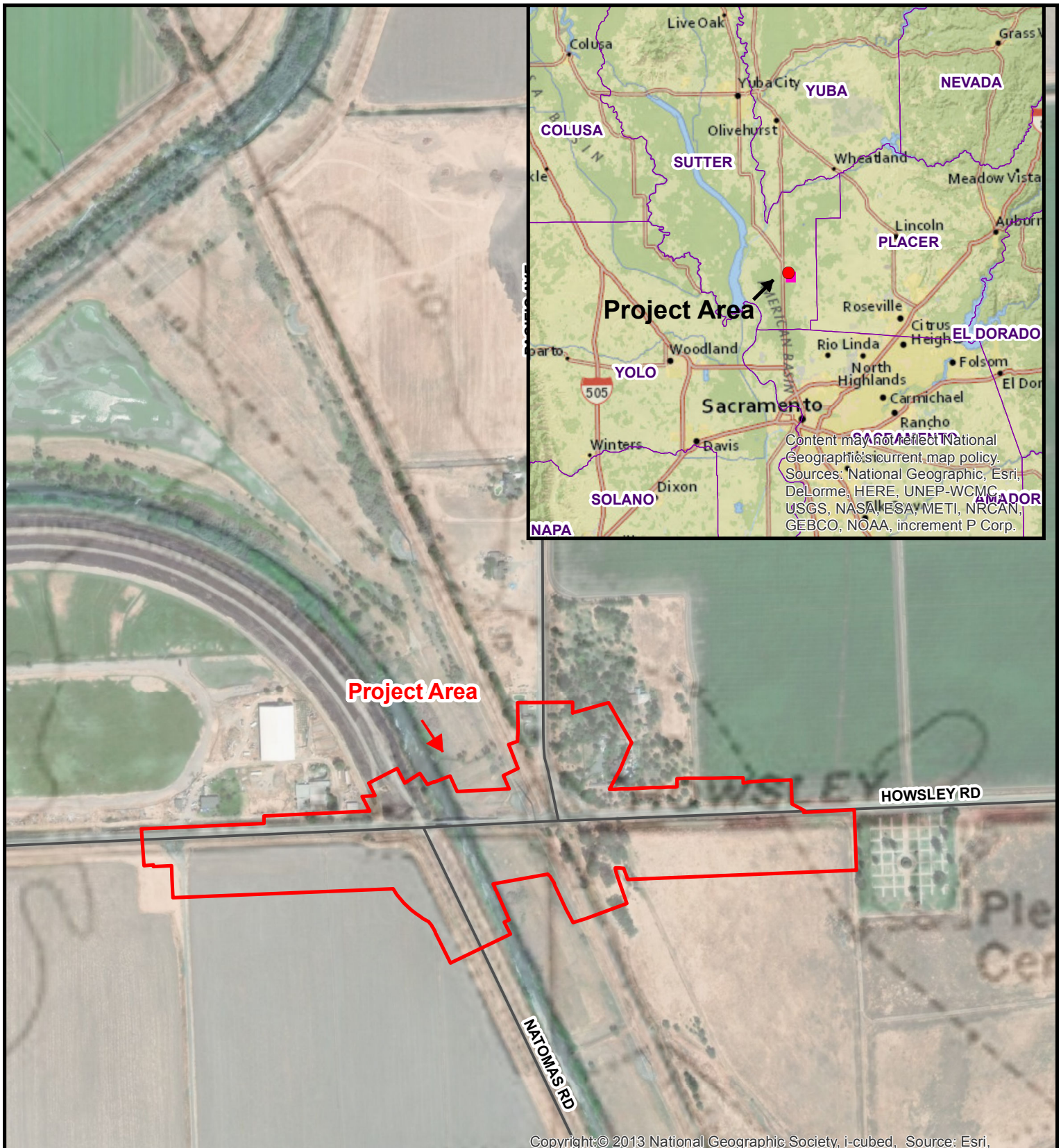
Photo 6: Western approach to Howsley Road Bridge seen from the northwestern corner of the bridge looking east.



Photo 7: Low flow channel of Pleasant Grove Creek within the Pleasant Grove Creek Canal. Standing on the bridge looking south. Photo is taken during low flows within the project area.



Photo 8: Pleasant Grove Creek within the Pleasant Grove Creek Canal during higher flows contained within the levees. Standing on the bridge looking south.

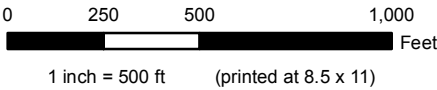


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Legend

Linetype

- Project Area
- Roads



Imagery Source:
USGS Topo
Inset Imagery:
National Geographic



Within Sections 3,4,9,10
Township 11N, Range 04E,
Sutter County, CA
VERONA USGS 7.5' Quad

Map Date:
April 28, 2019

Drawn By:
MSR

NSE Project #
16-074

Figure 1: Location Map

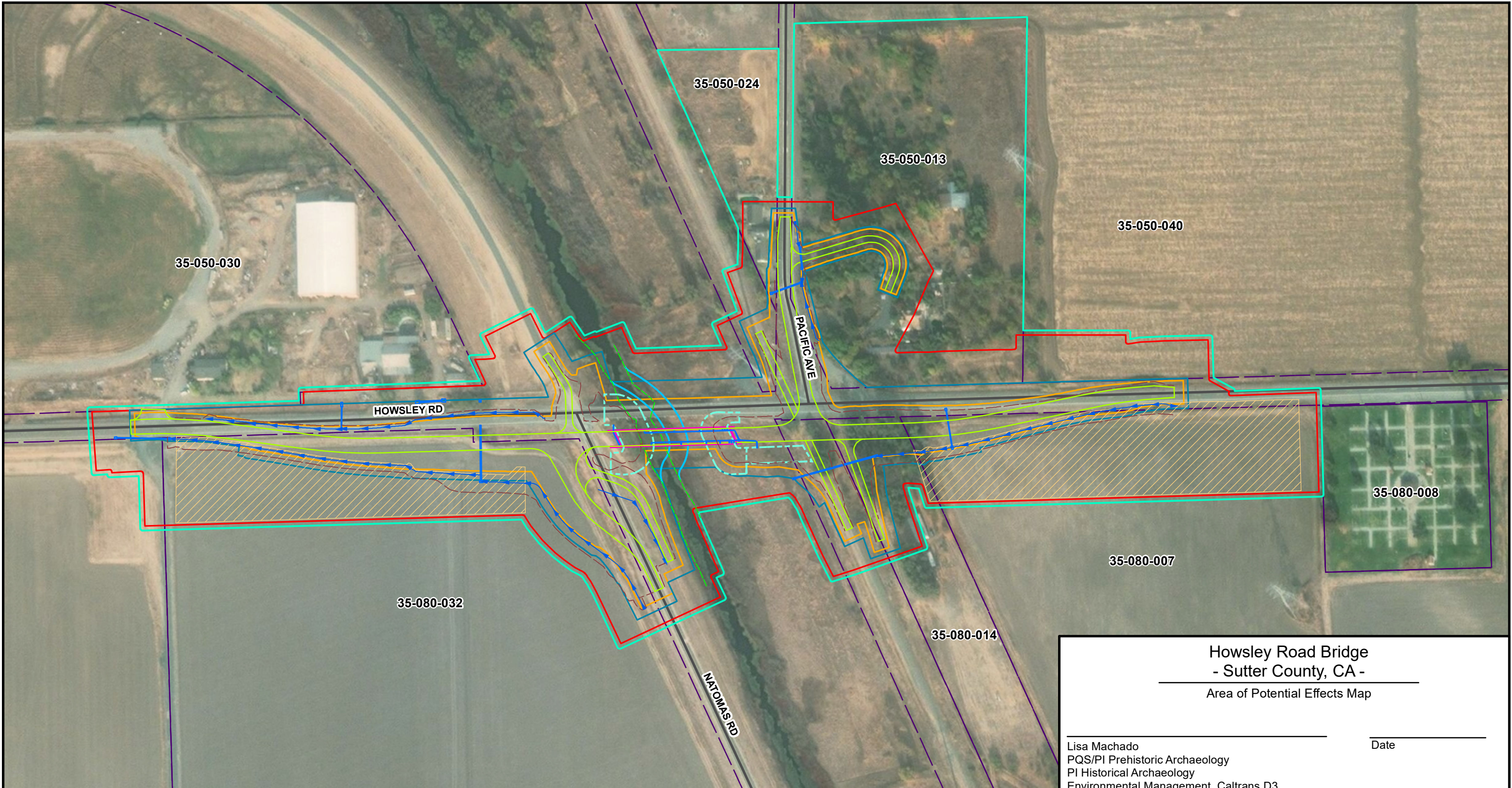
Howsley Road Bridge Replacement
- Sutter County, CA -



NORTHSTAR

... Designing Solutions

111 MISSION RANCH BLVD., SUITE 100 CHICO, CA 95926
PHONE: (530) 893-1600 - www.NorthStarEng.com - © NorthStar



Legend		ARCHAEOLOGICAL: Prehistoric and Historic No ground disturbance to occur outside of APE boundary		NORTHSTAR ... Designing Solutions 111 MISSION RANCH BLVD., SUITE 100 CHICO, CA 95926 PHONE: (530) 893-1600 - www.NorthStarEng.com - © NorthStar	
Archaeological Area of Potential Effect (APE)	Parcel	Bridge	0 100 200 400 Feet 1 inch = 200 ft (printed at 11" x 17")		
Area of Indirect Impact / Architectural Area of Potential Effect	Staging Area	RSP Limits			
Limits of Permanent Disturbance (LPD) / Area of Direct Impact (ADI)	Road	Drainage Flowline			
Limits of Temporary Disturbance (LTD) / Area of Direct Impact (ADI)	Low Flow Channel	Drainage Pipe/Inlet			
	Low Flow Channel Diversion	Edge of Pavement			
		Road Earthwork			
			ARCHAEOLOGICAL: Prehistoric and Historic No ground disturbance to occur outside of APE boundary		
			APE boundary encompasses maximum area of disturbance and construction staging areas.		
			Map Date: Dec 16, 2019	NSE Project # 16-074	Drawn By: TDA
Howsley Road Bridge - Sutter County, CA - Area of Potential Effects Map					
Lisa Machado PQS/PI Prehistoric Archaeology PI Historical Archaeology Environmental Management, Caltrans D3				Date	
Vlad Popko Local Assistance Project Engineer Office of Local Assistance, Caltrans D3				Date	
Neal Hay Local Agency Project Engineer Sutter County Development Services Department				Date	

DATE	COUNTY	ROUTE	POST MILES	TOTAL SHEETS
3	Sut	HOWSLEY		X

REGISTERED CIVIL ENGINEER	DATE	PROFESSIONAL ENGINEER

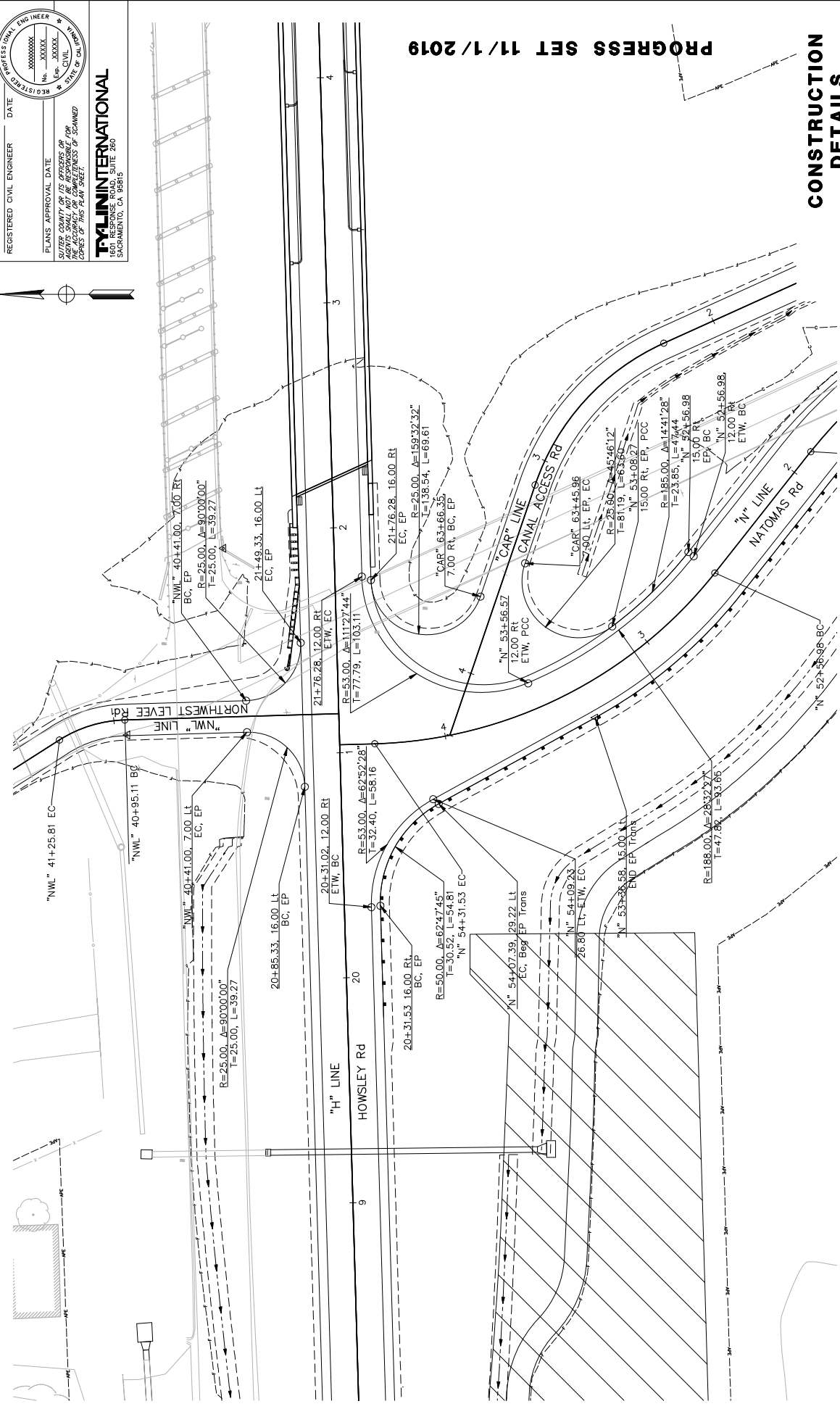
PLANS APPROVAL DATE	REGISTERED CIVIL ENGINEER

SUTTER COUNTY OFFICE OF THE COUNTY ENGINEER
 SUTTER COUNTY SHALL NOT BE RESPONSIBLE FOR
 THE ACCURACY OF THE INFORMATION CONTAINED
 HEREIN OR THE RESULTS OF ANY SUCH INFORMATION

TYLINTNATIONAL
 1601 RESPONSE ROAD, SUITE 260
 SACRAMENTO, CA 95815

NOTE:
 1. SEE SHEET GN-1 FOR ABBREVIATIONS, NOTES & LEGEND

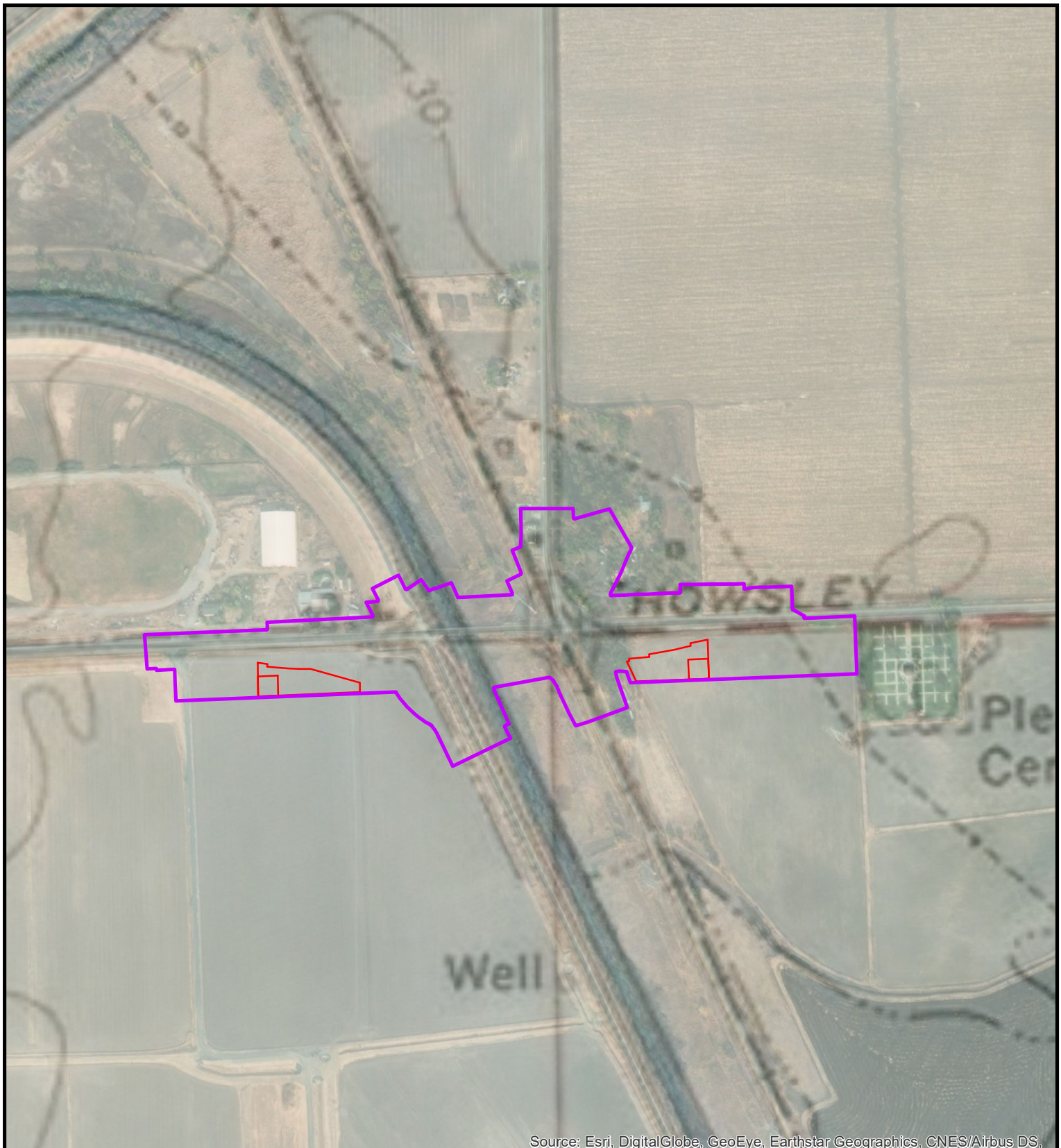
SUTTER COUNTY DEVELOPMENT SERVICES DEPARTMENT	NEAL HAY	CONSULTANT DESIGN MANAGER	HANS STRANDGAARD	DESIGNED BY	JEFFREY HOGE	REVISOR	DATE	REVISION
				CHECKED BY	TIM CLIFFORD			



HOWSLEY/NATOMAS INTERSECTION

CONSTRUCTION DETAILS
 SCALE: 1" = 20'

C-2



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS,

Legend

- Area of Potential Effect
- Staging Areas

0 250 500 1,000
 Feet
 1 inch = 500 ft (printed at 8.5 x 11)

Imagery Source:
 USGS Topo
 Inset Imagery:
 National Geographic



Within Sections 3,4,9,10
 Township 11N, Range 04E,
 Sutter County, CA
 VERONA USGS 7.5' Quad

Map Date:
 May 1, 2020

Drawn By:
 BSA

NSE Project #
 16-074

Figure 4: Potential Staging Areas

Howsley Road Bridge Replacement
 - Sutter County, CA -



NORTHSTAR

... Designing Solutions

111 MISSION RANCH BLVD., SUITE 100 CHICO, CA 95926
 PHONE: (530) 893-1600 - www.NorthStarEng.com - © NorthStar

3 Determination

3.1.1 Environmental Factors Potentially Affected

The environmental factors checked below could be potentially affected by this project; however, with the incorporation of mitigation measures,* potentially significant impacts are reduced to less than significant level by the project” (CEQA Guidelines Section 15382).

- | | | |
|--|--|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agricultural/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 type="checkbox"/> Geology/Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards/Hazardous Materials |
| <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population & Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input 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 |

3.1.2 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 EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Applicant Mitigation Agreement:

CEQA allows a project proponent to make revisions to a project, and/or to agree and comply with, mitigation measures that reduce the project impacts such that the project will not have a significant effect on the environment. CEQA Guidelines Section 15064.

As the applicant/representative for this proposed project, I hereby agree to implement the proposed mitigation measures and mitigation monitoring program identified within this document.



Signature of Applicant/Representative

Matthew S Rogers

Signature of preparer

 5/1/2020

Doug Libby
Environmental Control Officer

4 Environmental Checklist

4.1 Aesthetics

Would the project:	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site/surroundings?				X
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X

4.1.1 Discussion

- a) **Less than Significant.** The General Plan does not inventory any scenic vistas within the project area and there are no scenic vistas proximate to the project site. The General Plan Technical Background Report identifies geographic features such as the Sutter Buttes, Feather River, Sacramento River, Bear River, and the valley's orchards as scenic resources within the County which contribute to the County's character. This project is not located in the vicinity of the Bear River, Feather River, or Sacramento River. The project site is not near the Sutter Buttes and located well outside of the Sutter Buttes Overlay Zone and will not obstruct the views of the Sutter Buttes. Although the rural setting and unique geography of Sutter County and its surrounding area have created a number of scenic vistas and corridors, the proposed project only includes bridge replacement, roadway, and approach

rehabilitation along the existing roadway alignments for improved safety and will not have a substantial adverse effect on a scenic vista.

- b) **No Impact.** There are no resources within a state scenic highway in the project area. Furthermore, there are no officially recognized scenic roadways in Sutter County. The proposed project would not result in a significant change to the appearance of the existing roadway, nor would it eliminate access to scenic views or alter the landscapes surrounding the project site.
- c) **No Impact.** The proposed project will not substantially degrade the existing visual character or quality of the site and its surroundings. The project would not create structures with a substantial vertical presence. Temporary visual impacts may occur during construction activities, when heavy equipment and construction materials will be present within the project area. Neither the function nor the general appearance of the surrounding area would be substantially modified by the proposed project.
- d) **No Impact.** The improvements associated with this project do not include the installation of lighting or reflective surfaces that could contribute to substantial sources of light or glare. Additionally, construction will not occur during the evening or nighttime hours.

Mitigation: None required

4.2 Agricultural and Forestry Resources

Would the project:	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
a) Convert Farmland (Prime, Unique or of Statewide Importance) pursuant to the Farmland Mapping and Monitoring Program of the CA Resources Agency, to non-agricultural use?			X	
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			X	
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
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?			X	

4.2.1 Discussion

- a) **Less than Significant.** The project involves the replacement of Howsley Road Bridge, additionally, the project involves the reconfiguration of several intersections to provide safer line of sight and turning conditions when compared to existing roadway conditions. The proposed project does occur adjacent to lands designated as Important Farmlands; the project will primarily occur within the existing road right-of-way, however, new road improvements at Natomas Road and the eastern side of the project area will encroach into adjacent Prime Farmland. Approximately 1.5 acres of Prime Farmland will be permanently impacted by roadway improvements. Additionally, the project may require utilization of adjacent agricultural lands for staging. Although the project will convert Prime Farmland and will require the temporary use of Important Farmland, the amounts are negligible when compared to the total amount of Important Farmland found within the County. The agricultural uses present surrounding the project would continue both during and after the completion of the project. Farmers adjacent to the project would be fairly compensated during the right-of-way acquisition process for any land lost. The project is not comparable to a subdivision or large commercial development as it is much smaller and linear in nature.
- b) **Less than Significant.** The project will not conflict with existing zoning for agricultural use, or a Williamson Act Contract. According to the most recent map of Williamson Act Contracts in Sutter County, there are no Williamson Act Contracts on lands adjacent to the project. Therefore, relative to land use designations and Williamson Act contracts, there would be no impact.
- c) **No Impact.** The proposed project would not conflict with existing zoning for, or cause the rezoning of forestland (as defined in Public Resources Code §1220(g)), timberland (as defined in Public Resources Code §4526), or Timberland Production (as defined in Government Code §51104(g)), because the project site and the surrounding area does not contain forest land. The proposed project is located in the Sacramento Valley, a non-forested region.

- d) **No Impact.** The proposed project would not cause the rezoning or loss of forestland or timberland to non-forest use due to its location within Sutter County. Sutter County is located on the valley floor of California's Central Valley, and, as such does not contain forest land.
- e) **Less Than Significant.** The proposed project does involve changes to the existing environment that could result in the conversion of Farmland to non-agricultural use. The proposed project involves the replacement of a bridge primarily within the road right-of-way. However, approximately 1.5 acres of Prime Farmland will be permanently impacted by project construction. This amount is minimal when compared to the total amount present within the immediate area surrounding the project and the County as a whole. Agricultural lands adjacent to the project area may be utilized temporarily for equipment staging and material storage. The agricultural uses in the surrounding area will not be permanently removed, after project completion they would continue.

Mitigation: None required

4.3 Air Quality

Would the project:	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		X		
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including emissions that exceed quantitative thresholds for ozone precursors)?		X		
d) Expose sensitive receptors to substantial pollutant concentrations?		X		
e) Create objectionable odors affecting a substantial number of people?			X	

4.3.1 Setting

The proposed project is in the Northern Sacramento Valley Planning Area (NSVPA), which includes the following counties: Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba. The NSVPA is bounded on the north and west by the Coastal mountain range and on the east by the southern portion of the Cascade mountain range and the northern portion of the Sierra Nevada Mountains. High temperatures and low humidity, with prevailing winds from the south, characterize summer conditions. Occasional rainstorms, interspersed with stagnant and sometimes foggy weather, characterize winter conditions. Southern winds continue to predominate during the winter. Two types of inversions occur in the NSVPA: 1) during the summer, sinking air forms a lid over the region and distributes photochemical smog and 2) air cools next to the ground while air aloft remains warm causing poor dispersion of ground level pollutant emissions.

The California Air Resources Board (CARB) prepares and submits to the EPA a State Implementation Plan (SIP) explaining how the state will attain compliance with Federal clean air standards. The NSVPA

is subject to federal, state, and local regulations. The NSVPA adopted an updated 2012 Triennial Air Quality Attainment Plan as its component of the SIP in compliance with the Federal and California Clean Air Acts.

4.3.2 Discussion

- a) **Less Than Significant.** The proposed project is the replacement of a structurally deficient bridge with a new cast-in-place structure. It does not involve the construction of new expanded facilities. The proposed project will be required to comply with all applicable rules, regulations, and control measures including permitting, prohibitions, and limits to emissions that work to reduce air pollution throughout California. Therefore, it will not conflict with or obstruct implementation of any air quality plans in Sutter County. The proposed project would not create a source of new vehicle traffic, such as a new housing development or commercial uses, and thus there would be no added vehicle trips to the existing roadway network, and no long-term air quality impacts. The proposed project is located within the Northern Sacramento Valley Air Basin (NSVAB) and the jurisdiction of the Feather River Air Quality Management District (FRAQMD). Construction activities may result in ground disturbance due to vegetation removal, placement of the new bridge, and eventual removal of the existing bridge. To comply with the Feather River Air Quality Management District's (FRAQMD) rules (3.0 and 3.16, visible and fugitive dust emissions), the County shall comply with all Best Available Mitigation Measures (BAMMs) for the control of construction related particulate emissions. Refer to Air Quality MM-1 that is proposed below.
- b) **Less Than Significant With Mitigation Incorporated.** Implementation of the proposed project would result in the generation of short-term construction-related air pollutant emissions. Diesel fumes may be noticeable near the site; however, diesel fumes will be a short-term effect. All equipment must comply with California emissions standards and Caltrans Standard Specifications. Exhaust emissions from construction equipment would contain reactive organic gases (ROG), nitrogen oxides (NOx), carbon monoxide (CO) and particulate matter less than 10 microns in diameter (PM10). Particulate matter less than 10 microns emissions would also result from windblown dust (fugitive dust) generated during construction activities. As shown in **Table 1**, per the California Ambient Air Quality Standards (CAAQS) the project area is designated as non-attainment/transitional for ozone, and a non-attainment area for PM10.

Because the project is Caltrans funded, the project must comply with Caltrans Standard Specifications (Section 7-1.01F, Air Pollution Control and Section 10.1, Dust Control), therefore, the contractor is required to comply with FRAQMD rule 3.0 and 3.16 as well as other local jurisdiction rules, regulations, ordinances, and statutes. The project would not result in construction related emissions exceeding FRAQMD emission thresholds, having a less than significant impact to regional air quality. The incorporation of **Air Quality MM-1**, would ensure construction related emissions impacts would be less than significant.

Table 1: Attainment Status for Criteria Air Pollutants for Sutter County CA.

Pollutant	State	Federal
NOx	Attainment	Attainment
SO ₂	Attainment	Attainment
CO	Attainment	_____
1-hour Ozone	<i>Non-Attainment/transitional</i>	_____
8-hour Ozone	<i>Non-Attainment/transitional*</i>	<i>Unclassified</i>

PM ¹⁰	Non-Attainment	Attainment
PM ^{2.5}	Attainment**	Maintenance/Attainment
Source: FRAQMD / CARB 2010		

* The District has been redesignated from Nonattainment to Nonattainment Transitional for the State designation for ozone occurs by operation of law. The change was confirmed by the CARB Board of Directors on March 25, 2010. [HSC Section 40925.5] Nonattainment Transitional is a subcategory of the nonattainment designation category for state standards that signals progress and implies the area is nearing attainment. Districts with nonattainment-transitional status may revise their attainment plans to delay adoption of control measures anticipating attainment without the measures/

** The District has been redesignated to attainment for the annual PM_{2.5} State AAQS. The change was adopted on the March 25, 2010, by the CARB Board of Directors.

Construction activities were modeled using the Sacramento Metropolitan Air Quality Management District's Roadway Construction Emissions Model to determine the maximum daily emissions. **Table 2** includes the FRAQMD thresholds of significance for construction related criteria air pollutant emissions and the proposed project's construction related criteria air pollutant emissions.

Table 2: Construction Criteria Air Pollutants Emissions

Category	Criteria Air Pollutants		
	ROG	NOx	PM ₁₀ Total (or smaller)
Construction Threshold	25 lbs/day, 4.5 tons/yr	25 lbs/day, 4.5 tons/yr	80 lbs/day
Daily (lbs/day)	4.88	16.52	2.63

The daily construction related emissions are well below the thresholds of significance for criteria air pollutants. Given that the construction criteria air pollutants are below the levels of significance, the proposed project would not violate any air quality standard or contribute substantially to an existing or project violation. Therefore, impacts are less than significant.

- c) **Less Than Significant With Mitigation Incorporated.** Bridges and roadways are conduits that enable vehicular traffic to move from one point to another. The project involves replacement of an existing bridge, and does not generate new traffic, thereby generating more emissions, as would new development (i.e., residential or commercial land uses).

The project will generate short-term construction related emissions associated with equipment used for construction activities. These emissions would contain ozone precursors, PM₁₀ and PM_{2.5}. Additional particulate matter emissions in the form of fugitive dust could be generated during ground disturbing activities for vegetation removal, placement of new abutments, bents, and RSP.

The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard. Each of the above impacts are temporary, local, and construction related. The incorporation of **Air Quality MM-1** would reduce these impacts to a less than significant level. Air quality mitigation measures are consistent with the requirements of Sutter County General Plan and the FRAQMD and Caltrans Standard Specifications for pollution and dust control.

- d) **Less Than Significant With Mitigation Incorporated.** Several residences can be found in close proximity to the project area. A residential dwelling exists approximately 310 ft. to the north of the

existing bridge, another residence is located approximately 280 feet to the northeast of the bridge, the last is located approximately 815 feet west of the existing bridge on Howsley Road. Project activities at Bridge 18C0113 consist of removal of the current structure and replacement with a cast-in-place structure as well as approach and intersection work. There are no schools, hospitals, or other sensitive receptors in the area and no substantial pollutant concentrations are anticipated to occur. Temporary construction activities would result in particulate emissions in an area designated as non-attainment. However, implementation of BAMM's and Standard Mitigation Measures for construction outlined in Section 4 of the FRAQMD CEQA review, and the incorporation of **Air Quality MM-1** would minimize the exposure of sensitive receptors to fugitive dust to the maximum extent possible.

- e) **Less Than Significant.** Other than construction activities (diesel odors may be noticeable near the construction site), no long-term odor producing activities would result from the project. Therefore, the proposed project would not result in less than significant objectionable odor impacts.

4.3.3 Mitigation:

Air Quality MM-1

To comply with the Feather River Air Quality Management District's (FRAQMD) rules (3.0 and 3.16, visible and fugitive dust emissions), the County shall comply with all Best Available Mitigation Measures (BAMMs) for the control of construction related particulate emissions. The contractor shall submit a Fugitive Dust Control Plan to the County for approval. The approved plan shall include all applicable BAMMs as specified by FRAQMD Standard Construction Phase Mitigation Measures, including but not limited to the following:

1. Haul trucks must 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.
2. Construction equipment exhaust emissions shall not exceed FRAQMD Regulation III, Rule 3.0, Visible Emissions limitations (40 percent opacity or Ringelmann 2.0). Operators of vehicles and equipment found to exceed opacity limits shall act to repair the equipment within 72 hours or remove the equipment from service.
3. The area disturbed by demolition, clearing, grading, earth moving, or excavation operations shall be minimized at all times.
4. Suspend grading or earth moving activities when wind speeds exceed 20 mph
5. Minimize unnecessary idling time to 5 minutes.
6. Water shall be applied as needed to prevent fugitive dust impacts offsite.
7. All onsite vehicles should be limited to a speed of 15mph on unpaved roads.

4.4 Biological Resources

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
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?		X		
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 US Fish and Wildlife Service?			X	
c) Have a substantial adverse effect on protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
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?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
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?				X

4.4.1 Setting

A Natural Environmental Study (NES) report (Appendix A), which assessed the potential for significant impacts to special-status species, was prepared for the proposed project by NorthStar in June 2019. As part of the NES, a list of special-status plant and animal species was compiled from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation database, California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB), and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants to determine special-status species that may potentially be affected by the proposed project. All the special-status species listed by the USFWS, CDFW, and CNPS occurring within the Sutter, Pennington, Gridley, Honcut, Sutter Buttes, Yuba City, Tisdale Weir, Gilsizer Slough, and Olivehurst, USGS quadrangles are included in the NES, in Table 1 (**refer to Appendix A**). Based on the CNDDDB data, only one special-status plant species occurs within five miles of the project site, woolly rose mallow (*Hibiscus lasiocarpus* var. *occidentalis*). Woolly rose mallow was not encountered during the botanical field survey of the project area, nor were any other special-status plant species.

Special-status wildlife species with at least moderate potential to occur within the project area include, giant garter snake (*Thamnophis gigas*), northwestern pond turtle (*Actinemys marmorata*), Swainson's hawk (*Buteo swainsoni*), Modesto population of song sparrow (*Melospiza melodia*) and birds protected by the Migratory Bird Treaty Act (MBTA).

In addition to the NES, a Biological Assessment (BA) was prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act (ESA) (16 U.S.C. 1536 (c)). The BA consisted of plant and biological field surveys to identify any federally listed special-status species habitat located within the project corridor. The BA proposes, through field studies conducted on May 17, 2017 that the project "may affect and is likely to adversely affect" giant garter snake (GGS). In addition, measures for avoidance and minimization would ensure impacts to aquatic and upland habitat will be reduced. The County will implement avoidance and minimization measures as detailed in applicable regulatory permits to avoid impacts. Measures may include but are not limited to construction within the ROW, staging the equipment and the excavated material in designated areas, and using erosion control methods such as silt fencing and straw wattles. If deemed necessary by USFWS and/or CDFW during the ESA Section 7 consultation process and/or the Fish and Game Code Section 2080.1, respectively, the County will also purchase compensatory mitigation credits for the loss of aquatic and upland habitat.

Table 2 includes federally listed special-status species with at least moderate potential of occurring within the project (including the potential for foraging habitat) and an associated effect determination.

Table 2: Federally listed Species with Potential to Occur in the Action Area and Effect Determinations

Species	Effect Determination
Giant garter snake (<i>Thamnophis gigas</i>)	May affect, likely to adversely affect

Table 3 includes State listed species and CDFW Species of Special Concern with at least moderate potential to occur within the project area.

Table 3: State listed Species with Potential to Occur in the Action Area and Associated Status

Species	Status
Giant garter snake (<i>Thamnophis gigas</i>)	State Threatened
Modesto Population of song sparrow (<i>Melospiza melodia</i>)	Species of Special Concern
Northwestern pond turtle (<i>Emys marmorata</i>)	Species of Special Concern
Swainson's hawk (<i>Buteo swainsoni</i>)	State Threatened

A Draft Delineation of Aquatic Resources was prepared for this project by NorthStar in June 2019. Pre-jurisdictional waters of the U.S. were delineated within the project area including the Pleasant Grove Creek, and several seasonal wetlands present adjacent to the existing bridge.

Required Regulatory Permitting

The USACE and the EPA regulate the discharge of dredged or fill material into jurisdictional waters of the United States, under Section 404 of the CWA. The issuance of a Section 404 permit is contingent on a project's demonstration of adherence to the maximum extent practicable to the following principals: 1) avoidance of impacts, 2) minimization of potential impacts, and 3) compensation for any remaining unavoidable impacts. Thus, acquisition of a Section 404 permit is indicative of adherence to the USACE "no net loss" policy for area and function of Waters of the US. Furthermore, the proposed project would be required to obtain water quality certification per Section 401 of the Clean Water Act as a condition of

404 permit acquisition. The Regional Water Quality Control Board (RWQCB) issues water quality certifications within the scope of the following mandates: Section 401 of the Clean Water Act, California Porter-Cologne Water Quality Control Act, and State and Federal No Net Loss Policies. Acquisition of water quality certification is indicative of compliance with the state's water quality standards, including beneficial uses, water quality objectives, and an anti-degradation policy.

The CDFW grants approval per the Streambed Alteration Agreement Program under one of the following two scenarios, as described in Section 1602 of the Fish and Game Code:

- The activity will not substantially adversely affect an existing fish or wildlife resource, and that the entity may commence the activity without an agreement.
- The department determines that the activity may substantially adversely affect an existing fish or wildlife resource and issues a final agreement to the entity that includes reasonable measures necessary to protect the resource, and the entity conducts the activity in accordance with the agreement.

4.4.2 Discussion

- a) **Less Than Significant With Mitigation.** Field surveys of the project area were conducted on May 17, 2017 by NorthStar biologists Carol Wallen, Matt Rogers, and Andrew Huneycutt. Based on the survey results and literature research, five special-status species have at least moderate potential to occur within the project area, including giant garter snake, western pond turtle, Modesto Population of song sparrow, Swainson's hawk, and migratory birds protected by the MBTA. Species with a low or no potential to occur within the project site are not discussed further because the potential for these species to occur is negligible (Refer to Table 2, Appendix A). The five special-status species with a moderate potential to occur are discussed in further detail below.

Giant Garter Snake

There are 54 CNDDDB occurrences within a five-mile radius of the Action Area and each of these occurrences could represent more than one individual snake. The nearest record (CNDDDB occurrence 59) for one snake observed in 1995 at a location approximately 1,500 feet west of the project area. Many of the other nearby occurrences are located within the Natomas Basin where the U.S. Geologic Survey conducts annual GGS monitoring projects. The potential for occurrence within the project area is considered high because the project area meets all of the four essential GGS habitat components, as set forth in the November 13, 1997 USACE Programmatic Formal Consultation for GGS within the Northern California counties, including Sutter County. Additionally, there are several reliable records of occurrence in the vicinity including one in close proximity to the project area.

Primary habitat requirements consist of 1) adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; 2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; 3) grassy banks and openings in waterside vegetation for basking; and 4) higher elevation uplands for cover and refuge from floodwaters during the snake's dormant season in the winter (USFWS 2006).

1) Adequate Water - The canal contains water during the active season, thus providing food and cover.

2) Wetland Vegetation – There are stands of hardstem bulrush found adjacent to the canal that would provide suitable foraging and escape cover for GGS. Additionally, several other wetland plant species

commonly utilized by the species were observed within the Action Area including water primrose, pale spike rush, and cattail.

3) Basking and Low-flow water sites - The site does provide suitable basking sites in the form of the levee and associated access roads. Additionally, during the active season, water within the canal is contained within the low flow channel and the areas adjacent to this channel provide suitable basking sites for the species.

The water passing through the canal follows a relatively straight path however, as the water draws down smaller wetland areas are created that provide foraging opportunities for the species.

4) Higher Elevation Uplands – There are suitable upland refugia present within the Action Area. Rock slope protection present near eastern abutment of the existing bridge could be utilized by the species during the active and inactive seasons.

As part of the Clean Water Act Section 404 Nationwide Permit application process, the USACE will initiate ESA Section 7 consultation with the USFWS. The USFWS consultation will result in either a finding that the project “may affect, but not likely to adversely affect” (NLAA) or “may affect, likely to adversely affect” determination. Under either circumstance, the USFWS will identify in their conservation measures and avoidance and minimization measures that will required to be implemented pre-, during, and post-construction. These measures become part of project plans and specifications and/or contract documents. The USFWS determination will ensure that the project will not jeopardize the continued existence of the GGS species or result in the destruction of critical habitat.

Upon receiving a determination from USFWS, the project proponent will also work with CDFW to obtain a CESA consistency determination (CD) per Fish and Game Code Section 2080.1. If a CD is issued by CDFW, then no further authorization or approval is necessary under CESA.

The project will temporarily and permanently disturb potential aquatic and upland GGS habitat. The inclusion of **Biological Resources MM-1** will ensure impacts to GGS are less than significant.

Northwestern Pond Turtle

The northwestern pond turtle is a CDFW Species of Special Concern that occurs within a variety of habitats across the state. Northwestern pond turtles are associated with permanent or nearly permanent waters including ponds, lakes, sloughs, streams, irrigation ditches. Potentially suitable aquatic and nesting habitat occurs within the project area. Six northwestern pond turtles of any were observed basking during the biological survey of the project area in May 2017. Implementation of **Biological Resources MM-2** would ensure project related impacts to western pond turtles would be less than significant.

Swainson's Hawk

Swainson hawk is a State-threatened species with no federal status listing. The species can be found throughout much of California but the greatest concentration of breeding pairs is found in the Central Valley from Butte to San Joaquin counties. The species often nests in riparian areas adjacent to agricultural fields. Swainson's hawks are migratory, arriving in California in late February/early March and departing the breeding grounds in September.

There are a number of CNDDDB occurrences within five miles of the project area, with the nearest occurrence is located approximately 0.25 miles north of the bridge. The large trees located near the bridge could provide suitable nesting habitat for the species. No Swainson's hawks or any large nests were observed during the May 2017 biological survey.

The implementation of **Biological Resources MM-3** will ensure impacts to Swainson's hawk would be less than significant.

Migratory Birds and Raptors

The federal Migratory Bird Treaty Act (MBTA) and California F.G.C. Sections 3503 and 3800 protect the occupied nests and eggs of migratory and non-game bird species. The Federal Bald and Golden Eagle Protection Act also prohibits the take of bald and golden eagles and their nests. Birds nest in a variety of places including trees, shrubs, man-made structures, and the ground. Work buffers around migratory birds and their nests are typically needed to minimize impacts to these species. Any proposed project must take measures to avoid the take of any migratory and non-game birds, nests, or eggs.

Numerous migratory bird species were observed during the wildlife survey. Abundant active cliff swallow nesting was in progress beneath the bridge during the biological survey of the Action Area. With the implementation of **Biological Resources MM-3** impacts to migratory birds and raptors would be less than significant.

- b) **Less Than Significant.** The proposed project will temporarily and permanently impact potential GGS aquatic and upland habitat by replacing the existing bridge, widening the approaches to the bridge, and reconfiguring intersection geometry. Temporary impacts to habitat will be returned to pre-construction conditions. Mitigation credits for permanent impacts to GGS habitat would be purchased at a ratio determined by USFWS and/or CDFW from a USFWS and CDFW approved mitigation bank.
- c) **Less Than Significant.** A Draft Delineation of Waters of the U.S. was prepared for this project by NorthStar in June 2019. Pre-jurisdictional waters of the U.S. were delineated within the project area including Pleasant Grove Creek and seasonal wetlands adjacent to the bridge structure. The proposed project could affect Waters of the U.S. and Waters of the State. Therefore, the proposed project would be required to adhere to the applicable performance standards of the USACE, the RWQCB and the CDFW via the regulatory permit process. Due to the potential impacts to relatively permanent other waters of the U.S., the following regulatory permits will be acquired prior to the start of any grading or construction activities within the project area:
 - CWA Section 404 permit #14 Linear Transportation from the USACE
 - CWA Section 401 Water Quality Certification from the RWQCB
 - USFWS Section 7 ESA Informal Consultation
 - F.G.C. Section 1602 Streambed Alteration Agreement from CDFW
 - F.G.C. Section 2080.1 Notification and Consistency Determination from CDFW

Obtaining the appropriate regulatory permits ensures: 1) compliance with applicable state and federal laws, 2) that potential impacts to wetlands and other waters of the U.S., waters of the state, and streambed and banks (including irrigation ditches), and listed species are mitigated appropriately (including the payment of mitigation fees), and 3) minimizes, reduces, or avoids potentially significant impacts.

- d) **Less than Significant.** The proposed project would involve the removal of the current structurally deficient bridge and replacing it with a new bridge structure, minor vegetation removal, and paving road approaches, within existing roadway alignments. Temporary disturbances resulting from vegetation removal will be restored to pre-project conditions. Additionally, aquatic habitat that may support GGS will be monitored prior to and during construction to minimize potential impacts. The project would not result in the introduction of permanent barriers to movement of any resident or migratory fish or wildlife species, nor would it result in the introduction of any new long-term factors (light, fencing, noise, human/presence and/or domestic animals) which could hinder the normal activities of wildlife.
- e) **No Impact.** The proposed project would not conflict with any local plans or policies that protect biological resources. The project would be required to adhere to the mitigation measures and standard/permitting requirements of regulatory agencies, as set forth in this study.
- f) **No Impact.** The project site is not subject to the provisions of any adopted habitat conservation plans or natural community conservation plans, as the Yuba-Sutter Regional Conservation Plan is yet to be adopted. Regarding local plans, policies and ordinances, the proposed project would result in no impact.

4.4.3 Mitigation:

Biological Resources MM-1 Obtain Regulatory Permits and Implement Avoidance and Minimization Measures

- The project will obtain the following permits, as necessary and applicable:
 - CWA Section 404 permit #14 Linear Transportation from the USACE
 - CWA Section 401 Water Quality Certification from the RWQCB
 - RWQCB Notice of Applicability for Dewatering and Other Low Threat Discharges to Surface Waters
 - USFWS Section 7 ESA Informal Consultation
 - F.G.C. Section 1602 Streambed Alteration Agreement from CDFW
 - F.G.C. Section 2080.1 Notification and Consistency Determination from CDFW
- Given the GGS habitat located within the project boundaries, the purchase of compensatory mitigation may be required by USFWS and/or CDFW. If the purchase of mitigation credits is deemed applicable and necessary by USFWS and/or CDFW during the ESA Section 7 consultation process and/or Fish and Game Code Section 2080.1 consistency determination process, the County shall purchase compensatory mitigation for permanent loss of suitable aquatic and upland habitat for GGS. Mitigation credits would be purchased at the ratio identified by USFWS and/or CDFW. If applicable, the purchase of credits will take place through a purchase and sale agreement from a USFWS and CDFW approved mitigation bank prior to the initiation of any construction activities.
- The project will incorporate the avoidance and minimization measures (AMMs), standard BMPs and other notification requirements identified in applicable permits into project plans and specifications and/or contract documents. Incorporation of these requirements will protect sensitive natural resources and water quality from project impacts and ensure that the project will not jeopardize the continued existence of GGS or result in the destruction of critical habitat. Suggested AMMs have been identified in the Natural Resources Study (NES) and Biological Assessment (BA) prepared for the project.

