Draft
Initial Study/Mitigated Negative Declaration

Knights Landing Ridge Cut Erosion Repair Project

Knights Landing, California

Lead Agency:

Knights Landing Ridge Drainage District
975 Wilson Bend Road
Grimes, California 95950

Prepared For:

Knights Landing Ridge Drainage District
975 Wilson Bend Road
Grimes, California 95950

Prepared By:

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December 2021

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DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Lead Agency: Knights Landing Ridge Drainage District

Project Proponent: Knights Landing Ridge Drainage District

Project Location: 6.25 miles along both banks of the Knights Landing Ridge Cut canal levee just south of Knights Landing in Yolo County, California

Project Description: The Project is the repair of eroded areas on the waterside of levees of the 6.25-mile long Knights Landing Ridge Cut (KLRC), a human-made leveed drainage channel, using rock slope protection, and vegetation in some areas, similar to the approach approved by the United States Army Corps of Engineers (USACE) in their Sacramento River Bank Protection Plan Environmental Impact Statement (EIS)/Environmental Impact Report (EIR). The Project objective is to arrest or avoid streambank erosion that threatens the integrity of the Sacramento River Flood Control Project levee system. Hydraulic excavators would be utilized at repair locations to remove and reshape existing soil and to place rock and other materials hauled in from commercial sources by truck. Repairs will be implemented in phases over the next 10 years as erosion areas are identified and funding becomes available.

Public Review Period: December 7, 2021 through January 6, 2022

Mitigation Measures Incorporated into the Project to Avoid Significant Effects:

Biological Resources

BIO-1: Erosion Control Measures and Best Management Practices

The Project will implement erosion control measures and BMPs to reduce the potential for sediment or pollutants within the Project Area. Measures may include:

- Erosion control measures will be implemented within an area, between waters of the U.S., and the outer edge of the staging and dewatering areas, prior to commencement of construction activities. Such erosion control measures will be properly maintained until construction is completed and the soils have been stabilized.
- The use fiber rolls or other appropriate erosion control method for erosion control that are certified by the California Department of Food and Agriculture as weed free.
- Seed mixtures applied for erosion control will not contain California Invasive Plant Council designated invasive species (http://cal-ipc.org) and will be composed of a KLRDD-approved seed mix.
- Trash generated onsite will be promptly and properly removed.
- Any fueling in the upland portion of the Project Area will use appropriate secondary containment techniques to prevent spills.

- A qualified biologist will conduct a mandatory Worker Environmental Awareness Program for all contractors, work crews, and any onsite personnel on the potential for special-status species to occur in the Project Area. The training will provide an overview of habitat and characteristics of the species, the need to avoid certain areas, and the possible penalties for noncompliance.

Timing/Implementation: *This measure shall be printed on construction plan sets and implemented at all times during construction.*

Enforcement/Monitoring: *KLRDD and Project construction lead.*

BIO-2: Yolo Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) Avoidance and Minimization Measure (AMM) 11: Palmate-Bracted Bird's Beak

- In accordance with Yolo HCP/NCCP AMM 11, to determine if palmate-bracted bird's-beak is present and could be affected, a qualified biologist will conduct a planning-level survey for this species for any covered activities that will take place within 250 feet of suitable habitat. The survey will be conducted during the period from May 31 to September 30 and will be consistent with the CDFW's Protocols for Surveying and Evaluating Impacts to Special-status Native Plant Populations and Natural Communities.
- In accordance with Yolo HCP/NCCP AMM 11, KLRDD will avoid occupied habitat where palmate-bracted bird's beak has been located within any of the last 15 years (seed viability could be as little as three years and as much as six years, as described in Appendix A of the Yolo HCP/NCCP). KLRDD also will avoid any new occurrences of this species identified during planning-level surveys. Avoidance will require a 250-foot setback from the occupied habitat, or greater distance, depending on the site-specific topography to avoid hydrologic effects. A shorter buffer distance may apply if is determined to avoid effects and is approved by the Yolo Conservancy (Conservancy), USFWS, and CDFW. Mortality of palmate-bracted bird's beak individuals will be avoided, except as needed through management activities that provide an overall benefit to the species.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, and Project construction lead.*

BIO-3: Other Special-Status Plant Species

- Preconstruction floristic surveys shall be conducted for any areas of proposed ground disturbance (i.e., grading or earthwork) in the Project Area with the potential to support special-status plants. A qualified botanist shall survey the area of ground disturbance and a 25-foot buffer during the appropriate blooming period prior to the start of Project activity.

- If no special-status plants are found during the preconstruction surveys, no further measures are necessary.
- If surveys identify any special-status plants, they shall be flagged and avoided with a 25-foot no-disturbance buffer during Project activities. If this avoidance is not feasible, KLRDD shall consult with the CDFW to determine whether alternative avoidance measures that are equally protective are possible.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, CDFW, and Project construction lead.*

BIO-4: Valley Elderberry Longhorn Beetle

The following mitigation measures will avoid or minimize potential impacts to the VELB:

- Obtain ESA take coverage under the Yolo HCP/NCCP for direct effects to VELB. The Project will be conducted in accordance with the AMMs set forth in the Yolo HCP/NCCP to avoid Project effects to ESA-listed VELB.
- Elderberry shrubs will be avoided to the extent practicable. To avoid take of VELB fully, KLRDD will maintain a buffer of at least 100 feet from any elderberry shrubs with stems greater than one inch in diameter at ground level. If necessary, lesser buffers may be applied, in accordance with Yolo HCP/NCCP AMM 1.
- For elderberry shrubs that cannot be avoided with a designated buffer distance, as described above, the qualified biologist will quantify the number of stems one inch or greater in diameter that could be affected, and the presence or absence of exit holes. The Conservancy will use this information to determine the number of plants or cuttings to plant on a riparian restoration site to help offset the loss. Additionally, prior to construction, KLRDD will transplant elderberry shrubs identified within the Project footprint that cannot be avoided.
- Transplantation will only occur if a shrub cannot be avoided and, if indirectly affected by the activity, the indirect would otherwise result in the death of stems or the entire shrub. If KLRDD chooses, in coordination with a qualified biologist, not to transplant the shrub because the activity would not likely result in death of stems of the shrub, then the qualified biologist will monitor the shrub annually for a five-year monitoring period. The monitoring period may be reduced with concurrence from the wildlife agencies if the latest research and best available information at the time indicates that a shorter monitoring period is warranted. If death of stems at least one inch in diameter occurs due to effects from the activity within the monitoring period, and the qualified biologist determines that the shrub is sufficiently healthy to transplant, KLRDD will transplant the shrub, as described elsewhere in AMM 12, in coordination with the qualified biologist. If the shrub dies due to effects from the activity during the monitoring period, or the qualified biologist determines that the

shrub is no longer healthy enough to survive transplanting, then the Conservancy will offset the shrub loss consistent with this measure.

- KLRDD will transplant the shrubs into a Conservancy-approved location in the Yolo HCP/NCCP reserve system. Elderberry shrubs outside the Project footprint but within the 100-foot buffer will not be transplanted.
- Transplanting will follow the following measures:
    1. Monitor: A qualified biologist will be onsite for the duration of the transplanting of the elderberry shrubs to ensure the effects on elderberry shrubs are minimized.
    2. Timing: KLRDD will transplant elderberry plants when the plants are dormant, approximately November through the first two weeks of February, after they have shed their leaves. Transplanting during the non-growing season will reduce shock to the plant and increase transplantation success.
    3. Transplantation procedure:
        a. Cut the plant back three feet to six feet from the ground or to 50 percent of its height (whichever is taller) by removing branches and stems above this height. Replant the trunk and stems measuring one inch or greater in diameter. Remove leaves that remain on the plants.
        b. Relocate plant to approved location in the reserve system, and replant as described in the Yolo HCP/NCCP Section 6.4.2.4.1.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, Yolo Habitat Conservancy, and Project construction lead.*

BIO-5: Fish

If Project activities occur within the wetted channel of the ridge cut, the following mitigation measures shall be implemented to avoid or minimize potential impacts to special-status fish species:

- If KLOG fish passage barrier is not in place and operational, request USACE to initiate Section 7 consultation with the NMFS through the CWA Section 404 process on the Project effects to ESA-listed fish species and acquire a BO for the Project. Implement all conditions of the BO.
- If KLOG fish passage barrier is not in place and operational, implement work within the wetted channel during a limited work window (likely June 15 through October 15) to avoid the most sensitive life stages of ESA-listed anadromous fish species.
- If the KLOG fish passage barrier is not in place and operational, consult with CDFW and, if necessary, secure Incidental Take Permit 2081, pursuant to Section 2080 of the California Fish and Game Code for the California ESA-listed fish (i.e., spring-run and winter-run Chinook salmon).

- Deploy measures, as practicable, to reduce sediment resuspension, such as a turbidity curtain, if feasible, given the flow volume and velocity in the Project Area.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, USACE, CDFW, and Project construction lead.*

BIO-6: Yolo HCP/NCCP AMM14: Western Pond Turtle

If modeled upland habitat will be impacted (see Attachment E of the BRA Report for the Project), the following mitigation shall be implemented:

- A qualified biologist must be present and will assess the likelihood of western pond turtle nests occurring in the disturbance area (based on sun exposure, soil conditions, and other species habitat requirements).
- If a qualified biologist determines that there is a moderate to high likelihood of western pond turtle nests within the disturbance area, the qualified biologist will monitor all initial ground disturbing activity for nests that may be unearthed during the disturbance and will move out of harm's way any turtles or hatchlings found.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD and qualified biologist.*

BIO-7: Yolo HCP/NCCP AMM15: Giant Garter Snake

KLRDD cannot avoid effects of construction activities on aquatic habitat; therefore KLRDD will implement the measures below to minimize effects of construction projects:

- Conduct preconstruction clearance surveys using USFWS-approved methods within 24 hours prior to construction activities within identified giant garter snake aquatic and adjacent upland habitat. If construction activities stop for a period of two weeks or more, conduct another preconstruction clearance survey within 24 hours prior to resuming construction activity.
- Restrict all construction activity involving disturbance of giant garter snake habitat to the snake's active season, May 1 through October 1. During this period, the potential for direct mortality is reduced because snakes are expected to move and avoid danger.
- Dewatering is not feasible for the KLRC; therefore netting and salvage of giant garter snake prey items may be necessary to discourage use by snakes.
- Provide Conservancy-approved environmental awareness training for construction personnel. Training may consist of showing a video prepared by a qualified biologist, or an in-person presentation by a qualified biologist. In addition to the video or in-person presentation, training may be supplemented with the distribution of approved brochures and other materials that describe resources protected under

the Yolo HCP/NCCP and methods for avoiding effects. The training may be conducted simultaneously with the Workers Awareness Training.

- A qualified biologist will prepare a