Biological Resources MM-2 Northwestern Pond Turtle Avoidance and Minimization Measures

- No later than 48 hours prior to any ground disturbance, pre-construction surveys will be conducted by a qualified biologist within the project limits.
- If project activities are to occur during the nesting season, (late June-July), a survey will be conducted by a qualified biologist to locate any northwestern pond turtles or their nests before project activities begin. This survey should be conducted no more than two days prior to the start of project activities. If a pond turtle nest is located, the biologist will flag the site and determine whether projects activities can avoid affecting the nest. If the nest cannot be avoided, a no-disturbance buffer zone will be established around the nest in coordination with CDFW. The no-disturbance buffer will remain in place until the young have left the nest.
- If a pond turtle is observed in the project limits during construction, all work will be stopped, and the turtle will: 1) be allowed to leave on its own volition, or 2) be moved by the project biologist in the direction it was heading (upstream or downstream), at a safe distance from the construction activities, and at a safe location. The biologist will report observations and relocations to the County.

Biological Resources MM-3 Swainson's Hawk, Modesto Population of Song Sparrow and Migratory Birds Avoidance and Minimization Measures

- If species covered under the Migratory Bird Treaty Act and Fish and Game Code sections 3503, 3503.5, and 3513 are determined to be present within the project vicinity, construction activity including clearing of vegetation, generation of mechanical noise, or ground disturbance should be conducted outside of the breeding season (February 1 to August 31), if feasible.
- If Project activities must be conducted during the nesting bird season, then the following shall be conducted:
 - Swainson's Hawk and Raptors: If work must occur during bird breeding season, to ensure that no indirect impacts to active nests occur due to any future construction activities, a qualified biologist will conduct a pre-construction survey for Swainson's hawk and raptor nests. The area to be surveyed will include a 0.5 mile-radius including and surrounding the biological survey area. If active nests are found, the County will be notified. No construction will occur until appropriate buffers are established, based upon recommendations by the qualified biologist. The pre-construction survey will be conducted no less than 14 days and no more than 30 days prior to the commencement of construction.
 - Migratory Birds: A qualified biologist will conduct pre-construction surveys for nesting birds within 250' foot distance of the project area. If active nests are found, the County will be notified and the qualified biologist will establish buffers around nests that are sufficient in size to ensure that breeding is not likely to be disrupted or adversely impacted by construction. Factors to be considered for determining buffer size will include: the presence of natural buffers provided by vegetation or topography; nest height; locations of foraging territory; and baseline levels of noise and human activity. Buffers will be maintained until young have fledged or the nests become inactive. Pre-construction nesting bird surveys will be conducted no more than 48 hours prior to the commencement of construction.

- Active nests shall be monitored at reasonable intervals, as determined by the qualified biologist. The status of nesting activities shall be included in monthly reports to the County and/or regulatory agencies, as appropriate. If a protected species is discovered during construction within the Action Area, the County will notify USFWS and/or CDFW as appropriate, and the qualified biologist will have the authority to stop all construction work on the site until the appropriate corrective measures have been conducted, and it is determined that the species will not be harmed.
- Cliff Swallow: If construction of the proposed bridge occurs during the cliff swallow's breeding season (April through July), the underside of the existing bridge shall be covered with ½ to ¾ inch mesh netting before March 1 to prevent nesting in the construction area. The netting shall remain in place until demolition of the structure and must be anchored such that the swallows cannot construct their nests in the bridge. It is recommended that once such netting is put in place, a monitor visit the site weekly to check for signs that swallows are trying to nest under the bridge. If swallows enter the netted area and begin nest building, the net's integrity shall be repaired. If a swallow successfully completes a nest and lays eggs within the netted area of the existing bridge, a biological monitor shall be present to monitor the nest to ensure that construction activities do not disturb nesting activities. In the event that construction/demolition activities may result in the abandonment of hatchlings, the biologist will be able to stop work and 1) establish appropriate avoidance buffers, 2) suggest changes in construction activities that will minimize impacts to the nest/hatchlings, and 3) identify other appropriate measures to reduce the potential for abandonment. Construction activities shall not encroach on upon the identified buffer until the nestlings have fledged or the nest fails as determined by a qualified biologist. If swallows begin colonizing on the newly constructed bridge or the existing bridge before March 1, all nest precursors (mud placed by swallows for the construction of nests) shall be knocked or washed down at least once daily until construction of the new bridge is complete or the swallows cease trying to construct nests, whichever is first.
- Exclusionary devices shall be installed on the bridge prior to the initiation of nesting season (February 1). Exclusionary devices shall cover the bottom and sides (if necessary) of the bridge (wherever mud nesting birds may find purchase). Passage underneath the bridge (through the channel) shall not be impeded. Exclusionary materials shall be installed within seven days of surveying the bridge for bridge dwelling wildlife, shall not pose an entanglement risk to wildlife, and shall be regularly maintained to ensure these parameters are being met. Exclusionary materials shall not be installed if nesting bird activity is detected.

4.5 Cultural Resources

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations, Section 15064.5?			X	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CA Code of Regulations, §15064.5?		X		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	
d) Disturb any human remains, including those interred outside of formal cemeteries?			X	

4.5.1 Setting

PAR Environmental Services, Inc. (PAR) prepared a Historical Property Survey Report (HPSR), an Archaeological Survey Report (ASR), and a Historic Resources Evaluation Report in June of 2019 for the proposed project. In support of the ASR, PAR staff conducted an archival record search, consultations, and an archaeological field survey to identify the cultural resources occurring, or potentially occurring, in the project area. The record search included a review of the data housed at the Northeast Information Center (NEIC) at CSU, Chico and a Sacred Lands search with the Native American Heritage Commission (NAHC). The tribal consultation involved potentially interested local Native American groups, as identified by the NAHC.

According to the NEIC one resource (P-51-000084) is located within the APE. This is the Natomas Cross Canal Levee/Pleasant Grove Creek Canal Levee, built from 1911-1913. The Pleasant Grove Creek Canal Levee become the Natomas Cross Canal Levee after it crosses under Howsley Road to the south. Although not evaluated individually, the levees were recommended as contributing resources to the RD 1000 Rural Historic Landscape District (Bradley and Corbett 1995). Bradley and Corbett recommended Reclamation District 1000 as eligible as a Rural Historic Landscape District under Criterion A, at a state level significance for its contributions to the reclamation and flood control of the Sacramento River Basin within the Sacramento Flood Control Project. It was determined eligible for listing in the National Register of Historic Places (NRHP) on September 21, 1994 and is listed in the and California Register of Historical Resources (CRHR). Additionally, two resources are located adjacent to the APE, 2434 Howsley Road and the Pleasant Grove Cemetery. The buildings located at 2434 Howsley Road were recommended as ineligible for listing in the NRHP while the Pleasant Grove Cemetery has not been evaluated for inclusion in the NRHP. During the pedestrian surveys of the APE, two historical archaeological resources were recorded including a L-shaped earthen ditch located south of Howsley Road and resources associated with the Northern Electric Railway/Sacramento Northern which include metal rails, three concrete foundations and a railcar base, and an earthen berm.

In addition to the ASR, PAR prepared a Historical Resources Evaluation Report (HRER) for the project. The report was prepared in compliance with Section 106 of the NRHP and Section 5024.1 of California Environmental Quality Act. Consultation with historical societies did not result in the identification of any historical resources within or near the APE or any local concerns about the project. Record searches identified the previously evaluated Natomas Cross Canal Levee/Pleasant Grove Creek Canal (P-51-

000084. As previously mentioned, P-51-000084 is a contributing resource to the RD 1000 which is eligible for listing in the NRHP and listed on the CRHR.

Howsley Road Bridge, originally constructed in 1935 is not eligible for listing in the NRHP, in the Caltrans Local Agency Bridge Inventory.

Two newly identified built environment resources were recorded during the pedestrian survey. Rural residential complexes at APN 035-050-024 (5481 Pacific Avenue) and APN 035-050-013 (5496 Pacific Avenue). APN 035-050-024 was constructed in 1921, however, the buildings have been extensively modified and no longer retain a resemblance to 1920s structures. They are exempt from evaluation as they are so altered as to appear less than 30 years old. The rural residence at APN 035-050-013 is a complex of residential and rural buildings, including the original passenger station for the Pleasant Grove Northern Electric Railway (NE)/Sacramento Northern (SN) stop. The buildings and passenger station are recommended as ineligible for listing in the NRHP and CRHR due to a lack of integrity and are not considered historical resources for the purposes of CEQA.

A segment of the Sacramento Northern Railroad and related features in Sutter County was previously evaluated by Wee et al. in 1994 as ineligible for inclusion in the National Register and the SHPO concurred with this finding in 1995. However, twenty-one miles of the railroad and all related sidings, stations, and features in Solano County were nominated for the NRHP by the Western Railway Museum and formally listed on the NRHP as the Sacramento Northern Railway Historic District in July 2012. For the purposes of this project the railroad grade and recorded surface features are assumed eligible for inclusion in the NRHP. The Pleasant Grove Shelter Station was removed and relocated by 1967 but its original location is within the area of direct impact. The station was a small, unmanned transitory shelter elevated on posts with no amenities (such as a privy). Therefore, there is a low potential for associated buried deposits that could provide data related to understanding early transportation history.

Consultation with interested parties and the NAHC identified no sacred lands within the project area. The field survey, conducted per CEQA and National Historic Preservation Act (NHPA) standards, identified only the previously mentioned segment of the Natomas Cross Canal Levee and Pleasant Grove Creek Canal Levee within the project area. As previously mentioned, the resource was determined eligible for the NRHP and CRHR.

4.5.2 Discussion

a) **Less than Significant With Mitigation Incorporated.** The archaeological field survey was conducted by PAR on June 6, 2017 and again on April 4, 2019 for identifying and recording archaeological resources. The field survey identified two historical archaeological resources that were subsequently recorded by PAR. One is an L-shaped earthen ditch located south of Howsley Road, the ditch was utilized for irrigation purposes and was constructed by unknown individuals. As such, the ditch is recommended as ineligible for listing in the NRHP. It is not unique in its design or construction. It is not a historical resource for the purposes of CEQA. The second is three resources associated with the Northern Electric Railway/Sacramento Northern located north and south of Howsley Road. The resources are comprised of metal rails, three concrete foundations and railcar base, and an earthen berm. A segment of the Sacramento Northern Railroad and related features in Sutter County was previously evaluated by Wee et al. in 1994 as ineligible for inclusion in the National Register and the SHPO concurred with this finding in 1995. Twenty-one miles of the railroad and all related sidings, stations, and features in Solano County were nominated for the NRHP by the Western Railway Museum and formally listed on the NRHP as the Sacramento Northern Railway Historic District in July 2012. For the purposes of this project the railroad grade and recorded surface features are assumed eligible for inclusion in the NRHP. The Pleasant Grove Shelter

Station was removed and relocated by 1967 but its original location is within the ADI. The station was a small, unmanned transitory shelter elevated on posts with no amenities (such as a privy). Therefore, there is a low potential for associated buried deposits that could provide data related to understanding early transportation history.

Additionally, PAR prepared a Historic Property Survey Report (HPSR) for the project, it summarizes the findings of the Archaeological Study Report (ASR) and Historical Resources Evaluation Report (HRER). The purpose of this document is to assist with project compliance for applicable sections of the National Historic Preservation Act (NHPA) and the implementing regulations found in 36 CFR 800 and Section 5024.1 of CEQA. The findings presented in the HPSR show the property at 5481 Pacific Avenue (APN 035-050-024) is exempt from evaluation because it was so altered as to not appear more than 30 years old. The Howsley Road Bridge was previously determined not eligible for inclusion in the NRHP. There were two cultural resources within the APE that were determined not eligible for inclusion in the NRHP or CRHR including the L-shaped earthen berm and rural residence and outbuildings located at 5496 Pacific Avenue. Two resources were present that were previously determined eligible for inclusion in the NRHP and CRHR and those determinations remain valid. The resources are the Natomas Cross Canal Levee/Pleasant Grove Creek Canal and the segment of the Sacramento Northern Railroad and related features including the concrete foundations, rail car base, and earthen berm. The HPSR has determined a finding of No Historic Properties Affected is appropriate because the Natomas Cross Canal Levee/Pleasant Grove Creek Canal will not be affected as only a very small portion of the resource (1.5%) is located within the APE.

As previously mentioned, one resource has been documented within the APE. The ASR and HRER for the proposed project identified: the Natomas Cross Canal Levee/Pleasant Grove Creek Canal Levee as present within the APE. The levee is part of the RD 1000 Rural Historic Landscape District which is eligible for listing in the NRHP and listed in the CRHR. The HPSR for the project determined No Historic Properties will be Affected as only a very small portion of the resource is found within the APE. These findings are based on a records search, consultation with interested parties and a field survey, conducted by a professional archaeologist. Incorporation of **Cultural Resources MM-1** will ensure impacts to archaeological resources would be less than significant.

- b) **Less than Significant With Mitigation Incorporated:** The proposed project would not generate potentially significant impacts to any known cultural resources as stated previously. However, in the event human remains are uncovered during work activities, pursuant to Health and Safety Code (§7050.5), the Coroner must be contacted if human remains are uncovered during construction activities (See item d below). Previously unidentified human remains are subject to regulations set forth at the state and federal levels, including the CA Public Resources Code and the Native American Graves Protection and Repatriation Act (NAGPRA). Incorporation of **Cultural Resources MM-1** will ensure impacts to archaeological resources would be less than significant.
- c) **Less than Significant.** The project footprint has been previously disturbed by the construction of the existing bridge and road structures; and the planned depths of excavation would not exceed the depths that are already disturbed; therefore, no paleontological resources are anticipated to be impacted.
- d) **Less than Significant.** While unlikely, there is the chance that currently unidentified remains could be uncovered during excavation. Per Health and Safety Code §7050.5, all work must cease and the County Coroner must be notified when previously unidentified human remains are discovered. No further disturbances may occur until the Coroner has made findings as to the origins and disposition per Public Resource Code §5097.98. Adherence to the applicable local, state and federal regulations ensures less than significant potential impacts to newly discovered human remains.

4.5.3 Mitigation:

Cultural Resources MM-1

Although no prehistoric sites have been formally recorded or otherwise identified within the project site, the presence of buried cultural resources is always a possibility. Therefore, although unlikely, if unknown resources are discovered during construction and excavation activities, the following Cultural Resources Minimization Measures will be included in all contract documents and construction plans.

- A minimum of seven days prior to ground disturbing activities, the County shall contact the United Auburn Indian Community. The UAIC will be invited to inspect the project site within the first five days of ground breaking activity. During the inspection, a site meeting of construction personnel shall be held in order for the tribal representative to provide tribal cultural resources awareness information.
- Should archaeological resources be encountered at any point during project excavation and construction activities, all activity within 100 feet of the discovery will cease. The County will retain the services of a qualified archaeologist to examine the findings, assess their significance, and offer proposals for any exploratory procedures deemed appropriate to further investigate and/or mitigate any adverse impacts. In the event of inadvertent discovery of prehistoric cultural components when a native monitor is not present, Native American tribes should be contacted.
- A tribal cultural resources awareness brochure and training program for all personnel involved in project implementation will be developed in coordination with interested Native American Tribes. The brochure will be distributed and the training will be conducted in coordination with qualified cultural resources specialists and Native American Representatives and Monitors from culturally affiliated Native American Tribes before any stages of project implementation begin.
- Should human remains be encountered during excavation activities in the project area, the following procedures shall be followed:
 - Per Health and Safety Code §7050.5(b), the Sutter County Coroner's Office will be contacted immediately; all work must cease, no further disturbances may occur until the Coroner has made findings as to the origins and disposition per Public Resources Code §5097.98.
 - If the Coroner determines the remains are Native American, the Office will notify the Native American Heritage Commission (NAHC) within 24 hours.
 - Following receipt of the Coroners notice, the NAHC will contact a Most Likely Descendent (MLD). The MLD will then have 48 hours in which to make recommendations to the County and the consulting archaeologist regarding the treatment and/or re-interment of the human remains and any associated grave items.

4.6 Energy

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				X

4.6.1 Discussion

- a) **Less than Significant.** The proposed project will not result in any potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Construction energy consumption would largely occur from fuel consumption by heavy equipment during bridge construction and subsequent demolition of the existing bridge, transportation of materials to and from the site, and construction worker trips to and from the project site. Energy consumption during construction related activities would vary substantially depending on the level of activities, length of construction period, construction operations, type of equipment used, and number of personnel present. Despite this variability, the overall scope of construction is moderate and would be completed within two construction seasons. Increasingly stringent state and federal regulations regarding engine efficiency combined with state, local, and federal regulations limiting engine idling times and recycling of construction debris, would further reduce the amount of transportation fuel demand during construction.

The proposed project is the installation of a new safer bridge with improved roadway approaches, as such, it will not use any energy resources during operation.

- b) **Less than Significant.** Many of the state and federal regulations regarding energy efficiency focus on increasing building efficiency and renewable energy generation, as well as reducing water consumption and vehicle miles traveled. The proposed project includes conservation measures to meet or exceed the regulatory requirements including limiting idling time of heavy equipment during construction activities. The project will comply with FRAQMD and Caltrans standards regarding engine efficiency and limiting idling time during project construction.

4.6.2 Mitigation: *None Required*

4.7 Geology and Soils

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i.) Rupture of a known earthquake fault, as delineated on the Alquist-Priolo Earthquake Fault Zoning Map for the area or based on other substantial evidence of a known fault?				X
ii.) Strong seismic ground shaking?				X
iii.) Seismic-related ground failure/liquefaction?				X
iv.) Landslides?				X
b) Substantial soil erosion or the loss of topsoil?			X	
c) Located on a geologic unit or soil that is unstable, or would become unstable as a result of the project, and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse?				X
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				X
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?				X

4.7.1 Discussion

- a) **No Impact.** The proposed project will not expose people or structures to substantial adverse effects from strong seismic ground shaking, or liquefaction as the project area is not located in an Alquist-Priolo Earthquake Fault Zone. Additionally, Figure 5.1-1 of the General Plan Technical Background Report does not identify any active faults in Sutter County. The faults identified in Sutter County include the Quaternary Faults located within the Sutter Buttes, and the Pre-Quaternary Fault in the southeastern portion of the County. Therefore, the potential for earthquakes, liquefaction, or landslides are very unlikely.
- b) **Less than Significant.** The project is the replacement of a structurally deficient bridge within Sutter County. Project activities at Bridge 18C0113 include vegetation removal, removal of existing bridge structure, the installation/construction of the new cast-in-place bridge structure, and construction of roadway approaches on both side of the new structure. During construction-related activities, specific erosion control and surface water protection methods would be implemented within the project site. During construction related activities, specific erosion control and surface water protection measures would be implemented such as straw wattles and silt fencing, and the use of erosion control seeding. These control measures are standard in the construction industry and are commonly utilized to minimize soil erosion and water quality degradation. The project will have a less than significant impact on soil erosion.

- c) **No Impact.** No major earthquakes have been recorded within Sutter County (Sutter County General Plan Technical Background Report, 2008). The project will not expose people or structures to potential substantial adverse effects due to rupture or a known earthquake fault, seismic ground shaking, seismic-related ground failure including liquefaction. The project will not result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. The project is within a landslide free zone due to its flat topography.
- d) **Less than Significant.** The soil present within the project site consists primarily of Capay silty clay 0-2 percent slopes, this soil type has moderate shrink swell potential. However, all construction will comply with the California Building Code requirements.
- e) **No Impact.** The project will not utilize septic tanks or an alternative wastewater disposal system on the site. Therefore, the proposed project will not result in an impact due to soils incapable of adequately supporting septic systems.

4.7.2 Mitigation: *None required.*

4.8 Greenhouse Gas Emissions

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Generate greenhouse gas emissions, directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?			X	

4.8.1 Discussion

- a) **Less than Significant.** It is anticipated that bridge replacement activities would generate short-term temporary GHG emissions associated with construction equipment. The BMP's discussed in Section 3, Air Quality, minimize temporary emissions associated with the construction activities. Sutter County developed a Climate Action Plan (CAP) in 2010 to achieve emission reduction goals outlined by Global Warming Solutions Act of 2006 (AB 26). The Greenhouse Gas Pre-Screening Measures for Sutter County developed a two-tiered screening procedure for projects. Under this procedure, bridge and road replacements are pre-screened and do not require quantitative analysis of emissions and are assumed to have a less than significant impact.
- b) **Less than Significant.** Although development of the project will result in temporary construction related GHG emissions, the CAP's pre-screening criteria identifies that bridge and road replacement projects do not require quantitative analysis of emissions and are assumed to have a less than significant impact. As such, the project will not conflict with the County's CAP nor would it conflict with any other identified plans, policies, or regulations adopted for the reduction of greenhouse gas emissions.

4.8.2 Mitigation: *None required.*

4.9 Hazards and Hazardous Materials

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
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?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
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?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X

4.9.1 Discussion

- a) **Less than Significant.** An Initial Site Assessment (ISA) was performed at the bridge on May 12, 2017 by WRECO. The purpose of an ISA is to evaluate whether there is evidence of a recognized environmental condition (REC) that may have impacted or could potentially impact the site in study. The ISA for the bridge included research of site history, review of information provided by Environmental Data Resources, Inc, observed site conditions, and discussions with owners, local officials, or regulatory personnel regarding past site activities and history. Several RECs were

observed within the project area including above ground storage tanks located at an adjacent property, potential for elevated levels of heavy metals in the abandoned railway, potential for elevated levels of lead adjacent to the roadway, lead based paint and asbestos on the bridge structure, Road way striping paint as striping can contain lead, chromium, or both and the striping will be disturbed as part of the project, and asphalt grindings. The ISA determined a Phase II/Preliminary Site Investigation is recommended based on the presence of RECs.

Since the project involves the demolition of the existing bridge over Pleasant Grove Creek Canal and the ISA identified the bridge as potentially containing asbestos, a Phase II evaluation will be completed in accordance with the Asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP) regulations. The project will incorporate standard construction BMPs to protect workers from exposure to hazardous materials during project implementation.

The proposed project would not involve the routine transport, use, or disposal of hazardous materials, and would not result in such impact. Construction activities associated with the project would include refueling and minor onsite maintenance of construction equipment, which could lead to minor fuel or oil spills. The use and handling of hazardous materials during construction activities would occur in accordance with applicable federal, state, and local laws including California Occupational Health and Safety Administration (CalOSHA) requirements.

- b) **Less than Significant.** The proposed project would not result in new land uses when compared to existing conditions. The project would not construct dwellings, occupy structures, or result in land uses that could generate or emit hazardous materials. Project activities are not anticipated to result in a significant hazard to the public or risk of upset and accident conditions resulting from a release of hazardous materials into the environment. The project will comply with FRAQMD rules and regulations for new development which includes prior to demolition of existing structures, an asbestos evaluation must be completed in accordance with the Asbestos National Emission Standard for Hazardous Air Pollutants regulations.
- c) **No Impact.** The proposed project does not involve any emission or handling of any hazardous materials, substances, or waste within one-quarter mile of an existing school. The nearest school is Pleasant Grove Elementary School located approximately 0.90 miles east of the project area along Howsley Road. Therefore, no existing or proposed school facilities are located within a one-quarter mile radius of the project site.
- d) **No Impact.** The project is not included on a list of sites containing hazardous materials and would not result in a significant hazard to the public or to the environment. The project site is not included on the Cortese list compiled pursuant to Government Code Section 65962.5. The nearest sites containing hazardous materials are located approximately 1.2 miles north of the project area and 1.85 miles southeast of the project area.
- e) **Less than Significant.** The proposed project site is not located within two miles of a public airport. The nearest public airport is the Sacramento International Airport located approximately 8.0 miles southwest of the project area. Additionally, the Lincoln Regional Airport is located approximately 10.85 miles northeast of the project area.
- f) **No Impact.** The proposed project site is not located within the vicinity of a private airstrip and the project would not result in permanent structures that expose people to a safety hazard.
- g) **Less than Significant.** The proposed project does not include any actions within the roadways that would physically interfere with any emergency response or emergency evacuation plans. However,

construction activities may temporarily reduce the roadways to one lane during bridge construction potentially increasing emergency response time during the construction period. In the event the road is closed during construction detours will be clearly marked throughout construction activities. The project would not result in an increase in traffic, and thus would not significantly reduce the current level of service of the area road network.

- h) Less than Significant.** The General Plan identifies wildlands and river bottoms within the levee system as areas containing a dense fuel load, and susceptible to wildfires. The proposed project is located in an area used for agricultural and residential purposes and is not in the Sutter Buttes or river bottom wildland areas that can be susceptible to wildland fires. Therefore, the proposed project will not expose people or structures to a significant risk of loss, injury, or death involving wildfires. (County of Sutter, 2030 General Plan. 2014 PS 3.2 Community Services Department)

Mitigation: *None required.*

4.10 Hydrology and Water Quality

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Violate any water quality standards or waste discharge requirements?			X	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?				X
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			X	
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X	
f) Otherwise degrade water quality?				X
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
j) Inundation by seiche, tsunami, or mudflow?				X

4.10.1 Discussion

- a) **Less Than Significant.** As identified in Section 4.4 of this document (Biological Resources), the project will obtain all appropriate regulatory permits including certification from a RWQCB per

Section 401 Water Quality Certification of the Clean Water Act prior to construction activities. The project would be required to implement all applicable erosion control BMPs as a condition of RWQCB approval, which may include the installation of straw wattles, and silt fencing, etc. to prevent silt/sediment from entering the water, and re-seeding of disturbed upland areas post construction. Additionally, the project may be subject to the National Pollution Discharge Elimination System General Construction Activities Storm Water permit program, if one acre of land or more is disturbed. This program requires implementation of erosion control measures during and immediately after construction that are designed to avoid significant erosion during the construction period. Project operations that are under a NPDES permit would also be subject to State Water Resources Control Board requirements for the preparation of a Storm Water Pollution Prevention Plan (SWPPP) to control pollution in stormwater runoff from the project site. The project will have to file a Notice of Intent with the Regional Water Quality Control Board to comply with the terms of General Order R5-2013-0074 for Dewatering and Other Low Threat Discharges to Surface Waters for construction dewatering activities described in the project description. A Notice of Applicability would be received by the project notifying that the discharge is authorized under the terms and conditions of the General Order. As described in the Biological Resources Section of this document (Section 4.4), the project will be required to adhere to the requirements of Section 404 and Section 401 of the Clean Water Act, and Section 1600 of the CA Fish and Game Code, the Notice of Applicability, as well as the air quality standard mitigation measures for fugitive dust control outlined in Section 4.3, **Air Quality MM-1**. A Section 401 permit is contingent on sufficient evidence that a project would not pose a threat to water quality or quantity leaving the proposed project's site. No additional mitigation measures are necessary.

- b) **No Impact.** The proposed project involves the replacement of an existing bridge and does not propose activities requiring permanent increases in groundwater use. No new extraction wells or buildings with the potential to increase water usage are proposed.
- c) **Less Than Significant.** Project activities include the replacement of an existing bridge and bridge approach work. The overall direction of drainage on the site will not change. The implementation of standard erosion control measures and BMPs during construction activities will minimize soil erosion and siltation. Additionally, the proposed project will not alter the existing drainage pattern of the site, including through the alteration of the course of the Pleasant Grove Creek Canal in a manner that will result in substantial erosion or siltation on- or off-site
- d) **Less than Significant.** Wreco prepared a Hydraulic Study Report (HSR) for the project which analyzed potential changes in hydrological conditions based on project activities at the bridge. The HSR utilized the Hydraulic Engineering Center River Analysis System (HEC-RAS) to estimate the hydraulic conveyance capacity under project conditions. The HSR for the bridge is available from the Sutter County Development Services Engineering Division located at 1130 Civic Center Boulevard #G, Yuba City, CA 95993.

The HSR concluded the addition of the new structure is estimated to yield minor differences in water surface elevation compared to the existing condition and will not alter the existing drainage pattern of the site, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. Additionally, the bridge is designed to have adequate freeboard under a variety of storm event conditions including 50-year, 100-year, and 200-year events.

- e)-j) **Less than Significant.** The proposed project would not result in significant increases in the surface area of impervious materials or redirect flood flows. The proposed project is located within Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel 0603940810F,

effective 6-16-2015. The project area is located in Zone A99 and Zone AE, near the proximity of Zone A. These areas are potentially subject to flooding during the 100-year storm. Additionally, the Pleasant Grove Creek Canal is a regulated floodway designated as Zone AE. However, the project does not involve the construction of dwelling units and will not place housing within the flood hazard area. Furthermore, the project would not expose people or structures to significant loss, injury, or death involving flooding, including levee or dam failure. The project has been designed to pass flood flows and the bridge will maintain the necessary freeboard during storm events. There are no anticipated impacts to the proposed project from seiche, tsunami, or mudflow, as no topographical features of water bodies capable of producing such events exist within the project site vicinity.

4.10.2 Mitigation: *None Required*

4.11 Land Use and Planning

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X

4.11.1 Discussion

- a), b) **No impact.** The project is the replacement of an existing bridge structure and will not physically divide an established community. The proposed project would not conflict with an applicable land use plan, policy, or regulation of any agencies with jurisdiction adopted for the purpose of avoiding or mitigating an environmental effect.
- c) **No Impact.** The project will not have a substantial conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. The project site is located within the boundaries of the proposed Yuba-Sutter Regional Conservation Plan (YSRCP). The YSRCP has not been completed or adopted at this time; therefore, no impact is anticipated.

4.11.2 Mitigation: *None required.*

4.12 Mineral Resources

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
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?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site on a local general plan, specific plan or other land use plan?				X

4.12.1 Discussion

a), b) No Impact. The California Geological Survey's (Department of Conservation) map "Fifty-Year Aggregate Demand Compared to Permitted Aggregate Resources" (2012) does not identify extraction facilities near the project site. The General Plan and State of California Division of Mines and Geology Special Publication 132 do not list the site as having any substantial mineral deposits of a significant or substantial nature. Relative to mineral resources, there would be no impact

4.12.2 Mitigation: *None required*

4.13 Noise

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			X	
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

4.13.1 Discussion

- a)-d) **Less Than Significant.** The project is consistent with the Sutter County General Plan, Noise Element (Sutter County 2011). The nearest residence (sensitive receptor) is located approximately 280 feet northeast of the existing bridge and 140 feet north of Howsley Road. There are homes within 1000 feet of the project work limits. The Sutter County General Plan Policy N1.6 states that construction noise within 1,000 feet of noise-sensitive uses (i.e., residential uses, daycares, schools, convalescent homes, and medical care facilities) is limited to daytime hours between 7:00 am and 6:00 pm on weekdays, 8:00 am and 5:00 pm on Saturdays, and is prohibited on Sundays and holidays unless permission for the latter has been applied for and granted by the County. No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with applicable local noise standards discussed above. Increases in noise is limited to temporary, intermittent construction noise in the immediate project area. The proposed project would not alter land use or traffic, and thus would not increase the ambient noise within the area. Construction activities are limited to the hours allowed by the County General Plan. No permanent increase in ambient noise will take place due to the project. Noise impacts will take place during the construction period and they will be temporary and limited to daytime hours as stated above. No mitigation measures are necessary.
- e) **Less than Significant:** The proposed project is not located within an airport land use plan area and is located approximately 8.0 miles from the Sacramento International Airport. The proposed project will not expose people residing or working in the project area to excessive noise levels. A less than significant impact is anticipated.
- f) **No Impact:** The proposed project is not located within two miles of a private airstrip and people residing or working in the project area will not be exposed to excessive noise levels generated by private airstrips.

4.13.2 Mitigation: *None Required*

4.14 Population and Housing

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

4.14.1 Discussion

- a)-c) **No Impact:** The proposed project is a bridge replacement project located in a rural portion of Sutter County. The proposed project will not induce substantial population growth in the area, directly or indirectly, or displace a substantial number of people or existing housing. The project will not

displace people or housing nor necessitate the construction of replacement housing elsewhere. Therefore, the project will not impact population or housing.

4.14.2 Mitigation: *None required*

4.15 Public Services

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:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Fire protection?				X
b) Police protection?				X
c) Schools?				X
d) Parks?				X
e) Other public facilities?				X

4.15.1 Discussion

a)-e) No Impact. The proposed project would not construct buildings, businesses or other facilities that would result in an increased population in the area. Temporary delays to traffic may occur during construction activities. However, as required by state and local regulations, emergency vehicles will be given the right-of-way in the event of their presence at the project site. There would be no long-term demands on public services such as fire protection, police protection, schools, or parks generated by this project. No changes in fire protection or police protection are proposed as part of this project. Therefore, the proposed project is not anticipated to impact public services.

4.15.2 Mitigation: *None required*

4.16 Recreation

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	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?				X
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?				X

4.16.1 Discussion

a), b) No Impact. The proposed project will not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility will occur or be accelerated nor will the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. This proposed project will not result in residential development. There are no existing neighborhoods or regional parks in the vicinity of the project site and the project does not proposed recreational facilities or require the expansion of existing recreational facilities; therefore, no impacts are anticipated.

4.16.2 Mitigation: *None required*

4.17 Traffic and Transportation

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				X
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?				X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?			X	
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				X

4.17.1 Discussion

- a) **No Impact.** The proposed project is a bridge replacement project and will not conflict with an applicable plan, ordinance or policy regarding the effectiveness of the performance of the circulation system. The proposed project would not generate additional traffic, as it would not construct facilities that would generate additional vehicular traffic such as a retail center or residential subdivision.
- b) **No Impact.** The project is not expected to result in additional vehicular trips, or to impact levels of service and trip distributions within the project area. The proposed project will not conflict with an applicable congestion management program and will not affect travel demand measures. Roadway safety conditions are expected to improve upon project completion, as the project will widen the bridge and provide safer, wider transitions to the bridge structure. Additionally, the proposed project includes improvements to intersection geometry near the bridge. The proposed project would generate less than significant impacts to traffic and transportation.

- c) **No Impact.** The proposed project will not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that will result in substantial safety risks. The project site is not located in the vicinity of a public airport which is approximately 8.0 miles southwest of the project area. This project will not obstruct air traffic patterns. As a result, no impact is anticipated.
- d) **No Impact.** The proposed project would replace a functionally obsolete, narrow bridge, and make roadway-widening improvements in order to increase conveyance and safety for residents and farm equipment on Howsley Road within the existing public right-of-way. The proposed project will not increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment). No impacts are anticipated.
- e) **Less than Significant.** During the construction phase, emergency vehicles could experience delays. However, emergency vehicle access to, and passage through, the project site would be ensured through adherence to applicable roadway and/or lane closures and detour standards (Code of Ordinances, Ch. 950 950-010). Howsley Road will maintain through traffic during construction, except for limited duration disruptions for grading and paving to reconnect the roadway. The construction period disruptions will affect local traffic temporarily with single lane closures managed during daylight hours and no disruptions during nighttime hours. Pacific Avenue will maintain through traffic during construction, except for a limited duration disruption for embankment build-up, grading, and paving to reconstruct the intersection. The construction period disruptions will affect local traffic temporarily with a full closure managed by barricades, detour signage and advanced public notification. Natomas Road will be closed at the intersections of Howsley Road and Fifield Road through the duration of construction. The construction period disruption will affect local traffic and will be managed by barricades, detour signage, and advance public notification. Detours for travelers traveling north on Natomas Road would be routed east on Fifield Road to Pleasant Grove Road. From Pleasant Grove Road, access to SR99/SR70 is provided to the north via Howsley Road or Catlett Road (north of Howsley Road) via East Striplin Frontage Road. South of Fifield Road, both Natomas Road and Pleasant Grove Road provide access to SR99/SR70 via West Riego/Baseline Road. The project will be required to adhere to pertinent local and state construction site regulations. Thus, temporary traffic control activities during the construction phase of the proposed project would not prevent emergency vehicle movement throughout the area. The proposed improvements, which would bring the existing facilities in the project site up to current design standards, would provide safer passage for emergency vehicles. Therefore, relative to emergency access, impacts would be less than significant
- f) **No Impact.** The proposed project will not conflict with an applicable plan, ordinance or policy regarding public transit, bicycle or pedestrian facilities because the project site is located in a rural area that does not have any provisions for alternative transportation. No impact is anticipated.

4.17.2 Mitigation: None required

4.18 Tribal Cultural Resources

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
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:			X	
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			X	
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			X	

4.18.1 Discussion

- a) **Less than Significant.** As part of the ASR prepared for the project by PAR, a sacred lands file request with the NAHC and Native American Consultation with the identified tribes was conducted. Consultation letters were sent to five tribes on June 8, 2017 with follow up emails and phone calls. A site visit was held on July 18, 2017 with representatives from PAR, NorthStar, TY Lin International and the United Auburn Indian Community (UAIC) present to discuss the project, impacts to cultural resources, and potential mitigation strategies. As the APE changed slightly in 2019, updated consultation letters were sent on April 24, 2019 with follow up calls on May 1, 2019. On May 22, 2019 Ms. Cherilyn Neider, Administrative Assistant with the UAIC sent an email stating no tribal cultural resources were identified on-site but there was a chance for subsurface tribal cultural remains. In her email, Ms. Neider attached three recommended mitigation measures which have been incorporated under Cultural Resources MM-1. A similar email was received from Ms. Melodi McAdams, the Cultural Resources Supervisor for UAIC, additionally, a letter from tribal Chairman Mr. Gene Whitehouse was received on June 5, 2019 and repeated what Ms. Neider and Ms. McAdams had included in their emails. No other cultural resources were identified within the project site or immediate vicinity.

4.18.2 Mitigation: *None Required*

4.19 Utilities and Service Systems

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Exceed wastewater treatment requirements of the applicable Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Result in a determination by the wastewater treatment provider which serves/may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X

4.19.1 Discussion

a)-e) No Impact. This project proposes replacing an existing bridge over the Pleasant Grove Creek Canal, with a new wider bridge of similar size. The new bridge will not significantly increase the amount of impervious surfaces in the area, and will not increase the surface runoff of the area. The project will not require additional water supplies or entitlements. The project will not result in exceeding wastewater treatment requirements for the applicable RWQCB or result in the need for new wastewater treatment facilities because the project is not a use that generates wastewater. The project does involve the relocation of electrical and cable utilities located on the south side of Howsley Road to accommodate the new bridge and roadway alignment. This relocation will not affect electrical or cable distribution within the area.

f), g) No Impact. The proposed project would not generate impacts relative to landfill capacity, wastewater treatment or solid waste generation. Therefore, there would be no impact.

4.19.2 Mitigation: *None required*

4.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
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?				X
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?				X
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?				X

4.20.1 Setting

Portions of the project site are designated as a moderate fire hazard by the State Department of Forestry and Fire Protection. The project site is also within a designated Local Responsibility Area (LRA), which means the local jurisdiction has fiscal responsibility for preventing and suppressing wildfires.

4.20.2 Discussion

- a) **No Impact.** The project will not impair an adopted emergency response plan or evacuation plan. The existing bridge will be open to traffic during the project and would not constrict access for emergency vehicles.
- b) **No Impact.** The project site is located in the Central Valley and as such the topography of the site is flat to gently sloping and will not expose project occupants to pollution concentrations from a wildfire. Additionally, the project is in an area surrounded by rice agriculture that typically holds water. The habitat within the Pleasant Grove Creek Canal is riparian with grass along the banks of the canal, wildfires in the area are extinguished quickly and contained to a relatively small area due to the conditions of the area. No conditions or factors have been identified in the project area that would exacerbate wildfire risks.
- c) **Less Than Significant.** The proposed project involves improvements to Howsley Road and upgrades to a driveway. Proposed road construction would be regulated by public resources code 4290 and 4291, which establish standards for access, signage, maintenance of defensible space and vegetation management during and after roadway improvements. Due to the existing conditions of the site, improvements would act as a firebreak during fires, which would further

assist in containing wildland fires. Therefore, roadway construction would not exacerbate a fire risk.

- d) **No Impact.** The proposed project is located within the Central Valley that contains slopes between 0 and 2 percent. The project area does not exhibit landslide potential nor does it exhibit flood potential due to the existing levees as well as bridge design being able to pass any potential high flow events within the canal. Therefore, no impacts from post fire instability or drainage changes have been identified.

4.20.3 Mitigation: *None Required*

5 Mandatory Findings of Significance

Mandatory Findings of Significance	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
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)?			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				X

5.1.1 Discussion

- a) **Less Than Significant with Mitigation Incorporated.** With the implementation of the mitigation measures included in this Initial Study, **Air Quality MM-1, Biological Resources MM-1 through MM-3 and Cultural Resources MM-1**, the proposed project would not degrade the environment; result in an adverse impact on fish, wildlife, or plant species including special status species, or prehistoric or historic resources.
- b) **No Impact.** The project is the replacement of a functionally obsolete bridge which spans the Pleasant Grove Creek Canal on Howsley Road with a wider bridge for safety. The project does not involve the addition of new expanded structures, facilities, or growth inducing effects, which would be considered cumulatively considerable with regards to past or future projects. A future levee project performed by the U.S. Army Corps of Engineers is planned to occur along the Pleasant Grove Creek Canal Levee in the future. Impacts from that project will be avoided and mitigated separately from those discussed in this document.
- c) **No Impact.** Based on the preceding environmental analysis and adherence to applicable local, state and federal regulations, as noted in this document, the proposed project would not result in potentially significant cumulative, direct or indirect adverse effects on human beings.

6 Preparers and References

6.1 Report Preparation and Review

Kamie Loeser, Principal Planner, NorthStar, Preparer

Matt Rogers, Associate Environmental Planner/ Biologist, NorthStar, Preparer

Jodi Ketelsen, Senior Associate Environmental Services Manager, T.Y. Lin, Reviewer

Neal Hay, P.E., Director of Development Services, Sutter County Development Services

Doug Libby, AICP, Principal Planner, Sutter County Development Services

6.2 References

Baldwin, B.G., D.H Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. *The Jepson Manual: Vascular Plants of California, Second Edition*. University of California Press, Berkeley, CA.

California Department of Conservation. *Fault Activity Map of California Map*. Accessed June 2017.
Available at: maps.conservation.ca.gov/cgs/fam/

California Department of Conservation. *California Important Farmland Finder*. Accessed June 2017.
Available at: maps.conservation.ca.gov/ciff/ciff.html

California Department of Conservation. 2012. *Fifty-Year Aggregate Demand Compared to Permitted Aggregate Reserves*. Available at
www.conservation.ca.gov/cgs/information/publications/ms/Documents/MS_52_2012.pdf

California Department of Toxic Substance Control. 2009. *Envirostor Database*. Accessed June 2017.
Available at: <http://www.envirostor.dtsc.ca.gov/public>

Federal Emergency Management Agency. 2016. *FEMA Flood Map Service Center*. Accessed April 2017.
Map 0603940080B. Available at: <https://msc.fema.gov/portal>

NorthStar. 2019. Natural Environment Study

NorthStar. 2019. Biological Assessment

PAR Environmental Services, Inc. 2019. *Archaeological Survey Report (HPSR/ASR)*

Sutter County. 2008. *General Plan Technical Background Report*

Sutter County. 2010. *General Plan 2030 Draft Environmental Impact Report*

Sutter County. 2017. *Zoning Code*

Sutter County. 2010. *Climate Action Plan*

Western Regional Climate Center. 2019. *Marysville, California, Period of Record General Climate Summary-Temperature and Precipitation, Station (0445385) MARYSVILLE, From Year=1897 to Year=2007*.

Wreco. 2019. *Bridge Design Hydraulic Study Report. Howsley Road over Pleasant Grove Creek Canal Bridge Replacement Project; Sutter County, CA*.

Wreco. 2017. *Initial Site Assessment, Howsley Road Bridge Replacment Project, Sutter County, CA*.

U.S. Department of Agriculture. 2017. *Web Soil Survey*. Available online at:
websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

7 Acronyms and Abbreviations

Agencies, Boards, Commissions, Districts:

CAAQS.....	California Ambient Air Quality Standards
Caltrans.....	California Department of Transportation
CARB.....	California Air Resources Board
CDFW.....	California Department of Fish and Wildlife
CDWR.....	California Department of Water Resources
DTSC.....	(California) Department of Toxic Substances Control
EPA.....	Environmental Protection Agency
FEMA.....	Federal Emergency Management Agency
FRAQMD.....	Feather River Air Quality Management District
NAHC.....	Native American Heritage Commission
NSVAB.....	Northern Sacramento Valley Air Board
RWQCB.....	Regional Water Quality Control Board
USACE.....	United States Army Corps of Engineers
USFWS.....	United States Fish and Wildlife Service
USGS.....	United States Geological Survey

Guidelines, Policies, Programs, Regulations:

CD.....	Consistency Determination
CEQA.....	California Environmental Quality Act
CESA.....	California Endangered Species Act
CRHR.....	California Register of Historic Resources
CWA.....	Clean Water Act
ESA.....	Endangered Species Act
FGC.....	Fish and Game Code
MBTA.....	Migratory Bird Treaty Act
NESHAP.....	National Emission Standards for Hazardous Air Pollutants
NHPA.....	National Historic Preservation Act
NPDES.....	National Pollution Discharge Elimination System
NRHP.....	National Registry of Historic Places
SIP.....	State Implementation Plan

Miscellaneous:

APE.....	Area of Potential Effect
ASR.....	Archaeological Survey Report
BA.....	Biological Assessment
BMPs.....	Best Management Practices
BSAs.....	Biological Study Areas
CNDDB.....	California Natural Diversity Database
CNEL.....	Community Noise Equivalent Level
CNPS.....	California Native Plant Society
CO.....	Carbon Monoxide
County.....	Sutter County
ESAs.....	Environmentally Sensitive Areas
FIRM.....	Flood Insurance Rate Map
GGS.....	Giant Garter Snake
GHG.....	Green House Gases

ISA.....	Initial Site Assessment
MLD.....	Most Likely Descendant
NEIC.....	Northeast Information Center
NES.....	Natural Environmental Study
NOx.....	Nitrogen oxides
PAR.....	PAR Environmental Services, Inc.
PGCC.....	Pleasant Grove Creek Canal
PM ₁₀ / 2.5.....	Particulate Matter less than 10 / 2.5 Microns
REC.....	Recognized Environmental Condition
ROG.....	Reactive Organic Gases
RPW.....	Relatively Permanent Waters
RSP.....	Rock Slope Protection

8 Mitigation Monitoring and Reporting Program

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Agency & Initials	Date	Notes
AIR QUALITY						
Air Quality MM-1		Fugitive Dust Control Plan - Prior to initiation of construction.	Sutter County – Public Works			
To comply with the Feather River Air Quality Management District’s (FRAQMD) rules (3.0 and 3.16, visible and fugitive dust emissions), the County shall comply with all Best Available Mitigation Measures (BAMMs) for the control of construction related particulate emissions. The contractor shall submit a Fugitive Dust Control Plan to the County for approval. The approved plan shall include all applicable BAMMs as specified by FRAQMD Standard Construction Phase Mitigation Measures, including but not limited to the following:						
<ul style="list-style-type: none">• Haul trucks must 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.• Construction equipment exhaust emissions shall not exceed FRAQMD Regulation III, Rule 3.0, Visible Emissions limitations (40 percent opacity or Ringelmann 2.0). Operators of vehicles and equipment found to exceed opacity limits shall act to repair the equipment within 72 hours or remove the equipment from service.• The area disturbed by demolition, clearing, grading, earth moving, or excavation operations shall be minimized at all times.• Suspend grading or earth moving activities when wind speeds exceed 20 mph• Minimize unnecessary idling time to 5 minutes.• Water shall be applied as needed to prevent fugitive dust impacts offsite.• All onsite vehicles should be limited to a speed of 15mph on unpaved roads.						

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Agency & Initials	Date	Notes
BIOLOGICAL RESOURCES						
Biological Resources MM-1 Obtain Regulatory Permits and Implement Avoidance and Minimization Measures		Obtain Permits - Prior to initiation of construction.	Sutter County – Public Works			
<ul style="list-style-type: none">The project will obtain the following permits, as necessary and applicable:<ul style="list-style-type: none">CWA Section 404 permit #14 Linear Transportation from the USACECWA Section 401 Water Quality Certification from the RWQCBUSFWS Section 7 ESA Informal ConsultationF.G.C. Section 1602 Streambed Alteration Agreement from CDFWF.G.C. Section 2080.1 Notification and Consistency Determination from CDFWGiven the marginal GGS habitat located within the project boundaries, the purchase of compensatory mitigation may not be required by USFWS and/or CDFW. However, if the purchase of mitigation credits is deemed applicable and necessary by USFWS and/or CDFW during the ESA Section 7 consultation process and/or Fish and Game Code Section 2080.1 consistency determination process, the County shall purchase compensatory mitigation for permanent loss of suitable aquatic and upland habitat for GGS. Mitigation credits would be purchased at the ratio identified by USFWS and/or CDFW. If mitigation credits for permanent impacts to GGS habitat are required, then the following ratios are proposed: a 1:1 ratio if construction activities are initiated in the active season and 2:1 ratio if construction activities initiated in the inactive season. If applicable, the purchase of credits will take place through a purchase and sale agreement from a USFWS and CDFW approved mitigation bank prior to the initiation of any construction activities.The project will incorporate the avoidance and minimization measures (AMMs), standard BMPs and other notification requirements		Purchase Compensatory Mitigation (if applicable) – Prior to initiation of construction.				
		AMMs – Include in specifications and contract documents.				

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Agency & Initials	Date	Notes
	identified in applicable permits into project plans and specifications and/or contract documents. Incorporation of these requirements will protect sensitive natural resources and water quality from project impacts and ensure that the project will not jeopardize the continued existence of GGS species or result in the destruction of critical habitat. Applicable AMMs have been identified in the Natural Resources Study (NES) and Biological Assessment (BA) prepared for the project.					
	Biological Resources MM-2 Northwestern Pond Turtle Avoidance and Minimization Measures <ul style="list-style-type: none"> No later than 48 hours prior to any ground disturbance, pre-construction surveys will be conducted by a qualified biologist within the project limits. If a pond turtle is observed in the project limits during construction, all work will be stopped, and the turtle will: 1) be allowed to leave on its own volition, or 2) be moved by the project biologist in the direction it was heading (upstream or downstream), at a safe distance from the construction activities, and at a safe location. The biologist will report observations and relocations to the County. 	Prior to initiation of construction.	Sutter County – Public Works			
	Biological Resources MM-3 Swainson’s Hawk, Modesto Population of Song Sparrow, and Migratory Birds Avoidance and Minimization Measures <ul style="list-style-type: none"> If species covered under the Migratory Bird Treaty Act and Fish and Game Code sections 3503, 3503.5, and 3513 are determined to be present within the project vicinity, construction activity including clearing of vegetation, generation of mechanical noise, or ground disturbance should be conducted outside of the breeding season (February 1 to August 31), if feasible. If Project activities must be conducted during the nesting bird season, then the following shall be conducted: <ul style="list-style-type: none"> Swainson’s Hawk and Raptors: If work must occur during bird breeding season, to ensure that no indirect impacts to active nests occur due to any future construction activities, a qualified biologist will conduct a pre-construction survey for Swainson’s 	Prior to initiation of construction.	Sutter County – Public Works			

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Agency & Initials	Date	Notes
	<p>hawk and raptor nests. The area to be surveyed will include a 0.5 mile-radius including and surrounding the biological survey area. If active nests are found, the County will be notified. No construction will occur until appropriate buffers are established, based upon recommendations by the qualified biologist. The pre-construction survey will be conducted no less than 14 days and no more than 30 days prior to the commencement of construction.</p> <ul style="list-style-type: none"> ○ Migratory Birds: A qualified biologist will conduct pre-construction surveys for nesting birds within 250' foot distance of the project area. If active nests are found, the County will be notified and the qualified biologist will establish buffers around nests that are sufficient in size to ensure that breeding is not likely to be disrupted or adversely impacted by construction. Factors to be considered for determining buffer size will include: the presence of natural buffers provided by vegetation or topography; nest height; locations of foraging territory; and baseline levels of noise and human activity. Buffers will be maintained until young have fledged or the nests become inactive. Pre-construction nesting bird surveys will be conducted no more than 48 hours prior to the commencement of construction. ○ Cliff Swallow: If construction of the proposed bridge occurs during the cliff swallow's breeding season (April through July), the underside of the existing bridge shall be covered with ½ to ¾ inch mesh netting before March 1 to prevent nesting in the construction area. The netting shall remain in place until demolition of the structure and must be anchored such that the swallows cannot construct their nests in the bridge. It is recommended that once such netting is put in place, a monitor visit the site weekly to check for signs that swallows are trying to nest under the bridge. If swallows enter the netted area and begin nest building, the net's integrity shall be repaired. If a swallow successfully completes a nest and lays eggs within the netted area of the existing bridge, a biological monitor shall be present to monitor the nest to ensure that construction activities do not disturb nesting activities. In the event that 					

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Agency & Initials	Date	Notes
	<p>construction/demolition activities may result in the abandonment of hatchlings, the biologist will be able to stop work and 1) establish appropriate avoidance buffers, 2) suggest changes in construction activities that will minimize impacts to the nest/hatchlings, and 3) identify other appropriate measures to reduce the potential for abandonment. Construction activities shall not encroach on upon the identified buffer until the nestlings have fledged or the nest fails as determined by a qualified biologist. If swallows begin colonizing on the newly constructed bridge or the existing bridge before March 1, all nest precursors (mud placed by swallows for the construction of nests) shall be knocked or washed down at least once daily until construction of the new bridge is complete or the swallows cease trying to construct nests, whichever is first.</p> <ul style="list-style-type: none"> ○ Active nests shall be monitored at reasonable intervals, as determined by the qualified biologist. The status of nesting activities shall be included in monthly reports to the County and/or regulatory agencies, as appropriate. If a protected species is discovered during construction within the Action Area, the County will notify USFWS and/or CDFW as appropriate, and the qualified biologist will have the authority to stop all construction work on the site until the appropriate corrective measures have been conducted, and it is determined that the species will not be harmed. ○ Exclusionary devices shall be installed on the bridge prior to the initiation of nesting season (February 1). Exclusionary devices shall cover the bottom and sides (if necessary) of the bridge (wherever mud nesting birds may find purchase). Passage underneath the bridge (through the channel) shall not be impeded. Exclusionary materials shall be installed within seven days of surveying the bridge for bridge dwelling wildlife, shall not pose an entanglement risk to wildlife, and shall be regularly maintained to ensure these parameters are being met. Exclusionary materials shall not be installed if nesting bird activity is detected. 					

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Agency & Initials	Date	Notes
CULTURAL RESOURCES						
Cultural Resources MM-1		Prior to construction and during construction, if resources are discovered.	Sutter County – Public Works			
Although no prehistoric sites have been formally recorded or otherwise identified within the project site, the presence of buried cultural resources is always a possibility. Therefore, although unlikely, if unknown resources are discovered during construction and excavation activities, the following Cultural Resources Minimization Measures will be included in all contract documents and construction plans.						
<ul style="list-style-type: none">A minimum of seven days prior to ground disturbing activities, the County shall contact the United Auburn Indian Community. The UAIC will be invited to inspect the project site within the first five days of ground breaking activity. During the inspection, a site meeting of construction personnel shall be held in order for the tribal representative to provide tribal cultural resources awareness information.Should archaeological resources be encountered at any point during project excavation and construction activities, all activity around the discovery will cease. The County will retain the services of a qualified archaeologist to examine the findings, assess their significance, and offer proposals for any exploratory procedures deemed appropriate to further investigate and/or mitigate any adverse impacts. In the event of inadvertent discovery of prehistoric cultural components when a native monitor is not present, Native American tribes should be contacted.A tribal cultural resources awareness brochure and training program for all personnel involved in project implementation will be developed in coordination with interested Native American Tribes. The brochure will be distributed and the training will be conducted in coordination with qualified cultural resources specialists and Native American Representatives and Monitors from culturally affiliated Native American Tribes before any stages of project implementation begin.Should human remains be encountered during excavation activities in						

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Agency & Initials	Date	Notes
	<p>the project area, the following procedures shall be followed:</p> <ul style="list-style-type: none"> ○ Per Health and Safety Code §7050.5(b), the Sutter County Coroner's Office will be contacted immediately; all work must cease, no further disturbances may occur until the Coroner has made findings as to the origins and disposition per Public Resources Code §5097.98. ○ If the Coroner determines the remains are Native American, the Office will notify the Native American Heritage Commission (NAHC) within 24 hours. ○ Following receipt of the Coroners notice, the NAHC will contact a Most Likely Descendent (MLD). The MLD will then have 48 hours in which to make recommendations to the County and the consulting archaeologist regarding the treatment and/or re-interment of the human remains and any associated grave items. 					

Appendix A

Natural Environment Study

Howsley Road Bridge Replacement Project



Natural Environment Study

Sutter County, California

Township 11 North, Sections 3,4,9,10, Range 4 East

Verona 7.5' USGS Quadrangle

Federal Project No. BRLO-5918(101)

December 2019



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Natural Environment Study

Howsley Road Bridge Replacement Project

Federal Project No. BRLO-5918(101)

Sutter County, California

STATE OF CALIFORNIA
Department of Transportation

Prepared By:

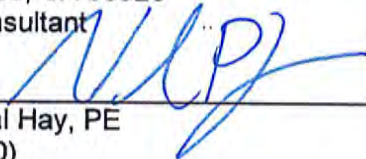


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Executive Summary

The proposed Howsley Road Bridge Replacement project is located within Sections 3, 4, 9, and 10, Township 11 North, Range 4E of the Verona United States Geological Survey (USGS) 7.5-minute quadrangle. More specifically located along Howsley Road, approximately 0.9 miles east of State Route 99 (SR 99) (Location Map-**Appendix A**).

Sutter County, Development Services Department, Engineering Division (County) is seeking to replace the bridge at Howsley Road over Pleasant Grove Creek Canal, Bridge No. 18C0113. The bridge replacement project is eligible for funding through the California local set-aside from the federal MAP-21 program (replacing the Highway Bridge Program (HBP) funds).

The current structure was built in 1935 and widened in 1965. The existing bridge consists of two travel lanes and is approximately 25 feet wide and approximately 230 feet long with 11 spans. The bridge is comprised of precast inverted channel girders with an asphalt concrete deck supported by reinforced 4-column rigid frame bents with battered exterior columns set on a common reinforced concrete footing. The abutments are reinforced concrete wall-type with strip bearings between the top of the wall and the superstructure end diaphragm with continuous flared wingwalls. The foundation types are unknown but assumed to be pile supported. The bridge approach embankments extend into the levee by approximately 50 feet on the west and approximately 170 feet on the east. Near the abutments, the embankments are protected by rock slope protection on both the upstream and downstream sides of the structure.

This Natural Environment Study presents the results of biological resource surveys of the project areas. All biological resources were evaluated, including special-status plant and wildlife species, and habitat for roosting bats. The potential for jurisdictional wetlands and waters of the U.S. and State are the subject of a jurisdictional wetland delineation forthcoming.

No special-status plants were observed within the BSA during botanical surveys conducted on April 8, and July 25, 2016. None were expected to occur due to the high degree of disturbance associated with agricultural practices in or adjacent to the ESL.

Several special-status wildlife species were determined to have at least a moderate potential to occur within the ESL including the federally threatened giant garter snake (*Thamnophis gigas*, GGS), western pond turtle (*Actinemys marmorata*) which was observed within the ESL, Swainson's hawk (*Buteo swainsoni*), Modesto population of song sparrow (*Melospiza melodia*), and migratory birds and raptors protected by the Migratory Bird Treaty Act. Numerous cliff swallows (*Petrochelidon pyrrhonota*) and several barn swallows (*Hirundo rustica*) were observed nesting beneath the existing bridge.

The project will require with the following permits:

- Section 404 Nationwide Permit 14 Linear Transportation and 33 from the U.S. Army Corps of Engineers (USACE).
- Section 401 permit is necessary when a project requires a 404 permit from the USACE and under other special circumstances. Section 401 Water Quality Certification from the Central Valley Regional Water Quality Control Board.
- Section 408 Permit from USACE is necessary when a project builds upon, alters, improves, moves, occupies, or otherwise affects the usefulness, or the structural or ecological integrity of a USACE project.
- 1602 Streambed Alteration Agreement from CDFW
- Incidental Take Permit for Giant Garter Snake.
- Central Valley Flood Protection Board Encroachment Permit

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List of Abbreviated Terms

AMM	avoidance and minimization measure
APE	Area of Potential Effect
BMP	best management practice
BPMP	Bridge Preventative Maintenance Program
BSA	biological study area
Caltrans	California Department of Transportation
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	Sutter County
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships System
DPS	Distinct Population Segment
EFH	essential fish habitat
ESA	environmentally sensitive area
ESL	Environmental Study Limits
°F	degrees Fahrenheit
FESA	Federal Endangered Species Act
F.G.C.	Fish and Game Code
GGS	Giant Garter Snake
ITP	Incidental Take Permit
MBTA	Migratory Bird Treaty Act
MSL	mean sea level
NCCP	Natural Community Conservation Planning
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NOAA	National Oceanic and Atmospheric Administration
project	Howsley Road Bridge Replacement Project
RSP	rock slope protection
RWQCB	Regional Water Quality Control Board
SBA	Streambed Alteration Agreement
SSC	Species of Special Concern

USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VegCAMP	Vegetation Classification and Mapping Program

Chapter 1 Introduction

The proposed project will replace the existing bridge, Bridge No. 18C-0113, where Howsley Road crosses the Pleasant Grove Creek Canal.

The purpose of the Natural Environment Study (NES) is to provide technical information and to determine the extent to which the project may affect special-status species, their habitats, and other natural areas in accordance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). **Figure 1** provides a map showing the bridge location. All figures are located in **Appendix A**.

1.1 Purpose and Need

The bridge was originally constructed in 1935 and widened in 1965. The bridge has a sufficiency rating (SR) of 45.3 and has been designated as functionally obsolete (FO) per the Caltrans Structure Maintenance & Investigations, Local Agency Bridge List (July 2018).

1.2 Project Description

The project site is located approximately one mile east of State Route 99/70 (SR 99/ 70) along Howsley Road, midway between the City of Marysville and City of Sacramento, west of the community of Pleasant Grove (**Attachment A**, Regional and Project Location Map).

The existing bridge consists of two travel lanes and is approximately 25 feet wide where it crosses the Pleasant Grove Creek Canal and approximately 230 feet long with 11 spans. The bridge is comprised of precast inverted channel girders with an asphalt concrete deck supported by reinforced 4-column rigid frame bents with battered exterior columns set on a common reinforced concrete footing. The abutments are reinforced concrete wall-type with strip bearings between the top of the wall and the superstructure end diaphragm with continuous flared wingwalls. The foundation types are assumed to be pile supported. The bridge approach embankments extend into the levee by approximately 50 feet on the west and approximately 170 feet on the east. Near the abutments, the roadway embankments are armored by rock slope protection (**Attachment B**, Site Photos).

New Bridge Structure

The new bridge structure would be constructed south of and immediately adjacent to the existing bridge. The new bridge would be constructed using a cast-in-place post-tensioned box girder using three spans over the Pleasants Grove Creek Canal. Interior supports are anticipated to be

two column bents supported on large diameter cast-in-drilled-hole concrete piles. Abutments are anticipated to be reinforced concrete, pile supported seat abutments. The width of the new structure will be approximately 36-feet, including two 12-foot lanes, two 4-foot shoulders, and two 2-foot wide concrete barriers. The length will be approximately 250-feet and will be comprised of spans of 75-feet, 100-feet and 75-feet.

Exposed slopes below and adjacent to the new bridge would be protected by rock slope protection (RSP) placed within the 200-year floodplain. Excavation near the new abutments will be required in order to install the required RSP. Additional bank disturbance and vegetation removal will occur from general clearing and grubbing, the construction of the new bridge abutments and bents, buildup of embankments and roadway approaches, placement of scour projection measures, and development of the construction access into the channel. The maximum depth of excavation is expected to be approximately 8 feet. The maximum depth of the pile shaft foundations is expected to be approximately 100 feet.

Roadway Approaches

Howsley Road bridge approaches would be realigned to the south to accommodate the new bridge alignment. Roadway improvements would extend a maximum of 1,100 feet from the ends of the bridge. The roadway will have two 12-foot lanes and 4-foot shoulders to match the existing shoulder width. The profile will be raised with fill and new embankment slopes will be graded to create stable embankments on the landside of the canal banks where adjacent agricultural land is effectively flat. Side slopes for the embankments will vary between 2:1 and 3:1, depending on whether or not metal beam guard rails are used.

Intersection and Driveway Access Improvements

Two roadways intersect Howsley Road: Pacific Avenue on the northeast side of the bridge and Natomas Road on the southwest side of the bridge. The project will require the improvement of the Howsley Road/Pacific Avenue intersection and the Pacific Avenue roadway to improve its safety and approach visibility. Pacific Avenue would be extended to the south to connect to the new approach alignment. The existing driveway access on to the northeast parcel would be relocated further to the north on Pacific Avenue.

The project will require improvements to the Howsley Road/Natomas Road intersection and Natomas Road approach roadway to reconfigure the intersection geometrics. The approach roadways will be paved with asphalt concrete. Connections to existing levee access roads and private driveways will be restored.

Exposed slopes below and adjacent to the new bridge would be protected by rock slope protection placed within the 200-year floodplain. Substantial excavation near the new abutments will be required in order to install the required rock slope protection. The low water channel may have to be relocated during construction of the Abutment 1 rock slope protection. The existing easterly roadway embankment protruding into PGCC will remain.

Work within the low flow channel of the canal will be required to remove the existing concrete bridge support bents and abutments as well as foundation remnants from a previous structure that catch debris and impeded flow in the canal. Additionally, new abutments, support bents, and form work/false work will be required in the water area, so diversion of the channel flow is anticipated. Bank disturbance and vegetation removal will occur at the ends of the existing bridge abutments to accommodate bridge removal and regrading of the channel. Additional bank disturbance and vegetation removal will occur from general clearing and grubbing, the construction of the new bridge abutments and bents, buildup of embankments and roadway approaches, placement of scour projection measures, and development of the construction access into the channel. The maximum depth of excavation is expected to be approximately 8 feet. The maximum depth of the pile shaft foundations is expected to be 80 feet.

Road Closures and Detours

Howsley Road will maintain through traffic during construction, except for limited duration disruptions for grading and paving to reconnect the roadway. The construction period disruptions will affect local traffic temporarily with single lane closures managed during daylight hours and no disruptions during nighttime hours. Pacific Avenue will maintain open to through traffic during construction, except for a limited duration disruption for embankment build-up, grading, and paving to reconstruct the intersection. Natomas Road will be closed at the intersections of Howsley Road and Fifield Road through the duration of construction. The construction period disruptions will affect local traffic temporarily with a full closure managed by barricades, detour signage and advanced public notification.

Detours for travelers driving north on Natomas Road would be routed east on Fifield Road to Pleasant Grove Road. From Pleasant Grove Road, access to SR99/SR70 is provided to the north via Howsley Road or Catlett Road (north of Howsley Road) via East Striplin Frontage Road. South of Fifield Road, both Natomas Road and Pleasant Grove Road provide access to SR99/SR70 via West Riego/Baseline Road.

Utilities

Approximately ten power poles would be relocated as a result of the roadway realignment or roadway embankment prisms. Utility poles would be relocated to the toes of the new embankment slopes within the newly acquired County ROW.

Staging Areas

The staging and material storage areas will be outside of the County's right-of-way along Howsley Road. Potential sites identified are located south of Howsley Road on agricultural parcels and in the northwest residential parcel at the intersection of Howsley Road and Pacific Avenue.

Right-of-Way Acquisition

The project is expected to require the acquisition of right-of-way due to the offset alignment and the increase in bridge elevation to meet CVFPB criteria and temporary construction easements for staging and access.

Construction and Demolition

The construction schedule will take into account the affected species at the site and incorporate the anticipated work periods specified in the required state and federal agency permits. The construction is expected to take one and one-half years (two seasons) beginning in the Spring and ending in the Fall of the following year. Embankment build up, rough grading, temporary levee road reconnection, and staging area and construction access development would begin once the first work period begins. Based on the proposed span layout, a water diversion may not be required to install the cast-in-drilled-hole concrete piling at the bents since Bent 2 is located just at the edge of the existing low flow channel and Bent 3 is outside of the low flow channel. Since the water table is high, the bent piling will likely be constructed in the wet using slurry displacement methods or cased holes. If slurry methods are used, the contractor will store the slurry in Baker tanks (large portable water tank) during construction of the piling. Slurry is then recycled from hole to hole and when all the piling are complete, the slurry is pumped to a settling basin to evaporate. After approximately two months, the abutments and bent piling would be constructed, while the cast-in-place concrete superstructure falsework is also erected. Temporary driven steel piling would be used to support the falsework in the low flow channel. Timber falsework pads will likely be used to support the falsework outside of the low flow channel. August and September would see the placement and finishing of the concrete superstructure. The formwork, falsework, and any water diversion will be removed in October. By November 1, the

Central Valley Flood Protection Board would require all construction materials to be out of the channel, subject to two-week extensions based on site conditions at that time. Depending on whether time extensions are granted, the rock slope protection required to protect the abutments can be placed. However, if there is not enough time, this work could occur in the following work period. Also, in October, the finish grading of the roadway approaches and adjacent intersection will occur. The placement of the asphalt concrete pavement roadway and striping will occur in November. In December, barriers and railings will be installed and traffic will be shifted to the new structure and alignment. A winter stoppage of work can occur at this time.

Once the second Work Period begins, the existing bridge and the remnant footings from the precursor bridge will be demolished, final levee road reconnections constructed, and staging areas restored. The channel banks will be regraded, and the appropriate environmental mitigation, such as hydroseeding, would be implemented.

Work within the low flow channel of the canal will be required to remove the existing concrete bridge support bents and abutments as well as foundation remnants from a previous structure that catch debris and impeded flow in the canal.

Bank disturbance and vegetation removal will occur at the ends of the existing bridge abutments to accommodate bridge removal and regrading of the channel.

The low water channel may have to be relocated during construction of the Abutment 1 rock slope protection. The existing easterly roadway embankment protruding into PGCC will remain.

Additionally, new abutments, support bents, and form work/false work will be required in the water area, so diversion of the channel flow is anticipated.

Dewatering

The Pleasant Grove Creek Canal can be divided into two distinct channel areas depending on the season, 1) low-flow channel and 2) active floodplain. During the dry season, water levels are primarily contained within in the low-flow channel. The top of bank of the low-flow channel is the Canal's OHWM. During the rainy season, water fills the Canal and the area above the OHWM, becomes the active floodplain within the Canal.

The project will require work within the low-flow channel to remove the existing concrete bridge support bents and abutments as well as foundation remnants from a previous structure that catch debris and impeded flow in the canal. Additionally, new abutments, support bents, and form work/false work will be required in both the low-flow channel and active floodplain. For the construction of Abutment 1, which includes rock slope protection (RSP) and installation of Bent

2 for the proposed bridge, construction activities will require the relocation of approximately 275 linear feet of the low-flow channel between proposed Bents 2 and 3. Therefore, dewatering of the low-flow channel would be necessary. Dewatering techniques may include sheetpiling, the use of culverts, large sandbags, berms, bladder dams, or other commonly used dewatering practices. The design width of the new low flow channel will be fixed at 40 feet and excavated to a depth and kind of the original channel as required to accommodate the largest anticipated flows observed during the low flow portion of the year.

For the installation of the Abutment 1, there are two anticipated methods that may be used for dewatering:

- 1) Excavate and relocate the low-flow channel between proposed Bents 2 and 3, occlude channel ends to divert water into the new low-flow channel. Depending on flows within the channel and active floodplain, the new channel would need to accommodate fluctuating flows from the Sacramento River as well as rainfall and agricultural drainage.
- 2) Excavate and relocate the low-flow channel between proposed Bents 2 and 3 and install corrugated steel culverts within the new channel.

The installation of Bent 2 could include either of the dewatering methods outlined above or use of a cofferdam within the low-flow channel to isolate construction activities.

The new low flow channel system shall be constructed in its entirety, with upstream and downstream plugs/barriers separating the original low flow channel from the excavated new low flow channel. A permanent plug shall be installed in the original waterbody channel, at the inflow confluence of the original waterbody channel and the new low flow passage system, to fully divert the water to flow through the new low flow passage system. A permanent plug shall be installed in the original waterbody channel, at the outflow confluence of the new low flow passage system and the original waterbody channel, to prevent backflow into the original waterbody channel. The majority of excavation for the new low flow channel will be conducted in dry areas prior to relocating the low flow channel. Excavated soils from the new low flow channel as well as other approved fill will be used to fill the old low flow channel as necessary to allow the bridge construction and placement of RSP.

Excavation for the abutments prior to installing RSP may encounter groundwater infiltrate. In this case, dewatering will likely be needed in combination with other water control options. The preferred method is land based discharge. This will be accomplished by segregating an area of the staging area by building a berm. This area will then act as a discharge basin which will be created as far away from the canal as practicable while still within the temporary construction

easement. Equipment and materials shall not be stored within the discharge basin. A sump system will be installed within the excavation(s) along with hose running from the sumps to the discharge basin to transport any ground water infiltrate from the excavation(s) to the discharge basin. Once in the discharge basin the water will be absorbed or evaporate off.

If dewatering an excavation(s) to the discharge basin is not feasible, a Baker tank (or equivalent) may be utilized to capture sediment laden water. For captured water to be discharged back into the channel, it must be accompanied by and meet the quality standards laid forth in a RWQCB Waste Discharge Permit. If this is the case, supernatant will be pumped from the Baker tank (or equivalent) and returned to the canal or the water may be pumped into the discharge basin if volume is sufficient.

Following construction, any materials that consist of foreign fill (cofferdams, sheet piles, aggregate, culverts, impermeable layers, etc.) would be removed from the channel. Where surface areas have been disturbed or regraded, the slope shall be restored to pre-construction condition and stabilized by seeding with native grasses (strictly avoiding noxious weeds) per direction from the CDFW and USACE requirements. The new low flow channel will be left in place following construction as the new permanent low flow channel. It is believed this will result in less sedimentation and be less damaging to the waters than attempting to restore the original low flow channel.

Geotechnical Sampling

Additional geotechnical sampling in the channel by the design team will be completed once the environmental document is approved and as soon as access into the channel can be obtained. The sampling will generally include gaining access from the eastern bank into the channel, boring at two individual locations, collecting soil samples, and backfilling the exploratory borings. The proposed borings are located approximately 60 feet south of the existing bridge at stations 23+00 and 24+00. A rubber track or truck-mounted drill rig will be used to advance four- to eight-inch diameter borings to a depth of 80 feet below the channel bottom. Typical drill rigs are maximum 26-feet long and 8-feet wide and weigh a maximum of 23,000 pounds. Auger drilling will be used to advance the boring then once groundwater is encountered mud rotary techniques will be used to advance the bore to the required depth. Upon completion of drilling, the borings will be backfilled with neat cement grout to within approximately five feet of the channel bottom per Sutter County Environmental Health Department requirements. The upper five feet will be allowed to collapse or be backfilled with native soil cuttings generated from drilling operations to approximate the existing creek bottom. The remaining drill cuttings will be drummed and disposed of at an approved off-site facility. No construction will take place to complete this work

and no water will be drafted or released to Pleasant Grove Creek Canal. All activities will be confined to daylight hours.

Chapter 2 Study Methods

This section presents the relevant regulations and the methods used to evaluate the effect of the project on special-status species, their habitats, and other natural areas.

2.1 Regulatory Requirements

The project could affect natural resources within the jurisdiction of the following regulatory agencies:

- U.S. Fish and Wildlife Service (USFWS)
- U.S. Army Corps of Engineers (USACE)
- California Department of Fish and Wildlife (CDFW)
- Central Valley Regional Water Quality Control Board (RWQCB)
- Central Valley Flood Protection Board (CVFPB)

The following federal regulatory requirements and laws apply to the proposed project:

- NEPA (42 United States Code [U.S.C.] § 4321)
- Federal Endangered Species Act (FESA) (16 U.S.C. § 1531)
- Clean Water Act (CWA), Sections 404 (33 U.S.C. § 1344) and 401 (33 U.S.C. § 1341)
- Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§ 703-712)
- Executive Order 13112 (Invasive Species) (64 Federal Register 6183).

The applicable state laws and regulations include:

- CEQA (Public Resources Code, Division 13 § 21000 et seq.)
- California Endangered Species Act of 1984 (CESA) (Fish and Game Code [F.G.C.] § 2050 et seq.)
- Protection of Migratory Birds (F.G.C. §§ 3503 and 3800)
- Porter-Cologne Water Quality Control Act (Water Code § 13000 et seq.).

2.2 Studies Required

An Environmental Study Limit (ESL) was established and encompasses the project limits and surrounding areas that could be used by regional special-status species that could be affected directly or indirectly by the project. The ESL is defined as the area (land and water) that may be

directly, indirectly, temporarily, or permanently impacted by construction and construction-related activities. The ESL is intended to include the potential effects on wildlife and other biological resources (e.g., birds that could nest in the vicinity or water resources that could be affected by hazardous material spills generated by the project). In general, the ESL for the project comprises private agricultural lands, the Pleasant Grove Canal, and rural residence (see Section 3.1.1).

Biological surveys and studies were performed to satisfy the requirements of NEPA and CEQA, to document all special-status species that potentially occur in the BSA, and to identify all potential project impacts on protected resources or critical habitat. Special-status species include those listed as endangered, threatened, or rare under the FESA or CESA; plants listed as rare by the California Native Plant Society (CNPS), critical habitat, and essential fish habitat listed by NOAA Fisheries; migratory birds protected under the MBTA; and California Species of Special Concern (SSC).

2.2.1 Database Searches and Literature Search

Information about habitat types and special-status species that can occur in the ESL was obtained from the following sources:

- USFWS Information for Planning and Consultation online database (IPAC).
- CDFW California Natural Diversity Database (CNDDDB) (CDFW 2017).
- CNPS Online Inventory of Rare and Endangered Plants (CNPS 2017).
- Existing literature as cited in the text.

The results from all database queries are presented in Appendix C.

The USFWS database of endangered species was utilized to query all federally endangered, threatened, candidate, and proposed animal and plant species, as well as designated critical habitat (defined as habitats determined to be essential for the survival of that species) with known occurrences in Sutter County.

Results from the USFWS and CNDDDB databases were refined using available scientific literature, aerial imagery, site visits, and CNPS databases to determine which special-status species have the potential to occur in the BSA and to be affected by the proposed project. If suitable habitat was not present for a sensitive species within the BSA, the species was not given further consideration beyond its mention in Section 3.2.

2.3 Personnel and Survey Dates

Biological surveys were conducted to determine the presence or absence of special-status plants and wildlife, along with potential habitat for special-status species on May 17, 2017 by NorthStar biologists Carol Wallen, Matt Rogers, and Andrew Huneycutt. The ESL was surveyed on foot, walking the entirety, and photo-documenting existing habitat conditions, as well as potential habitat for special-status species. General notes were also collected including observed plants and wildlife.

The credentials for survey personnel are:

- Carol Wallen, B.S., Biology; 9 years' experience
- Matt Rogers, B.S., Biology; 9 years' experience
- Andrew Huneycutt, B.S., Environmental Science; 11 years' experience

2.4 Agency Coordination and Professional Contacts

An official species list was obtained from the USFWS' Sacramento Field Office via the USFWS Information for Planning and Consultation website on March 8, 2017 and again on May 22, 2019. No other agency coordination or consultation has been initiated with respect to the proposed project.

2.5 Limitations That May Influence Results

All necessary portions of the BSA were accessible; therefore, no limitations impacted the botanical and wildlife surveys.

Chapter 3 Environmental Setting

3.1 Physical and Biological Conditions in the Biological Study Areas

This section provides a description of the existing biological and physical conditions within the ESL.

3.1.1 Biological Study Area

Bridge 18C0113 is located within Sections 3, 4, 9, 10 Township 11 North, Range 3 East of the Verona USGS quadrangle, at an elevation of approximately 30 feet above MSL. The bridge crosses over the Pleasant Grove Canal. The Pleasant Grove Canal is a man-made, leveed bypass that has a watershed area of approximately 70.4 square miles at the Howsley Road bridge crossing. The watershed area encompasses several creeks including Pleasant Grove Creek, Curry Creek, and Kaseberg Creek. The Pleasant Grove Creek Canal meets up with the Eastside Canal and forms the Cross Canal which moves water into the Sacramento River at Verona.

Surrounding land uses include single family residences in a rural setting and agricultural land in rice production.

3.1.2 Physical Conditions

The physical conditions for the bridge ESL are described below. See **Appendix B** for representative site photos.

3.1.2.1 CLIMATE AND HYDROLOGY

The project area has a Mediterranean climate, characterized by mild, moist winters and hot, dry summers. The project area generally experiences a majority of the annual precipitation from November through March. A climate summary for the nearest NOAA weather station with similar elevation and topography to the project reports the following precipitation and temperature information (Western Regional Climate Center 2018):

Marysville, California Station 045385

- Average annual rainfall for Marysville is 20.96 inches.
- Average temperatures range seasonally from 37.7 to 96.3 degrees Fahrenheit (°F).

The maximum average temperature reported for the Marysville area was 96.3°F in July and the minimum average temperature was 37.7°F in January. The wettest month of the year is January with an average rainfall of 4.01 inches, and the driest month is July with an average of 0.03

inches. Winter storms are usually of moderate duration and intensity (Western Regional Climate Center 2018).

The project area lies within the Sacramento River basin, which includes all of Sacramento Valley. The two largest rivers in the area are the Sacramento and Feather rivers, with the Feather River being a tributary to the Sacramento River. The waters within these watersheds generally flow from north to south through the Sutter Basin, and eventually flow into the Sacramento River Delta, then the San Francisco Bay. The Howsley Road bridge crosses over the Pleasant Grove Creek Canal. The canal intercepts flow from Howsley Creek, Pleasant Grove Creek, and Curry Creek. The canal joins the East Side Canal to form the Cross Canal which discharges westward into the Sacramento River at Verona. The Pleasant Grove Creek Canal is owned and maintained by Reclamation District 1000.

3.1.2.2 SOILS AND TOPOGRAPHY

The Natural Resource Conservation Service's Web Soil Survey was utilized to identify the soil units that occur within and adjacent to the BSA for the bridge (**Table 1**). The majority of soils consist of loam and clay, with 0 to 2 percent slopes. All soil units in Table 4 are considered hydric soils.

Table 1. Soils within Biological Study Areas

Bridge Number	Soils Occurring Within and Adjacent to BSAs
18C0113	<ul style="list-style-type: none"> • 104 - Capay silty clay, 0 to 2 percent slopes • 110 - Clear Lake silt loam, 0 to 2 percent slopes • 177 - Water

The project area lies within an area known as the Natomas Basin, which is located in the southern portion of the Sutter County. The Natomas Basin has relatively flat topography, with the land gradually sloping from north to south. Average elevations in the northern portion are approximately 26 feet above MSL, and in the southern portion are approximately 17 feet above MSL. The Sutter Basin lies just south of the Sutter Buttes, which is the highest point in Sutter County.

3.1.3 Biological Conditions

This section discusses vegetation and wildlife observed or expected to occur within the ESL. **Appendix D** provides a complete list of observed species where field surveys were conducted.

3.1.3.1 VEGETATION COMMUNITIES

The plant community descriptions and nomenclature conventions within this analysis use the CDFW's California Wildlife Habitat Relationships System (CWHR). This classification system

is based on wildlife habitats described in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988) and may be used as a model to predict which wildlife species may inhabit specific plant communities.

There are eight vegetation communities within the BSA: annual grasslands, rice, irrigated row and field crops, riverine, valley and foothill riparian, fresh emergent wetland, barren, and urban. The BSA and lands surrounding are primarily agricultural with several rural residences in the vicinity.

Annual Grasslands

Annual grassland habitats are found on flat plains to gently rolling foothills and often occur in between or adjacent to other wooded habitat types. Annual grasslands are described as open grasslands composed primarily of annual plant species. Species commonly found within annual grasslands include wild oats, ripgut brome, red brome, soft chess, wild barely, foxtail fescue, filaree, and various clovers among others.

Annual grasslands are present in the BSA, primarily along levee banks, roadsides, and along the fringes of croplands. Non-native grasses observed included creeping bentgrass (*Agrostis stolonifera*), wild oats (*Avena barbata* and *A. fatua*), ripgut brome (*Bromus diandrus*), soft chess (*B. hordeaceus*), Italian wild rye (*Festuca perennis*), and foxtail barley (*Hordeum murinum*). There was an abundance of non-native herbaceous plants observed including mustard (*Brassica* spp.), Italian thistle (*Carduus pycnocephalus*), bull thistle (*Cirsium vulgare*), Queen Anne's lace (*Daucus carota*), sweet fennel (*Foeniculum vulgare*), filaree (*Erodium* spp.), cut leaved geranium (*Geranium dissectum*), bull mallow (*Malva nicaeensis*), bur clover (*Medicago polymorpha*), alfalfa (*Medicago sativa*), English plantain (*Plantago lanceolata*), cudweed (*Pseudognaphalium* spp.), cultivated radish (*Raphanus sativus*), common groundsel (*Senecio vulgaris*), milk thistle (*Silybum marianum*), spiny sowthistle (*Sonchus asper*), and spring vetch (*Vicia sativa*). Very few native plant species were observed in the annual grasslands and were only found where grasslands were associated with riparian corridors. These plants included meadow barley (*Hordeum brachyantherum*), pineapple weed (*Matricaria discoidea*), and rough cocklebur (*Xanthium strumarium*).

Rice

Rice is found growing throughout the northern Central Valley typically on level terrain with heavy clay soils that hold water well. Rice is a flood irrigated annual crop grow in laser leveled fields that are flooded and then dried down to let the seed mature and to facilitate harvesting of the fields. Rice crops are typically planted in the spring and harvested in the fall months. (Schultze 1988a).

Wildlife use of the rice croplands changes seasonally. After the fields have been harvested, the waste grain is left, and the fields are flooded again. These conditions mimic freshwater wetlands, and many bird species--especially waterfowl, shorebirds, and wading birds--have adapted to foraging for waste grain in the rice fields. Use by birds typically is not discouraged by the agricultural industry, and in some areas, the practice is encouraged for waterfowl hunting. Wildlife use of rice fields decreases dramatically during the growing season.

Plants observed in the rice croplands adjacent to the AA during the growing season consisted entirely of rice with occasional unwanted plants interspersed such as sprangletop (*Leptochloa* sp.). Narrow strips of non-native grasses fringed the outer edges of the rice fields and along the levee roads. Plants in these areas were consistent with those described in annual grasslands above. No special-status plants are likely to occur in the rice fields due to the agricultural practices that have occurred in the Central Valley over the decades.

Irrigated Row and Field Crops

A variety of crops are grown in irrigated row and field crops; during the spring growing season these usually include numerous types of vegetables, melons, onions, and potatoes. During the fall, to maximize crop rotation, dry-farmed vegetation is planted and includes wheat or barley. This variation in sizes, shapes, colors, and growing patterns leads to variable plant height and canopy cover, which may influence wildlife usage. Croplands have considerably reduced wildlife habitat richness, thereby reducing the diversity of wildlife that would be found in them to rodents, foraging birds, and rabbits. Irrigation water briefly draws many other wildlife species, particularly birds. Fencing, trapping, and poisoning are common practices utilized to prevent crop losses (Schultze 1988b).

Irrigated row and field crops are found northwest of the bridge adjacent to a rural residence. The crop being cultivated was not identified.

Riverine

Riverine habitats consist of intermittent or perennial water. Higher elevation rivers and streams tend to be smaller and higher velocity. At lower elevations, rivers and streams become slow and enlarged. The transition from higher elevation to lower will cause temperature and turbidity to increase, dissolved oxygen will decrease and the bottom will transition from rocky towards muddy or silty. Riverine habitats are found in close association with terrestrial habitats and in many cases, are contiguous with lake and emergent wetland habitats (Grenfell 2008). Flow in riverine habitats is variable, ranging from high to low volume but with continuous flows in rivers, to becoming dry every summer in some streams. Riverine waters provide food for a wide variety of birds, and habitat for fish, turtles, amphibians, and other aquatic species.

Riverine habitat is found within the Pleasant Grove Creek Canal, water is present within the canal year-round. The flows within the canal are variable especially in the winter when the areas creeks that feed into the canal swell.

Valley Foothill Riparian

Valley and foothill riparian communities are found adjacent to rivers and streams. Riparian vegetation consists of one or more species of deciduous trees, shrubs, and herbs that grow on the banks of most streams, lakes, and springs (Holland and Keil 1995). Riparian vegetation provides wildlife habitat in the form of food, shelter, and breeding sites. The structure of the canopy, sub-canopy, shrub layer, and ground cover is extremely variable and important in riparian communities. The structural diversity is equated with the increases observed in biodiversity when examining this habitat compared to others within the Sacramento valley.

Valley foothill riparian habitat is found within the canal in small portions of the ESL. The canopy is dominated by Goodding's black willow (*Salix gooddingii*) with Fremont cottonwood (*Populus fremontii*) present as well. Shrub species present included sandbar willow (*S. exigua*), arroyo willow (*S. lasiolepis*), and mule fat (*Baccharis salicifolia*).

Common wildlife observed included Pacific chorus frog (*Pseudacris sierra*), great blue heron (*Ardea herodias*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), black phoebe (*Sayornis nigricans*), tree swallow (*Tachycineta bicolor*), yellow-billed magpie (*Pica nuttallii*), bushtit (*Psaltiriparus minimus*), western bluebird (*Sialia mexicana*), European starling (*Sturnus vulgaris*), Brewer's blackbird (*Euphagus cyanocephalus*), and house finch (*Haemorhous mexicanus*). Colonies of cliff swallows (*Petrochelidon pyrrhonota*) were nesting beneath the bridge soffit. Barn swallow (*Hirundo rustica*) nests were also present but much less abundant.

Fresh Emergent Wetland

Fresh emergent wetlands are found throughout California and typically occur in level to gently rolling terrain. Fresh emergent wetlands are flooded enough that plants present are able to prosper in anaerobic conditions. This habitat is dominated by emergent hydrophytes such as hardstem bulrush (*Schoenoplectus acutus*) and cattail (*Typha latifolia*) (Kramer 1988). The type of plants present in fresh emergent wetlands depends on the type of soil and the amount of water present.

Fresh emergent wetland habitat is found within and directly adjacent to the low flow channel within the Pleasant Grove Creek Canal. The dominant species observed within this habitat type included hardstem bulrush (*Schoenoplectus acutus*), cattail (*Typha latifolia*), and water primrose (*Ludwigia* sp.).

Urban

Urban habitat occurs throughout California from small villages to the largest metropolitan areas. The vegetative structure within urban habitats can be quite variable, but is often maintained. Species composition can be dominated by exotic species but many times natives can be found as they can be better suited to the physical conditions of the region. Lawns are the typical groundcover found in urban habitats, they are comprised of a variety of grass species and are almost always irrigated. Urban habitat is present in the form of single-family residences throughout the ESL. The homes within the ESL are maintained and includes ornamental trees and shrubs plus lawns. Species observed in urban habitat included European starling (*Sturnus vulgaris*) and house sparrow (*Passer domesticus*).

Barren

Barren habitat is defined by a lack of vegetation. Structure and composition of the substrate is often determined by the region of the state, the surrounding environment, and geologic conditions. Barren areas represent extreme environments for vegetation (i.e. impermeable substrate, vertical slope). Barren habitats are found in juxtaposition with a wide variety of habitat types throughout California. Where vegetation is absent the structure of the substrate becomes the primary component of the habitat.

Barren habitat is found in the areas containing rock slope protection immediately adjacent to the bridge as well as, the levee road tops and access roads along the canal.

3.1.3.2 HABITAT CONNECTIVITY

There are no upland terrestrial wildlife corridors in the project area. The canal likely provides migration and dispersal corridors for a wide variety of birds and terrestrial species, including giant garter snake.

3.2 Regional Species and Habitats and Natural Communities of Concern

No sensitive natural communities listed in local or regional plans or policies were present within the BSA. Table 2 lists special-status plant and wildlife species that are known to occur or have the potential to occur in the within a 5-mile radius of the bridges, based on the methods discussed in Chapter 2.

3.2.1 Special-Status Plants

The USFWS, CNDDDB, and CNPS databases list 15 special-status plant species within a USGS nine quad search around the project site. However, due to the managed agricultural land surrounding the BSA no special-status plant species have the potential to occur. Plant species

with no potential to occur in the BSA are not discussed further in this NES. The database results are provided in **Appendix B**.

3.2.2 Special-Status Wildlife

The CNDDDB and USFWS databases list a total of 39 special-status wildlife species with a potential to occur within the BSA. The names and legal status of each of these species are identified in Table 2, as well as a general description of the habitat requirements, whether or not suitable habitat is present in the BSA, and the potential that each species would occur in the bridge BSA. Wildlife species with no potential to occur in the BSA are not discussed further in this NES. After further examination a total of five species have at least moderate potential to occur within the ESL including western pond turtle, giant garter snake, song sparrow (Modesto Population), Swainson's hawk, and migratory birds and raptors protected by the Migratory Bird Treaty Act. The database results are provided in Appendix B.

Table 2: Special-Status Species and Sensitive Natural Communities identified by CNDDDB, USFWS, and CNPS as Potentially Occurring in the Biological Survey Area.

Common Name (<i>Scientific Name</i>)	Status Fed/State/ CNPS	Associated Habitats	Potential for Occurrence*
Sensitive Natural communities			
Coastal and Valley Freshwater Marsh	_/SNC/_	Occurs near river mouths, oxbows, and other areas in the floodplain, and along margins of lakes and springs, where water is quiet and permanently flooded by freshwater. Dominated by perennial, emergent monocots 4-5 meters tall.	<u>None</u> : SNC is not present within the project area.
Great Valley Mixed Riparian Forest	_/SNC/_	A tall, dense, winter-deciduous, broadleaved riparian forest. The tree canopy is usually well closed and moderately to densely stocked with several species including <i>Acer negundo</i> , <i>Juglans hindsii</i> , <i>Platanus racemosa</i> , <i>Populus fremontii</i> , and <i>Salix</i> spp.	<u>None</u> : SNC is not present within the project area
Northern Claypan Vernal Pool	_/SNC/_	Seasonally flooded depressions on impermeable soils with low microrelief and overall cover.	<u>None</u> : SNC is not present within the project area.
Northern Hardpan Vernal Pool	___/SNC/_	Seasonally flooded depressions on impermeable soils or rock.	<u>None</u> : SNC is not present within the project area.

Common Name (Scientific Name)	Status Fed/State/ CNPS	Associated Habitats	Potential for Occurrence*
PLANTS			
Alkali Milk-vetch (<i>Astragalus tener</i> var. <i>tener</i>)	___/___/1B	Playas, valley and foothill grassland/adobe, clay soils, and alkaline vernal pools. (March-June)	<u>None</u> : There are no suitable vernal pools present within the BSA.
Bogg's Lake Hedge-hyssop (<i>Gratiola heterosepala</i>)	___/SE/1B	Marshes and swamps. Vernal pools. (Apr-Aug)	<u>Low</u> : There are no suitable vernal pools within the BSA. Sub-marginal marsh habitat is present within the BSA.
Brittlescale (<i>Atriplex depressa</i>)	___/___/1B	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools (alkaline, clay). (May-Oct)	<u>None</u> : No suitable vernal pool habitat present within the BSA.
California Alkali Grass (<i>Puccinellia simplex</i>)	___/___/1B	Valley Grassland, wetland-riparian, usually occurs in wetlands, but occasionally found in non-wetlands (May-Jul)	<u>None</u> : No suitable alkaline habitat is present within the BSA. Valley grassland habitat is heavily degraded.
Depauperate Milk-vetch (<i>Astragalus tener</i> var. <i>tener</i>)	___/___/1B	Valley Grassland, foothill woodland. (Mar-Jun)	<u>Low</u> : Sub-marginal habitat is present within the BSA. Grassland habitat is heavily degraded within the BSA.
Dwarf Downingia (<i>Downingia pusilla</i>)	___/___/2	Valley and foothill grasslands. Vernal pools. (Mar-May)	<u>None</u> : No suitable vernal pool habitat is present within the BSA.
Heckard's Peppergrass (<i>Lepidium latipes</i> var. <i>heckardii</i>)	___/___/1B	Valley and foothill grassland (alkaline flats). (Mar-May)	<u>Low</u> : Sub-marginal grassland habitat is present within the BSA. Grassland habitat is heavily degraded.
Legenere (<i>Legenere limosa</i>)	___/___/1B	Vernal pools, 1-880 meters. (Apr-Jun)	<u>None</u> : No suitable vernal pool habitat is present within the BSA.

Common Name (Scientific Name)	Status Fed/State/ CNPS	Associated Habitats	Potential for Occurrence*
Palmate-bracted Bird's-beak (<i>Cordylanthus palmatus</i>)	FE/SE/1B	Seasonally-flooded, saline-alkali soils in lowland plains along the edges of channels and drainages. (May-Oct)	<u>None</u> : No suitable alkaline habitat is present within the BSA.
Parry's Rough Tarplant (<i>Centromadia parryii</i> ssp. <i>rudis</i>)	___/___/4	Alkaline, vernal mesic, seeps, sometimes roadsides. Valley and foothill grassland, vernal pools. (May-Oct)	<u>None</u> : No suitable vernal pool habitat present within the BSA.
Saline Clover (<i>Trifolium hydrophilum</i>)	___/___/1B	Wetland-riparian. Alkaline soils (Apr-Jun)	<u>None</u> : No suitable alkaline or saline habitat is present within the BSA.
San Joaquin Spearscale (<i>Atriplex joaquiniana</i>)	___/___/1B	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland (alkaline). (Apr- Oct)	<u>None</u> : No suitable alkaline habitat is present within the BSA.
Sanford's Arrowhead (<i>Sagittaria sanfordii</i>)	___/___/1B	Marshes and swamps, assorted shallow freshwater. (May-Oct)	<u>None</u> : Suitable habitat present within the BSA. However, species not observed during biological surveys of the project area.
Stinkbells (<i>Fritillaria agrestis</i>)	___/___/4	Chaparral, valley grassland, foothill woodland, wetland-riparian. Equally likely to occur in wetlands or non-wetlands. (Mar-Jun)	<u>Low</u> : Sub-marginal habitat occurs within the BSA. Grassland habitat is extremely degraded. Species was not encountered during biological surveys.
Woolly Rose- mallow (<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>)	___/___/1B.2	Marshes and swamps (freshwater). (Jun-Sep)	<u>None</u> : Suitable habitat present within the BSA. However, species not encountered during biological surveys.
INVERTEBRATES			
Antioch Dunes Anthicid Beetle (<i>Anthicus antiochensis</i>)	___/___/___	Interior sand dunes and sand bars.	<u>None</u> : No suitable sandy habitats occur within the BSA.

Common Name (Scientific Name)	Status Fed/State/ CNPS	Associated Habitats	Potential for Occurrence*
California Linderiella (<i>Linderiella occidentalis</i>)	__/_/_/	Vernal pools, swales, and ephemeral freshwater habitat.	<u>None</u> : No suitable vernal pool habitat occurs within the BSA.
Conservancy Fairy Shrimp (<i>Branchinecta conservatio</i>)	FE/ __/_/	Moderately turbid, deep, cool-water vernal pool	<u>None</u> : No suitable vernal pool habitat occurs within the BSA.
Sacramento Anthicid Beetle (<i>Anthicus sacramento</i>)	__/_/_/	Interior sand dunes and sand bars; has also been found in dredge spoil heaps. Known occurrences along the Sacramento and San Joaquin rivers from Shasta to San Joaquin counties and at one site along the Feather River at Nicolaus.	<u>None</u> : No suitable sand dune habitat is present within the BSA.
Sacramento Valley tiger beetle (<i>Cicindela hirticollis abrupta</i>)	__/_/_/	Inhabits sandy areas of lakes and rivers within the Sacramento Valley of California.	<u>None</u> : No suitable sandy habitat within the BSA.
Valley Elderberry Longhorn Beetle (<i>Desmocerus californicus dimorphus</i>)	FT/ __/_/	Blue elderberry shrubs usually associated with riparian areas.	<u>None</u> : No blue elderberry present within the BSA.
Vernal Pool Fairy Shrimp (<i>Branchinecta lynchi</i>)	FT/ __/_/	Vernal pools, swales, and ephemeral freshwater habitat.	<u>None</u> : No suitable vernal pool habitat present within the BSA.
Vernal Pool Tadpole Shrimp (<i>Lepidurus packardii</i>)	FE/ __/_/	Vernal pools, swales, and ephemeral freshwater habitat.	<u>None</u> : No suitable vernal pool habitat present within the BSA.
REPTILES AND AMPHIBIANS			
California Red-legged Frog (<i>Rana draytonii</i>)	FT/ __/_/	Inhabits quiet pools of streams, marshes, and occasionally ponds.	<u>None</u> : Species is presumed extirpated from the Central Valley.
California Tiger Salamander (<i>Ambystoma californiense</i>)	FT/SSC/_/	Vernal pools and seasonal ponds in grassland and oak savannah.	<u>None</u> : No suitable vernal pool habitat is present within the BSA.

Common Name (Scientific Name)	Status Fed/State/ CNPS	Associated Habitats	Potential for Occurrence*
Giant Garter Snake (<i>Thamnophis gigas</i>)	FT/ST/___	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands.	<u>High</u> : Suitable aquatic and upland habitat is present and known occurrences are found in close proximity to the project area.
Western Pond Turtle (<i>Emys marmorata</i>)	___/SSC/___	Associated with permanent ponds, lakes, streams, and irrigation ditches or permanent pools along intermittent streams.	<u>Known</u> : Species was observed within the project area during biological studies.
Western Spadefoot (<i>Spea hammondi</i>)	___/SSC/___	Grassland and woodland and vernal pools without aquatic predators for breeding.	<u>None</u> : No suitable vernal pool habitat is present within the BSA.
FISH			
Central Valley Spring-Run Chinook Salmon (<i>Oncorhynchus tshawytscha</i>)	FT/ST/___	Sacramento River and tributaries.	<u>Low</u> : Sub-marginal habitat present within the BSA. Water temperatures lethal to salmonids during summer months. No suitable spawning habitat present within the BSA.
Central Valley Steelhead (<i>Oncorhynchus mykiss</i>)	FT/___/___	Sacramento and San Joaquin Rivers and their tributaries.	<u>Low</u> : Sub-marginal habitat present within the BSA. Water temperatures lethal to salmonids during summer months. No suitable spawning habitat present within the BSA.
Delta Smelt (<i>Hypomesus transpacificus</i>)	FT/ST/___	Sacramento-San Joaquin Estuary	<u>None</u> : No suitable estuary habitat present within the BSA.
Essential Fish Habitat	___/___/___	Aquatic habitat where fish spawn, breed, feed, or grow to maturity.	<u>None</u> : No essential fish habitat for listed salmonids is present within the BSA.
Eulachon (<i>Thaleichthys pacificus</i>)	FT/___/___	Anadromous fish	<u>None</u> : No suitable habitat present within the BSA.

Common Name (Scientific Name)	Status Fed/State/ CNPS	Associated Habitats	Potential for Occurrence*
Green Sturgeon (<i>Acipenser medirostris</i>)	FT/SSC/_	Sturgeon enter freshwaters to spawn. The only recently-documented green sturgeon spawning locations are in the Klamath, Sacramento, Feather, and Rogue rivers along the west coast of North America.	<u>None</u> : No suitable spawning habitat is present within the BSA.
Longfin smelt (<i>Spirinchus thaleichthys</i>)	FC/ST/_	Open water estuaries	<u>None</u> : No suitable estuary habitat present within the BSA.
Sacramento Splittail (<i>Pogonichthys macrolepidotus</i>)	_/_SC/_	Largely confined to: (1) the San Francisco Bay Delta, (2) Suisun Bay, (3) Suisun Marsh, (4) Napa River, (5) Petaluma River, and (6) other parts of the Sacramento-San Joaquin Estuary.	<u>Low</u> : Sub-marginal habitat present within the BSA.
MAMMALS			
Hoary Bat (<i>Lasiurus cinereus</i>)	_/_/_	Roosting habitat includes woodlands and forests with medium to large-sized trees and dense foliage. Adjacent open areas are required for feeding.	<u>Low</u> : Marginal roosting habitat exists within the BSA. Suitable foraging habitat is present within BSA.
Pallid Bat (<i>Antrozous pallidus</i>)	_/_SSC/_	Arid and semi-arid habitats; roosts in rock crevices, caves, and mine shafts.	<u>Low</u> : No suitable roosting habitat present within the BSA, no evidence of bat use at existing bridge. However, suitable foraging habitat present within the BSA.
Western Red Bat (<i>Lasiurus blossevillei</i>)	_/_SSC/_	Roosting habitat includes forest and broadleaf woodlands from sea level to coniferous forest. Feeds over grasslands, shrublands, open woodlands, and croplands. Known to occur from Shasta County to the Mexican border – often in riparian habitats.	<u>Low</u> : Sub-marginal roosting habitat present within the BSA, foraging habitat present within the BSA.
BIRDS			

Common Name (Scientific Name)	Status Fed/State/ CNPS	Associated Habitats	Potential for Occurrence*
Bank Swallow (<i>Riparia riparia</i>)	___/ST/___	Nests in steep riverbank cliffs, gravel pits, and highway cuts.	<u>None</u> : No suitable nesting habitat is present within the BSA.
Black-Crowned Night Heron (<i>Nycticorax nycticorax</i>)	___/___/___	Marshes, shores; roosts in trees. Found in a wide variety of aquatic habitats, around both fresh and salt water, including marshes, rivers, ponds, mangrove swamps, tidal flats, canals, and rice fields. Nests in groves of trees, in thickets, or on ground, usually on islands or above water.	<u>Low</u> : Species may forage in the BSA. No colonial nests were observed during biological surveys of the project area.
Burrowing Owl (<i>Athene cunicularia</i>)	___/SSC/___	Nests in burrows in the ground, often in old ground squirrel burrows or badger, within open dry grassland and desert habitat.	<u>None</u> : No suitable burrowing habitat is present within the BSA.
Great Blue Heron Rookery (<i>Ardea herodias</i>)	___/___/___	Common all year throughout California, in shallow estuaries and fresh and saline emergent wetlands. Nests in colonies in tops of secluded large snags or live trees.	<u>Low</u> : Species may forage in the BSA. No colonial nests were observed during biological surveys of the project area.
Great Egret Rookery (<i>Ardea alba</i>)	___/___/___	Communally nests in large trees in groves near aquatic foraging areas	<u>Low</u> : Species may forage in the BSA. No colonial nests were observed during biological surveys of the project area.
Merlin (<i>Falco columbarius</i>)	___/___/___	Open conifer woodland, prairie groves; in migration, also foothills, marshes, open country. Generally, breeds in semi-open terrain having trees for nest sites and open areas for hunting. May winter in more open areas, such as grasslands, coastal marshes.	<u>Low</u> : Only found in the Central Valley in the winter and does not breed in California.
Mountain Plover (<i>Charadrius montanus</i>)	___/SSC/___	Short vegetated areas, bare and flat topography. Grazed and agricultural areas.	<u>None</u> : No suitable grazed agricultural habitat present within the BSA.

Common Name (Scientific Name)	Status Fed/State/ CNPS	Associated Habitats	Potential for Occurrence*
Purple Martin (<i>Progne subis</i>)	_/SSC/_	Woodlands and low-elevation conifer forests of Douglas-fir, ponderosa pine, and Monterey pine. Nests in tall, old trees near water, old woodpecker cavities, and sometimes nesting boxes, culverts, and under bridges.	<u>Low</u> : Bridge may provide suitable nesting habitat. However, nearest populations occur approximately 17 miles south of the BSA in Sacramento. Additionally, this species was not encountered during biological surveys of the BSA.
Snowy Egret Rookery (<i>Egretta thula</i>)	__/_/_	Marshes, swamps, ponds, shores. Widespread in many types of aquatic habitats, including fresh and salt water; in coastal areas, may seek sheltered bays. Inland, favors extensive marshes and other large wetlands. Sometimes forages in dry fields.	<u>Low</u> : Species may forage within the BSA. No large communal roosts observed during biological studies.
Song Sparrow (Modesto population) (<i>Melospiza melodia</i>)	_/SSC/_	Emergent freshwater marshes, riparian willow thickets, vegetated irrigation canals.	<u>High</u> : Song sparrow was detected during biological surveys of ESL. However, it is unknown if the individuals belonged to the Modesto Population.
Swainson's Hawk (<i>Buteo swainsoni</i>)	MBTA/ST/___	Nests in isolated trees or riparian woodlands adjacent to suitable foraging habitat including grasslands or suitable grain or alfalfa fields, or livestock pastures.	<u>Moderate</u> : Habitat within the BSA and surrounding area is suitable for the species. Additionally, there are several confirmed records in close proximity to the BSA.
Tri-colored Blackbird (<i>Agelaius tricolor</i>)	_/SSC/_	Nests in dense blackberry, cattail, tules, willow, or wild rose within emergent wetlands throughout the Central valley and foothills surrounding the valley.	<u>Low</u> : Marginal habitat present within the BSA. Species not encountered nesting within the BSA during biological surveys.

Common Name (Scientific Name)	Status Fed/State/ CNPS	Associated Habitats	Potential for Occurrence*
Western Yellow-billed Cuckoo (<i>Coccyzus americanus occidentalis</i>)	FT/SE/___	Structured dense riparian forest, generally willows.	<u>None</u> : No suitable riparian habitat is present within the BSA.
Western Snowy Plover (<i>Charadrius alexandrinus nivosus</i>)	FT/SSC/___	Coastal beaches, sand spits, dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths	<u>None</u> : No suitable sandy habitat is present within the BSA.
White-faced Ibis (<i>Plegadis chihi</i>)	___/___/___	Fresh marshes, irrigated land, tules. For foraging, favors very shallow water, as in marshes, flooded pastures, irrigated fields. Sometimes in damp meadows with no standing water. Prefers fresh water marsh, but sometimes forages in salt marsh.	<u>Low</u> : The species could occur within the rice fields surrounding the BSA. No colonial nests were observed during biological surveys.
White-tailed Kite (<i>Elanus leucurus</i>)	___/FP/___	Uses herbaceous lowlands with variable tree growth and dense population of voles. Substantial groves of dense, broad-leafed deciduous trees used for nesting and roosting.	<u>Low</u> : Tall trees within the BSA may provide suitable nesting and roosting habitat. No large stick nests observed during biological surveys of the BSA. Additionally, the species was not encountered during surveys.
Migratory Birds and Raptors	MBTA	Nest and forage in a variety of habitats including hardwood woodlands, coniferous forests, meadows, grasslands and riparian.	<u>Known</u> : Species protected by the MBTA were observed nesting within the BSA. Numerous cliff swallows were utilizing the bridge for nesting.
<p align="center"><u>CODE DESIGNATIONS</u></p> <div> <div> FE = Federally-listed Endangered FT = Federally-listed Threatened FC = Federal Candidate Species MBTA = protected by the federal Migratory Bird Treaty Act SE = State-listed Endangered ST = State-listed Threatened </div> <div> SSC = CDFW Species of Special Concern FP = CDFW Fully Protected Species SNC = CDFW sensitive natural community CNPS 1A = Plants presumed extinct in California CNPS 1B = Rare or Endangered in California or elsewhere CNPS 2 = Rare or Endangered in California, more common elsewhere </div> </div>			
<p>*Potential for occurrence: for plants, it is considered the potential to occur during the survey period; for birds and bats it is considered the potential to breed, forage, roost, over-winter, or stop-over in the project area during migration. Any bird or bat species could fly over the</p>			

Common Name (Scientific Name)	Status Fed/State/ CNPS	Associated Habitats	Potential for Occurrence*
<p>project area, but this is not considered a potential for occurrence. The categories for the potential for occurrence include:</p> <p><u>None</u>: The species or natural community is known not to occur, and has no potential to occur in the project area based on sufficient surveys, the lack of suitable habitat, and/or the project area is well outside of the known distribution of the species.</p> <p><u>Low</u>: Potential habitat in the project area is marginal, but the species is known to occur in the vicinity of the project area; or suitable habitat is present, but the species is not known to occur in the vicinity of the project area.</p> <p><u>Moderate</u>: Suitable habitat is present in the project area and the species is known to occur in the vicinity of the project area.</p> <p><u>High</u>: Habitat in the project area is highly suitable for the species and there are reliable records close to the project area, but the species was not observed.</p> <p><u>Known</u>: Species was detected in the project area or a recent reliable record exists for the project area.</p>			

Chapter 4 Results: Biological Resources, Discussion of Impacts, and Mitigation

Project biologists conducted site visits and utilized various databases and resources to determine the potential for this project to impact biological resources. This chapter describes the habitats and natural communities of concern, as well as the special-status plant and wildlife species that were observed or were determined to have the potential to occur in the BSA.

The Contractor will use Caltrans' standard best management practices (BMPs), as well as specific avoidance and minimization measures (AMMs) to protect sensitive natural resources from project impacts. A list of the general avoidance and minimization measures (AMMs) that will be incorporated into the project include but are not limited to:

Permits

- Include a copy of relevant permits with construction bid package. Implement the conditions of all applicable federal and state permits.

Environmentally Sensitive Areas

- Prior to construction starting, project limits will be delineated with high visibility fencing to avoid ground disturbance adjacent to work limits. Fencing will be maintained until the completion of work in the area and removed when work is completed.
- All spoils, excavated materials, and plant materials will be disposed at a licensed and approved facility.

Erosion Control

Protective measures will include but are not limited to:

- No discharge of pollutants from vehicle and equipment cleaning will be allowed into any storm drains or watercourses.
- Vehicle and equipment fueling and maintenance operations will be at least 50 feet away from watercourses, except at established commercial gas stations or established vehicle maintenance facilities.
- Dust control will include use of water trucks and dust palliatives to control dust in excavation and fill areas, and covering temporary stockpiles when weather conditions require. The amount of water used will be kept to the minimum amount needed, and water will not be allowed to form puddles or runoff from construction surfaces.

- Biodegradable straw wattles will be installed along or at the base of slopes during work to capture sediment.
- Protection of graded areas from erosion will be implemented using a combination of silt fences, biodegradable fiber rolls along toes of slopes or along edges of designated staging areas, and biodegradable erosion control mat (such as jute or coir) as appropriate on sloped areas.

Project Site Management

- Access routes and the number and size of staging, access and work areas will be limited to existing paved surfaces, graveled, or other previously compacted surfaces as identified in the project plans. Movement of heavy equipment to and from the site will be restricted to established roadways. Project activities shall confine all project-related parking, storage areas, equipment storage, vehicles, and supplies and any other construction activities to the project work limits using, to the extent possible, previously disturbed areas. Additionally, Permittee shall not use or cross Covered Species' habitat outside of the marked project work limits. During construction operations, stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas.
- All equipment will be maintained such that there will be no leaks of automotive fluids such as gasoline, oils, or solvents, and a Spill Response Plan will be prepared. The Spill Response Plan will indicate the proper storage of any hazardous materials or petroleum products and fuels to be used in work activities and response measures, including appropriate response personnel and timing in the event of their accidental release.
- Hazardous materials such as fuels, oils, and solvents will be stored in sealable containers in a designated location that is at least 100 feet from aquatic habitats.
- All trash will be disposed of in closed containers and removed from the construction area at least once per week during the construction period. Workers will not feed or attract wildlife to the project area.
- Upon completion of construction all temporary fill and construction refuse will be removed from the project area and properly disposed of.

Environmental Awareness Training

Before project activities, a qualified biologist will conduct an education program for all project personnel. Species to be covered in the training include, northwestern pond turtle, giant garter snake (GGS), and birds protected by the Migratory Bird Treaty Act (MBTA).

The program will include:

- Information on the protected species and the habitats within the action area.
- Requirements of federal and State laws pertaining to these species.
- Identification of measures implemented to conserve the species and habitats within the action area.
- Distribution of a fact sheet conveying this information to the personnel who may enter the action area.

Pre-construction Surveys

- Prior to initiation of ground disturbing work, the County will submit to the Agencies for approval the name and resume of an individual who will act as the Designated Biologist (DB) for the project. The DB shall be responsible for monitoring construction activities for compliance with measures so as to minimize and fully mitigate or avoid the incidental take of GGS and its associated habitat. Resumes for all biological staff who will be acting as biological monitors will also be submitted to the agencies for approval as qualified biologists. A list of approved staff they may work as the acting DB will be maintained in the on-site construction monitoring binder.
- An approved biologist will conduct pre-construction surveys before any ground-disturbing activities occur at time intervals described in species-specific avoidance and maintenance measures (AMMs). Surveys will confirm that no occupied bird nests are present within the action area. If construction will take place during the bird nesting season (February 1-August 31). Nesting bird surveys will be conducted 100 feet beyond the project limits for passerines, and 250 feet beyond the project limits for raptors.
- If active nests are discovered, the qualified biologist will establish buffer zones around the nest to prevent disruption of the nesting cycle. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails as determined by the qualified biologist. Nests shall be monitored at least twice per week and a status report submitted monthly.
- If feasible, consistent removal of nests during nest building will be used to deter birds from nesting in the project area. If an occupied nest occurs in the project area, the County will consult with the CDFW to develop appropriate measures to avoid disturbance to nesting birds.
- If a protected species is discovered during construction within the action area, the County will notify USFWS and/or CDFW as required in resource agency permits, and the

qualified biologist will have the authority to stop all construction work on the site until the appropriate corrective measures have been conducted, and it is determined that the animal will not be harmed.

- For protected resources and species, construction activity will be scheduled to avoid impacts to listed species and habitats to the extent practicable.
- An approved biological monitor will be present during ground-disturbing activities (e.g., clearing, grubbing, or excavation) that could result in take of a special-status species.
- Biological monitors will record all observations of special-status species to the CNDDDB.

Restore Disturbed Areas

Disturbed areas will be restored with the following methods

- All slopes or unpaved areas temporarily affected by the proposed project will be stabilized with effective erosion control materials.
- Slopes and bare ground will be reseeded with native plant seed mix to stabilize and prevent erosion as soon as possible.
- Where temporary disturbance includes the removal of trees or plants, native species will be replanted.

4.1 Habitats and Natural Communities of Special Concern

4.1.1 Designated Sensitive Natural Communities

The CDFW's Natural Community Conservation Planning (NCCP) program originated from F.G.C. Section 2800. The purpose of the NCCP program was to combine CDFW's efforts with private and public partners to take a broad-based ecosystem approach to planning for the protection and perpetuation of California's biological diversity. The goal of the NCCP is to identify and provide for regional protection of plants, wildlife, and their habitats. Part of this effort is the development of a standardized classification of vegetation community nomenclature that is utilized by the National Vegetation Classification System. Another tool initiated by the NCCP is the Vegetation Classification and Mapping Program (VegCAMP) as a result of a State mandate requiring CDFW to develop and maintain a vegetation mapping standard for the State per F.G.C. Section 1940. Sensitive natural communities that have been mapped to date as a result of the VegCAMP effort are included in the CNDDDB database.

4.1.1.1 SURVEY RESULTS

There are no CDFW-designated sensitive natural communities within or adjacent to the BSA.

4.1.1.2 SURVEY RESULTS

There are no CDFW-designated sensitive natural communities within or adjacent to the BSA.

4.1.1.3 PROJECT IMPACTS

The project will have no impact on CDFW-designated sensitive natural communities.

4.1.1.4 AVOIDANCE AND MINIMIZATION MEASURES

Because no impacts to CDFW-designated sensitive natural communities are anticipated, there are no specific AMMs proposed.

4.1.1.5 COMPENSATORY MITIGATION

Because no impacts to CDFW-designated sensitive natural communities are anticipated, there is no proposed compensatory mitigation.

4.1.1.6 CUMULATIVE IMPACTS

No cumulative impacts to CDFW-designated sensitive natural communities will occur as a result of the project.

4.1.2 Wetlands and Other Waters

This section discusses potential project impacts on waters of the U.S., including wetlands. Wetlands and other water resources (e.g., rivers, streams, and natural basins) are a subset of “waters of the U.S.” and receive protection under Section 404 of the federal CWA. The USACE has primary federal responsibility for administering regulations that concern waters and wetlands. The USACE acts under two statutory authorities: the Rivers and Harbors Act (Sections 9 and 10), which governs specified activities in “waters of the U.S.” including wetlands.

The California Water Code defines “waters of the State” as “any surface water or groundwater, including saline waters, within the boundaries of the state” (Water Code Section 13050[e]). In this report, waters of the U.S. are therefore also waters of the State. The RWQCB may exercise jurisdiction over discharges into the waters of the State identified in the project impact area.

4.1.2.1 SURVEY RESULTS

A preliminary delineation of wetlands and waters of the U.S. was conducted by Northstar in May 2017. Waters of the U.S. present within the survey area consist of the Pleasant Grove Creek Canal which contains water perennially and two seasonal wetlands present to the north and south of the existing bridge. The canal is approximately 350 feet wide from low terrace boundary to low terrace boundary, while the distance between ordinary high water marks (OHWM) is approximately 75 feet. The low flow channel where water is present during the summer is approximately 60 feet. Like many creek, rivers, and canals within northern California, the Pleasant Grove Creek Canal is subject to higher flows during the winter months (November-

March) when precipitation amounts are at their highest. The two seasonal wetlands are located near the eastern levee on both the north and south side of the existing bridge. They are formed in depressional areas where water remains when water levels within the canal recede.

4.1.2.2 PROJECT IMPACTS

A formal Delineation of Waters of the U.S. report is being prepared by NorthStar. The delineation will be submitted to the USACE for a formal determination of the presence of jurisdictional waters. Depending on the outcome of the USACE determination, there could be temporary and permanent impacts to wetlands and other waters of the U.S. within the ESL. Permanent impacts below the ordinary high water mark could result from the construction of the new bridge and the demolition and removal of the existing bridge. Impacts below the OHWM would require a Clean Water Act Section 404 Nationwide Permit 14 (Linear Transportation) and Section 401 Water Quality Certification.

4.1.2.3 AVOIDANCE AND MINIMIZATION MEASURES

The following water-quality protection measures will be implemented throughout the project site:

- 1) Environmentally Sensitive Area (ESA) fencing will be installed along the project limits to avoid and minimize impacts beyond the project area.
- 2) A water quality inspector will inspect the site after a rain event to ensure that the stormwater BMPs are adequate.
- 3) The potential for adverse effects to water quality will be avoided by implementing temporary and permanent BMPs outlined in the Caltrans *Construction Site Best Management Practices Manual* (Caltrans 2003). Caltrans erosion-control BMPs will be used to minimize any wind- or water-related erosion. This manual is comprehensive and includes many other protective measures and guidance to prevent and minimize pollutant discharges. Protective measures will be included in the contract documents, including, at a minimum:
 - a. No discharge of pollutants from vehicles and equipment cleaning will be allowed into the storm drain or water courses.
 - b. Vehicle and equipment fueling and maintenance operations must be at least 50 feet away from water courses.
 - c. Dust control will be implemented, including the use of water trucks and tackifiers to control dust in excavation and fill areas, applying drain rock to temporary access road entrances and exits, and covering temporary stockpiles when weather conditions require.

- d. Straw wattles will be installed along or at the base of slopes during construction to capture sediment, and temporary organic hydromulching will be applied to all unfinished disturbed and graded areas.
- e. Work areas where temporary disturbance has removed the pre-existing vegetation will be restored and re-seeded with an approved native seed mix.
- f. Graded areas will be protected from erosion using a combination of silt fences, fiber rolls along the toe of slopes or along edges of designated staging areas, and erosion-control netting such as jute or coir, as appropriate.

4.1.2.4 COMPENSATORY MITIGATION

Compensatory mitigation for permanent impacts to USACE, RWQCB, and CDFW jurisdictions will be purchased prior to project construction and will be detailed in regulatory permits received from the agencies.

4.1.2.5 CUMULATIVE IMPACTS

No cumulative impacts to waters of the U.S. will occur as a result of the proposed project due to the AMMs discussed above as well as the purchase of compensatory mitigation for any impacts to WOUS.

4.1.3 Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act was passed in 1976 for the conservation and management of the fishery resources of the U.S. to prevent overfishing, to rebuild overfished stocks, to ensure conservation, and to facilitate long-term protection of essential fish habitats (EFH). This Act is implemented by regional Fishery Management Councils that work with NOAA to develop and implement fishery management plans. The plans must identify and the EFH for each fishery within their NOAA jurisdiction. When a project is proposed that could adversely affect EFH, federal agencies must consult with NOAA in order to obtain avoidance and minimization consultation as well as conservation and enhancement recommendations.

4.1.3.1 SURVEY RESULTS

No EFH was identified within the BSA.

4.1.3.2 PROJECT IMPACTS

Because no EFH is present and with the implementation of AMMs described in Section 4.1.2.3 to protect water quality, the proposed project will have no impact on EFH.

4.1.3.3 AVOIDANCE AND MINIMIZATION MEASURES

The AMMs proposed to protect water quality in Section 4.1.2.3 will also protect EFH outside of the BSA.

4.1.3.4 COMPENSATORY MITIGATION

Because no EFH exists within the BSA no impacts to EFH are anticipated, there is no proposed compensatory mitigation.

4.1.3.5 CUMULATIVE IMPACTS

No cumulative impacts to EFH will occur as a result of the project due to AMMs discussed above and the absence of EFH within the BSA.

4.2 Special-Status Plant Species

Based on literature and database searches and botanical surveys, 15 plant species were initially evaluated and none were determined to be within the BSA. This is likely due to the high degree of disturbance over time associated with levee system development and conversion from natural areas to agricultural fields. The introduction of non-native plant species both intentionally and inadvertently altered the landscape significantly. Non-native plants out-compete native place species for resources such as space, water, and nutrients.

4.3 Special-Status Wildlife Species

Based on literature and database searches, and wildlife surveys, a total of 39 wildlife species were initially considered. After further examination a total of four species and migratory birds and raptors protected by the MBTA have at least moderate potential to occur within the ESL. The four species include western pond turtle, giant garter snake, song sparrow (Modesto Population), and Swainson's hawk. Species with no suitable habitat in the BSAs were dropped from consideration and are not discussed further.

4.3.1 Western Pond Turtle

The western pond turtle (*Emys marmorata*), a California species of special concern, occurs throughout northern California. Pond turtles are associated with permanent or nearly permanent water including ponds, lakes, streams, and irrigation ditches or permanent pools along intermittent streams in a variety of environments. The drab brown or khaki-colored turtles are often observed basking on exposed sites, such as logs and mud banks. An omnivorous species, pond turtles feed on a variety of items including aquatic plant material, small insects, aquatic invertebrates, fish, and frogs. They lay their eggs upland of streams in nests they dig in dry soil with sparse vegetation and southern exposure. After the eggs are deposited in the nest they cover

the hole with a mixture of vegetation and wetted soil. Nesting occurs from April through August (Stebbins 2003).

Habitat alteration (e.g., flood control projects, creek channelization, and riparian development) and predation of the young by bullfrogs, raccoons, introduced red foxes (*Vulpes vulpes*), and bass (*Micropterus* spp.) have been the primary causes for decline of the species.

Six western pond turtles were observed basking along the water's edge directly upstream and downstream of the bridge during biological surveys. In addition, there is one CNDDDB record, within a 5-mile radius of the ESL, of an adult western pond turtle observed basking by CDFW personnel in 2014.

4.3.1.1 SURVEY RESULTS

No focused surveys for western pond turtle were conducted; however, six adults were observed basking during biological surveys of the ESL.

4.3.1.2 PROJECT IMPACTS

Even with the implementation of AMMs described below, the proposed project could adversely impact western pond turtles or their habitat.

4.3.1.3 AVOIDANCE AND MINIMIZATION MEASURES

In addition to the AMMs listed above, the following AMMs will be implemented to prevent project impacts to western pond turtle:

1. No later than 48 hours prior to any ground disturbance, pre-construction surveys will be conducted by a qualified biologist within the project limits at the bridges identified above as having suitable habitat present.
2. If project activities are to occur during the nesting season, (late June-July), a survey will be conducted by a qualified biologist to locate any northwestern pond turtles or their nests before project activities begin. This survey should be conducted no more than two days prior to the start of project activities. If a pond turtle nest is located, the biologist will flag the site and determine whether projects activities can avoid affecting the nest. If the nest cannot be avoided, a no-disturbance buffer zone will be established around the nest in coordination with CDFW. The no-disturbance buffer will remain in place until the young have left the nest.
3. If a pond turtle is observed in the project limits during construction, all work will be stopped, and the turtle will: 1) be allowed to leave on its own volition, or 2) be moved by the project biologist in the direction it was heading (upstream or downstream), at a safe

distance from the construction activities, and at a safe location. The biologist will report observations and relocations to the County.

4.3.1.4 COMPENSATORY MITIGATION

There is no proposed compensatory mitigation for the species.

4.3.1.5 CUMULATIVE IMPACTS

No cumulative impacts to western pond turtle or its habitat will occur as a result of the project due to AMMs discussed above.

4.3.2 Giant Garter Snake

The giant garter snake is a federal and state listed threatened species endemic to the wetlands of the Sacramento and San Joaquin Valleys of California. The giant garter snake prefers the high-quality natural wetlands which include marshes, ponds, small lakes, low-gradient streams with silty substrates, and managed wetlands. Additionally, it has become readily apparent giant garter snakes inhabit agricultural wetlands and other associated waterways such as irrigation and drainage canals, sloughs, and adjacent uplands in the Central Valley. Because of the direct loss of natural habitat, GGS now relies on rice farming in the Sacramento and San Joaquin Valley, but also uses managed marsh areas in federal national wildlife refuges and state wildlife areas. Giant garter snakes are typically absent from larger rivers with sand, rock and gravel substrates, wetlands with sand, gravel, or rock substrates due to a lack of habitat and emergent vegetation. Riparian woodlands typically do not provide suitable habitat because of excessive shade, lack of basking sites, and absence of prey populations (USFWS 2006). The GGS is active from early spring (April-May) through mid-fall (October-November), although this period of activity varies based on weather. During the winter they are much less active and rarely emerge from burrows. When active, the species usually remains near wetland habitat, although they can move up to 0.8 km in a day (USFWS 1999).

The loss and fragmentation of habitat is the leading threat to GGS throughout the range of the species. Habitat loss has occurred from urban expansion, agricultural conversion, and flood control. Fragmentation limits dispersal and isolates populations of the giant garter snake, increasing the likelihood of inbreeding, decreasing fitness, and reducing genetic diversity. Some populations of the giant garter snake are subject to the cumulative effects of a number of other existing and potential threats, including roads and vehicular traffic, predation by non-native species and climate change.

Primary habitat requirements consist of 1) adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; 2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active

season; 3) grassy banks and openings in waterside vegetation for basking; and 4) higher elevation uplands for cover and refuge from floodwaters during the snake's dormant season in the winter (USFWS 2006).

According to the USFWS Recovery Plan for the Giant Garter Snake released in 2017, habitat components include; 1) a fresh water component with protective emergent vegetative cover that will allow foraging, 2) An upland component near the aquatic habitat that can be used for thermoregulation and for summer shelter in burrows, and 3) An upland refugia component that will serve as winter hibernacula. Further, researchers and experts acknowledge qualitative components for ideal aquatic and upland habitat. Ideal aquatic habitat has 1) water present from March through November; 2) slow moving or static water flow with mud substrate, 3) the presence of emergent bankside vegetation that provides cover from predators and may serve in thermoregulation, 4) the absence of a continuous canopy of riparian vegetation, 5) available prey in the form of small amphibians and small fish, 6) thermoregulation sites with supportive vegetation such as folded tule clumps immediately adjacent to escape cover, 7) the absence of large predatory fish, and 8) the absence of recurrent flooding, or where flooding is probable the presence of upland refugia. Ideal upland habitat contains, 1) available bankside vegetative cover, typically tule or cattail, for screening from potential predators, 2) available permanent shelter, such as bankside cracks or crevices, holes, or small mammal burrows and 3) free of poor grazing management practices (i.e., grazing to the point at which giant garter snake refugia has been reduced or eliminated). An important portion of the upland component is upland refugia for the winter months when the snakes hibernate and enter a lethargic state similar to mammalian hibernation. Over-wintering sites generally consist of mammal burrows along canal or marsh banks, or rock slope protection along roadways or canal edges.

Giant garter snakes feed primarily on small fish, tadpoles, and frogs. The GGS inhabits small mammal burrows and other soil crevices above prevailing flood elevations throughout its winter dormancy period. The snakes typically select burrows with sunny exposure along south and west facing slopes. The breeding season extends through March and April, and females give birth to live young from late July through early September. Brood size is variable, ranging from 10 to 46 young, with a mean of 23 (Hansen and Hansen, 1990). Young immediately scatter into dense cover and absorb their yolk sacs, after which they begin feeding on their own. Although growth rates are variable, young typically more than double in size within the first year; sexual maturity averages three years for males and five years for females (Hansen and Hansen, 1990).

There are 54 CNDDDB occurrences within a 5-mile radius of the ESL each of these occurrences could represent more than one individual snake. The nearest record (CNDDDB occurrence 59) is

for one snake observed in 1995 at a location approximately 1500 feet west of the project area. The potential for the species to occur in the ESL is high.

4.3.2.1 SURVEY RESULTS

The ESL is comprised of 68.75 acres in total, of which 43.58 are suitable GGS habitat and 25.17 classified as non-habitat.

- GGS Upland Habitat makes up 11.1 acres of the ESL and is comprised of grassland, levee roads adjacent to paddies. These areas meet GGS habitat requirements and provide suitable burrowing habitat for summer thermal regulation and the higher ground burrows provide refuge for winter hibernacula.
- GGS Aquatic Habitat makes up 26.08 acres of the ESL and is comprised of roadside ditches; rice paddies, riverine/canal, irrigation ditches and riverine wetland features. These areas provide adequate fresh water during the snake's active season, protective emergent vegetation provides cover for foraging and series of canals, ditches and rice paddies provide a means of movement within the area. Additionally, there are accessible areas along the banks that provide opportunity for basking.
- GGS Non-Habitat makes up 25.17 acres of the ESL and is comprised of urban and barren habitat types within the ESL. The non-habitat includes a cemetery, orchard and an agriculture storage yard. All of these areas have a high amount of human disturbance and have highly managed vegetation. Both of these factors make them unsuitable as snake habitat, the disturbance causes a lot of noise which repels snakes and the managed vegetation results in a lack of cover for hiding from and evading predators.

No focused surveys for giant garter snake were conducted and the species was not observed. However, during the general biological survey much the habitat within the ESL met the snakes needs and several borrows were observed.

4.3.2.2 PROJECT IMPACTS

Even with the implementation of the AMMs described below, the proposed project is likely to adversely impact the giant garter snake or its habitat.

4.3.2.3 AVOIDANCE AND MINIMIZATION MEASURES

The following AMMs will be implemented to prevent project impacts to the GGS:

General Measures:

1. A GGS handling and relocation plan outlining appropriate procedures for these activities will be prepared for the project and provided to USFWS and CDFW (Agencies) for review and approval prior to commencement of construction. The generalized content is anticipated to

include: conditions under which the biologist may order work stop and re-start; approved monitoring equipment and processing procedures, and procedures for treating an injured animal, including approved veterinary treatment facilities and their location.

2. In addition to the avoidance and minimization measures listed herein, compensatory mitigation will be purchased for the temporary and permanent impacts to GGS habitat, as identified in the applicable regulatory permits. The mitigation credits will be purchased from a CDFW and USFWS approved mitigation bank. The transaction will take place through a purchase and sale agreement, and funds must be transferred within 30 days, and prior to the initiation of any construction activities that would result in direct or indirect impacts to GGS.
3. Prior to initiation of ground disturbing work, the County will submit to the Agencies for approval the name and resume of an individual who will act as the Designated Biologist (DB). The DB shall be responsible for monitoring construction activities for compliance with measures so as to minimize and fully mitigate or avoid the incidental take of GGS and its associated habitat. Resumes for all biological staff who will be acting as biological monitors will also be submitted to the agencies for approval. A list of approved staff they may work as the acting DB will be maintained in the on-site construction monitoring binder.
4. Construction activities will be conducted between May 1st and October 1st if possible, when direct mortality will be lessened because the snakes can move to avoid danger. If work is not able to occur during the active season, the areas scheduled for ground disturbance/fill will be excluded with silt fence containing one-way exits for at least two weeks prior to the inactive season, to reduce the likelihood of individuals wintering within the area.
5. Twenty-four hours prior to the commencement of construction activities within the canal and areas within 200 feet of the canal, the project area shall be surveyed by a USFWS approved biologist to document the presence or absence of GGS. The biologist will provide the USFWS a written report that adequately documents the monitoring efforts within 24-hours of commencement of construction activities. The project will be re-inspected by the monitoring biologist whenever a lapse of two weeks or greater has occurred. If any GGS habitat is identified within the project area during the pre-construction survey, exclusionary fencing shall be placed around the potential habitat to identify areas to be avoided during construction activity.
6. Construction personnel will participate in a USFWS Worker Environmental Awareness Training program prior to the initiation of construction activities. The training will educate all workers and site personnel about identification of GGS and appropriate actions to be taken in the event GGS are observed during construction. Under this training, information regarding the life history of GGS, importance of irrigation canals, marshes/wetlands, and

seasonally flooded areas, and a description of activities that qualify as take of the species including harassment, destruction of habitat, and death of an individual.

7. During construction operations, excavation will be accomplished by equipment located and operated outside of the low flow channel. Stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and all operations will be confined to the minimal area necessary. All project related vehicles will observe a 20-mile-per-hour speed limit within construction areas, except on existing paved roads where they will adhere to the posted speed limit. All construction related holes will be covered to prevent entrapment of individuals. All construction equipment shall be checked daily prior to starting work.
8. During work within the banks of the canal, a qualified biologist will conduct daily visual surveys of the construction zone prior to any earthmoving activities to verify there are no GGS in the area. If GGS is encountered, the County or its consultant shall halt construction until the snake has left the area under its own volition and notify the USFWS immediately to determine the appropriate procedures related to the collection or relocation of the snake. A report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the snake, within one business day. The biologist will be required to report any take of listed species to the Service immediately by telephone and written letter or email within one day of the incident.
9. Standard construction best management practices (BMPs) will be implemented to minimize potential for erosion and sedimentation.
10. After completion of construction activities, the applicant will remove any temporary fill and construction debris and, wherever feasible restore disturbed areas to pre-project conditions. Restoration work includes such activities as revegetating the banks of the canal with an approved seed mix.
11. A photo documentation report showing pre- and post-construction project area conditions will be submitted to the USFWS one month after the completion of the project.

4.3.2.4 COMPENSATORY MITIGATION

Because impacts to giant garter snake are anticipated, compensatory mitigation will be purchased for the temporary and permanent impact to GGS habitat. The mitigation credits will be purchased from a CDFW and USFWS approved mitigation bank. The transaction will take place through a purchase and sale agreement, and funds must be transferred within 30 days, and prior to the initiation of any construction activities that would result in direct or indirect impacts to GGS.

4.3.2.5 CUMULATIVE IMPACTS

No cumulative impacts to giant garter snake or its habitat will occur as a result of the project due to the AMMs discussed above.

4.3.3 Song Sparrow (Modesto Population)

The Modesto population is a subspecies of song sparrow and is a California species of special concern. It is endemic to California and lives only in the north-central portion of the Central Valley. The highest densities occur in the Butte Sink in Butte County, and along the Sacramento-San Joaquin Delta. Breeding records exist for Butte, Colusa, Sutter, Sacramento, and San Joaquin counties. While it is still common in some areas, it is believed that large-scale loss of wetland and riparian habitat has caused population decline and extirpation in other areas. The sparrow is found in emergent freshwater marshes, riparian willow (*Salix* spp.) thickets, and valley oak forests with a blackberry understory, and sometimes along vegetated irrigation canals and levees. It breeds from mid-March to early August. (Shuford and Gardali 2008; Humple and Geupel 2004). In general, song sparrows are small with a short bill and brown streaking on a white chest and flanks (Cornell Laboratory of Ornithology 2016). The sparrow's diet consists primarily of seeds for much of the year, but insects become increasingly important, reaching more than 70 percent of its diet in May. Habitat loss and fragmentation—as well as nest predation by several species of mammals, snakes, and birds, including feral domestic cats—pose threats to the sparrow (Shuford and Gardali 2008; Humple and Geupel 2004).

There are no distinctive differences in appearance between song sparrows that allow absolute visual identification of a song sparrow as being part of the “Modesto population.” Although designation as subspecies for the “Modesto” song sparrow is pending further research, it is recognized as such and has been listed as a California SSC.

4.3.3.1 SURVEY RESULTS

Song sparrow was detected during biological survey, as previously mentioned there are no distinctive differences in appearance between song sparrows that would allow assignment of the individuals detected into the Modesto population. However, the habitat within the ELS appears suitable and similar to areas where individuals of the Modesto population are found.

4.3.3.2 PROJECT IMPACTS

With the implementation of the AMMs identified below the project will have no impact on song sparrow (Modesto population) or its habitat.

4.3.3.3 AVOIDANCE AND MINIMIZATION MEASURES

The following AMMs will be implemented to prevent project impacts to song sparrows:

1. Construction activity will be conducted during the bird breeding season (February 1 through August 31). Therefore, pre-construction nesting bird surveys will be conducted by a qualified biologist no more than 48 hours prior to the commencement of construction. If an active migratory bird nest is found, the County will be notified immediately.
2. No work will occur in the vicinity of an active migratory bird nest until the County establishes a protective buffer zone or other protective measures. The buffer should be sufficient enough in size to ensure impacts to nesting species are avoided. Project activities shall be prohibited within the buffer zone until young have fledged or the nest fails, as determined by a qualified biologist.

4.3.3.4 COMPENSATORY MITIGATION

Because there will be no impact to song sparrow, no compensatory mitigation is proposed.

4.3.3.5 CUMULATIVE IMPACTS

No cumulative impacts to song sparrow or its habitat will occur as a result of the project due to the AMMs discussed above.

4.3.4 Swainson's Hawk

Swainson's hawk is listed as Threatened under the California Endangered Species Act (CESA). It is a long-distance migrant with nesting grounds in western North America. Swainson's hawks arrive in the Central Valley between March and early April to establish breeding territories. Breeding occurs from late March to late August, peaking in late May through July (Fitzner 1980).

The Swainson's hawk nests in isolated trees, small groves, or large woodlands, adjacent to open grasslands or agricultural fields. This species typically nests near riparian areas; however, it has been known to nest in urban areas as well. Nest locations are usually in close proximity to suitable foraging habitats, which include grasslands, fallow fields, irrigated pastures, alfalfa and other hay crops, and low-growing row crops. Swainson's hawks primarily prey upon small rodents such as ground squirrels (*Spermophilus* spp.), pocket gophers (*Thomomys* spp.), voles (*Microtus* spp), but insects, reptiles, and birds may be consumed as well (Snyder and Wiley 1976; Fitzner 1980; Estep 1989). Swainson's hawks leave their breeding grounds to return to their wintering grounds in late August or early September (Bloom and DeWater 1994). Swainson's hawks' largest threats are loss of habitat and secondary poisoning from insecticides on their wintering grounds (Woodbridge et al. 1995a).

There are several known occurrences of the species within the cross canal. The nearest of which occurs approximately 0.25 miles north of the existing bridge. The nest is presumed extant and

was last observed in 2010 when it successfully fledged two chicks. The large trees surrounding the ESL could provide suitable nesting habitat for the species.

4.3.4.1 SURVEY RESULTS

No Swainson's hawks or active nests were observed in the BSA.

4.3.4.2 PROJECT IMPACTS

With the implementation of AMMs described below, the proposed project will have no impact on Swainson's hawk or its habitat.

4.3.4.3 AVOIDANCE AND MINIMIZATION MEASURES

The following AMMs will be implemented to prevent project impacts to Swainson's hawk:

1. Construction activity will be conducted during the bird breeding season (February 1 through August 31).
2. Therefore, to ensure that no indirect impacts to active nests occur due to any future construction activities, a qualified biologist will conduct a pre-construction survey for raptor nests per the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (CDFG 2000). The area to be surveyed will include a 0.5 mile-radius including and surrounding the BSA. If active nests are found, the County will be notified. No construction will occur until appropriate buffers are established, based upon recommendation by the County.
3. The pre-construction survey will be conducted no less than 14 days and no more than 30 days prior to the commencement of construction.

4.3.4.4 COMPENSATORY MITIGATION

Because no impacts to Swainson's hawk are anticipated, there is no proposed compensatory mitigation.

4.3.4.5 CUMULATIVE IMPACTS

No cumulative impacts to Swainson's hawk or its habitat will occur as a result of the project due to the AMMs discussed above.

4.3.5 Migratory Birds

The federal MBTA and California F.G.C. Sections 3503 and 3800 protect the occupied nests and eggs of migratory and non-game bird species. The federal Bald and Golden Eagle Protection Act also prohibits the take of bald and golden eagles and their nests. Birds nest in a variety of places including trees, shrubs, man-made structures, and the ground. Work buffers around migratory birds and their nests are typically needed to minimize impacts to these species.

Numerous species protected by the MBTA were observed within the ESL and habitat within the ESL is suitable for nesting for a number of species.

4.3.5.1 SURVEY RESULTS

Active cliff swallow and in smaller numbers, barn swallow nests were observed beneath the bridge soffits. No large stick nests were observed in any of the large trees within or immediately surrounding the ESL.

4.3.5.2 PROJECT IMPACTS

With the implementation of AMMs described below, the proposed project will have no impact on migratory birds or their habitat.

4.3.5.3 AVOIDANCE AND MINIMIZATION MEASURES

The following AMMs will be implemented to prevent project impacts to migratory birds:

1. Construction activities will be conducted during the bird breeding season (February 1 through August 31). Therefore, pre-construction nesting bird surveys will be conducted by a qualified biologist no more than 48 hours prior to the commencement of construction. If an active migratory bird nest is found, the County will be notified immediately.
2. No work will occur in the vicinity of an active migratory bird nest until the County establishes a protective buffer zone or other protective measures. The buffer should be sufficient enough in size to ensure impacts to nesting species are avoided. Project activities shall be prohibited within the buffer zone until young have fledged or the nest fails, as determined by a qualified biologist.
3. If construction of the proposed bridge occurs during the cliff swallow's breeding season (April through July), the underside of the existing bridge shall be covered with $\frac{1}{2}$ to $\frac{3}{4}$ inch mesh netting before March 1 to prevent nesting in the construction area. The netting shall remain in place until demolition of the structure and must be anchored such that the swallows cannot construct their nests in the bridge. It is recommended that once such netting is put in place, a monitor visit the site weekly to check for signs that swallows are trying to nest under the bridge. If swallows enter the netted area and begin nest building, the net's integrity shall be repaired. If a swallow successfully completes a nest and lays eggs within the netted area of the existing bridge, a biological monitor shall be present to monitor the nest to ensure that construction activities do not disturb nesting activities. In the event that construction/demolition activities may result in the abandonment of hatchlings, the biologist will be able to stop work and 1) establish appropriate avoidance buffers, 2) suggest changes in construction activities that will minimize impacts to the

nest/hatchlings, and 3) identify other appropriate measures to reduce the potential for abandonment. Construction activities shall not encroach on upon the identified buffer until the nestlings have fledged or the nest fails as determined by a qualified biologist. If swallows begin colonizing on the newly constructed bridge or the existing bridge before March 1, all nest precursors (mud placed by swallows for the construction of nests) shall be knocked or washed down at least once daily until construction of the new bridge is complete or the swallows cease trying to construct nests, whichever is first.

4.3.5.4 COMPENSATORY MITIGATION

Because no impacts to migratory birds are anticipated, there is no proposed compensatory mitigation.

4.3.5.5 CUMULATIVE IMPACTS

No cumulative impacts to migratory birds or their habitat will occur as a result of the project due to the AMMs discussed above.

Chapter 5 Conclusions and Regulatory Determinations

This chapter contains a summary of the federal, State, and local regulations, agreements, and agency policies that are relevant to the proposed project and the related required permits.

5.1 Federal Endangered Species Act Consultation Summary

Evaluations of federally listed species resulted in a total of one species with “may effect- likely to adversely affect” determinations.

Compensatory mitigation would be purchased for temporary and permanent impacts to GGS habitat. Mitigation credits would be purchased from a CDFW and USFWS approved mitigation bank prior to the initiation of construction.

Potential for temporary impacts would result from construction-related actions that are unintentional, such as hazardous materials spills, or the accidental destruction of riparian vegetation.

General and specific conservation measures are proposed that would avoid and minimize effects by the project to federally-listed wildlife species.

No consultation with USFWS or USACE has occurred to date. Consultation will result in the issuance of a letter of concurrence or biological opinion from USFWS.

5.2 California Endangered Species Habitat Consultation Summary

An Incidental Take Permit (ITP) may be required. ITPs may be required for candidate, threatened, or endangered State-listed species at the discretion of CDFW. The proposed project has the potential to inadvertently temporarily impact State-listed species including GGS; therefore, consultation with CDFW should be sought regarding the need for an ITP.

No consultation with CDFW has occurred to date.

5.3 Wetlands and Other Waters Coordination Summary

5.3.1 Section 404 of the Clean Water Act

Construction activities include the placement of fill below the Ordinary High Water Mark at Bridge 18C0113, which would require a Section 404 Nationwide Permit 14 (Linear Transportation). A jurisdictional delineation must be completed and submitted to the USACE for a formal determination of the presence of jurisdictional waters. Depending on the outcome of the

USACE determination, there could be temporary and permanent impacts to wetlands and other waters of the U.S. within the ESL.

5.3.2 Section 401 of the Clean Water Act

A Section 401 permit is necessary when a project requires a 404 permit from the USACE and under other special circumstances. If it is determined that a Section 404 permit is not necessary due to lack of connectivity to navigable waters, wetlands in the BSAs would still be jurisdictional under the State Porter-Cologne Water Quality Act and could require a Notice of Applicability under State Water Resources Control Board, Water Quality Order No. 2004-004-DWQ, *Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the Army Corps of Engineers to be Outside of Federal Jurisdiction*.

5.4 Section 1602 of the California Fish and Game Code

The California Fish and Game Code Section 1602 requires a project proponent to apply for and receive a Lake and Streambed Alteration Agreement prior to the following activity in any river, stream, or lake including those that are perennial, ephemeral, or intermittent:

- Obstructing or diverting the natural flow of any river, stream, or lake;
- Changing or using any material from the bed, channel, or bank;
- Depositing or disposing of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

A Streambed Alteration Agreement (SBA) will be necessary for planned work within the BSA.

5.5 Migratory Bird Treaty Act

As described in Section 4.3.15, all migratory and non-game bird species are protected under the MBTA. The County would comply with the MBTA through the proposed AMMs described in Section 4.3.15.3. Through implementation of the proposed AMMs, the take of nests, eggs, young or individuals of bird species is not anticipated.

5.6 California Fish and Game Code

The majority of birds and mammals found in the BSA are protected under California Fish and Game Codes 3503-3505, 3513, and 3800. Section 4150 states that all non-game mammals or parts thereof may not be taken or possessed, except as provided otherwise in the code or in accordance with guidelines adopted by the CDFW. Activities resulting in mortality of non-game mammals or disturbances that cause the loss of maternity colonies of bats may be considered “take” by the CDFW. The AMMs implemented to protect special-status species and roosting bats discussed in this NES would also protect non-game animals.

5.7 Invasive Species – Executive Order (13112)

The ESL does contain Cal-IPC-ranked weeds. These species have a high potential to be spread if seeds or portions of plants are transported via contaminated equipment from site to site. This is discussed below along with the Cal-IPC rank:

- High – these species have severe ecological impacts on physical process, plant and animal communities, and vegetation structure. The plant species rated as high present within the BSA include; Himalayan blackberry (*Rubus armeniacus*), medusahead (*Elmus caput-medusae*), and yellow starthistle (*Centaurea solstitialis*).
- Moderate – these species have substantial and apparent, but general, not severe, ecological impacts on physical process, plant and animal communities, and vegetation structure. The plant species rated as moderate present in the BSA include; wild oats (*Avena fatua*), black mustard (*Brassica nigra*), ripgut brome (*Bromus diandrus*), Italian thistle (*Carduus pycnocephalus*), foxtail (*Hordeum murinum*), tree of heaven (*Ailanthus altissima*), and bull thistle (*Cirsium vulgare*).
- Limited – these species are invasive, but their ecological impacts are minor on a statewide level, or there was not enough information to justify a higher score. The plant species listed as moderate present within the BSA include; cut-leaved geranium (*Geranium dissectum*), field mustard (*Brassica rapa*), milk thistle (*Silybum marianum*).

Any earth-moving equipment should be washed when it is transported from site to site.

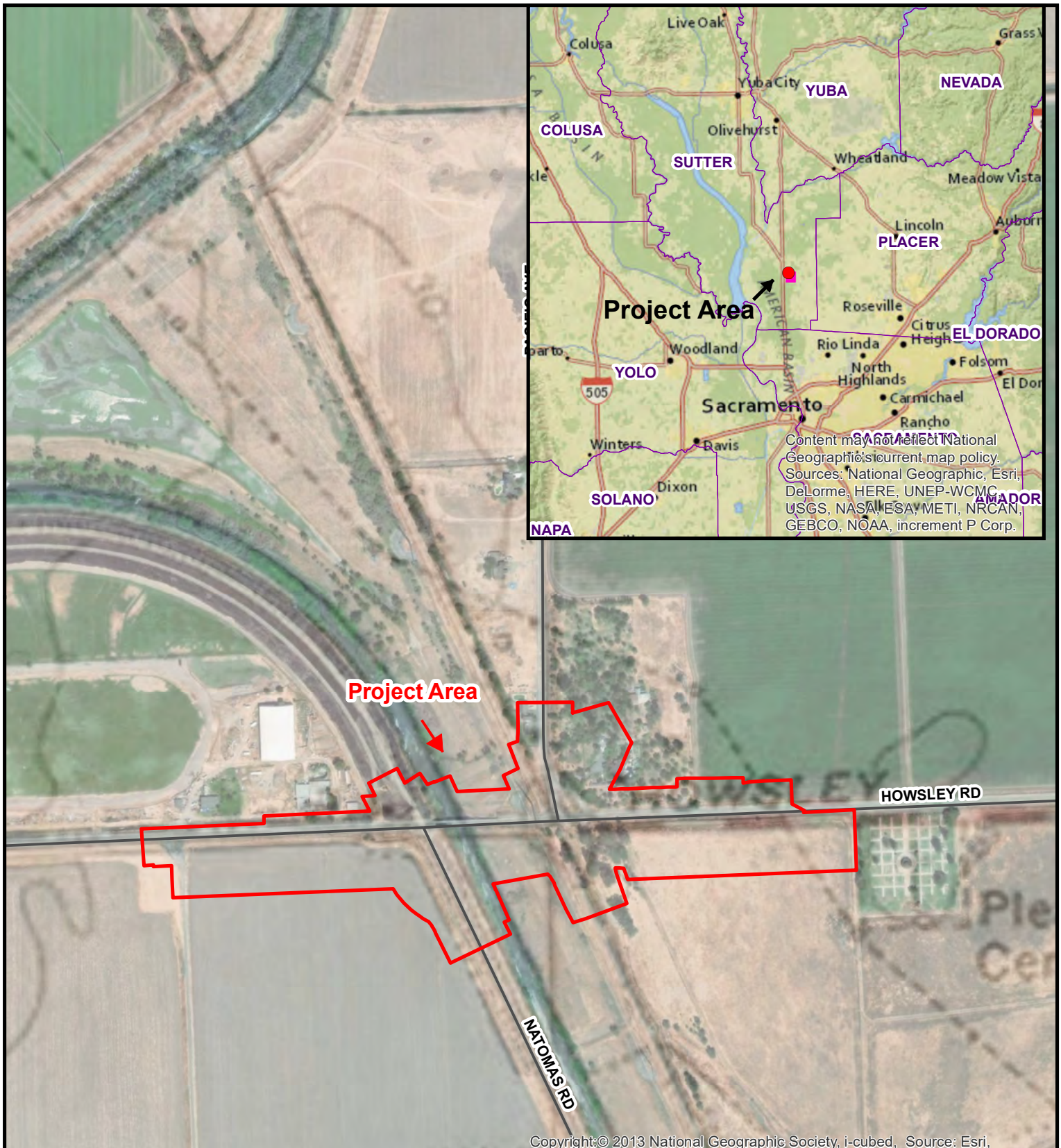
Chapter 6 References

- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. *The Jepson Manual: Vascular Plants of California*, Second Edition. University of California Press, Berkeley.
- Bloom, P.H. and D. Van DeWater. 1994. Swainson's hawk. *In*: C.G. Thelander and M. Crabtree, editors. *Life on the Edge: A Guide to California's Endangered Natural Resources: Wildlife*. BioSystems Books, Santa Cruz, CA. pp. 150-151.
- CALFED Bay-Delta Program (2000). *Ecosystem Restoration Program Plan Feather River/Sutter Basin Ecological Zone Vision*.
- California Department of Fish and Game. (2000). *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*. Swainson's Hawk Technical Advisory Committee. May 31.
- California Department of Fish and Game. 1994. Staff Report regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California. Sacramento, CA.
- California Department of Fish and Wildlife. (2018). California Natural Diversity Database. RareFind 5. Version 5.2.7. Sacramento, California.
<https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data>
- California Department of Fish and Wildlife. (2016). Swainson's Hawks in California.
<https://www.wildlife.ca.gov/Conservation/Birds/Swainson-Hawks>
- California Department of Transportation. (2003). *Construction Site Best Management Practices Manual*. Available at: <http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm>.
- California Native Plant Society. (2018). *Inventory of Rare and Endangered Plants* (online 8th Edition). Sacramento, California. <http://www.cnps.org/inventory>
- Estep, J. A. 1989. Biology, movements, and habitat relationships of the Swainson's Hawk in the Central Valley of California, 1986-87. Calif. Dept. Fish and Game, Nongame Bird and Mammal Sec. Rep., 52pp
- Fitzner, R.E. 1980. Behavioral ecology of the Swainson's hawk (*Buteo swainsoni*) in southeastern Washington. Pac. NW Lab PLN-2754.

- George, M.R. (2016). "Mediterranean Climate." In: *Annual Rangeland Handbook*. California Rangelands Resource & Information Center.
http://rangelandarchive.ucdavis.edu/Annual_Rangeland_Handbook/Mediterranean_Climate/
- Grenfell, Jr., W.E. (2008). "Riverine." In: *Wildlife Habitat Relationships System*. California Interagency Wildlife Task Group Database. Version 8.1. California Department of Fish and Wildlife. <http://www.dfg.ca.gov/biogeodata/cwhr/pdfs/RIV.pdf>
- Hansen, G.E. 1988. Review of the Status of the Giant Garter Snake (*Thamnophis couchi gigas*) and its Supporting Habitat during 1986-1987. Final Report for California Department of Fish and Game, Contract C-2060.
- Hansen, R.W. and G.E. Hansen. 1990. *Thamnophis gigas* (giant garter snake) reproduction. Herpetological Review. 21(4): 93-94.
- Holland, V.L. and D. J. Keil. (1995). *California Vegetation*. Kendall/Hunt Publishing Company. Dubuque, Iowa.
- Humple, D. and G. R. Geupel. (2004). "Song Sparrow (*Melospiza melodia*)". In: *The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California*. California Partners in Flight.
http://www.prbo.org/calpif/html/docs/riparian_v-2.html
- Kie, J.G. (2005). "Annual Grassland." In: *Wildlife Habitat Relationships System*. California Interagency Wildlife Task Group Database. Version 8.1. California Department of Fish and Wildlife. <http://dfg.ca.gov/biogeodata/cwhr/pdfs/AGS.pdf>
- Kramer, G. (1988). "Fresh Emergent Wetland." In: *Wildlife Habitat Relationships System*. California Interagency Wildlife Task Group Database. Version 8.1. California Department of Fish and Wildlife. <http://dfg.ca.gov/biogeodata/cwhr/pdfs/AGS.pdf>
- Mayer, K. and W. Laudenslayer Jr. (eds.). (1988). *A Guide to Wildlife Habitats of California*. Sacramento: State of California Resources Agency. Department of Fish and Game.
- Russo, M. (2010). *Sacramento River Flood Control Project Weirs and Flood Relief Structures*. California Department of Water Resources. Division of Flood Management. Flood Operations Branch. <http://www.water.ca.gov/newsroom/docs/WeirsReliefStructures.pdf>
- Shuford, W. D., and Gardali, T., editors. (2008). California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. *Studies of Western Birds* 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

- Schultze, R.F. (1988a). "Rice." In: *Wildlife Habitat Relationships System*. California Interagency Wildlife Task Group Database. Version 8.1. California Department of Fish and Wildlife. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=67412&inline>
- Stebbins, R.C. (2003). *A Field Guide to Western Reptiles and Amphibians*. Third edition. Houghton Mifflin, New York. 231-233 p.
- U.S. Department of Agriculture. Natural Resources Conservation Service. (2018). Web Soil Survey. <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>
- U.S. Fish and Wildlife Service. 2017. Recovery Plan for the Giant Garter Snake (*Thamnophis gigas*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California vii + 71pp.
- U.S. Fish and Wildlife Service 2016. Information for Planning and Consultation. Environmental Conservation Online System. Website <http://ecos.fws.gov/ipac>
- U.S. Fish and Wildlife Service. (2016a). Giant Garter Snake. https://www.fws.gov/sacramento/es_species/Accounts/Amphibians-Reptiles/es_giant-garter-snake.htm
- U.S. Fish and Wildlife Service. 2006. Giant Garter Snake (*Thamnophis gigas*) 5-Year Review: Summary and Evaluation. Sacramento, CA.
- U.S. Fish and Wildlife Service 1997. Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo Counties, California.
- Western Regional Climate Center. (2018). Cooperative Climatological Data Summaries. [http://www.wrcc.dri.edu/climate data/climsum](http://www.wrcc.dri.edu/climate%20data/climsum).
- Woodbridge, B. (1998). "Swainson's Hawk (*Buteo swainsoni*)". In: *The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated bird in California*. California Partner's in Flight. http://www.prbo.org/calpif/htmldocs/species/riparian/swainsons_hawk.htm

Appendix A Figures



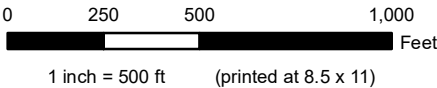
Copyright © 2013 National Geographic Society, i-cubed, Source: Esri,

Legend

Linetype

Project Area

Roads



Imagery Source:
USGS Topo
Inset Imagery:
National Geographic



Within Sections 3,4,9,10
Township 11N, Range 04E,
Sutter County, CA
VERONA USGS 7.5' Quad

Map Date:
April 28, 2019

Drawn By:
MSR

NSE Project #
16-074

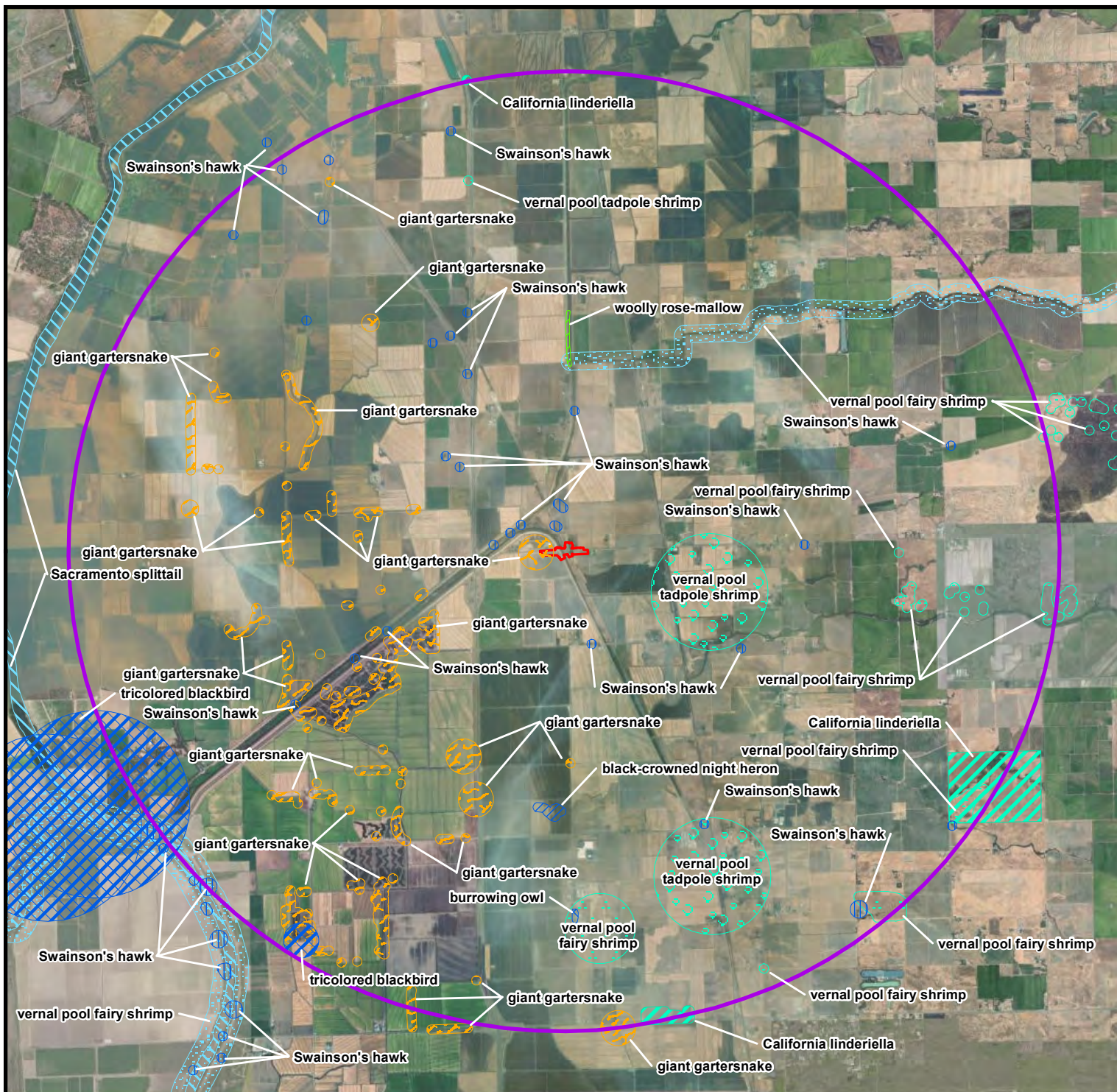
Figure 1: Location Map

Howsley Road Bridge Replacement
- Sutter County, CA -



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Legend

CNDDB 5 Mile Buffer

APE

CNDDB within 5 Miles (Common Name)

Woolly Rose-mallow

California Linderella

vernal pool fairy shrimp

vernal pool tadpole shrimp

Giant Gartersnake

steelhead - Central Valley DPS

Sacramento splittail

Black-Crowned Night Heron

Burrowing Owl

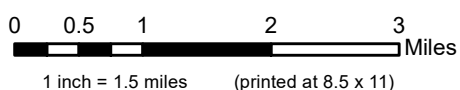
Swainson's hawk

tricolored blackbird

Within Sections 3, 4, 9, 10,
T11N, R4E, Sutter County, CA;
Verona USGS 7.5' Quad

Imagery Source: Esri,
DigitalGlobe, GeoEye, Earthstar
Geographics, CNES/Airbus DS,
USDA, USGS, AeroGRID, IGN,
and the GIS User Community

Howsley Road Bridge - Sutter County, CA -



Map Date:
April 13, 2019

Drawn By:
TDA

NSE Project #
16-074

CNDDB Occurences within 5 miles



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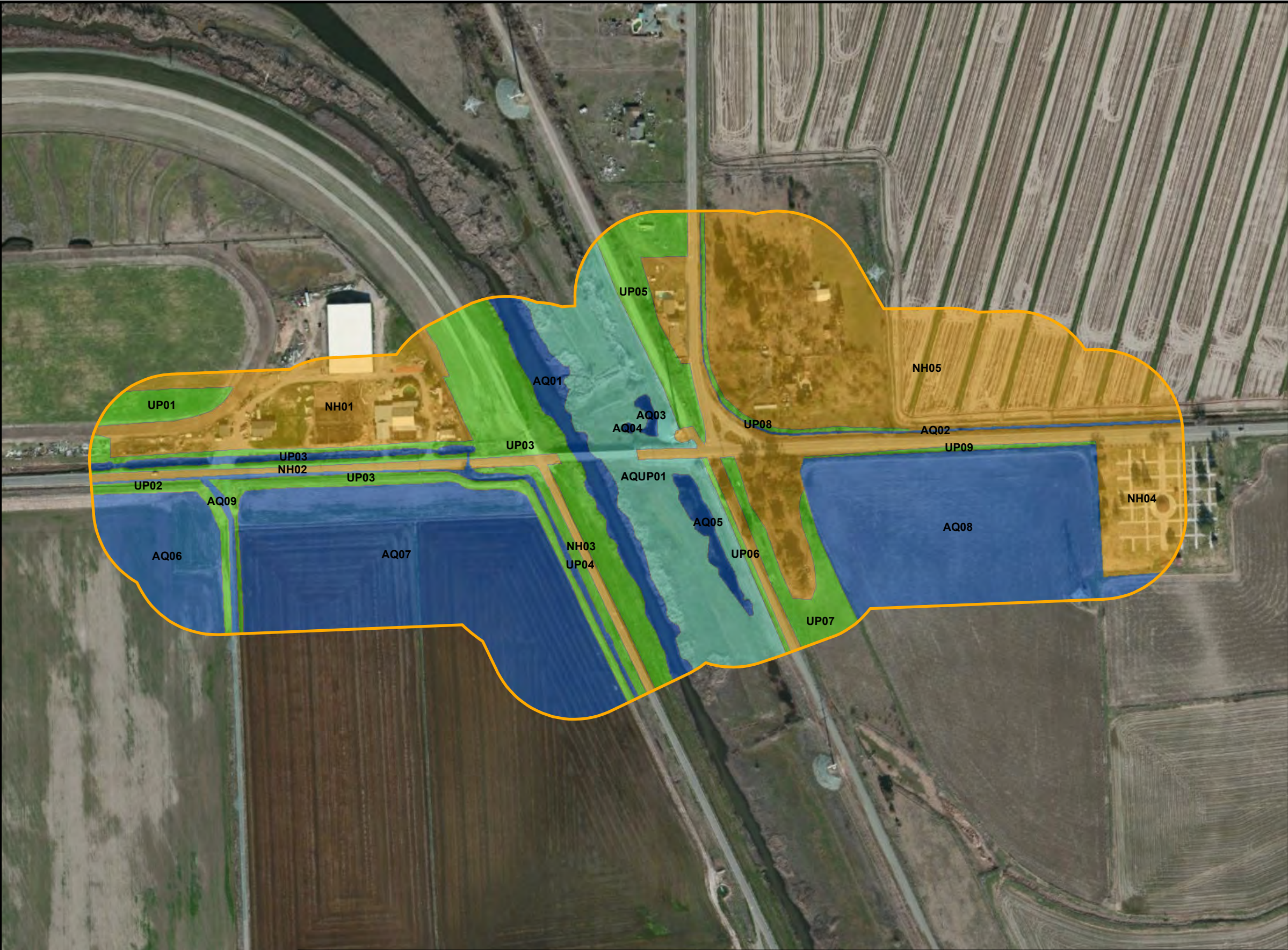


Figure 5: Potential Giant Garter Snake Habitat Environmental Survey Area (ESL)

Howsley Road Bridge Replacement Project - Sutter County, CA-			
GGS Habitat Within Action Area			
Label	Type	Area (ft ²)	Area (Acres)
UP01	Upland	29,636.01	0.680352
UP02	Upland	22,529.85	0.517216
UP03	Upland	247,492.81	5.681676
UP04	Upland	23,956.42	0.549966
UP05	Upland	75,255.20	1.727629
UP06	Upland	8,696.08	0.199635
UP07	Upland	54,009.14	1.239884
UP08	Upland	13,518.60	0.310346
UP09	Upland	8,669.90	0.199034
UPLAND TOTAL =		483,764.02	11.105738
AQ01	Aquatic	82,366.57	1.890884
AQ02	Aquatic	11,021.98	0.253031
AQ03	Aquatic	4,304.26	0.098813
AQ04	Aquatic	828.07	0.019010
AQ05	Aquatic	20,086.21	0.461118
AQ06	Aquatic	113,728.36	2.610854
AQ07	Aquatic	463,008.56	10.629257
AQ08	Aquatic	375,552.92	8.621543
AQ09	Aquatic	56,809.17	1.304164
AQUATIC TOTAL =		1,127,706.10	25.888673
AQUP01	Aquatic/Upland	286,928.22	6.586992
AQUATIC/UPLAND TOTAL =		286,928.22	6.586992
NH01	Non-Habitat	214,749.61	4.929992
NH02	Non-Habitat	23,723.96	0.544629
NH03	Non-Habitat	26,995.94	0.619744
NH04	Non-Habitat	307,721.28	7.064337
NH05	Non-Habitat	523,059.56	12.007843
NON-HABITAT TOTAL =		1,096,250.35	25.166546
TOTAL OF ALL AREA =		2,994,648.69	68.75
GGS HABITAT TOTAL =		1,898,398.34	43.58

Legend

Howley ESL (68.75 ac)

Upland (11.11 ac)

Aquatic (25.89 ac)

Aquatic-Upland (6.59 ac)

Non-Habitat (25.17 ac)



PROPOSED WATERS OF THE UNITED STATES (WOUS)					
Type	Description	Class	Label	Area (ft²)	Area (ac)
a3	Other WOUS	R-2-UB-3	OW01	82,386.927266	1.891344
a4	Impoundment	R-2-UB-3	IM01	9,130.618460	0.209610
a5	Tributary	R-2-UB-3	TB01	23,443.506623	0.538189
a5	Tributary	R-2-UB-3	TB02	14,807.976291	0.339944
a4	Tributary	R-2-UB-3	TB03	10,498.228913	0.241006
a7	Wetland	R-2-EM-2	SW01	4,305.326831	0.098837
a7	Wetland	R-2-EM-2	SW02	828.190922	0.019013
a7	Wetland	R-2-EM-2	SW03	20,091.164335	0.461230
TOTAL OF ALL PROPOSED WOUS				165,491.94	3.80
R = Riverine		UB-3 = Unconsolidated Bottom; Mud			
2 = Lower Perennial			EM-2 = Emergent; Nonpersistent		
*Feature Types are based off of the prepublication version of Title 33 Part 328 - Definitions of "Waters of the U.S." signed 9/12/2019 by EPA.					

X

USACE Reference Point

APE Boundary

USACE Survey

Transect_Lines

Flow Vector (no OHWM)

●

Low Flow Channel

●

Ordinary High Water Mark

●

Active Flood Plain

●

Low Terrace

■

Upland Soil Sample

■

Wetland Soil Sample

+

Bridge Corner

Contours

Approx. Low Terrace

Approx. Active Flood

Ordinary High Water Mark

Major Contour

Standard Contour

Howsley WOUS

328.3(a)(3)-Other Waters

328.3(a)(4)-Impoundments

328.3(a)(5)-Tributary

328.3(a)(7)-Wetlands

0100200400600

1 inch = 200 ft

Feet

(printed at 11 x 17)

Drawn By:
TDA

Survey Date: 5/17/17
Original Map Date: 11/22/19
Revised Map Date: N/A

Surveyed By:
CJW, MSR, ADH,
BC, JS

NSE
Project #
16-074

Made in accordance with the "Updated Map and Drawing Standards for the South Pacific Division Regulatory Program", as amended on February 10, 2016

Imagery Source:
ArcGIS Map Services

All features to remain preliminary until written verification received from the U.S. Army Corps of Engineers.

Projection: NAD 1983 UTM Zone 10

Within Section 3, 4, 9, & 10, Township 11N, Range 4E, MDM Sutter County, CA

Verona USGS 7.5' Quad

Figure 3: Delineation of Wetlands and Other Waters of the U.S.

Howsley Road Bridge Replacement
- Pleasant Grove, CA -
SHEET 1 OF 2

N

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Appendix B Representative Site Photos



PHOTO 1 -

Bridge 18C0113.

Upstream side of the bridge. Western abutment visible on left of photo and eastern abutment on right side of photo.

- Standing on the southeast side of the bridge looking northwest.

17 May 2017



PHOTO 2 -

Bridge 18C0113.

Upstream side of the bridge looking towards western abutment. OHWM on bank noted by red arrow.

- Standing on southwest side of the bridge looking northwest.

17 May 2017



PHOTO 3 -

Bridge 18C0113.

Upstream side of bridge. View towards the eastern abutment.

- Standing on the southwest side of the bridge looking northeast.

17 May 2017



PHOTO 4 -

Bridge 18C0113.

Bridge, creek, and surrounding habitat south (downstream) of the bridge. Tule present at edge of low flow channel.

- Standing near the middle of the bridge looking northwest.

17 May 2017



PHOTO 5 -

Bridge 18C0113.

Upstream side of bridge and immediate surrounding area. Drift deposit visible on bents.

- Standing on the west levee looking east.

17 May 2017



PHOTO 6 -

Bridge 18C0113.

Bridge and immediate surrounding area. OHWM readily visible on both banks of channel.

- Standing on western side of bridge looking east.

17 May 2017



PHOTO 7 -

Bridge 18C0113.

Upstream side of bridge and immediate surrounding area. Ordinary High Water Mark and Active Flood Plain visible in background.

- Standing on the bridge looking east.

17 May 2017

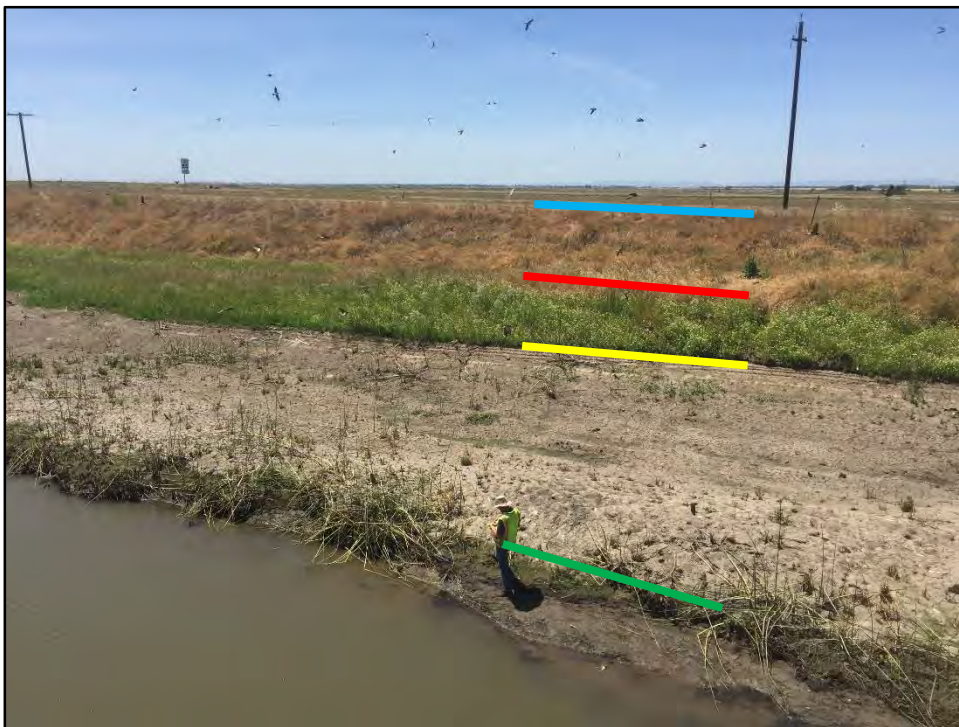


PHOTO 8 -

Bridge 18C0113.

Western levee with low flow channel (green), OHWM (yellow), active flood plain (red) and low terrace boundaries.

- Standing on the bridge looking west.

17 May 2017



PHOTO 9 -

Bridge 18C0113.

Seasonal wetland on the upstream side of bridge and adjacent to the eastern levee. This photo is taken 15 days after Photo 10 showing the draw down in water level in a short period of time.

- Standing on the road looking south.

17 May 2017



PHOTO 10 -

Bridge 18C0113.

Pleasant Grove Creek under higher flow conditions. Photo taken from approximately the same location as the previous photo.

- Standing on the road looking south.

2 May 2017



PHOTO 11 -

Bridge 18C0113.

Seasonal wetland on upstream side of bridge by east levee. OHWM indicated with arrow.

- Standing on the road looking south.

17 May 2017

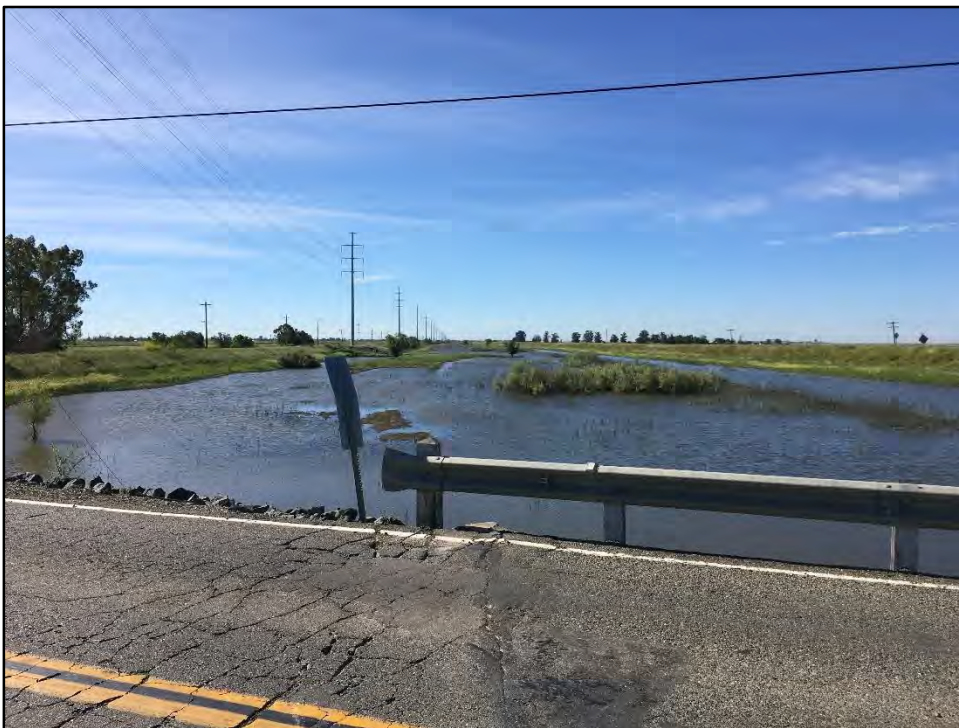


PHOTO 12 -

Bridge 18C0113.

Pleasant Grove Creek under higher flow conditions. Photo taken from just west of previous photo.

- Standing on the road looking south.

2 May 2017



PHOTO 13 -

Bridge 18C0113.

Pleasant Grove Creek on upstream side of bridge. Drift deposits present on bents in central portion of photo.

- Standing on the eastern bank of the creek looking north.

17 May 2017



PHOTO 14 -

Bridge 18C0113.

Eastern approach of the bridge.

- Standing east of the bridge looking west.

17 May 2017



PHOTO 15 -

Bridge 18C0113.

Pleasant Grove Creek on upstream side of bridge. Cliff swallows present throughout photo.

- Standing near the center of the bridge looking south.

17 May 2017



PHOTO 16 -

Bridge 18C0113.

Structure underneath the bridge. Active cliff and barn swallow nests present beneath bridge.

- Standing on the western bank of the creek beneath the bridge looking east.

17 May 2017



PHOTO 17 -

Bridge 18C0113.

Downstream side of the bridge with low flow channel in foreground. Tule present on eastern side of low flow channel.

- Standing on the western bank of channel looking southeast.

17 May 2017



PHOTO 18 -

Bridge 18C0113.

Central and western portion of the downstream side of the bridge.

- Standing near eastern abutment looking west.

17 May 2017



PHOTO 19 -

Bridge 18C0113.

Downstream side of bridge with numerous swallow nests beneath the bridge.

- Standing on the western bank of the channel looking east.

17 May 2017



PHOTO 20 -

Bridge 18C0113.

Downstream side of the bridge with small seasonal wetland present on right of photo.

- Standing near eastern abutment looking west.

17 May 2017



PHOTO 21-

Bridge 18C0113.

Downstream side of bridge. Seasonal wetland present along base of east levee.

- Standing on the base of the east levee looking southwest.

17 May 2017



PHOTO 22 -

Bridge 18C0113.

Downstream side of bridge. Seasonal wetland present along base of east levee.

- Standing at the base of the east levee looking southwest.

17 May 2017



PHOTO 23 -

Bridge 18C0113.

Downstream side of bridge with associated hydrophytic vegetation.

- Standing within the canal looking south.

17 May 2017



PHOTO 24 -

Bridge 18C0113.

Pleasant Grove Creek with large amount of tule present on eastern bank.

- Standing in canal looking north.

17 May 2017



PHOTO 25 -

Bridge 18C0113.

Downstream side of bridge. Low flow channel with associated vegetation including tule and black willow.

- Standing on the western bank of the channel looking north.

17 May 2017



PHOTO 26 -

Bridge 18C0113.

Three western pond turtles basking downstream of the bridge within the BSA.

- Standing on east side of low flow channel looking west.

17 May 2017



PHOTO 27 -

Bridge 18C0113.

Downstream side of bridge under higher flow conditions.

- Standing on the roadway looking northwest.

2 May 2017



PHOTO 28 -

Bridge 18C0113.

Pleasant Grove Creek downstream of the bridge in higher flow conditions.

- Standing in the roadway looking north.

2 May 2017



PHOTO 29 -

Bridge 18C0113.

Pleasant Grove Creek downstream of the bridge under higher flow conditions.

- Standing on the roadway near the eastern abutment looking north.

2 May 2017



PHOTO 30 -

Bridge 18C0113.

Pleasant Grove Creek upstream of bridge under higher flow conditions.

- Standing on the western bank looking east.

20 March 2017



PHOTO 31 -

Bridge 18C0113.

Roadway east of bridge and north of Howsley Road. Single family residence visible in background of photo.

- Standing north of Howsley Road looking west.

26 October 2018



PHOTO 32 -

Bridge 18C0113.

Pacific Avenue east of the existing bridge. Single family residences are present on both sides of the roadway.

- Standing north of Howsley Road looking north.

26 October 2018



PHOTO 33 -

Bridge 18C0113.

Canal access road
present along
western levee.

- Standing south of
the bridge looking
south.

26 October 2018



PHOTO 34 -

Bridge 18C0113.

Pacific Avenue east
of the existing
bridge. Single family
residences are
present on both sides
of the roadway.

- Standing north of
Howsley Road
looking north.

26 October 2018

Appendix C USFWS, CNPS and CNDDB Database Search Results

USFWS (Sacramento office) for Sutter County; CNPS and CNDDB Species List for the Grays Bend, Knights Landing, Nicolaus, Sheridan, Sutter Causeway, Taylor Monument, Pleasant Grove, Verona, and Rio Linda Quadrangles.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713



In Reply Refer To:

May 01, 2020

Consultation Code: 08ESMF00-2020-SLI-1786

Event Code: 08ESMF00-2020-E-05531

Project Name: Howsley Road Bridge Replacement Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2020-SLI-1786

Event Code: 08ESMF00-2020-E-05531

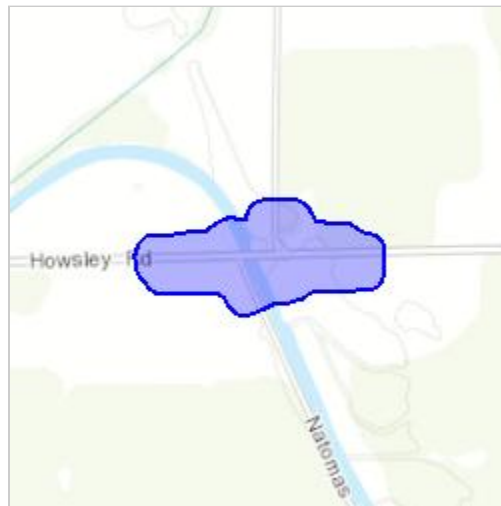
Project Name: Howsley Road Bridge Replacement Project

Project Type: TRANSPORTATION

Project Description: The project is located on Howsley Road approximately 0.9 miles east of State Route 99 near Pleasant Grove, CA. The project involves the replacement of the existing functionally obsolete bridge with a new wider, safer structure.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.823375297012156N121.52603598274655W>



Counties: Sutter, CA

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is proposed critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850 Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.



Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Verona (3812175) OR Sutter Causeway (3812186) OR Nicolaus (3812185) OR Sheridan (3812184) OR Knights Landing (3812176) OR Pleasant Grove (3812174) OR Grays Bend (3812166) OR Taylor Monument (3812165) OR Rio Linda (3812164))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	PDFAB0F8R1	None	None	G2T1	S1	1B.2
Antioch Dunes anthicid beetle <i>Anthicus antiochensis</i>	IICOL49020	None	None	G1	S1	
bank swallow <i>Riparia riparia</i>	ABPAU08010	None	Threatened	G5	S2	
black-crowned night heron <i>Nycticorax nycticorax</i>	ABNGA11010	None	None	G5	S4	
Boggs Lake hedge-hyssop <i>Gratiola heterosepala</i>	PDSCR0R060	None	Endangered	G2	S2	1B.2
brittlescale <i>Atriplex depressa</i>	PDCHE042L0	None	None	G2	S2	1B.2
burrowing owl <i>Athene cunicularia</i>	ABNSB10010	None	None	G4	S3	SSC
California alkali grass <i>Puccinellia simplex</i>	PMPOA53110	None	None	G3	S2	1B.2
California linderiella <i>Linderiella occidentalis</i>	ICBRA06010	None	None	G2G3	S2S3	
chinook salmon - Central Valley spring-run ESU <i>Oncorhynchus tshawytscha</i> pop. 6	AFCHA0205A	Threatened	Threatened	G5	S1	
Coastal and Valley Freshwater Marsh <i>Coastal and Valley Freshwater Marsh</i>	CTT52410CA	None	None	G3	S2.1	
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	ICBRA03010	Endangered	None	G2	S2	
dwarf downingia <i>Downingia pusilla</i>	PDCAM060C0	None	None	GU	S2	2B.2
eulachon <i>Thaleichthys pacificus</i>	AFCHB04010	Threatened	None	G5	S3	
giant gartersnake <i>Thamnophis gigas</i>	ARADB36150	Threatened	Threatened	G2	S2	
great blue heron <i>Ardea herodias</i>	ABNGA04010	None	None	G5	S4	
great egret <i>Ardea alba</i>	ABNGA04040	None	None	G5	S4	
Great Valley Mixed Riparian Forest <i>Great Valley Mixed Riparian Forest</i>	CTT61420CA	None	None	G2	S2.2	



Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Heckard's pepper-grass <i>Lepidium latipes</i> var. <i>heckardii</i>	PDBRA1M0K1	None	None	G4T1	S1	1B.2
hoary bat <i>Lasiurus cinereus</i>	AMACC05030	None	None	G5	S4	
legenere <i>Legenere limosa</i>	PDCAM0C010	None	None	G2	S2	1B.1
longfin smelt <i>Spirinchus thaleichthys</i>	AFCHB03010	Candidate	Threatened	G5	S1	
merlin <i>Falco columbarius</i>	ABNKD06030	None	None	G5	S3S4	WL
mountain plover <i>Charadrius montanus</i>	ABNNB03100	None	None	G3	S2S3	SSC
Northern Claypan Vernal Pool <i>Northern Claypan Vernal Pool</i>	CTT44120CA	None	None	G1	S1.1	
Northern Hardpan Vernal Pool <i>Northern Hardpan Vernal Pool</i>	CTT44110CA	None	None	G3	S3.1	
pallid bat <i>Antrozous pallidus</i>	AMACC10010	None	None	G5	S3	SSC
palmate-bracted bird's-beak <i>Chloropyron palmatum</i>	PDSCR0J0J0	Endangered	Endangered	G1	S1	1B.1
purple martin <i>Progne subis</i>	ABPAU01010	None	None	G5	S3	SSC
Sacramento anthicid beetle <i>Anthicus sacramento</i>	IICOL49010	None	None	G1	S1	
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	AFCJB34020	None	None	GNR	S3	SSC
Sacramento Valley tiger beetle <i>Cicindela hirticollis abrupta</i>	IICOL02106	None	None	G5TH	SH	
saline clover <i>Trifolium hydrophilum</i>	PDFAB400R5	None	None	G2	S2	1B.2
San Joaquin spearscale <i>Extriplex joaquinana</i>	PDCHE041F3	None	None	G2	S2	1B.2
Sanford's arrowhead <i>Sagittaria sanfordii</i>	PMALI040Q0	None	None	G3	S3	1B.2
snowy egret <i>Egretta thula</i>	ABNGA06030	None	None	G5	S4	
song sparrow ("Modesto" population) <i>Melospiza melodia</i>	ABPBXA3010	None	None	G5	S3?	SSC
steelhead - Central Valley DPS <i>Oncorhynchus mykiss irideus</i> pop. 11	AFCHA0209K	Threatened	None	G5T2Q	S2	
stinkbells <i>Fritillaria agrestis</i>	PMLIL0V010	None	None	G3	S3	4.2



Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Suisun Marsh aster <i>Symphotrichum lentum</i>	PDASTE8470	None	None	G2	S2	1B.2
Swainson's hawk <i>Buteo swainsoni</i>	ABNKC19070	None	Threatened	G5	S3	
tricolored blackbird <i>Agelaius tricolor</i>	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	IICOL48011	Threatened	None	G3T2	S2	
vernal pool fairy shrimp <i>Branchinecta lynchi</i>	ICBRA03030	Threatened	None	G3	S3	
vernal pool tadpole shrimp <i>Lepidurus packardii</i>	ICBRA10010	Endangered	None	G4	S3S4	
western pond turtle <i>Emys marmorata</i>	ARAAD02030	None	None	G3G4	S3	SSC
western red bat <i>Lasiurus blossevillei</i>	AMACC05060	None	None	G5	S3	SSC
western snowy plover <i>Charadrius alexandrinus nivosus</i>	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
western spadefoot <i>Spea hammondi</i>	AAABF02020	None	None	G3	S3	SSC
western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
white-faced ibis <i>Plegadis chihi</i>	ABNGE02020	None	None	G5	S3S4	WL
white-tailed kite <i>Elanus leucurus</i>	ABNKC06010	None	None	G5	S3S4	FP
woolly rose-mallow <i>Hibiscus lasiocarpus var. occidentalis</i>	PDMAL0H0R3	None	None	G5T3	S3	1B.2

Record Count: 53

*The database used to provide updates to the Online Inventory is under construction. [View updates and changes made since May 2019 here.](#)

Plant List

17 matches found. [Click on scientific name for details](#)

Search Criteria

Found in Quads 3812186, 3812185, 3812184, 3812176, 3812175, 3812174, 3812166 3812165 and 3812164;

[Modify Search Criteria](#) [Export to Excel](#) [Modify Columns](#) [Modify Sort](#) [Display Photos](#)

Common Name	Scientific Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank
depauperate milk-vetch	Astragalus pauperculus	Fabaceae	annual herb	Mar-Jun	4.3
alkali milk-vetch	Astragalus tener var. tener	Fabaceae	annual herb	Mar-Jun	1B.2
brittlescale	Atriplex depressa	Chenopodiaceae	annual herb	Apr-Oct	1B.2
valley brodiaea	Brodiaea rosea ssp. vallicola	Themidaceae	perennial bulbiferous herb	Apr-May(Jun)	4.2
Parry's rough tarplant	Centromadia parryi ssp. rudis	Asteraceae	annual herb	May-Oct	4.2
palmate-bracted bird's-beak	Chloropyron palmatum	Orobanchaceae	annual herb (hemiparasitic)	May-Oct	1B.1
dwarf downingia	Downingia pusilla	Campanulaceae	annual herb	Mar-May	2B.2
San Joaquin spearscale	Extriplex joaquinana	Chenopodiaceae	annual herb	Apr-Oct	1B.2
stinkbells	Fritillaria agrestis	Liliaceae	perennial bulbiferous herb	Mar-Jun	4.2
Boggs Lake hedge-hyssop	Gratiola heterosepala	Plantaginaceae	annual herb	Apr-Aug	1B.2
woolly rose-mallow	Hibiscus lasiocarpus var. occidentalis	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2
legenere	Legenere limosa	Campanulaceae	annual herb	Apr-Jun	1B.1
Heckard's pepper-grass	Lepidium latipes var. heckardii	Brassicaceae	annual herb	Mar-May	1B.2
California alkali grass	Puccinellia simplex	Poaceae	annual herb	Mar-May	1B.2
Sanford's arrowhead	Sagittaria sanfordii	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2
Suisun Marsh aster	Symphyotrichum lentum	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2
saline clover	Trifolium hydrophilum	Fabaceae	annual herb	Apr-Jun	1B.2

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[The Jepson Flora Project](#)

[The Consortium of California Herbaria](#)

[CalPhotos](#)

Questions and Comments

rareplants@cnps.org

Appendix D Observed Species

Plants

Scientific Name	Common Name
<i>Anagallis arvensis</i>	Scarlet pimpernel
<i>Avena barbata</i>	Slender oat
<i>Avena fatua</i>	Wild oat
<i>Brassica nigra</i>	Black mustard
<i>Brassica rapa</i>	Field mustard
<i>Bromus diandrus</i>	Ripgut brome
<i>Bromus hordeaceus</i>	Soft brome
<i>Bromus madritensis</i>	Foxtail brome
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Centaurea solstitialis</i>	Yellow star thistle
<i>Cichorium intybus</i>	Chicory
<i>Convolvulus arvensis</i>	Field bindweed
<i>Crypsis schoenoides</i>	Swamp grass
<i>Cynodon dactylon</i>	Bermuda grass
<i>Cyperus eragrostis</i>	Tall nutsedge
<i>Echinochloa crus-galli</i>	Watergrass
<i>Eleocharis macrostachya</i>	Pale spike rush
<i>Elymus caput-medusae</i>	Medusa head
<i>Erigeron canadensis</i>	Canada horseweed
<i>Festuca perennis</i>	Perennial rye grass
<i>Gallium aparine</i>	Cleavers
<i>Geranium dissectum</i>	Cut-leaf geranium
<i>Grindelia caporum</i>	Common gumplant
<i>Helminthotheca echiodes</i>	Bristly ox tongue
<i>Hordeum murinum ssp. leporinum</i>	Wall barley
<i>Lactuca serriola</i>	Prickly lettuce
<i>Lepidium latifolium</i>	Perennial pepperweed
<i>Lolium multiflorum</i>	Italian rye grass
<i>Lotus corniculatus</i>	Bird's foot treefoil
<i>Lugwia hexapetala</i>	Six petal water primrose
<i>Lugwia peploides</i>	Floating water primrose
<i>Medicago polymorpha</i>	Bur clover

<i>Morus alba</i>	White mulberry
<i>Oryza sativa</i>	Rice
<i>Paspalum dilatatum</i>	Dallisgrass
<i>Persicaria hydropiperoides</i>	Water pepper
<i>Pistacia chinensis</i>	Chinese pistache
<i>Poa annua</i>	Annual bluegrass
<i>Populus fremontii</i>	Fremont's cottonwood
<i>Raphanus raphanistrum</i>	Wild radish
<i>Rumex crispus</i>	Curly dock
<i>Salix exigua</i>	Sandbar willow
<i>Salix gooddingii</i>	Goodding's black willow
<i>Scirpus acutus</i> var. <i>occidentalis</i>	Tule
<i>Senecio vulgaris</i>	Common groundsel
<i>Silybum marianum</i>	Milk thistle
<i>Sorghum halepense</i>	Johnsongrass
<i>Trifolium pratense</i>	Red clover
<i>Typha latifolia</i>	Broadleaf cattail
<i>Verbena litoralis</i>	Seashore vervain
<i>Vicia villosa</i>	Hairy vetch
<i>Xanthium strumarium</i>	Rough cocklebur

Wildlife

Scientific Name	Common Name
Birds	
<i>Agelaius phoeniceus</i>	Red-winged blackbird
<i>Aix sponsa</i>	Wood duck
<i>Anas platyrhynchos</i>	Mallard
<i>Aphelocoma californica</i>	California scrub-jay
<i>Ardea alba</i>	Great egret
<i>Ardea herodias</i>	Great blue heron
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Buteo lineatus</i>	Red-shouldered hawk
<i>Butorides virescens</i>	Green heron
<i>Calypte anna</i>	Anna's hummingbird
<i>Cathartes aura</i>	Turkey vulture
<i>Charadrius vociferus</i>	Killdeer

<i>Cistothorus palustris</i>	Marsh wren
<i>Colaptes auratus</i>	Northern flicker
<i>Corvus brachyrhynchos</i>	American crow
<i>Corvus corax</i>	Common raven
<i>Egretta thula</i>	Snowy egret
<i>Euphagus cyanocephalus</i>	Brewer's blackbird
<i>Falco</i>	
<i>Haemorhous mexicanus</i>	House finch
<i>Hirundo rustica</i>	Barn swallow
<i>Icterus bullockii</i>	Bullock's oriole
<i>Melospiza lincolnii</i>	Lincoln's sparrow
<i>Mimus polyglottos</i>	Northern mockingbird
<i>Molothrus ater</i>	Brown-headed cowbird
<i>Nycticorax nycticorax</i>	Black-crowned night heron
<i>Passer domesticus</i>	House sparrow
<i>Pheucticus melanocephalus</i>	Black-headed grosbeak
<i>Picoides nuttalli</i>	Nuttall's woodpecker
<i>Podilymbus podiceps</i>	Pied-billed grebe
<i>Pterochelidon pyrrhonota</i>	Cliff swallow
<i>Sayornis nigricans</i>	Black phoebe
<i>Spinus psaltria</i>	Lesser goldfinch
<i>Spinus tristis</i>	American goldfinch
<i>Stelgidopteryx serripennis</i>	Northern rough-winged swallow
<i>Streptopelia decaocto</i>	Eurasian collared-dove
<i>Sturnella neglecta</i>	Western meadowlark
<i>Sturnus vulgaris</i>	European starling
<i>Tachycineta bicolor</i>	Tree swallow
<i>Thryomanes bewickii</i>	Bewick's wren
<i>Tyrannus verticalis</i>	Western kingbird
<i>Zenaida macroura</i>	Mourning dove
Reptiles and Amphibians	
<i>Actinemys marmorata</i>	Northwestern pond turtle
<i>Lithobates catesbeianus</i>	American bullfrog
<i>Pseudacris sierra</i>	Sierran treefrog
<i>Sceloporus occidentalis</i>	Western fence lizard
<i>Thamnophis sirtalis fitchii</i>	Valley garter snake
Mammals	
<i>Otospermophilus beecheyi</i>	California ground squirrel

Appendix B

Biological Assessment

Howsley Road Bridge Replacement



Biological Assessment

Sutter County, California

Township 11 North, Sections 3,4,9,10, Range 4 East

Verona 7.5' USGS Quadrangle

Project Number: BRLO - 5918(101)

March 2020



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Biological Assessment

Howsley Road Bridge Replacement Project

Federal Project Number BRLO-5918(101)

Sutter County, California

State of California

Department of Transportation

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Executive Summary

The purpose of this biological assessment is to provide technical information and to review the proposed project in sufficient detail to determine to what extent the proposed project may affect threatened, endangered, or proposed species. The California Department of Transportation (Department), as assigned by the Federal Highway Administration (FHWA), has prepared this biological assessment under its assumption of responsibility at 23 United States Code (USC) 327(a)(2)(A). The biological assessment is also prepared in accordance with 50 CFR 402, legal requirements found in Section 7 (a)(2) of the Endangered Species Act (16 U.S.C. 1536(c)) and with Federal Highway Administration and California Department of Transportation regulation, policy and guidance. The document presents technical information upon which later decisions regarding project effects are developed.

Bridge 18C0113, Howsley Road Bridge, is located in the Verona U.S. Geological Survey (USGS) 7.5-quadrangle. The bridge crosses over the Pleasant Grove Canal which is a man-made, leveed bypass that has a watershed area of approximately 70.4 square miles. The existing bridge, consisting of two travel lanes, was built in 1935 and widened in 1965 and is approximately 25 feet wide and 230 feet long. The abutments are reinforced concrete wall-type with continuous flared wingwalls.

The project involves the removal and replacement of the existing two-lane structure with a new, safer two-lane structure. It is anticipated the new bridge will be constructed using a cast-in-place post-tensioned box girder using three spans over the canal.

Habitat for one federally listed species, the giant garter snake (*Thamnophis gigas*) (GGS) exists in the action area. There is approximately 43.58 acres of GGS habitat within the environmental survey limits (ESL) comprised of 25.89 acres of aquatic habitat, 11.11 acres of upland habitat, and 6.59 acres of aquatic-upland habitat. The Pleasant Grove Creek Canal provides suitable aquatic habitat for the species. Rice fields can be found southeast and southwest of the existing bridge that also provide suitable aquatic habitat for the species during the active season. A portion of the canal, east of the incised low flow channel provides suitable aquatic and upland habitat depending on the time of the year, early in the spring when water levels are higher the area inundates and is suitable aquatic habitat. As the active season progresses the water level recedes and the area becomes suitable upland habitat for the species. Upland habitat is found around the canal as ruderal, maintained vegetation is found along the upper portions of the canal banks and the levee access roads.

Even with the incorporation of avoidance measures and timing of construction, it is anticipated, the project may affect, and is likely to adversely affect GGS by the removal of aquatic and upland habitat and proposed construction activities within GGS habitat.

The project will permanently remove 1.05 acres of potential aquatic habitat, 0.54 acres of aquatic-upland habitat, and 0.93 acres of potential upland GGS habitat and temporarily disturb 2.19 acre of potential aquatic habitat, 1.33 acres of aquatic-upland habitat, 0.75 acres of staging, and 2.02 acres of potential upland GGS habitat. No other federally listed special status species are expected to occur in the project area.

List of Abbreviated Terms

AA	Action Area
AMM	avoidance and minimization measure
APE	Area of Potential Effect
BA	Biological Assessment
BMP	best management practice
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	Sutter County
CVFPB	Central Valley Flood Protection Board
CWHR	California Wildlife Habitat Relationships System
ESA	environmentally sensitive area
ESL	Environmental Survey Limits
°F	degrees Fahrenheit
FESA	Federal Endangered Species Act
F.G.C.	Fish and Game Code
GGS	giant garter snake
MBTA	Migratory Bird Treaty Act
NES	Natural Environment Study
NOAA	National Oceanic and Atmospheric Administration
RSP	rock slope protection
SR99/70	State Route 99/70
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

Chapter 1 Introduction

1.1 Purpose and Need of the Proposed Action

The Howsley Road bridge was originally constructed in 1935 and widened in 1965. The bridge has a sufficiency rating of 45.3 and has been designated as functionally obsolete per the Caltrans Structure Maintenance & Investigations, Local Agency Bridge List (July 2018).

Howsley Road Bridge is located in the Verona USGS 7.5-minute quadrangle, with an elevation of approximately 30 feet above mean sea level (**Appendix A: Figure 1 - Location Map**). The bridge is comprised of precast inverted channel girders with an asphalt concrete deck supported by reinforced 4-column rigid frame bents with battered exterior columns set on a common reinforced concrete footing. The foundation types are unknown but assumed to be pile supported. The bridge approach embankments extend into the levee by approximately 50 feet on the west and approximately 170 feet on the east. Near the abutments, the embankments are protected by rock slope protection (RSP) on both the upstream and downstream sides of the structure. The width of the new structure will be approximately 36-feet, including two 12-foot lanes, two 4-foot shoulders, and two 2-foot wide concrete barriers. The length will be approximately 250-feet and be comprised of spans of 75-feet, 100-feet, and 75 feet.

1.2 Threatened, Endangered, Proposed Threatened or Proposed Endangered Species, Critical Habitat

Updated species lists were obtained from the USFWS Information for Planning and Consultation for the action area (AA) (**Appendix B**). The action area is defined by USFWS as all areas that may be affected directly or indirectly by the project, and not just the immediate area involved in the project. The AA, which was established to encompass the project limits and adjacent locations, adds an approximately 200-foot buffer outside of the project limits to include areas that could be directly and indirectly impacted (**Appendix A: Figure 2 – Action Area**). Direct impacts could include noise, injuring wildlife, nest abandonment, or similar disruption impacts that could result from the presence of construction equipment and personnel. Indirect impacts could include future changes in habitat or species viability due to increased noise, improper dust control, or improper implementation of best management practices (BMPs).

Additional special-status species lists were obtained from the CNPS Online Inventory of Rare and Endangered Plants (CNPS 2017) and the CDFW California Natural Diversity Database (CNDDB 2017) accessed via Rarefind 5. These databases were queried for all occurrence records within the following nine USGS 7.5-minute quadrangles: Grays Bend, Knights Landing,

Nicolaus, Pleasant Grove, Rio Linda, Sheridan, Sutter Causeway, Taylor Monument, and Verona. A map of the CNDDDB wildlife occurrences is provided in Appendix A.

Table 1 and Table 2 show the federally listed plant and wildlife species and/or designated critical habitats that were identified on the agency species lists. The presence of suitable habitat required for each species within the action area was assessed and an effects finding is presented. The following listed and proposed species and/or designated critical habitats were identified on the updated federal species list and were considered during this analysis:

Table 1. Federal Special-Status Plant Species Assessed for Potential to Occur within the Action Area (AA)

<i>Scientific Name</i> Common Name	Status	Flowering Period	Habitat Requirements	Habitat Present / Absent	Potential to Occur within the AAs/ Rationale	Effects Finding
<i>Cordylanthus palmatus</i> Palmate-Bracted bird's-beak	FE	May-Oct	Palmate bracted bird's-beak grows in saline-alkaline soils in seasonally-flooded lowland plains and basins. Elevation: 0-150m	A	None. There is no suitable alkaline habitat within the AA.	Not present.

Table 2. Federal Special-Status Wildlife Species Assessed for Potential to Occur within the Action Area (AA)

<i>Scientific Name</i> Common Name	Status	Habitat Requirements	Habitat Present/ Absent	Potential to Occur within the AAs/Rationale	Effects Finding
Invertebrates					
<i>Branchinecta conservatio</i> Conservancy fairy shrimp	FE	Inhabits moderately turbid, large, deep, cool-water vernal pools in eight populations in Butte, Tehama, Glenn, Yolo, Solano, Stanislaus, Merced, and Ventura counties.	A	None. No vernal pools are present within the AA. Additionally, the AA is outside of the species known population centers.	Not present.
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	FT	Primarily endemic to the grasslands of the Central Valley, Central Coast, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	A	None. No sandstone depression pools, grassy swales, or other depression pools are present in the AA.	Not present.
<i>Lepidurus packardii</i> Vernal pool tadpole shrimp	FE	Inhabits vernal pools and swales in the Sacramento Valley. Pools in which they occur are often clear, grass-bottomed swales of unplowed grasslands, and some are mud-bottomed and highly turbid.	A	None. No vernal pools or swales are present in the AA.	Not present.

Scientific Name Common Name	Status	Habitat Requirements	Habitat Present/ Absent	Potential to Occur within the AAs/Rationale	Effects Finding
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle	FT	Occurs only in the Central Valley of California. Lays eggs in blue elderberry (<i>Sambucus nigra</i> ssp. <i>caerulea</i>) that are 1 to 8 inches in diameter.	A	None: No suitable habitat as no elderberry shrubs are present.	Not present.
Fish					
<i>Oncorhynchus mykiss</i> Steelhead – Central Valley DPS	FT	Populations in the Sacramento and San Joaquin rivers and their tributaries. Requires beds of loose, silt-free, well-oxygenated coarse gravel for spawning. After hatching, juveniles spend at least one summer in the freshwater rearing areas, so the stream must have either perennial flow or cool intermittent pools with subsurface flow, shade, food, and shelter during the dry season.	A	None: No suitable riverine habitat present. The temperatures in the canal within the AA are lethal to salmonids.	Not present.
<i>Oncorhynchus tshawytscha</i> Central Valley Spring Run Chinook Salmon	FT	Sacramento River and tributaries. Require deep, cold water holding pools during summer. Large silt free cobble and gravel for spawning. After hatching, juveniles migrate to the Pacific Ocean, some may hold in freshwater for a year before moving to salt water.	A	None: No suitable riverine habitat present. Temperatures in the canal within the AA are lethal to salmonids.	Not present.
<i>Thaleichthys pacificus</i> Eulachon	FT	Anadromous species that spends most of its life in the ocean. Spawns in rivers from northern California to Alaska. May have historically been found in the Sacramento River and further south where they may be extirpated.	A	None: No suitable riverine habitat present within the AA. Additionally, the species may be extirpated from the Sacramento River.	Not present.
<i>Acipenser</i>	FT	Anadromous species that	A	None: No suitable	Not present.

<i>Scientific Name</i> Common Name	Status	Habitat Requirements	Habitat Present/ Absent	Potential to Occur within the AAs/Rationale	Effects Finding
<i>medirostris</i> Green Sturgeon		returns to rivers from California to Alaska to spawn. Utilizes deep pools with large cobble for spawning. Found primarily in the mainstem of the Sacramento River but has been observed in the Feather and Yuba Rivers		riverine habitat is present within the AA.	
<i>Hypomesus transpacificus</i> Delta smelt	FT	Spawn in tidally influenced backwater sloughs and channels.	A	None. Action area is outside of the range of this species.	Not present.
<i>Spirinchus thaleichys</i> Longfin smelt	FC	Anadromous smelt found in estuary, bay, and near shore environments from San Francisco to the Oregon border.	A	None: No suitable estuary or bay habitat is present within the action area.	Not present.
Reptiles					
<i>Thamnophis gigas</i> Giant garter snake	FT	Freshwater marshes, swamps, wetlands, and low-gradient streams. Has adapted to drainage canals, irrigation ditches, and rice cultivation.	P	High: Habitat within the action area is suitable for the species. Known occurrences in close proximity to the action area.	May Effect--Likely to Adversely Affect.
Amphibians					
<i>Ambystoma californiense</i> California tiger salamander	FT	In the coast region, populations are scattered from Sonoma County to Santa Barbara County and east to the Central Valley. Need underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding.	A	None. No vernal pools are present in the action area. The only known occurrence within Sutter County is extirpated.	Not present.

Scientific Name Common Name	Status	Habitat Requirements	Habitat Present/ Absent	Potential to Occur within the AAs/Rationale	Effects Finding
<i>Rana draytonii</i> California red-legged frog (CRLF)	FT	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Must have access to upland estivation habitat.	A	None. There are no CNDDDB records for this species in Sutter County and it is presumed extinct on the Central Valley floor.	Not present.
Birds					
<i>Coccyzus americanus occidentalis</i> Western yellow-billed cuckoo	FT	Riparian nester, along the broad, lower flood-bottoms of larger river systems. Nests in dense riparian thickets of willow often mixed with cottonwoods, and a variety of understory species.	A	None. No suitable riparian habitat present.	Not present.
<i>Charadrius nivosus nivosus</i> Western snowy plover	FT	Inhabits beaches, lagoons, and salt water ponds along the California coast where it nests.	A	None: No suitable nesting habitat is present within the AA.	Not present.

Notes:**Acronyms:**

AMMs = Avoidance and Minimization Measures

DPS = distinct population segment

ESU = evolutionarily significant unit

FC = Candidate for listing under the federal Endangered Species Act (FESA)

FE = Listed as endangered under FESA

FSC = Listed as special species of concern under FESA

FT = Listed as threatened under FESA

Rationale Definitions:

None = No possibility for occurrence.

Low = Habitat may be present, but this wildlife species has not been documented in the AA; however, potential for its presence cannot be ruled out entirely.

Moderate= Suitable habitat present; not likely to occur due to environmental constraints, but cannot be ruled as absent.

High = Potential to occur based on habitat suitability and documented records in the AA region.

Known = Species has been documented within the AA.

Biological Assessment

Howesley Road Bridge Replacement Project, Sutter County
Federal Project No. BRLO-5918(101)

1.2.1 Critical Habitat

There is no designated critical habitat for any federally listed species found within the project area. The GGS does not have any designated critical habitat.

1.3 Consultation History

An official species list was obtained from the USFWS' Sacramento Field Office via the USFWS Information for Planning and Consultation website on March 8, 2017 and again on May 22, 2019. No other agency coordination or consultation has been initiated with respect to the proposed project.

1.4 Description of Proposed Action

1.4.1 Project Summary

The project site is located approximately one mile east of State Route 99/70 (SR 99/ 70) along Howsley Road, midway between the City of Marysville and City of Sacramento, west of the community of Pleasant Grove. In general, the proposed project will involve the removal and replacement of the existing two-lane structure with a new, safer two-lane structure. The existing bridge was constructed in 1935 and widened in 1965, and currently has a sufficiency rating of 45.3 and has been designated as functionally obsolete per the Caltrans Structure Maintenance & Investigation, Local Agency Bridge List from July 2018.

Existing Structure

The existing bridge consists of two travel lanes and is approximately 25 feet wide where it crosses the Pleasant Grove Creek Canal and approximately 230 feet long with 11 spans. The bridge is comprised of precast inverted channel girders with an asphalt concrete deck supported by reinforced 4-column rigid frame bents with battered exterior columns set on a common reinforced concrete footing. The abutments are reinforced concrete wall-type with strip bearings between the top of the wall and the superstructure end diaphragm with continuous flared wingwalls. The foundation types are assumed to be pile supported. The bridge approach embankments extend into the levee by approximately 50 feet on the west and approximately 170 feet on the east. Near the abutments, the roadway embankments are armored by rock slope protection (Attachment B, Site Photos).

Proposed Structure

The new bridge structure would be constructed approximately 25 feet south of and immediately adjacent to the existing bridge. The new bridge would be constructed using a cast-in-place post-tensioned box girder using three spans over the Pleasants Grove Creek Canal. Interior supports

are anticipated to be two column bents supported on large diameter cast-in-drilled-hole concrete piles. Abutments are anticipated to be reinforced concrete, pile supported seat abutments. The width of the new structure will be approximately 36-feet, including two 12-foot lanes, two 4-foot shoulders, and two 2-foot wide concrete barriers. The length will be approximately 250-feet and will be comprised of spans of 75-feet, 100-feet and 75-feet

Exposed slopes below and adjacent to the new bridge would be protected by RSP placed within the 200-year floodplain. Excavation near the new abutments will be required in order to install the required RSP. Additional bank disturbance and vegetation removal will occur from general clearing and grubbing, the construction of the new bridge abutments and bents, buildup of embankments and roadway approaches, placement of scour projection measures, and development of the construction access into the channel. The maximum depth of excavation is expected to be approximately 8 feet. The maximum depth of the pile shaft foundations is expected to be approximately 100 feet.

Roadway Approaches

Howsley Road bridge approaches would be realigned approximately 25 feet to the south to accommodate the new bridge alignment. Roadway improvements would extend a maximum of 1,100 feet from the ends of the bridge. The roadway will have two 12-foot lanes and 4-foot shoulders to match the existing shoulder width. The profile will be raised with fill and new embankment slopes will be graded to create stable embankments on the landside of the canal banks where adjacent agricultural land is effectively flat. Side slopes for the embankments will vary between 2:1 and 3:1, depending on whether or not metal beam guard rails are used.

Intersection and Driveway Access Improvements

Two roadways intersect Howsley Road: Pacific Avenue on the northeast side of the bridge and Natomas Road on the southwest side of the bridge. The project will require the improvement of the Howsley Road/Pacific Avenue intersection and the Pacific Avenue roadway to improve its safety and approach visibility. Pacific Avenue would be extended approximately 50 feet to the south to connect to the new approach alignment. The existing driveway access on to the northeast parcel would be relocated further to the north on Pacific Avenue.

The project will require improvements to the Howsley Road/Natomas Road intersection and Natomas Road approach roadway to reconfigure the intersection geometrics. The Howsley Road/Natomas Road intersection will be widened to allow for safe turns to and from Howsley Road. Additionally, the intersection of Howsley Road and Pacific Avenue will be widened to

facilitate turning to and from Howsley Road. The approach roadways will be paved with asphalt concrete. Connections to existing levee access roads and private driveways will be restored.

The project will require improvements to a private driveway on the eastern side of the existing bridge. The driveway will be approximately 12 feet wide and the connection to the new approach/Howsley Road will be widened.

Road Closures and Detours

Howsley Road will maintain through traffic during construction, except for limited duration disruptions for grading and paving to reconnect the roadway. The construction period disruptions will affect local traffic temporarily with single lane closures managed during daylight hours and no disruptions during nighttime hours.

Pacific Avenue will maintain open to through traffic during construction, except for a limited duration disruption for embankment build-up, grading, and paving to reconstruct the intersection.

Natomas Road will be closed at the intersections of Howsley Road and Fifield Road through the duration of construction. The construction period disruptions will affect local traffic temporarily with a full closure managed by barricades, detour signage and advanced public notification.

Detours for travelers traveling north on Natomas Road would be routed east on Fifield Road to Pleasant Grove Road. From Pleasant Grove Road, access to SR99/SR70 is provided to the north via Howsley Road or Catlett Road (north of Howsley Road) via East Striplin Frontage Road. South of Fifield Road, both Natomas Road and Pleasant Grove Road provide access to SR99/SR70 via West Riego/Baseline Road.

Utilities

Approximately ten power poles would be relocated as a result of the roadway realignment or roadway embankment prisms. Utility poles would be relocated to the toes of the new embankment slopes within the newly acquired County ROW.

Staging Areas

The staging and material storage area(s) may occur inside of the County's right-of-way (ROW), but will likely occur outside the ROW along Howsley Road. Potential sites identified are located south of Howsley Road on agricultural parcels and in the northwest residential parcel at the intersection of Howsley Road and Pacific Avenue. Only 0.75 acres of the AA will be utilized for staging area in total.

Right-of-Way Acquisition

The project is expected to require the acquisition of ROWCe due to the offset alignment and the increase in bridge elevation to meet CVFPB criteria and temporary construction easements for staging and access. The ROW will be located primarily south of the existing bridge structure.

Construction and Demolition

The construction schedule will take into account the affected species at the site and incorporate the anticipated work periods specified in the required state and federal agency permits. The construction is expected to take one and one-half years (two seasons) beginning in the Spring and ending in the Fall of the following year. Embankment build up, rough grading, temporary levee road reconnection, and staging area and construction access development would begin once the first work period begins. Based on the proposed span layout, a water diversion may not be required to install the cast-in-drilled-hole concrete piling at the bents since Bent 2 is located near the edge of the existing low flow channel and Bent 3 is outside of the low flow channel. Since the water table is high, the bent piling will likely be constructed in the wet using slurry displacement methods or cased holes. If slurry methods are used, the contractor will store the slurry in Baker tanks (large portable water tank) during construction of the piling. Slurry is then recycled from hole to hole and when all the piling are complete, the slurry is pumped to a settling basin to evaporate. After approximately two months, the abutments and bent piling would be constructed, while the cast-in-place concrete superstructure falsework is also erected. Temporary driven steel piling would be used to support the falsework in the low flow channel. Timber falsework pads will likely be used to support the falsework outside of the low flow channel. August and September would see the placement and finishing of the concrete superstructure. The formwork, falsework, and any water diversion will be removed in October. By November 1, the Central Valley Flood Protection Board (CVFPB) would require all construction materials to be out of the channel, subject to two-week extensions based on site conditions at that time. Depending on whether time extensions are granted, the RSP required to protect the abutments can be placed. However, if there is not enough time, this work could occur in the following work period. Also, in October, the finish grading of the roadway approaches and adjacent intersection will occur. The placement of the asphalt concrete pavement roadway and striping will occur in November. In December, barriers and railings will be installed and traffic will be shifted to the new structure and alignment. A winter stoppage of work can occur at this time.

Once the second Work Period begins, the existing bridge and the remnant footings from the precursor bridge will be demolished, final levee road reconnections constructed, and staging

areas restored. The channel banks will be regraded, and the appropriate environmental restoration, such as hydroseeding, would be implemented.

Work within the low flow channel of the canal will be required to remove the existing concrete bridge support bents and abutments as well as foundation remnants from a previous structure that catch debris and impeded flow in the canal.

Bank disturbance and vegetation removal will occur at the ends of the existing bridge abutments to accommodate bridge removal and regrading of the channel.

Tree Removal

Approximately 15 non-native trees of varying sizes will need to be removed to accommodate the new approaches to the proposed bridge. The trees are located southeast of the existing bridge south of Howsley Road and are primarily comprised of eucalyptus

Stream Diversion and Dewatering

The Pleasant Grove Creek Canal can be divided into two distinct channel areas depending on the season, 1) low-flow channel and 2) active floodplain. During the dry season, water levels are primarily contained within in the low-flow channel. The top of bank of the low-flow channel is the Canal's ordinary high water mark (OHWM), as defined by the U.S. Army Corps of Engineers (USACE). During the rainy season, water fills the Pleasant Grove Creek Canal and the area above the OHWM, becomes inundated, thus filling the active floodplain area within the Canal.

The project will require work within the low-flow channel to remove the existing concrete bridge support bents and abutments as well as foundation remnants from a previous structure that catch debris and impeded flow in the canal. Additionally, new abutments, support bents, and form work/false work will be required in both the low-flow channel and active floodplain. For the construction of Abutment 1, which includes RSP and installation of Bent 2 for the proposed bridge, construction activities will require the relocation of approximately 275 linear feet of the low-flow channel between proposed Bents 2 and 3. Therefore, dewatering of the low-flow channel would be necessary. Dewatering techniques may include sheetpiling, the use of culverts, large sandbags, berms, bladder dams, or other commonly used dewatering practices. The design width of the new low flow channel will be fixed at 40 feet and excavated to a depth and kind of the original channel as required to accommodate the largest anticipated flows observed during the low flow portion of the year.

For the installation of the Abutment 1, there are two anticipated methods that may be used for dewatering:

- 1) Excavate and relocate the low-flow channel between proposed Bents 2 and 3, occlude channel ends to divert water into the new low-flow channel. Depending on flows within the channel and active floodplain, the new channel would need to accommodate fluctuating flows from the Sacramento River as well as rainfall and agricultural drainage.
- 2) Excavate and relocate the low-flow channel between proposed Bents 2 and 3 and install corrugated steel culverts (or equivalent) within the new channel.

The installation of Bent 2 could include either of the dewatering methods outlined above or use of a cofferdam within the low-flow channel to isolate construction activities.

The new low flow channel system shall be constructed in its entirety, with upstream and downstream plugs/barriers separating the original low flow channel from the excavated new low flow channel. A permanent plug shall be installed in the original waterbody channel, at the inflow confluence of the original waterbody channel and the new low flow passage system, to fully divert the water to flow through the new low flow passage system. A permanent plug shall be installed in the original waterbody channel, at the outflow confluence of the new low flow passage system and the original waterbody channel, to prevent backflow into the original waterbody channel. The majority of excavation for the new low flow channel will be conducted in dry areas prior to relocating the low flow channel. Excavated soils from the new low flow channel as well as other approved fill will be used to fill the old low flow channel as necessary to allow the bridge construction and placement of RSP.

Excavation for the abutments prior to installing RSP may encounter groundwater infiltrate. In this case, dewatering will likely be needed in combination with other water control options. The preferred method is land based discharge. This will be accomplished by segregating an area of the staging area by building a berm. This area will then act as a discharge basin which will be created as far away from the canal as practicable while still within the temporary construction easement. Equipment and materials shall not be stored within the discharge basin. A sump system will be installed within the excavation(s) along with hose running from the sumps to the discharge basin to transport any ground water infiltrate from the excavation(s) to the discharge basin. Once in the discharge basin the water will be absorbed or evaporate off.

If dewatering an excavation(s) to the discharge basin is not feasible, a Baker tank (or equivalent) may be utilized to capture sediment laden water. For captured water to be discharged back into the channel, it must be accompanied by and meet the quality standards laid forth in a RWQCB

Waste Discharge Permit. If this is the case, supernatant will be pumped from the Baker tank (or equivalent) and returned to the canal or the water may be pumped into the discharge basin if volume is sufficient.

A temporary bridge crossing will be installed to access construction areas across the low flow channel within the canal prism. The temporary bridge crossing will be approximately 30 feet wide and 60 feet long and would be located south of the new bridge alignment.

Following construction, any materials that consist of foreign fill (cofferdams, sheet piles, aggregate, culverts, impermeable layers, etc.) would be removed from the channel. Where surface areas have been disturbed or regraded, the slope shall be restored to pre-construction condition and stabilized by seeding with native grasses (strictly avoiding noxious weeds) per direction from the CDFW and USACE requirements. The new low flow channel will be left in place following construction as the new permanent low flow channel. It is believed this will result in less sedimentation and be less damaging to the waters than attempting to restore the original low flow channel.

Geotechnical Sampling

Additional geotechnical sampling in the channel will be conducted for bent designs. The sampling will generally include gaining access from the eastern bank into the channel, boring at two individual locations, collecting soil samples, and backfilling the exploratory borings. The proposed borings are located approximately 60 feet south of the existing bridge at stations 23+00 and 24+00. A rubber track or truck-mounted drill rig will be used to advance four- to eight-inch diameter borings to a depth of 100 feet below the channel bottom. Typical drill rigs are maximum 26-feet long and 8-feet wide and weigh a maximum of 23,000 pounds. Auger drilling will be used to advance the boring then once groundwater is encountered mud rotary techniques will be used to advance the bore to the required depth. Upon completion of drilling, the borings will be backfilled with neat cement grout to within approximately five feet of the channel bottom per Sutter County Environmental Health Department requirements. The upper five feet will be allowed to collapse or be backfilled with native soil cuttings generated from drilling operations to approximate the existing creek bottom. The remaining drill cuttings will be drummed and disposed of at an approved off-site facility. No construction will take place to complete this work and no water will be drafted or released to Pleasant Grove Creek Canal. All activities will be confined to daylight hours.

1.4.2 Authorities and Discretion

The following federal regulatory requirements and laws apply to the proposed project:

- National Environmental Policy Act (NEPA) (42 U.S.C. § 4321)
- Federal Endangered Species Act (FESA) (16 U.S.C. § 1531)
- Clean Water Act (CWA), Sections 404 (33 U.S.C. § 1344) and 401 (33 U.S.C. § 1341)
- Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§ 703-712)
- Executive Order 13112 (Invasive Species) (64 Federal Register 6183).

The applicable state laws and regulations include:

- California Environmental Quality Act (CEQA) (Public Resources Code, Division 13 § 21000 et seq.)
- California Endangered Species Act of 1984 (Fish and Game Code [F.G.C.] § 2050 et seq.)
- Protection of Migratory Birds (F.G.C. §§ 3503 and 3800)
- Porter-Cologne Water Quality Control Act (Water Code § 13000 et seq.).

1.4.3 Project Location

The project site is located approximately one mile east of State Route 99/70 (SR 99/ 70), at Natomas Road, midway between the City of Marysville and City of Sacramento, west of the community of Pleasant Grove where the Pleasant Grove Creek Canal crosses Howsley Road (Attachment A: Figure 3 – Project Work Limits). The proposed project is located within Sections 3, 4, 9, and 10, Township 11 North, Range 3 East of the Verona USGS 7.5-minute quadrangle.

Surrounding land use includes agricultural and residential uses along Howsley Road. Rice is the primary crop adjacent to the project area and can be found to the southeast and southwest. Large residential lots can be found to the northeast and northwest of the project area.

1.4.4 Define Action Area

The USFWS requests that project proponents define the AA for a project, which is defined as the area (land and water) that may be directly, indirectly, temporarily, or permanently impacted by construction and construction-related activities. The AA differs from the Project Work Limits because it is intended to include the potential effects on wildlife and other biological resources (e.g., birds that could nest in the vicinity or water resources that could be affected by hazardous material spills generated by the project).

1.4.5 Conservation Measures

1.4.5.1 PROJECT DESIGN MODIFICATIONS FOR AVOIDANCE AND MINIMIZATION

The project is designed to avoid ground disturbance adjacent to work limits. Fencing will be maintained until work is completed. Access routes and the number and size of staging and work areas will be limited to existing paved surfaces, graveled, or other previously compacted surfaces where feasible. Some access and staging will occur in excluded suitable habitat. Standard BMPs for project site management, particularly relating to equipment storage, parking, vehicle access, hazardous materials, types of materials used for water quality and erosion control, and post-construction restoration activities have been incorporated into general and species-specific avoidance and minimization measures (AMMs). These measures will be included in project specifications. Other general conservation strategies that will be utilized during construction include:

- Specialized BMP Implementation
- Worker Awareness Training
- Pre-construction Survey
- Demarcation Environmental Sensitive Areas
- Project Site Management
- Restoration of Disturbed Areas:

A complete description of the general conservation and species-specific AMMs that make up the above categories may be found in section 5.5.1.

1.4.5.2 SPECIES SPECIFIC AVOIDANCE/MINIMIZATION MEASURES OR BEST MANAGEMENT PRACTICES

Effects determinations were made for 16 federally listed wildlife species. No AMMs are proposed for special-status plants or the following wildlife because the project will have “no effect”:

- Palmate-bracted bird’s beak
- Valley elderberry longhorn beetle
- Conservancy Fairy Shrimp
- Vernal Pool Fairy Shrimp
- Vernal Pool Tadpole Shrimp
- California Red-legged Frog
- California Tiger Salamander
- Steelhead Northern California DPS

- Delta Smelt
- Eulachon
- Green Sturgeon
- Longfin Smelt
- Chinook Salmon, Central Valley Spring-run
- Western yellow-billed cuckoo
- Western Snowy Plover

The project “may affect, likely to adversely affect” the GGS and a general description of the specific AMMs for the species are provided below.

GIANT GARTER SNAKE

Generally, the AMMs that will be implemented to protect and prevent project related impacts to GGS before, during, and post construction will include the following genres:

- Designated County Representative and Biologist
- Pre-construction Surveys and Monitoring for GGS
- Timing of Work
- Exclusion and Construction Barrier Fencing for GGS
- Established Procedures for GGS Encountered
- Establish Procedures for Dewatering GGS Habitat
- Minimization of Construction Impacts on GGS
- Additional Protective Measures during Work in Suitable Habitat during the GGS Inactive Season
- Implementing a Mitigation Monitoring Reporting Program (MMRP) for GGS
- Performance Security

A complete description of the species-specific AMMs that make up the above categories may be found in section 5.5.1.

1.4.5.3 CONSERVATION MEASURES

The bridge and approach design was developed to meet the identified purpose and need of the project, while avoiding or minimizing environmental impacts, to the maximum extent feasible. The project will implement standard BMPs during all phases of the project. Work limits will be delineated using high-visibility fencing, and all impacts will be minimized to the greatest extent practicable.

In addition to the above-mentioned conservation measures and AMMs being incorporated into the project documents and design drawings where appropriate, a copy of relevant permits (or

their drafts) will be included with contract award so that contract documents will include compliance with and implementation of the conditions of all applicable federal and state permits.

1.4.6. Interrelated and interdependent Actions

There are no interrelated or interdependent actions related to the project, and there are no cumulative effects within the action area.

Chapter 2 Study Methods

This BA focuses on plant and wildlife species that are listed as either federally threatened or endangered under the FESA that have potential be affected. Management and protection of federally listed plants and wildlife is the shared responsibility of the USFWS and NOAA Fisheries.

2.1 Summary

To evaluate potential impacts of the proposed Project activities to biological resources, NorthStar compiled a list of special-status plant and wildlife species from information provided by the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation, the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB), and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants. The information was evaluated to determine the likelihood of each species' occurrence in and near the Project area and the potential impacts from the proposed activities.

This BA is based on the use of best available scientific and commercial data, Information about habitat types and special-status species that could occur in the action area was obtained from the following sources:

- USFWS database (2017 and 2019) (Appendix B),
- CNDDDB (CDFW 2017) (Appendix B),
- California Native Plant Society Online Inventory of Rare and Endangered Plants (2017) (Appendix B),
- Existing literature as cited in the text.

The following technical reports prepared for the project were also used and include the:

- *Howsley Road Bridge Replacement Project – Natural Environment Study (NES).*

Studies completed to support the information in this BA include the following:

- General biological surveys

2.2 Personnel and Survey Dates

Biological surveys were conducted to determine the presence or absence of special-status plants and wildlife, along with potential habitat for special-status species on May 17, 2017 by NorthStar biologists Carol Wallen, Matt Rogers, and Andrew Huneycutt. The AA was surveyed on foot,

walking the entire AA, and photo-documenting existing conditions, as well as potential habitat for special-status species. General notes were also collected including observed plants and wildlife.

The credentials for survey personnel are:

- Carol Wallen, B.S., Biological Sciences; 11 years experience
- Matt Rogers, B.S., Biological Sciences; 11 years experience
- Andrew Huneycutt, B.S., Environmental Science; 12 years experience

2.3 Resource Agency Coordination and Professional Contacts

An official species list was obtained from the USFWS' Sacramento Field Office website on March 8, 2017 and again on May 22, 2019. No other agency coordination or consultation has been initiated with respect to the proposed project.

2.4 Limitations and Assumptions that may Influence Results

All necessary portions of the AA were accessible; therefore, no limitations impacted the botanical and wildlife surveys.

Chapter 3 Environmental Baseline

The environmental baseline describes the setting in which the project would occur and includes the effects from past and present federal, State, and private actions; proposed federal projects with completed Section 7 consultations; and contemporaneous State or private actions with consultation in progress. The environmental baseline also considers non-permitted actions (i.e., other non-federal actions occurring within the Action Area).

3.1 Habitat Conditions in the Action Areas

Natural habitats for plants and wildlife within the action area have been modified to accommodate agricultural uses in the northern Central Valley. These actions have reduced or, in some cases, eliminated suitable habitat for special-status species, particularly plants. To the northeast of the site is a residential/ranch property, to the northwest is a rural residence with associated agricultural fields with unknown crops, and to the south are rice fields. The lands surrounding the AA are largely agricultural in nature and primarily in rice cultivation.

The Pleasant Grove Creek Canal contains water year around and is composed of aquatic habitat with large amounts of emergent and aquatic vegetation including hardstem bulrush (*Schoenoplectus acutus*) and cattail (*Typha latifolia*) immediately adjacent to the low flow channel. During the summer months aquatic habitat is confined to an incised low flow channel that is approximately 40 to 50 feet wide and approximately three feet deep. The low flow channel is bordered by hardstem bulrush and cattail with openings for GGS basking. During the early spring, the canal can be filled from levee to levee providing additional aquatic habitat for the snake, in addition, several wetlands occurring in the higher elevation terrace become inundated which provide suitable foraging habitat for GGS as water recedes back into the low flow channel as the weather warms. When water recedes back into the low flow channel the exposed plateau becomes suitable upland habitat for GGS. Due to the fluctuation of water within the levee prism the area between the edge of the low flow channel and the toe of the levee (exposed plateau) functions as both aquatic and upland habitat depending on the time of the year and the level of water in the Pleasant Grove Creek Canal. The banks of the Pleasant Grove Creek Canal contain ruderal annual vegetation providing suitable upland habitat for GGS. Rock slope protection is present near the abutments and especially on and near the eastern abutment and could provide basking and aestivation/brumation habitat for the GGS. Some riparian vegetation including sandbar willow (*Salix exigua*), arroyo willow (*S. lasiolepis*), and Goodding's black willow (*S. gooddingii*) is present within the canal prism.

The watershed area encompasses several creeks including Pleasant Grove Creek, Curry Creek, and Kaseberg Creek. The Pleasant Grove Creek Canal meets up with the Eastside Canal and forms the Cross Canal which moves water into the Sacramento River at Verona.

As previously mentioned, rice agriculture is present to the south of the existing bridge on both the southeast and southwest. Rice fields provide aquatic habitat for GGS during the active season due to the standard irrigation regime for the crop, it is typically irrigated from the late spring to the late summer. Rice has replaced natural wetlands throughout the northern Central Valley and now functions as aquatic habitat for GGS albeit degraded when compared to natural wetlands. Rice provides water during the snake's active season, as well as, escape and foraging cover and ample prey.

Roadside and agricultural ditches are present within the AA to the east and west of the existing bridge. The roadside ditches vary in width and depth from approximately two feet wide to approximately 10 feet wide. The ditches have some vegetative cover including annual herbaceous species, hardstem bulrush and cattail, additionally, water is present within the roadside ditches at various portions of the year depending on irrigation practices in the immediate area. These ditches provide suitable aquatic and upland habitat for GGS. The ditch found to the southwest of the existing bridge travels west along Howsley Road and provides connectivity to an area of restored wetlands (Frazer North and Lucich North) that are part of the Natomas Basin Conservancy and have known occurrences of GGS.

The elevated dry area of the canal could provide upland terrestrial wildlife corridors in the project area during certain portions of the year when it is not under water. The canal in the AA provides a movement corridor for a wide variety of birds and terrestrial species, including GGS. No sensitive natural communities listed in local or regional plans or policies are present within the AA.

3.2 Summary of Environmental Baseline

The project area lies within the Sacramento River basin, which includes all of Sacramento Valley. The two largest rivers in the area are the Sacramento and Feather rivers, with the Feather River being a tributary to the Sacramento River. The waters within these watersheds generally flow from north to south through the Sutter Basin, and eventually flow into the Sacramento River Delta, then the San Francisco Bay. The Howsley Road bridge crosses over the Pleasant Grove Creek Canal. The canal intercepts flow from Howsley Creek, Pleasant Grove Creek and Curry Creek. The canal joins the East Side Canal to form the Cross Canal which discharges westward into the Sacramento River at Verona. The Pleasant Grove Creek Canal is owned and maintained by Reclamation District 1000. Additionally, seasonal precipitation events during the winter

months and localized runoff from the surrounding area likely contribute to the hydrology seen on the site.

The project area generally experiences precipitation from October through May. A climate summary for the nearest NOAA weather station with similar elevation and topography to the project reports the following precipitation and temperature information (Western Regional Climate Center 2017):

Marysville, California Station 045385

- Average annual rainfall for Marysville is 20.96 inches.
- Average temperatures range seasonally from 37.7°F to 96.3°F.

The maximum average temperature reported for the Marysville area was 96.3°F in July and the minimum average temperature was 37.6°F in January. The wettest month of the year is January with an average rainfall of 3.92 inches, and the driest month is July with an average of 0.01 inches. Winter storms are usually of moderate duration and intensity (Western Regional Climate Center 2018).

3.3 Description of the Action Area

The following plant community descriptions and nomenclature conventions within this analysis utilize the CDFW's California Wildlife Habitat Relationships System (CWHHR) based on *A Guide to Wildlife Habitats of California* by Mayer and Laudenslayer 1988.

3.3.1 Vegetation Communities

The plant community descriptions and nomenclature conventions within this analysis use the CDFW's CWHHR. This classification system is based on the 59 wildlife habitats described in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988) and may be used as a model to predict which wildlife species may inhabit specific plant communities.

There are eight vegetation communities within the AA: annual grasslands, rice, irrigated row and field crops, riverine, valley and foothill riparian, and fresh emergent wetland, barren, and urban. The AA and lands surrounding are primarily agricultural with associated rural residences.

Annual Grasslands

Annual grassland habitats are found on flat plains to gently rolling foothills and often occur in between or adjacent to other wooded habitat types. Annual grasslands are described as open grasslands composed primarily of annual plant species. Species commonly found within annual grasslands include wild oats, ripgut brome, red brome, soft chess, wild barely, foxtail fescue, filaree, and various clovers among others.

Annual grasslands are present in the ESL, primarily along levee banks, roadsides, and along the fringes of croplands. Non-native grasses observed included creeping bentgrass (*Agrostis stolonifera*), wild oats (*Avena barbata* and *A. fatua*), ripgut brome (*Bromus diandrus*), soft chess (*B. hordeaceus*), Italian wild rye (*Festuca perennis*), and foxtail barley (*Hordeum murinum*). There was an abundance of non-native herbaceous plants observed including mustard (*Brassica* sp.), Italian thistle (*Carduus pycnocephalus*), bull thistle (*Cirsium vulgare*), Queen Anne's lace (*Daucus carota*), sweet fennel (*Foeniculum vulgare*), filaree (*Erodium* sp.), cut leaved geranium (*Geranium dissectum*), bull mallow (*Malva nicaeensis*), bur clover (*Medicago polymorpha*), alfalfa (*Medicago sativa*), English plantain (*Plantago lanceolata*), cudweed (*Pseudognaphalium* sp.), cultivated radish (*Raphanus sativus*), common groundsel (*Senecio vulgaris*), milk thistle (*Silybum marianum*), spiny sowthistle (*Sonchus asper*), and spring vetch (*Vicia sativa*). Very few native plant species were observed in the annual grasslands but included meadow barley (*Hordeum brachyantherum*), pineapple weed (*Matricaria discoidea*), and rough cocklebur (*Xanthium strumarium*).

Rice

Rice is found growing throughout the northern Central Valley typically on level terrain with heavy clay soils that hold water well. Rice is a flood irrigated annual crop grow in laser leveled fields that are flooded and then dried down to let the seed mature and to facilitate harvesting of the fields. Rice crops are typically planted in the spring and harvested in the fall months. (Schultze 1988a).

Wildlife use of the rice croplands changes seasonally. After the fields have been harvested, the waste grain is left, and the fields are flooded again. These conditions mimic freshwater wetlands, and many bird species--especially waterfowl, shorebirds, and wading birds--have adapted to foraging for waste grain in the rice fields. Use by birds typically is not discouraged by the agricultural industry, and in some areas, the practice is encouraged for waterfowl hunting. Wildlife use of rice fields decreases dramatically during the growing season.

Plants observed in the rice croplands adjacent to the AA during the growing season consisted entirely of rice with occasional unwanted plants interspersed such as sprangletop (*Leptochloa* sp.). Narrow strips of non-native grasses fringed the outer edges of the rice fields and along the levee roads. Plants in these areas were consistent with those described in annual grasslands above. No special-status plants are likely to occur in the rice fields due to the agricultural practices that have occurred in the Central Valley over the decades.

Irrigated Row and Field Crops

A variety of crops are grown in irrigated row and field crops; during the spring growing season these usually include numerous types of vegetables, melons, onions, and potatoes. During the

fall, to maximize crop rotation, dry-farmed vegetation is planted and includes wheat or barley. The variation in sizes, shapes, colors, and growing patterns leads to variable plant height and canopy cover, which could influence wildlife usage. Croplands have considerably reduced wildlife habitat richness when compared to natural habitats, thereby reducing the diversity of wildlife that would be found in them. Irrigation water may briefly draw wildlife species, particularly birds into utilizing crop lands for foraging (Schultze 1988b).

Irrigated row and field crops are found northwest of the bridge adjacent to a rural residence. The crop being cultivated was not identified.

Riverine

Riverine habitats consist of intermittent or perennial water. Higher elevation rivers and streams tend to be smaller and higher velocity. At lower elevations, rivers and streams become slow and enlarged. The transition from higher elevation to lower will cause temperature and turbidity to increase, dissolved oxygen will decrease and the bottom will transition from rocky towards muddy or silty. Riverine habitats are found in close association with terrestrial habitats and in many cases, are contiguous with lake and emergent wetland habitats (Grenfell 2008). Flow in riverine habitats is variable, ranging from high to low volume but with continuous flows in rivers, to becoming dry every summer in some streams. Riverine waters provide food for a wide variety of birds, and habitat for fish, turtles, amphibians, and other aquatic species.

Riverine habitat is found within the Pleasant Grove Creek Canal, water is present within the canal year-round. The flows within the canal are variable especially in the winter when the areas creeks that feed into the canal swell.

Valley Foothill Riparian

Valley and foothill riparian communities are found adjacent to rivers and streams. Riparian vegetation consists of one or more species of deciduous trees, shrubs, and herbs that grow on the banks of most streams, lakes, and springs (Holland and Keil 1995). Riparian vegetation provides wildlife habitat in the form of food, shelter, and breeding sites. The structure of the canopy, sub-canopy, shrub layer, and ground cover is extremely variable and important in riparian communities. The structural diversity is equated with the increases observed in biodiversity when examining this habitat compared to others within the Sacramento valley.

Valley foothill riparian habitat is found within the canal in small portions of the ESL. The canopy is dominated by Goodding's black willow with Fremont cottonwood (*Populus fremontii*) present as well. Shrub species present included sandbar willow, arroyo willow, and mule fat (*Baccharis salicifolia*).

Common wildlife observed included Pacific chorus frog (*Pseudacris sierra*), great blue heron (*Ardea herodias*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), black phoebe (*Sayornis nigricans*), tree swallow (*Tachycineta bicolor*), yellow-billed magpie (*Pica nuttallii*), bushtit (*Psaltiriparus minimus*), western bluebird (*Sialia mexicana*), European starling (*Sturnus vulgaris*), Brewer's blackbird (*Euphagus cyanocephalus*), and house finch (*Haemorhous mexicanus*). Colonies of cliff swallows (*Petrochelidon pyrrhonota*) were nesting beneath the bridge soffit. Barn swallow (*Hirundo rustica*) nests were also present but much less abundant.

Fresh Emergent Wetland

Fresh emergent wetlands are found throughout California and typically occur in level to gently rolling terrain. Fresh emergent wetlands are flooded enough that plants present are able to prosper in anaerobic conditions. This habitat is dominated by emergent hydrophytes such as hardstem bulrush (*Schoenoplectus acutus*) and cattail (*Typha latifolia*) (Kramer 1988). The type of plants present in fresh emergent wetlands depends on the type of soil and the amount of water present.

Fresh emergent wetland habitat is found within and directly adjacent to the low flow channel within the Pleasant Grove Creek Canal. The dominant species observed within this habitat type included hardstem bulrush, cattail, and water primrose (*Ludwigia* sp.).

Urban

Urban habitat occurs throughout California from small villages to the largest metropolitan areas. The vegetative structure within urban habitats can be quite variable, but is often maintained. Species composition can be dominated by exotic species but many times natives can be found as they can be better suited to the physical conditions of the region. Lawns are the typical groundcover found in urban habitats, they are comprised of a variety of grass species and are almost always irrigated. Urban habitat is present in the form of single-family residences throughout the ESL. The homes within the ESL are maintained and includes ornamental trees and shrubs plus lawns. Species observed in urban habitat included European starling (*Sturnus vulgaris*) and house sparrow (*Passer domesticus*).

Barren

Barren habitat is defined by a lack of vegetation. Structure and composition of the substrate is often determined by the region of the state, the surrounding environment, and geologic conditions. Barren areas represent extreme environments for vegetation (i.e. impermeable substrate, vertical slope). Barren habitats are found in juxtaposition with a wide variety of habitat types throughout California. Where vegetation is absent the structure of the substrate becomes the primary component of the habitat.

Barren habitat is found in the areas containing RSP immediately adjacent to the bridge as well as, the levee road tops and access roads along the canal.

3.3.2 Other Projects

The USACE is conducting a federal levee improvement project along the west levee found within the the Howsley Road Bridge Replacement project and extending approximately 3.3 miles south to Sankey Road. The USACE will be completing the design and construction of general improvement which may include cutoff walls, seepage berms, levee widening and slope flattening, utility raising and removal, and irrigation and drainage ditch relocations.

This project is a separate future federal action unrelated to the proposed project that will require separate consultation pursuant to Section 7 of the FESA. As such, the project will be permitted, and the effects mitigated, separately.

Chapter 4 Federally-Listed/Proposed Species and Designated Critical Habitat within Action Area

Based upon the evaluation of the federally protected species on the lists obtained from the USFWS, CDFW, and CNPS for the AA (see Appendix B), and assessment of the vegetation community types present, one federally threatened wildlife species has potential to be affected by the project: the GGS.

4.1 Discussion of Giant Garter Snake

The GGS is a federal and state listed threatened species endemic to the wetlands of the Sacramento and San Joaquin Valleys of California. The GGS prefers the high-quality natural wetlands which include marshes, ponds, small lakes, low-gradient streams with silty substrates, and managed wetlands. Additionally, it has become readily apparent GGS inhabit agricultural wetlands and other associated waterways such as irrigation and drainage canals, sloughs, and adjacent uplands in the Central Valley. Because of the direct loss of natural habitat, GGS now relies on rice farming in the Sacramento and San Joaquin Valley, and also uses managed marsh areas in federal national wildlife refuges and state wildlife areas. Giant garter snakes are typically absent from larger rivers with sand, rock and gravel substrates, wetlands with sand, gravel, or rock substrates due to a lack of habitat and emergent vegetation. Riparian woodlands typically do not provide suitable habitat because of excessive shade, lack of basking sites, and absence of prey populations (USFWS 2006). The GGS is active from early spring (April-May) through mid-fall (October-November), although this period of activity varies based on weather. During the winter they are much less active and rarely emerge from burrows. When active, the species usually remains near wetland habitat, although they can move up to 0.8 km in a day (USFWS 1999).

The loss and fragmentation of habitat is the leading threat to GGS throughout the range of the species. Habitat loss has occurred from urban expansion, agricultural conversion, and flood control. Fragmentation limits dispersal and isolates populations of the GGS, increasing the likelihood of inbreeding, decreasing fitness, and reducing genetic diversity. Some populations of the GGS are subject to the cumulative effects of a number of other existing and potential threats, including roads and vehicular traffic, predation by non-native species and climate change.

Primary habitat requirements consist of 1) adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; 2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; 3) grassy banks and openings in waterside vegetation for basking; and 4) higher elevation uplands for cover and refuge from floodwaters during the snake's dormant season in the winter (USFWS 2006).

According to the USFWS Recovery Plan for the Giant Garter Snake released in 2017, habitat components include; 1) a fresh water component with protective emergent vegetative cover that will allow foraging, 2) An upland component near the aquatic habitat that can be used for thermoregulation and for summer shelter in burrows, and 3) An upland refugia component that will serve as winter hibernacula. Further, researchers and experts acknowledge qualitative components for ideal aquatic and upland habitat. Ideal aquatic habitat has 1) water present from March through November; 2) slow moving or static water flow with mud substrate, 3) the presence of emergent bankside vegetation that provides cover from predators and may serve in thermoregulation, 4) the absence of a continuous canopy of riparian vegetation, 5) available prey in the form of small amphibians and small fish, 6) thermoregulation sites with supportive vegetation such as folded tule clumps immediately adjacent to escape cover, 7) the absence of large predatory fish, and 8) the absence of recurrent flooding, or where flooding is probable the presence of upland refugia. Ideal upland habitat contains, 1) available bankside vegetative cover, typically tule or cattail, for screening from potential predators, 2) available permanent shelter, such as bankside cracks or crevices, holes, or small mammal burrows and 3) free of poor grazing management practices (i.e., grazing to the point at which GGS refugia has been reduced or eliminated). An important portion of the upland component is upland refugia for the winter months when the snakes hibernate and enter a lethargic state similar to mammalian hibernation. Over-wintering sites generally consist of mammal burrows along canal or marsh banks, or rock slope protection along roadways or canal edges.

Giant garter snakes feed primarily on small fish, tadpoles, and frogs. The GGS inhabits small mammal burrows and other soil crevices above prevailing flood elevations throughout its winter dormancy period. The snakes typically select burrows with sunny exposure along south and west facing slopes. The breeding season extends through March and April, and females give birth to live young from late July through early September. Brood size is variable, ranging from 10 to 46 young, with a mean of 23 (Hansen and Hansen, 1990). Young immediately scatter into dense cover and absorb their yolk sacs, after which they begin feeding on their own. Although growth rates are variable, young typically more than

double in size within the first year; sexual maturity averages three years for males and five years for females (Hansen and Hansen, 1990).

There are 57 CNDDDB occurrences within a five-mile radius of the AA (**Appendix A: Figure 4 – CNDDDB Occurrence Map**). The nearest record (CNDDDB occurrence 59) is for one snake observed in 1995 at a location approximately 1500 feet west of the existing bridge. Potential for occurrence in this BSA is high.

4.2 Survey Results

The ESL is comprised of 68.75 acres in total, of which 43.58 are suitable GGS habitat and 25.17 classified as non-habitat (**Appendix A: Figure 5 – GGS Habitat**).

- GGS Upland Habitat makes up 11.11 acres of the ESL and is comprised of grassland, levee roads, and slopes adjacent to rice. These areas meet GGS habitat requirements and provide suitable burrowing habitat for summer thermal regulation and the higher ground burrows provide refuge for winter hibernacula.
- GGS Aquatic Habitat makes up 25.89 acres of the ESL and is comprised of roadside ditches; rice paddies, riverine/canal, irrigation ditches and riverine wetland features. These areas provide adequate fresh water during the snake's active season, protective emergent vegetation provides cover for foraging and series of canals, ditches and rice paddies provide a means of movement within the area. Additionally, there are accessible areas along the banks that provide opportunity for basking.
- GGS Aquatic-Upland Habitat comprises approximately 6.59 acres of the ESL and includes the portion of the canal above the low flow channel up to the active floodplain on the eastern portion of the Pleasant Grove Creek Canal. This area provides both suitable aquatic habitat and suitable upland habitat at different times of the year. During the early spring in many years, water is present in this area that can be utilized by the species, however, it recedes into the low flow channel and dries, exposing a plateau that becomes suitable upland habitat for the remainder of the year until the inactive season.
- GGS Non-Habitat makes up 25.17 acres of the ESL and is comprised of urban and barren habitat types within the ESL. The non-habitat includes a cemetery, orchard and an agriculture storage yard. All of these areas have a high amount of human disturbance and have highly managed vegetation. Both of these factors make them unsuitable as snake habitat, the disturbance causes a lot of noise which repels snakes and the managed vegetation results in a lack of cover for hiding from and evading predators.

No focused surveys for GGS were conducted and the species was not observed. However, during the general biological survey much the habitat within the ESL met the snake's needs and several burrows were observed.

4.3 Status of Designated Critical Habitat in the Action Area for Giant Garter Snake

There is no federally designated critical habitat for GGS, therefore, none exists within the AA.

Chapter 5 Effects of the Project on the Action Area

5.1 Deconstruct Action

The key activities for constructing the project include:

- Installation of BMPs and ESA fence to protect sensitive resources.
- Clearing and grubbing at the location of the new structure.
- Dewatering and realignment of the low flow channel.
- Excavation and placement of footings and pilings for the new span.
- Cast-in-place foundation elements will be constructed on the banks of the canal.
- Cast-in-place bridge elements will be constructed.
- Rock slope protection placed around the new abutments.
- Roadway intersections would be extending to meet the new off-set alignment.
- Approaches would be tapered to provide a safe transition to the bridge.
- The bridge and approaches would be paved in asphalt.
- The existing bridge will be demolished and all material removed.
- Habitat restoration of temporary impact areas.

5.1.1 Construction Scenario

The staging and materials storage area will cover 0.75 acres and be contained within the limits of the project site. Two identically sized areas have been identified in project plans and the contractor will select only one staging area to utilize during project construction. Temporary impacts would result from the removal of vegetation, placement of culverts, road contouring, and accessing the construction area from the embankments on both sides of the current bridge structure. A total of 2.52 acres of permanent impacts to GGS habitat would result from the placement of the new bridge structure, removal of the functionally obsolete bridge, placement of RSP, realignment of the low flow channel, and roadway approach work. The project will result in 6.29 acres of temporary impact to GGS habitat. A map depicting impacts to potential GGS habitat can be found in **Appendix A: Figure 6 – Impacts to GGS Habitat**. Table 3 provides a summary of temporary and permanent impacts to GGS habitat within the project area.

Table 3. Permanent and Temporary Impacts to Giant Garter Snake Habitat at Bridge 18C0113

Temporary Impacts			Permanent Impacts		
Habitat Type	Square Feet	Acres	Habitat	Square Feet	Acres
Aquatic	95,508.42	2.19	Aquatic	45,809.54	1.05
Aquatic-Upland	57,916.62	1.33	Aquatic-Upland	23,330.78	0.54
Upland	88,041.26	2.02	Upland	40,701.61	0.93
Staging	32,721.36	0.75	Staging	0.00	0.00
Temporary Impact Total	274,187.66	6.29	Permanent Impact Total	109,841.92	2.52

Project construction activities will be limited to the low-flow period for in-channel work that will occur at Bridge 18C0113.

5.1.2 Sequencing and Schedule

The construction schedule will take into account the affected species potentially on-site and incorporate the anticipated work periods specified in the required state and federal agency permits. The construction is expected to take one and one-half years (two seasons) beginning in the Spring and ending in the Fall of the following year. Embankment build up, rough grading, temporary levee road reconnection, and staging area and construction access development would begin once the 1st work period begins. Based on the proposed span layout, a water diversion may not be required to install the cast-in-drilled-hole concrete piling at the bents since Bent 2 is located just at the edge of the existing low flow channel and Bent 3 is outside of the low flow channel. Since the water table is high, the bent piling will likely be constructed in the wet using slurry displacement methods or cased holes. If slurry methods are used, the contractor will have to store the slurry in Baker tanks during construction of the piling. After approximately two months, the abutments and bent piling would be constructed, while the cast-in-place concrete superstructure falsework is also erected. Temporary driven steel piling would be used to support the falsework in the low flow channel. Timber falsework pads will likely be used to support the falsework outside of the low flow channel. August and September would see the placement and finishing of the concrete superstructure. The formwork, falsework, and any water diversion will be removed in October. By November 1, the CVFPB would require all construction materials to be out of the channel, subject to two-week extensions based on site conditions at that time. Depending on whether time extensions are granted, the RSP required to protect the abutments can be placed. However, if there is not enough time, this work could occur in the following work period.

Also, in October, the finish grading of the roadway approaches and adjacent intersection will occur. The placement of the asphalt concrete pavement roadway and striping will occur in November. In December, barriers and railings will be installed and traffic will be shifted to the new structure and alignment. A winter stoppage of work can occur at this time. Once the 2nd Work Period begins, the existing bridge and the remnant footings from the precursor bridge will be demolished, final levee road reconnections constructed, and staging areas restored. The channel banks will be regraded, and the appropriate environmental mitigation, such as hydroseeding, would be implemented.

5.1.3 Stressors from Project Actions

Stressors induce an adverse response in an organism to any physical, chemical, or biological alteration of the environment (or resource). Stressors can act directly on an individual, or indirectly through effects to a resource.

General stressors associated with project activity could include:

- Removal of vegetation adjacent to the canal.
- Removal of hibernacula during ground disturbance and excavation.
- Removal of soil during excavation.
- Potential introduction of invasive competitors by construction equipment contaminated from previous project sites.

Species-specific stressors associated with project activity could potentially include:

- **Giant garter snake** – Increase in water turbidity, removal of vegetation, removal of aestivation or brumation sites, removal of soil, presence of humans, presence of construction equipment, hazardous material spills, and installation of ESA and silt fencing.

5.1.4 Project Operation and Maintenance

Once the bridge replacement is completed, there are no planned future operation and maintenance components that would affect GGS.

5.2 Exposure to Stressors from the Action

Exposures are defined as the interaction of the species, their resources, and the stressors that result from the project action. The types of project-generated stressors include:

- Direct loss of habitat, including temporary loss of habitat due to construction activities and permanent loss of habitat due to bridge replacement.

- Loss of wildlife forage and foraging potential, including temporary loss within the project work limits, and permanent loss of forage and foraging potential in areas where bridge replacement encroaches into potential habitat.
- Loss of wildlife shelter/cover, including temporary loss during construction due to vegetation removal within the project limits, and permanent loss of shelter/cover if vegetative cover does not grow back. Permanent loss of shelter and cover would occur near the bridge due to replacement of the structure.
- Exposure to biotic factors affecting wildlife species behavior through the presence of humans, pets, or food-related trash that could draw predators, or the introduction of non-native plants that could alter habitat for both wildlife and plant species.
- Exposure to abiotic factors through deposition of soil into waterways.

Species-specific exposure to stressors associated with project activity that could have direct impacts to GGS potentially include:

- Contamination of water from hazardous material or fuel spills.
- Crushing by humans or construction equipment.
- Predation wildlife attracted to the construction site by food waste.
- Noise exposure.
- Loss of habitat, including escape cover and foraging habitat, due to bridge replacement in aquatic and upland habitat.
- Loss of forage and foraging potential resulting from temporarily increased turbidity or hazardous material spills, which could cause death of prey (small fish, tadpoles, and frogs).
- Reduction in brumation and aestivation habitat due to bridge replacement
- Reduction in cover due to vegetation removal thus increasing predation risks.

5.3 Response to the Exposure

Species-specific response to exposures to stressors associated with project activity for GGS could potentially include:

1. Injury or death caused by trampling or operation of construction equipment.
2. Stress from handling and relocation. If a snake is detected by personnel or the biological monitor, it would be relocated (if allowed by USFWS and CDFW). Appropriate GGS habitat for relocation should be identified prior to the commencement of construction at the bridge in order to reduce handling time to no more than 30 minutes. Relocated snakes may be exposed to increased predation or

increased mortality from other factors due to relocation outside of its former localized habitat.

3. Stress or death from direct or indirect exposure to contaminants from inadvertent hazardous materials or fuel spills. Even brief exposure may be deadly, and there is no rapid rectification. Impacts associated with hazardous material clean-up would also be a stressor.
4. Increased risk of mortality for individuals and a reduced carrying capacity for the local population due to loss of habitat replaced by the new bridge structure and associated roadway alignment. However, it is not likely that the project would cause habitat fragmentation because the snakes can still move under or around the new structure.

The GGS responds to predation or potentially hazardous situations by seeking cover or leaving the area where danger is present. Removal of vegetation, underground refugia, and foraging opportunities at the bridge would likely cause GGS to move out of the area to safer locations which can be found both upstream and downstream of the existing bridge within the canal and in the rice fields in the vicinity of the bridge.

5.4 Effects of the Action

Effect is a description of the manner in which the action may affect any listed species or critical habitat and an analysis of any cumulative effect (50 Code of Federal Regulations 402.02). The effect of the action is the consequence (behavioral, physical, or physiological) of a response to a stressor.

Suitable habitat for GGS is present within the action area and with the extent of construction required the proposed project may affect, and is likely to adversely affect, GGS.

5.5 Conservation Measures and Compensation Proposal

5.5.1 Conservation Measures

The County will implement the conservation measures listed below to avoid and minimize potential impacts to listed species.

Best Management Practices

Standard BMPs will be implemented to minimize potential for erosion and sedimentation into water of the United States (WOUS) as well as protect species habitat.

Worker Awareness Training

Before any ground-disturbing work (including vegetation removal and grading), the qualified biologist will conduct a mandatory Contractor/Worker Awareness Training for all construction personnel about special-status species that could potentially occur on-site. Species to be covered in the training include, northwestern pond turtle, GGS, and birds protected by the MBTA.

- Proof of personnel attendance will be provided to USFWS and CDFW within one week of the training. The Worker Awareness Training will be conducted for new personnel as they are brought on the job during the construction period. General restrictions and guidelines that will be followed by construction personnel include:
- The construction crew leader will be responsible for ensuring that crew members adhere to the guidelines and restrictions.
- The training will discuss the legal status of each species, habitat requirements, representative photographs, and avoidance and minimization measures to be implemented. Information regarding the life history of GGS, importance of irrigation canals, marshes/wetlands, and seasonally flooded areas, and a description of activities that qualify as take of the species including harassment, destruction of habitat, and death of an individual.
- Distribution of a fact sheet conveying this information to the personnel who may enter the AA.

General Pre-construction Survey

- A photo documentation report showing pre- and post-construction project area conditions will be submitted to the USFWS and CDFW one month after the completion of the project.
- If species covered under the MBTA and FGC sections 3503, 3503.5, and 3513 are determined to be present within the project vicinity, construction activity including clearing of vegetation, generation of mechanical noise, or ground disturbance should be conducted outside of the breeding season (February 1 to August 31), if feasible. If Project activities must be conducted during the nesting bird season, then the following shall be conducted:
 - Migratory Birds: A qualified biologist will conduct pre-construction surveys for nesting birds within a reasonable buffer of the AA. If active nests are

found, the County will be notified. If active nests are detected, the qualified biologist will establish buffers around nests that are sufficient in size to ensure that breeding is not likely to be disrupted or adversely impacted by construction. Factors to be considered for determining buffer size will include: the presence of natural buffers provided by vegetation or topography; nest height; locations of foraging territory; and baseline levels of noise and human activity. Buffers will be maintained until young have fledged or the nests become inactive. Pre-construction nesting bird surveys will be conducted no more than 48 hours prior to the commencement of construction.

- If a protected species is discovered during construction within the Action Area, the County will notify USFWS and/or CDFW as required in resource agency permits, and the qualified biologist will have the authority to stop all construction work on the site until the appropriate corrective measures have been conducted, and it is determined that the species will not be harmed.
- For protected resources and species, construction activity will be scheduled to avoid impacts to listed species and habitats to the extent practicable.

Project Site Management

- Access routes and the number and size of staging, access, and work areas will be limited to those identified in the project plans. Movement of heavy equipment to and from the site will be restricted to established roadways and access routes. Project activities shall confine all project-related parking, storage areas, equipment storage, vehicles, and supplies and any other construction activities to the project work limits using, to the extent possible, previously disturbed areas. Additionally, Permittee shall not use or cross Covered Species' habitat outside of the marked project work limits. During construction operations, stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas.
- All equipment will be maintained such that there will be no leaks of automotive fluids such as gasoline, oils, or solvents, and a Spill Response Plan will be prepared.
- Hazardous materials such as fuels, oils, and solvents will be stored in sealable containers in a designated location outside of the levee prism.
- Project-related vehicles will observe the posted speed limit on hard-surfaced roads and a 15 mile-per-hour speed limit on unpaved roads during travel in the project area.

- Project-related vehicles and construction equipment will restrict off-road travel to the designated construction areas.
- No pets will be allowed in the project construction area.
- To prevent contamination of habitat, all workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Work will stop and any fuel or hazardous waste leaks or spills will be repaired and/or cleaned up immediately by qualified personnel following pertinent state and federal statutes and regulations. Hazardous materials will not be stored or handled in the project area and any unused or leftover hazardous products will be properly contained and handled offsite.
- To prevent possible resource damage from hazardous materials such as motor oil or gasoline, construction personnel will not service vehicles or construction equipment outside designated staging areas.
- The County will ensure contractor implementation of and compliance with a Storm Water Pollution Prevention Plan. BMPs will be implemented to prevent sediment from entering waterways and to reduce erosion, dust, noise, and other deleterious aspects of construction activities.
- All trash will be disposed of in closed containers and removed from the construction area at least once per week during the construction period. Workers will not feed or attract wildlife to the project area.
- Any worker who inadvertently injures or kills a federally listed species or finds one dead, injured, or entrapped will immediately report the incident to the on-site biological monitor(s) and Designated Biologist. The Designated Biologist will immediately notify the County, who will immediately provide verbal notification to USFWS, Sacramento Fish and Wildlife Office and the local CDFW warden or biologist, the County will follow up with a written report to the USFWS and CDFW within two calendar days. The report will include the date and time of the finding or incident, location of the animal or carcass, photographs, an explanation as to cause of take, and any other pertinent information.
- The biological monitor(s) and Designated Biologist will have the authority to immediately stop any activity that is not in compliance with conservation measures and/or to order any reasonable measure to avoid the unauthorized take of a federally

or State listed species or any rare, special-status, or sensitive species. If there is a threat of harm to any sensitive species, or other aquatic wildlife, the qualified biologist will stop construction in the immediate area and notify the USFWS and CDFW. Consultation with the USFWS and CDFW is required before re-commencing work in that area.

- The USFWS and CDFW will be given reasonable access to the project area. The County and its contractors will cooperate with efforts to verify compliance with or effectiveness of conservation measures.
- The designated representative will notify USFWS and CDFW in writing if the County or its contractors are not in compliance with any conservation measures. Non-compliance will be reported within 24 hours.
- Upon completion of construction all temporary fill and construction refuse, including flagging and fencing, will be removed from the project area and properly disposed of.
- The biological monitor(s) and Designated Biologist will record all observations of federally listed species, State listed species, or species of special concern on CNDDDB datasheets and submit to CDFW.

Environmentally Sensitive Areas

- Avian exclusionary devices shall be installed on the bridge prior to the initiation of bird nesting season (February 1). Exclusionary devices shall cover the bottom and sides (if necessary) of the bridge (wherever mud nesting birds may find purchase). Passage underneath the bridge (through the channel) shall not be impeded. Exclusionary materials shall be installed within seven days of surveying the bridge for bridge dwelling wildlife, shall not pose an entanglement risk to wildlife, and shall be regularly maintained to ensure these parameters are being met. Exclusionary materials shall not be installed if nesting bird activity is detected.
- Prior to the initiation of construction, project work limits will be clearly delineated with high visibility fencing, stakes, cones, or flags to avoid ground disturbance to areas adjacent to and outside of work limits.
- To prevent unwanted impact to suitable GGS habitat that is not scheduled for permanent or temporary disturbance, orange construction barrier fencing (snow fence) will be installed around areas off limits to vehicle and equipment traffic within the limit of temporary disturbance. Additionally, the limits of the allowed extent of

disturbance will be marked in the field (during construction staking) to prevent construction related impacts outside of the approved work area. To prevent snakes and other ground-dwelling animals from being caught in the orange construction fencing, it will be placed such that there is a 1-foot gap between the ground and the bottom of the orange construction fencing.

- Fencing will be maintained until the completion of work in the area and removed when work is completed. Fencing removed during high water levels will be reinstalled prior to reinitiation of work.

Erosion and Sediment Controls

Protective measures will include but are not limited to:

- Dust control includes the use of water trucks and dust palliatives to control dust in excavation and fill areas, and covering temporary stockpiles when weather conditions require. The amount of water used will be kept to the minimum amount needed, and water will not be allowed to form puddles or runoff from construction surfaces.
- Biodegradable straw wattles will be installed along or at the base of slopes during work to capture sediment.
- Protection of graded areas from erosion will be implemented using a combination of silt fences, biodegradable fiber rolls along toes of slopes or along edges of designated staging areas, and biodegradable erosion control mat (such as jute or coir) as appropriate on sloped areas. The contractor bid solicitation package will specify that tightly woven fiber netting (less than 0.25 inch), coconut coir matting, or similar material will be used for erosion control. Plastic monofilament or wire mesh in straw wattles or other erosion control devices will not be used. Only erosion control materials with natural fibers or other netting approved by USFWS and CDFW will be used. The edge of the material will be buried in the ground to prevent snakes from crawling under the material.

5.5.1.1 SPECIES-SPECIFIC AVOIDANCE AND MINIMIZATION MEASURES

The project was developed to meet the identified purpose and need of the project, while avoiding or minimizing impacts to GGS. The species-specific conservation measures and AMMs, described in detail below, will be incorporated into the project:

Designated County Representative and Biologist

- Before any work in the action area begins, the County will designate a representative (Designated Representative) that will be responsible for communicating with USFWS and CDFW and who will oversee compliance with applicable permits, conservation measures, and avoidance and minimization measures. The County shall notify USFWS and CDFW in writing before starting Covered Activities of the Designated Representative's name, business address, and contact information, and shall notify in writing if a substitute Designated Representative is selected or identified at any time during the term of applicable regulatory permits.
- The County shall submit to the USFWS and CDFW in writing the name, qualifications, business address, and contact information of the biological monitors, including a Designated Biologist and other qualified biologists at least 30 days before starting covered activities under the applicable regulatory permits. The County shall ensure that the biological monitors are knowledgeable and experienced in the biology and natural history of the Covered Species (i.e. GGS). The Designated Biologist shall be responsible for overseeing qualified biologists to help minimize and fully mitigate or avoid the incidental take of individual Covered Species and to minimize disturbance of Covered Species' habitat. The County shall obtain USFWS and CDFW approval of the Designated Biologist and qualified biologists in writing before starting Covered Activities. The County shall obtain Service and CDFW approval in writing if the Designated Biologist must be changed. At a minimum, one individual experienced with the biology and ecology of the Covered Species and with handling snakes is required for the Designated Biologist. All other qualified biological monitors shall have demonstrable experience monitoring for the Covered Species. The Designated Biologist may also serve as the Designated Representative.

Pre-construction Surveys and Monitoring for GGS

- A USFWS and CDFW approved Designated Biologist will conduct pre-construction surveys before any ground-disturbing activities occur at time intervals described in species-specific AMMs.
- Prior to ground-disturbing activities within suitable aquatic or upland habitat, a USFWS and CDWF approved Designated Biologist will conduct a pre-construction survey for GGS and will inspect exclusion and orange barrier fencing to ensure they are both in good working order. Preferably, the pre-construction survey will be conducted immediately prior to ground-disturbing activities but no more than 24 hours before the start of this work. The construction area will be re-inspected and

surveyed whenever a lapse in construction activity of two weeks or more has occurred. Results of pre-construction surveys will be provided to USFWS and CDFW within 24 hours of commencement of construction activities. Surveys will confirm that no rodent holes occupied by GGS are present within the Action Area.

- If a snake (believed to be a GGS) is encountered during construction, activities will cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. GGS encountered during construction activities will be allowed to move away from construction activities on their own.
- A compliance monitoring report including photo documentation of the project area conditions will be submitted to USFWS and CDFW each month.

Timing of Construction for GGS

- To the maximum extent possible, construction activities (including the installation of exclusion fencing) in GGS aquatic and upland habitat (within 200 feet of aquatic habitat) will be initiated during the snake's active period (May 1 - October 1). During this timeframe, potential for injury and mortality are lessened because snakes are actively moving and avoiding danger.
- Twenty-four hours prior to the commencement of construction activities within the channel prism, the project area shall be surveyed by a USFWS and CDFW approved Designated Biologist to document the presence or absence of GGS. The biologist will provide USFWS and CDFW a written report that adequately documents the monitoring efforts within 24-hours of commencement of in-channel construction activities. The project will be re-inspected by the Designated Biologist whenever a lapse in construction in the area of two weeks or greater has occurred. If any GGS habitat is identified within the project area during the pre-construction survey, exclusionary fencing shall be placed around the potential habitat to identify areas to be avoided during construction activity.

Established Procedures for GGS Encountered

- If GGS is encountered, the County or its consultant shall halt construction until the uninjured snake has left the area under its own volition. Capture and relocation of trapped or injured individuals shall be attempted only by the Designated Biologist and proper species identification must be made prior to any capture or handling. For each Covered Species encountered, the Designated Biologist shall submit a completed

field survey form (or equivalent) to be submitted to USFWS and CDFW no more than 90 days after completing the last field visit to the Project Area.

- The USFWS and CDFW will identify as part of the FESA and CESA consultation process the maximum number of encounters with a Covered Species is authorized. Any captured, trapped, injured, or killed individuals shall be considered encounters.
- Prior to capturing a Covered Species, a positive identification of the species must be made by the Designated Biologist. Construction workers shall receive a Worker Awareness Training to recognize and respond to the presence of all snakes in work areas. Because the Covered Species can be easily confused with other congeners, crews should be directed to assume that any snake encountered may be the Covered Species, until positively identified by the Designated Biologist.
- Captured Covered Species shall be released as soon as practicable. While construction activities are ongoing Covered Species captured within the work area will not be released at the point of capture but will be released at a designate release site. The following conditions for release have been adapted from the U.S. Geological Survey National Wildlife Health Center guidance on the use and care of wildlife during field research. Field-captured animals shall be released only: (1) at sites that are approved by USFWS and CDFW and in habitat suitable for species survival, (2) when the released animal can be reasonably expected to function normally within the population. (3) when local and seasonal conditions are conducive to survival, (4) when the ability to survive in nature has not been irreversibly impaired, and (5) when release is not likely to spread pathogens or contribute to disease processes in other ways.

Dewatering GGS Habitat

- The use of sheet piling (or other approved diversion device/methods) may be used to divert flow around work areas so that no work in standing water occurs (with the exception of installation or removal of diversion and dewatering devices). Diversion devices/methods shall be built from clean materials such as sandbags, gravel bags, water dams, or clean/washed gravel which will cause little or no siltation.
- If dewatering becomes necessary between May 1 and October 1, the County shall ensure that dewatered habitat remains dry for at least fifteen (15) consecutive days prior to the initiation of excavation and/or filling of dewatered habitat within the

Canal. The dewatered habitat shall remain dry until work in the dewatered habitat is complete.

- Dewatered habitat will be subject to daily biological monitoring.

Minimize Construction Impacts on GGS

The County will implement the following measures to minimize construction impacts on GGS and its habitat.

- Vegetation clearing within 200 feet of the banks of suitable GGS aquatic habitat will be limited to the minimum area necessary. Avoided GGS habitat within or adjacent to the action area will be flagged and designated as an environmentally sensitive area, to be avoided by all construction personnel.
- If the contractor chooses to place a temporary bridge crossing, it shall not exceed 30 feet in width or 60 feet in length. Additionally, the installation and removal activities of the temporary crossing will be limited to within 15 feet of existing low flow channel edge. All impacted areas will be restored to preconstruction conditions after removal of the temporary crossing.
- The movement of heavy equipment within 200 feet of the banks of suitable GGS aquatic habitat will be confined to designated haul routes to minimize habitat disturbance.
- The contractor bid solicitation package will specify that BMPS utilized will comply with descriptions in 5.5.1 Erosion and Sediment Controls and/or regulatory permits.
- If water will be obtained from any suitable GGS aquatic habitat, intake hoses will be screened with mesh no larger than 1/4 inch.
- All project personnel will look beneath parked vehicles and equipment for snakes prior to their movement.

Restoration of Disturbed Areas

Disturbed areas will be restored with the following methods:

- All slopes or unpaved areas temporarily affected by the proposed project will be stabilized with effective erosion control materials.

- Slopes and bare ground will be reseeded with native plant seed mix to stabilize and prevent erosion as soon as possible.
- Where temporary disturbance includes the removal of trees or plants, native species will be replanted.

Additional Protective Measures during Work in Suitable Habitat during the GGS Inactive Period

The County will implement the following additional protective measures if work must occur during the GGS inactive period (i.e. between October 2 and April 30), when snakes are more vulnerable to injury and mortality.

- Areas of suitable habitat that are scheduled for excavation or ground disturbance/fill will be excluded with silt fence containing one-way exits for at least two weeks prior to the inactive season (or the drop off in warm temperatures), to reduce the likelihood of individuals brumating within the area. The silt fencing will be approximately three feet tall and buried six inches below the ground surface level. Barrier and exclusionary fencing will be inspected daily by a qualified Designated Biologist during ground disturbing activities. The Designated Biologist will report any inadequacies in the fencing to the resident engineer. The resident engineer will be responsible for ensuring the contractor maintains the exclusionary and construction barrier fencing around GGS habitat throughout the construction period and makes necessary repairs.
- A full-time, USFWS and CDFW approved Designated Biologist will be on-site for the duration of any ground-disturbing activities (e.g., vegetation clearing, grubbing, grading, and other earth-moving activities) after October 1.
- All vegetation within 200 feet of aquatic habitat will be cleared prior to the GGS brumation period (i.e., vegetation clearing must be completed by October 1 for work the following winter).
- If exclusion fencing is installed in the active period but work does not begin until the inactive period, a qualified Designated Biologist will thoroughly inspect all fencing and one-way exits, and any necessary repairs will be made before ground disturbing activities begin on site. If silt fencing is unable to be installed during the active period, and would have to be installed in the inactive period (October 2 and April 30), silt exclusion fencing and ESA fencing in the project area will be hand installed under the supervision of a qualified Designated Biologist.

- Temporarily disturbed habitat will be revegetated, as appropriate, with native species when construction activities are complete.

Implement a Mitigation Monitoring Reporting Program for GGS

- A report summarizing the activities that have occurred and the GGS protective measures that were implemented will be prepared and submitted to USFWS and CDFW each month during construction. The report will contain a Mitigation Monitoring and Reporting Program (MMRP) table of conservation measures, when the measure will be implemented (i.e., before, during, or after construction), status of the measure (i.e., complete, ongoing, incomplete), the name of the individual completing the table, and the date completed.
- No later than 45 days after completion of all conservation measures, the County will submit a final mitigation report to the USFWS and CDFW. The final mitigation report will include: (1) a summary of information provided in monthly status reports; (2) the MMRP table with notes showing when each of the conservation measures was implemented; (3) all available information about incidental take of GGS during construction of the proposed action; (4) information about other effects on GGS from the proposed action; (5) beginning and ending dates of the proposed action; (6) an assessment of the effectiveness of conservation measures in minimizing and compensating for effects on GGS; (7) recommendations on how conservation measures might be changed to more effectively minimize take and compensate for effects of future projects on GGS; and (8) any other pertinent information.

Performance Security

- Prior to proceeding with Covered Activities, the County will provide USFWS and CDFW with written documentation that the County has ensured funding (Security) to complete all measures to minimize and fully mitigate the incidental take of GGS resulting from construction of the proposed action. The documentation provided by the County will identify specific minimization and mitigation components and the costs associated with each component.

5.5.2 Compensation

The County will compensate for the permanent loss of 2.52 acres of suitable habitat for GGS by purchasing GGS credits at a 3:1 ratio (7.56 credits) from a USFWS and CDFW-approved mitigation bank. The County will compensate for the temporary impacts to 6.29 acres of suitable GGS habitat by purchasing GGS credits at a 1:1 ratio (6.29 credits) from a USFWS

and CDFW approved mitigation bank. The transaction will take place through a purchase and sale agreement, and funds must be transferred within 30 days, and prior to the initiation of any construction activities. The County will provide USFWS and CDFW with copies of the credit sale agreement and fund transfer.

5.6 Effects of Interrelated and Interdependent Actions/ Conclusions and Determination

No effects of interrelated and interdependent actions are anticipated for this project. This project is not part of a larger project, and the construction activities would be completed consecutively.

5.7 Cumulative Effects

To evaluate the potential for cumulative impacts within the AA, the Governor's Office of Planning and Research CEQAnet database was reviewed to identify projects for which notices of preparation or completion of an environmental document were filed with the State Clearinghouse. The database search results vary for the cumulative impacts assessment based on the resource affected, and considers planned, approved, and recently completed projects. Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the AA described in this BA. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to Section 7 of the FESA. No other projects were found that are proposed within the AA.

5.7.1 Giant Garter Snake

No cumulative impacts to GGS or its habitat would occur as a result of the project.

5.8 Determination

A no effect determination was made for the following species:

- Palmate-bracted Bird's Beak
- Valley Elderberry Longhorn Beetle
- Conservancy Fairy Shrimp
- Vernal Pool Fairy Shrimp
- Vernal Pool Tadpole Shrimp
- California Red-legged Frog
- California Tiger Salamander

- Steelhead Northern California DPS
- Delta Smelt
- Eulachon
- Green Sturgeon
- Longfin Smelt
- Chinook Salmon, Central Valley Spring-run
- Western Yellow-billed Cuckoo
- Western Snowy Plover

A may affect-likely to adversely affect determination was made for the following species.

- GGS

5.8.1 Species and Critical Habitat Determination

Critical habitat for the listed species will not be impacted as there is no designated critical habitat for GGS. For this reason, critical habitat is not addressed in this BA.

5.8.2 Discussion Supporting Determination

After reviewing the current status of the GGS, the environmental baseline for the action area, the effect of the proposed project is not likely to jeopardize the continued existence of the GGS, and is not likely to destroy or adversely modify designated critical habitat. No critical habitat has been designated for this species; therefore, none will be affected.

Based on the analysis as documented in this BA, the project site contains suitable aquatic and upland habitat for GGS. Therefore, the project:

“May affect, likely to adversely affect the giant garter snake” with the species’ documented presence near the BSA, the species could be exposed to project actions. Specifically, construction activities involving ground disturbance conducted in and near the canal banks that are GGS aquatic habitat during the active season, and to areas they retreat to brumate during the inactive season, may result in project related take of individuals and their habitat. Especially when considering the species propensity to utilize RSP and voids behind concrete structures as hibernacula during the inactive season. With incorporation and implementation of the measures to avoid and minimize impacts to GGS as outlined in the GGS Avoidance and Minimization Measures, including following all BMPs, conducting pre-construction surveys, and continued biological monitoring during ground disturbing activities and as feasible while conducting ground disturbing activities when GGS are active, impacts would be minimized to the extent practicable. Additionally, site restoration where appropriate would minimize temporary impacts to habitat. Impacts to GGS habitat will also be off-set by

the purchase of compensatory mitigation credits from a USFWS and CDFW approved mitigation bank before the initiation of construction activities.

Chapter 6 Literature Cited

- California Department of Fish and Wildlife. 2017. California Natural Diversity Database. RareFind 5. Version 5.2.7. Sacramento, California.
<https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>
- California Native Plant Society. 2017. Inventory of Rare and Endangered Plants online 7th Edition. Sacramento, California. <http://www.cnps.org/inventory>.
- Grenfell, Jr., W.E. 2008. "Riverine." In: *Wildlife Habitat Relationships System*. California Interagency Wildlife Task Group Database. Version 8.1. California Department of Fish and Wildlife. <http://www.dfg.ca.gov/biogeodata/cwhr/pdfs/RIV.pdf>
- Hansen, G.E. 1988. Review of the Status of the Giant Garter Snake (*Thamnophis couchi gigas*) and its Supporting Habitat during 1986-1987. Final Report for California Department of Fish and Game, Contract C-2060.
- Hansen, R.W. and G.E. Hansen. 1990. *Thamnophis gigas* (giant garter snake) reproduction. Herpetological Review. 21(4): 93-94.
- Holland, V.L. and D. J. Keil. 1995. *California Vegetation*. Kendall/Hunt Publishing Company. Dubuque, Iowa.
- Kie, J.G. 2005. "Annual Grassland." In: *Wildlife Habitat Relationships System*. California Interagency Wildlife Task Group Database. Version 8.1. California Department of Fish and Wildlife. <http://dfg.ca.gov/biogeodata/cwhr/pdfs/AGS.pdf>.
- Kramer, G. 1988. "Fresh Emergent Wetland." In: *Wildlife Habitat Relationships System*. California Interagency Wildlife Task Group Database. Version 8.1. California Department of Fish and Wildlife. <http://dfg.ca.gov/biogeodata/cwhr/pdfs/AGS.pdf>.
- Mayer, K. and W. Laudenslayer Jr. eds. 1988. *A Guide to Wildlife Habitats of California*. Sacramento: State of California Resources Agency. Department of Fish and Game.
- Schultze, R.F. 1988a. "Rice." In: *Wildlife Habitat Relationships System*. California Interagency Wildlife Task Group Database. Version 8.1. California Department of Fish and Wildlife.
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=67412&inline>.
- Schultze, R.F. 1988b. "Irrigated Row and Field Crops." In: *Wildlife Habitat Relationships System*. California Interagency Wildlife Task Group Database. Version 8.1. California Department of Fish and Wildlife.
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=67410&inline>.
- Stebbins, R.C. (2003). *A Field Guide to Western Reptiles and Amphibians*. Third edition. Houghton Mifflin, New York. 231-233 p.
- U.S. Fish and Wildlife Service. 2017. Recovery Plan for the Giant Garter Snake (*Thamnophis gigas*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California vii + 71pp.

- U.S. Fish and Wildlife Service. 2016. Section 7 Consultation. *Guidance for Preparing a Biological Assessment*.
https://www.fws.gov/midwest/Endangered/section7/ba_guide.html.
- U.S. Fish and Wildlife Service 2017. Information for Planning and Consultation. Environmental Conservation Online System. Website <http://ecos.fws.gov/ipac>
- U.S. Fish and Wildlife Service. 2016c. Giant Garter Snake.
https://www.fws.gov/sacramento/es_species/Accounts/Amphibians-Reptiles/es_giant-garter-snake.htm
- U.S. Fish and Wildlife Service. 2006. Giant Garter Snake (*Thamnophis gigas*) 5-Year Review: Summary and Evaluation. Sacramento, CA.
- U.S. Fish and Wildlife Service 1997. Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo Counties, California.
- Western Regional Climate Center. 2018). Cooperative Climatological Data Summaries.
http://www.wrcc.dri.edu/climate_data/climsum.

Appendix A Figures

Figure 1. Location Map

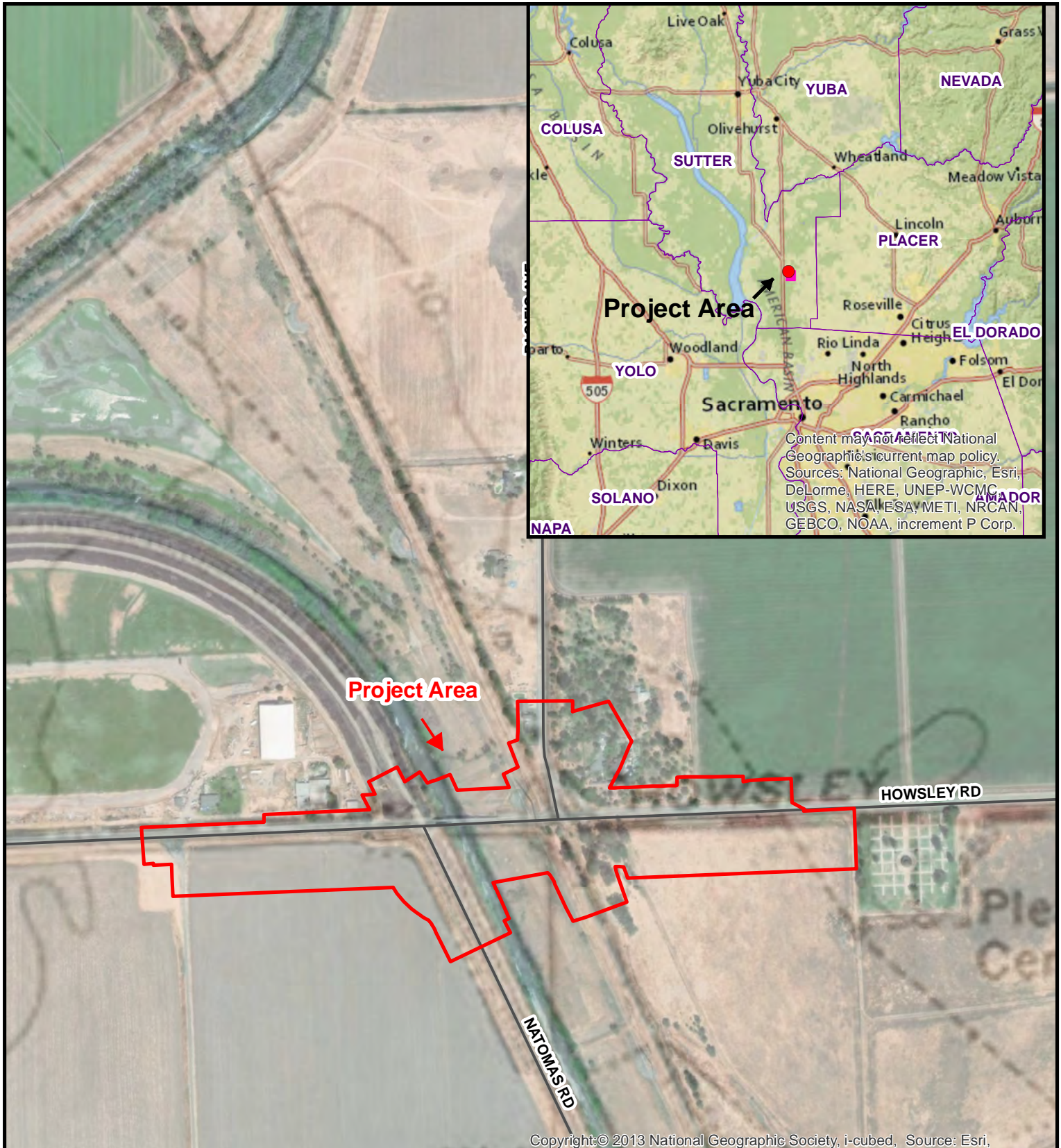
Figure 2. Action Area

Figure 3. Project Work Limits

Figure 4. CNDDB Occurrences within 5 Miles

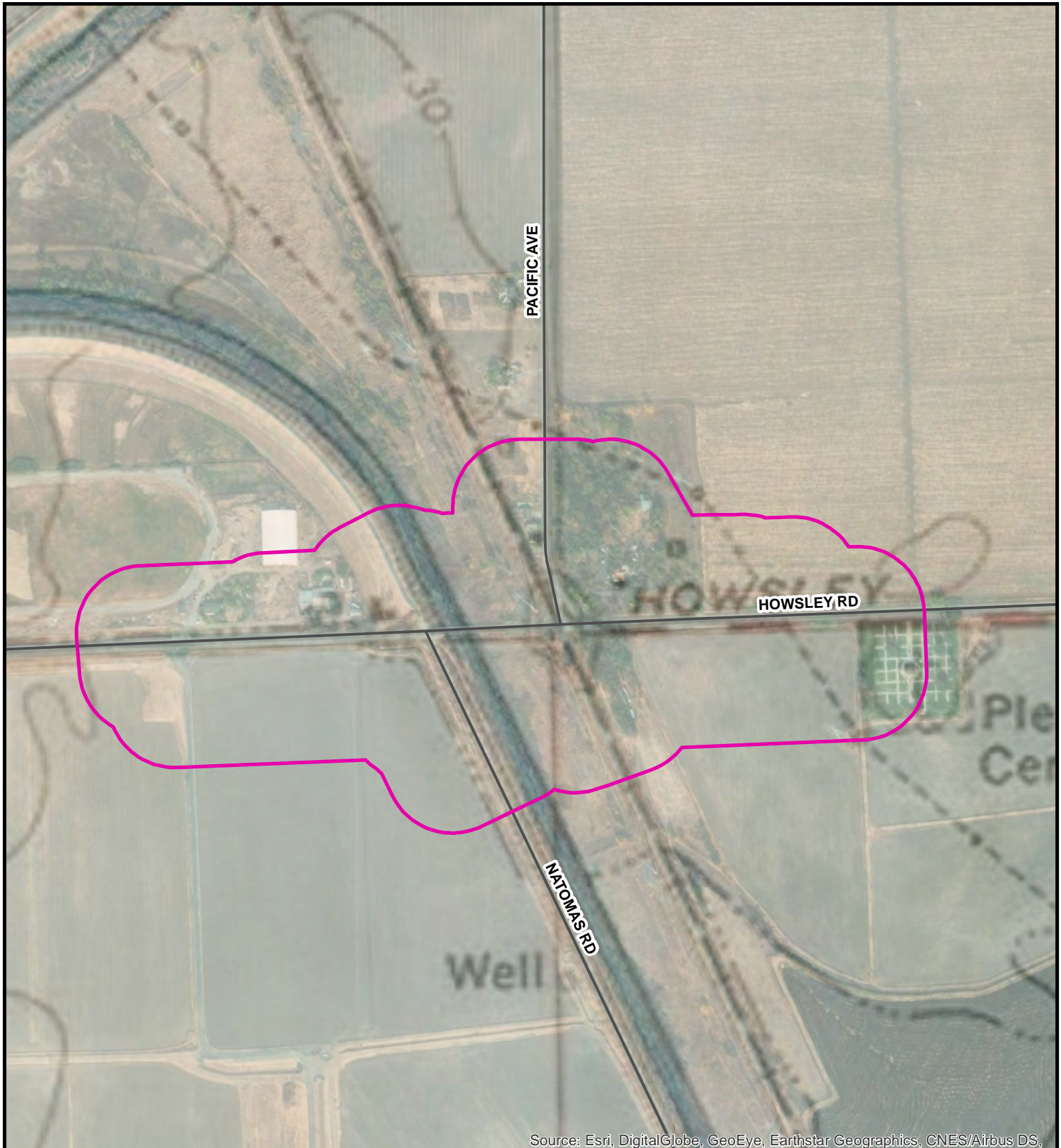
Figure 5. Giant Garter Snake Habitat

Figure 6. Impacts to Giant Garter Snake Habitat

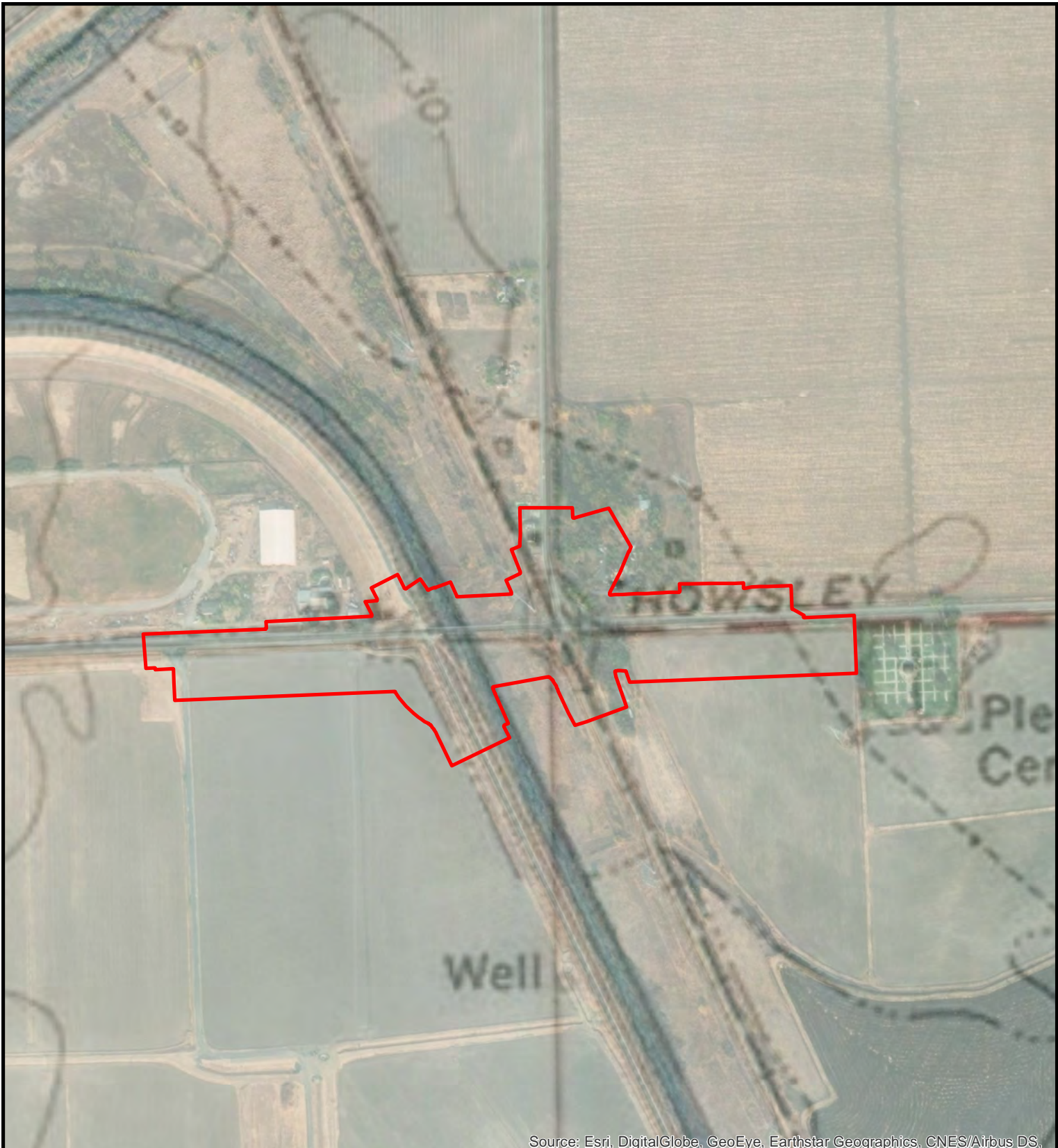


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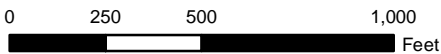


Legend Linetype <div style="border: 2px solid red; width: 20px; height: 10px; display: inline-block; margin-right: 5px;"></div> Project Area <div style="border-bottom: 2px solid black; width: 20px; display: inline-block; margin-right: 5px;"></div> Roads	<div style="text-align: center;"> </div> <div style="display: flex; justify-content: space-between; align-items: flex-start; margin-top: 10px;"> <div style="font-size: small;"> Imagery Source: USGS Topo Inset Imagery: National Geographic </div> <div style="text-align: center;"> </div> <div style="font-size: x-small;"> Within Sections 3,4,9,10 Township 11N, Range 04E, Sutter County, CA VERONA USGS 7.5' Quad </div> </div> <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 10px;"> <div style="font-size: x-small;"> Map Date: April 28, 2019 </div> <div style="font-size: x-small;"> Drawn By: MSR </div> <div style="font-size: x-small;"> NSE Project # 16-074 </div> </div>	<div style="text-align: center;"> Figure 1: Location Map Howsley Road Bridge Replacement - Sutter County, CA - </div> <div style="text-align: center; margin-top: 20px;"> <i>... Designing Solutions</i> </div> <div style="text-align: center; font-size: x-small; margin-top: 10px;"> 111 MISSION RANCH BLVD., SUITE 100 CHICO, CA 95926 PHONE: (530) 893-1600 - www.NorthStarEng.com - © NorthStar </div>

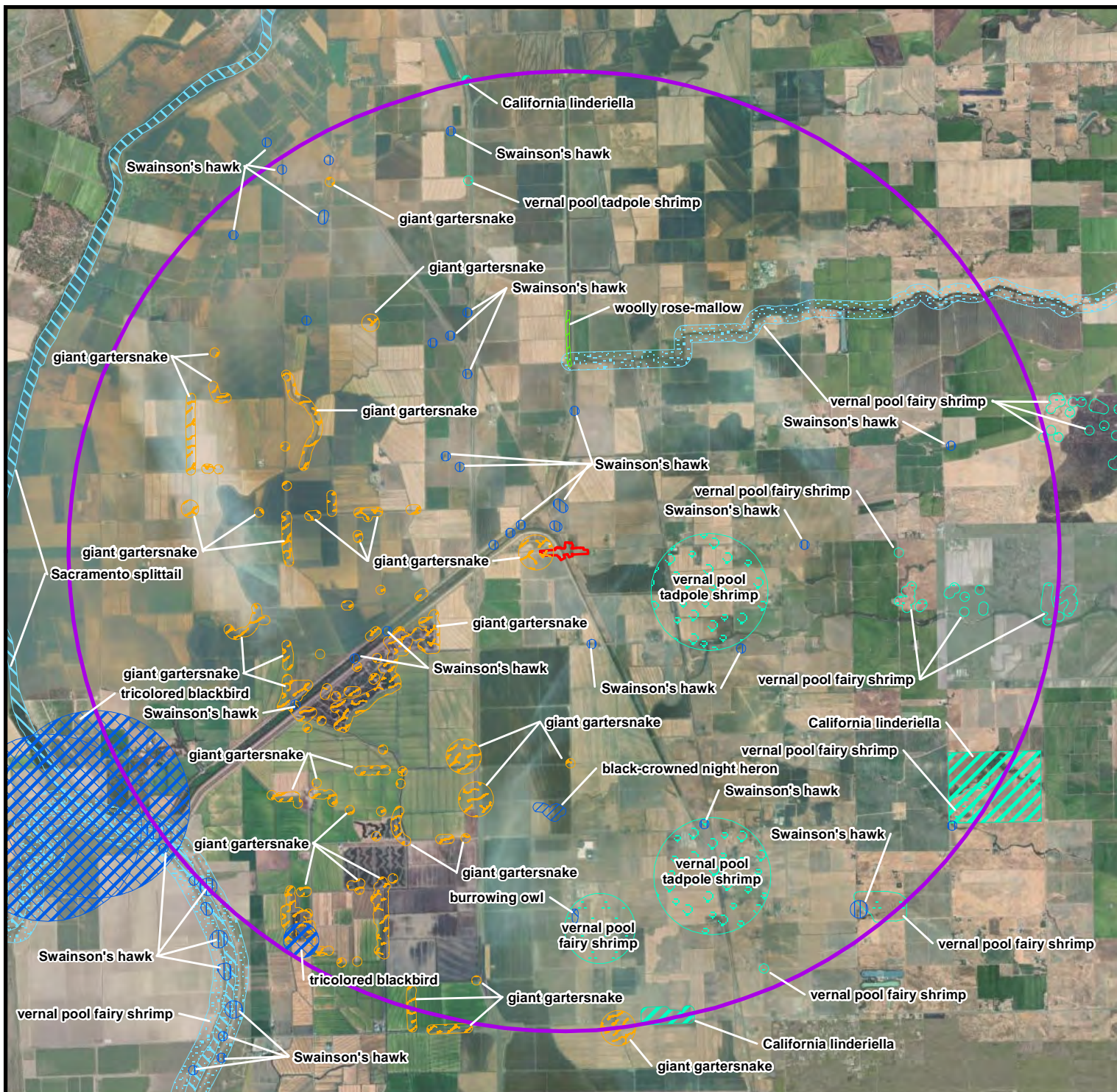


Legend Action Area Roads	 1 inch = 500 ft (printed at 8.5 x 11)		Figure 4: Action Area Howsley Road Bridge Replacement - Sutter County, CA -	
	Imagery Source: USGS Topo Inset Imagery: National Geographic		Within Sections 3,4,9,10 Township 11N, Range 04E, Sutter County, CA VERONA USGS 7.5' Quad	
	Map Date: March 18, 2020	Drawn By: MSR	 ... Designing Solutions	
	NSE Project # 16-074		111 MISSION RANCH BLVD., SUITE 100 CHICO, CA 95926 PHONE: (530) 893-1600 - www.NorthStarEng.com - © NorthStar	



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS,

Legend  Project Work Limits	 1 inch = 500 ft (printed at 8.5 x 11)		Figure 3: Project Work Limits	
	Imagery Source: USGS Topo Inset Imagery: National Geographic		Howsley Road Bridge Replacement - Sutter County, CA -	
		Within Sections 3,4,9,10 Township 11N, Range 04E, Sutter County, CA VERONA USGS 7.5' Quad	 NORTHSTAR ... Designing Solutions	
	Map Date: March 18, 2020	Drawn By: MSR	NSE Project # 16-074	111 MISSION RANCH BLVD., SUITE 100 CHICO, CA 95926 PHONE: (530) 893-1600 - www.NorthStarEng.com - © NorthStar



Legend

CNDDB 5 Mile Buffer

APE

CNDDB within 5 Miles (Common Name)

Woolly Rose-mallow

California Linderella

vernal pool fairy shrimp

vernal pool tadpole shrimp

Giant Gartersnake

steelhead - Central Valley DPS

Sacramento splittail

Black-Crowned Night Heron

Burrowing Owl

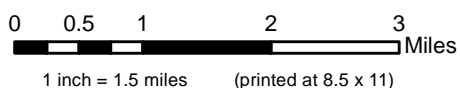
Swainson's hawk

tricolored blackbird

Within Sections 3, 4, 9, 10,
T11N, R4E, Sutter County, CA;
Verona USGS 7.5' Quad

Imagery Source: Esri,
DigitalGlobe, GeoEye, Earthstar
Geographics, CNES/Airbus DS,
USDA, USGS, AeroGRID, IGN,
and the GIS User Community

Howsley Road Bridge - Sutter County, CA -



Map Date:
April 13, 2019

Drawn By:
TDA

NSE Project #
16-074

CNDDB Occurences within 5 miles



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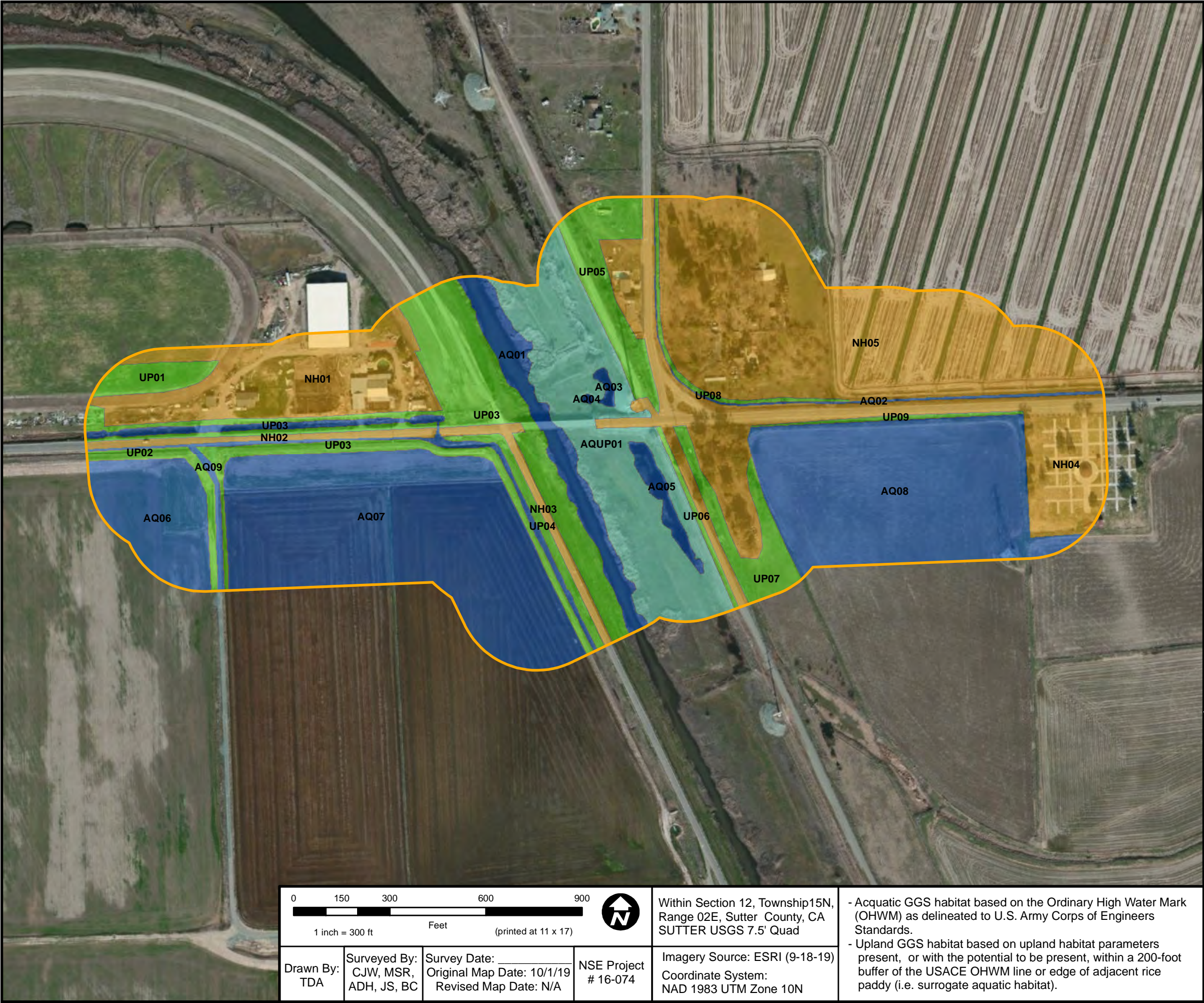


Figure 5: Potential Giant Garter Snake Habitat Environmental Survey Area (ESL)			
Howsley Road Bridge Replacement Project - Sutter County, CA-			
GGS Habitat Within Action Area			
Label	Type	Area (ft ²)	Area (Acres)
UP01	Upland	29,636.01	0.680352
UP02	Upland	22,529.85	0.517216
UP03	Upland	247,492.81	5.681676
UP04	Upland	23,956.42	0.549966
UP05	Upland	75,255.20	1.727629
UP06	Upland	8,696.08	0.199635
UP07	Upland	54,009.14	1.239884
UP08	Upland	13,518.60	0.310346
UP09	Upland	8,669.90	0.199034
UPLAND TOTAL =		483,764.02	11.105738
AQ01	Aquatic	82,366.57	1.890884
AQ02	Aquatic	11,021.98	0.253031
AQ03	Aquatic	4,304.26	0.098813
AQ04	Aquatic	828.07	0.019010
AQ05	Aquatic	20,086.21	0.461118
AQ06	Aquatic	113,728.36	2.610854
AQ07	Aquatic	463,008.56	10.629257
AQ08	Aquatic	375,552.92	8.621543
AQ09	Aquatic	56,809.17	1.304164
AQUATIC TOTAL =		1,127,706.10	25.888673
AQUP01	Aquatic/Upland	286,928.22	6.586992
AQUATIC/UPLAND TOTAL =		286,928.22	6.586992
NH01	Non-Habitat	214,749.61	4.929992
NH02	Non-Habitat	23,723.96	0.544629
NH03	Non-Habitat	26,995.94	0.619744
NH04	Non-Habitat	307,721.28	7.064337
NH05	Non-Habitat	523,059.56	12.007843
NON-HABITAT TOTAL =		1,096,250.35	25.166546
TOTAL OF ALL AREA =		2,994,648.69	68.75
GGS HABITAT TOTAL =		1,898,398.34	43.58

Legend

Howley ESL (68.75 ac)

Upland (11.11 ac)

Aquatic (25.89 ac)

Aquatic-Upland (6.59 ac)

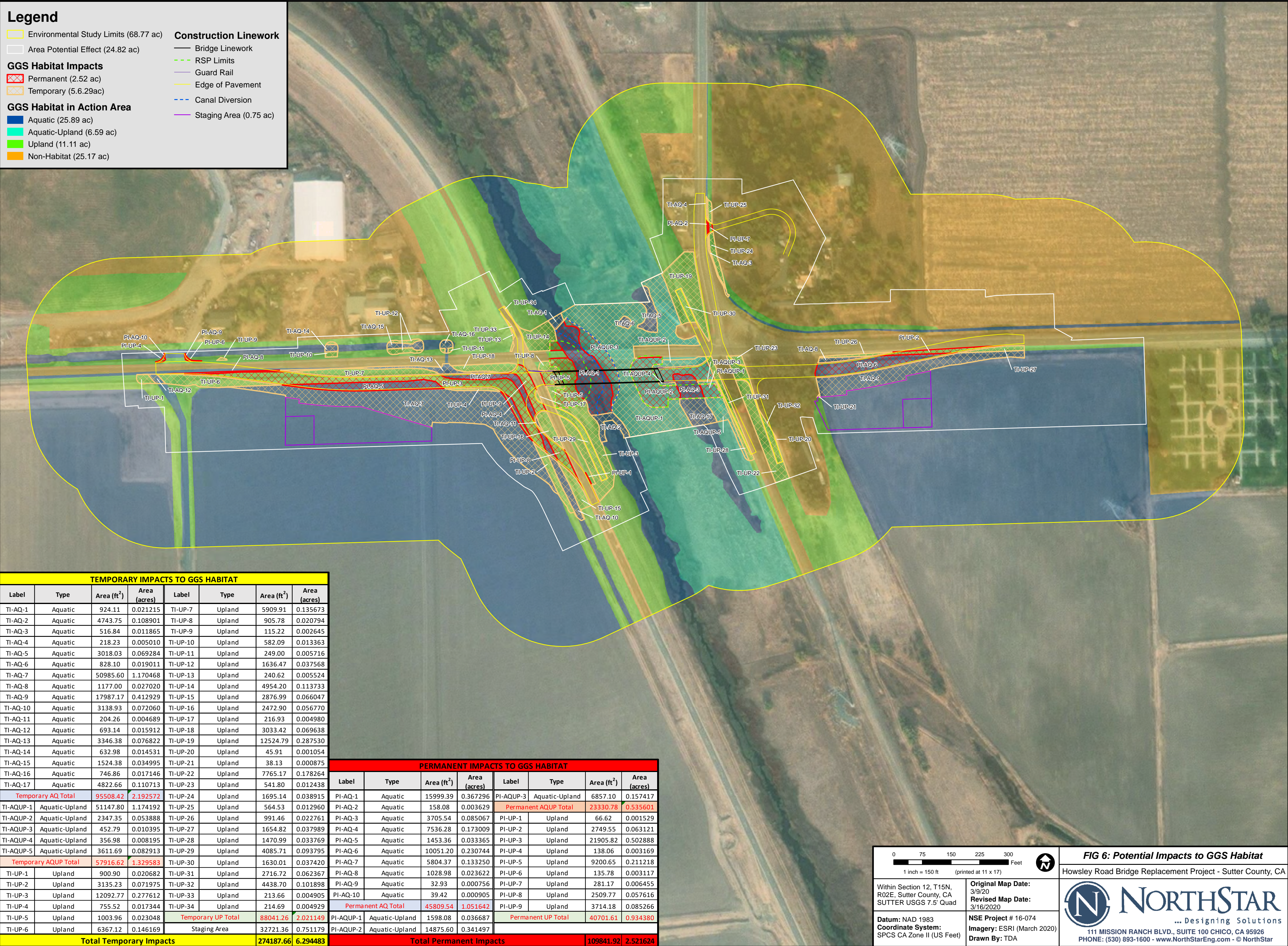
Non-Habitat (25.17 ac)

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Appendix B USFWS, CNDDDB, and CNPS Database Search Results

USFWS (Sacramento office) for Sutter County; CNPS and CNDDDB Species List for the Grays Bend, Knights Landing, Nicolaus, Sheridan, Sutter Causeway, Taylor Monument, Pleasant Grove, Verona, and Rio Linda Quadrangles.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

Phone: (916) 414-6600 Fax: (916) 414-6713



In Reply Refer To:

May 01, 2020

Consultation Code: 08ESMF00-2020-SLI-1786

Event Code: 08ESMF00-2020-E-05531

Project Name: Howsley Road Bridge Replacement Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.



Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Verona (3812175) OR Sutter Causeway (3812186) OR Nicolaus (3812185) OR Sheridan (3812184) OR Knights Landing (3812176) OR Pleasant Grove (3812174) OR Grays Bend (3812166) OR Taylor Monument (3812165) OR Rio Linda (3812164))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	PDFAB0F8R1	None	None	G2T1	S1	1B.2
Antioch Dunes anthicid beetle <i>Anthicus antiochensis</i>	IICOL49020	None	None	G1	S1	
bank swallow <i>Riparia riparia</i>	ABPAU08010	None	Threatened	G5	S2	
black-crowned night heron <i>Nycticorax nycticorax</i>	ABNGA11010	None	None	G5	S4	
Boggs Lake hedge-hyssop <i>Gratiola heterosepala</i>	PDSCR0R060	None	Endangered	G2	S2	1B.2
brittlescale <i>Atriplex depressa</i>	PDCHE042L0	None	None	G2	S2	1B.2
burrowing owl <i>Athene cunicularia</i>	ABNSB10010	None	None	G4	S3	SSC
California alkali grass <i>Puccinellia simplex</i>	PMPOA53110	None	None	G3	S2	1B.2
California linderiella <i>Linderiella occidentalis</i>	ICBRA06010	None	None	G2G3	S2S3	
chinook salmon - Central Valley spring-run ESU <i>Oncorhynchus tshawytscha</i> pop. 6	AFCHA0205A	Threatened	Threatened	G5	S1	
Coastal and Valley Freshwater Marsh <i>Coastal and Valley Freshwater Marsh</i>	CTT52410CA	None	None	G3	S2.1	
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	ICBRA03010	Endangered	None	G2	S2	
dwarf downingia <i>Downingia pusilla</i>	PDCAM060C0	None	None	GU	S2	2B.2
eulachon <i>Thaleichthys pacificus</i>	AFCHB04010	Threatened	None	G5	S3	
giant gartersnake <i>Thamnophis gigas</i>	ARADB36150	Threatened	Threatened	G2	S2	
great blue heron <i>Ardea herodias</i>	ABNGA04010	None	None	G5	S4	
great egret <i>Ardea alba</i>	ABNGA04040	None	None	G5	S4	
Great Valley Mixed Riparian Forest <i>Great Valley Mixed Riparian Forest</i>	CTT61420CA	None	None	G2	S2.2	



Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Heckard's pepper-grass <i>Lepidium latipes</i> var. <i>heckardii</i>	PDBRA1M0K1	None	None	G4T1	S1	1B.2
hoary bat <i>Lasiurus cinereus</i>	AMACC05030	None	None	G5	S4	
legenere <i>Legenere limosa</i>	PDCAM0C010	None	None	G2	S2	1B.1
longfin smelt <i>Spirinchus thaleichthys</i>	AFCHB03010	Candidate	Threatened	G5	S1	
merlin <i>Falco columbarius</i>	ABNKD06030	None	None	G5	S3S4	WL
mountain plover <i>Charadrius montanus</i>	ABNNB03100	None	None	G3	S2S3	SSC
Northern Claypan Vernal Pool <i>Northern Claypan Vernal Pool</i>	CTT44120CA	None	None	G1	S1.1	
Northern Hardpan Vernal Pool <i>Northern Hardpan Vernal Pool</i>	CTT44110CA	None	None	G3	S3.1	
pallid bat <i>Antrozous pallidus</i>	AMACC10010	None	None	G5	S3	SSC
palmate-bracted bird's-beak <i>Chloropyron palmatum</i>	PDSCR0J0J0	Endangered	Endangered	G1	S1	1B.1
purple martin <i>Progne subis</i>	ABPAU01010	None	None	G5	S3	SSC
Sacramento anthicid beetle <i>Anthicus sacramento</i>	IICOL49010	None	None	G1	S1	
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	AFCJB34020	None	None	GNR	S3	SSC
Sacramento Valley tiger beetle <i>Cicindela hirticollis abrupta</i>	IICOL02106	None	None	G5TH	SH	
saline clover <i>Trifolium hydrophilum</i>	PDFAB400R5	None	None	G2	S2	1B.2
San Joaquin spearscale <i>Extriplex joaquinana</i>	PDCHE041F3	None	None	G2	S2	1B.2
Sanford's arrowhead <i>Sagittaria sanfordii</i>	PMALI040Q0	None	None	G3	S3	1B.2
snowy egret <i>Egretta thula</i>	ABNGA06030	None	None	G5	S4	
song sparrow ("Modesto" population) <i>Melospiza melodia</i>	ABPBXA3010	None	None	G5	S3?	SSC
steelhead - Central Valley DPS <i>Oncorhynchus mykiss irideus</i> pop. 11	AFCHA0209K	Threatened	None	G5T2Q	S2	
stinkbells <i>Fritillaria agrestis</i>	PMLIL0V010	None	None	G3	S3	4.2



Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Suisun Marsh aster <i>Symphotrichum lentum</i>	PDASTE8470	None	None	G2	S2	1B.2
Swainson's hawk <i>Buteo swainsoni</i>	ABNKC19070	None	Threatened	G5	S3	
tricolored blackbird <i>Agelaius tricolor</i>	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	IICOL48011	Threatened	None	G3T2	S2	
vernal pool fairy shrimp <i>Branchinecta lynchi</i>	ICBRA03030	Threatened	None	G3	S3	
vernal pool tadpole shrimp <i>Lepidurus packardii</i>	ICBRA10010	Endangered	None	G4	S3S4	
western pond turtle <i>Emys marmorata</i>	ARAAD02030	None	None	G3G4	S3	SSC
western red bat <i>Lasiurus blossevillei</i>	AMACC05060	None	None	G5	S3	SSC
western snowy plover <i>Charadrius alexandrinus nivosus</i>	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
western spadefoot <i>Spea hammondi</i>	AAABF02020	None	None	G3	S3	SSC
western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
white-faced ibis <i>Plegadis chihi</i>	ABNGE02020	None	None	G5	S3S4	WL
white-tailed kite <i>Elanus leucurus</i>	ABNKC06010	None	None	G5	S3S4	FP
woolly rose-mallow <i>Hibiscus lasiocarpus var. occidentalis</i>	PDMAL0H0R3	None	None	G5T3	S3	1B.2

Record Count: 53

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2020-SLI-1786

Event Code: 08ESMF00-2020-E-05531

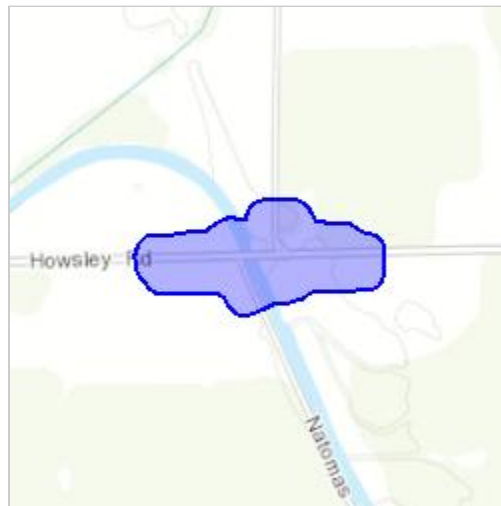
Project Name: Howsley Road Bridge Replacement Project

Project Type: TRANSPORTATION

Project Description: The project is located on Howsley Road approximately 0.9 miles east of State Route 99 near Pleasant Grove, CA. The project involves the replacement of the existing functionally obsolete bridge with a new wider, safer structure.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.823375297012156N121.52603598274655W>



Counties: Sutter, CA

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is proposed critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
<p>California Red-legged Frog <i>Rana draytonii</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/2891</p> <p>Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf</p>	Threatened
<p>California Tiger Salamander <i>Ambystoma californiense</i></p> <p>Population: U.S.A. (Central CA DPS)</p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/2076</p>	Threatened

Fishes

NAME	STATUS
<p>Delta Smelt <i>Hypomesus transpacificus</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/321</p>	Threatened

Insects

NAME	STATUS
<p>Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/7850</p> <p>Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf</p>	Threatened

Crustaceans

NAME	STATUS
<p>Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/498</p>	Threatened
<p>Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/2246</p>	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

*The database used to provide updates to the Online Inventory is under construction. [View updates and changes made since May 2019 here.](#)

Plant List

17 matches found. [Click on scientific name for details](#)

Search Criteria

Found in Quads 3812186, 3812185, 3812184, 3812176, 3812175, 3812174, 3812166 3812165 and 3812164;

[Modify Search Criteria](#) [Export to Excel](#) [Modify Columns](#) [Modify Sort](#) [Display Photos](#)

Common Name	Scientific Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank
depauperate milk-vetch	Astragalus pauperculus	Fabaceae	annual herb	Mar-Jun	4.3
alkali milk-vetch	Astragalus tener var. tener	Fabaceae	annual herb	Mar-Jun	1B.2
brittlescale	Atriplex depressa	Chenopodiaceae	annual herb	Apr-Oct	1B.2
valley brodiaea	Brodiaea rosea ssp. vallicola	Themidaceae	perennial bulbiferous herb	Apr-May(Jun)	4.2
Parry's rough tarplant	Centromadia parryi ssp. rudis	Asteraceae	annual herb	May-Oct	4.2
palmate-bracted bird's-beak	Chloropyron palmatum	Orobanchaceae	annual herb (hemiparasitic)	May-Oct	1B.1
dwarf downingia	Downingia pusilla	Campanulaceae	annual herb	Mar-May	2B.2
San Joaquin spearscale	Extriplex joaquinana	Chenopodiaceae	annual herb	Apr-Oct	1B.2
stinkbells	Fritillaria agrestis	Liliaceae	perennial bulbiferous herb	Mar-Jun	4.2
Boggs Lake hedge-hyssop	Gratiola heterosepala	Plantaginaceae	annual herb	Apr-Aug	1B.2
woolly rose-mallow	Hibiscus lasiocarpus var. occidentalis	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2
legenere	Legenere limosa	Campanulaceae	annual herb	Apr-Jun	1B.1
Heckard's pepper-grass	Lepidium latipes var. heckardii	Brassicaceae	annual herb	Mar-May	1B.2
California alkali grass	Puccinellia simplex	Poaceae	annual herb	Mar-May	1B.2
Sanford's arrowhead	Sagittaria sanfordii	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2
Suisun Marsh aster	Symphyotrichum lentum	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2
saline clover	Trifolium hydrophilum	Fabaceae	annual herb	Apr-Jun	1B.2

Suggested Citation

Appendix C Representative Site Photos



PHOTO 1 -

Bridge 18C0113.

Upstream side of the bridge. Western abutment visible on left of photo and eastern abutment on right side of photo.

- Standing on the southeast side of the bridge looking northwest.

17 May 2017



PHOTO 2 -

Bridge 18C0113.

Upstream side of the bridge looking towards western abutment.

- Standing on southwest side of the bridge looking northwest.

17 May 2017



PHOTO 3 -

Bridge 18C0113.

Upstream side of bridge. View towards the eastern abutment. Hardstem bulrush along low flow channel.

- Standing on the southwest side of the bridge looking northeast.

17 May 2017



PHOTO 4 -

Bridge 18C0113.

Bridge, creek, and surrounding habitat south (downstream) of the bridge. Hardstem bulrush present at edge of low flow channel.

- Standing near the middle of the bridge looking northwest.

17 May 2017



PHOTO 5 -

Bridge 18C0113.

Upstream side of bridge and immediate surrounding area. Drift deposit visible on bents.

- Standing on the west levee looking east.

17 May 2017



PHOTO 6 -

Bridge 18C0113.

Bridge and immediate surrounding area.

- Standing on western side of bridge looking east.

17 May 2017



PHOTO 7 -

Bridge 18C0113.

Upstream side of bridge and immediate surrounding area. Area in mid photo to levee toe inundates during high flow events then dries down.

- Standing on the bridge looking east.

17 May 2017



PHOTO 8 -

Bridge 18C0113.

Western levee with low flow channel with bulrush present near waterline and upland habitat present towards top of levee.

- Standing on the bridge looking west.

17 May 2017



PHOTO 9 -

Bridge 18C0113.

Seasonal wetland on the upstream side of bridge and adjacent to the eastern levee. This photo is taken 15 days after Photo 10 showing the draw down in water level in a short period of time.

- Standing on the road looking south.

17 May 2017



PHOTO 10 -

Bridge 18C0113.

Pleasant Grove Creek under higher flow conditions. Photo taken from approximately the same location as the previous photo.

- Standing on the road looking south.

2 May 2017



PHOTO 11 -

Bridge 18C0113.

Seasonal wetland on upstream side of bridge by east levee.

- Standing on the road looking south.

17 May 2017



PHOTO 12 -

Bridge 18C0113.

Pleasant Grove Creek under higher flow conditions. Photo taken from just west of previous photo.

- Standing on the road looking south.

2 May 2017



PHOTO 13 -

Bridge 18C0113.

Pleasant Grove Creek on upstream side of bridge. Aquatic and upland habitat present.

- Standing near the center of the bridge looking south.

17 May 2017



PHOTO 14 -

Bridge 18C0113.

Structure underneath the bridge. Active cliff and barn swallow nests present beneath bridge.

- Standing on the western bank of the creek beneath the bridge looking east.

17 May 2017



PHOTO 15 -

Bridge 18C0113.

Downstream side of the bridge with low flow channel in foreground. Hardstem bulrush present on eastern side of low flow channel.

- Standing on the western bank of channel looking southeast.

17 May 2017



PHOTO 16 -

Bridge 18C0113.

Central and western portion of the downstream side of the bridge. Area inundates during high flows and recedes during drier months.

- Standing near eastern abutment looking west.

17 May 2017



PHOTO 17 -

Bridge 18C0113.

Downstream side of bridge with numerous swallow nests beneath the bridge.

- Standing on the western bank of the channel looking east.

17 May 2017



PHOTO 18 -

Bridge 18C0113.

Downstream side of the bridge with small seasonal wetland present on right of photo.

- Standing near eastern abutment looking west.

17 May 2017



PHOTO 19-

Bridge 18C0113.

Downstream side of bridge. Seasonal wetland present along base of east levee.

- Standing on the base of the east levee looking southwest.

17 May 2017



PHOTO 20 -

Bridge 18C0113.

Downstream side of bridge. Seasonal wetland present along base of east levee.

- Standing at the base of the east levee looking southwest.

17 May 2017



PHOTO 21 -

Bridge 18C0113.

Downstream side of bridge with associated hydrophytic vegetation.

- Standing within the canal looking south.

17 May 2017



PHOTO 22 -

Bridge 18C0113.

Pleasant Grove Creek with large amount of hardstem bulrush present on eastern bank.

- Standing in canal looking north.

17 May 2017



PHOTO 23 -

Bridge 18C0113.

Downstream side of bridge. Low flow channel with associated vegetation including hardstem bulrush and black willow.

- Standing on the western bank of the channel looking north.

17 May 2017



PHOTO 24 -

Bridge 18C0113.

Three western pond turtles basking downstream of the bridge within the action area.

- Standing on east side of low flow channel looking west.

17 May 2017



PHOTO 25 -

Bridge 18C0113.

Downstream side of bridge under higher flow conditions.

- Standing on the roadway looking northwest.

2 May 2017



PHOTO 26 -

Bridge 18C0113.

Pleasant Grove Creek downstream of the bridge in higher flow conditions.

- Standing in the roadway looking north.

2 May 2017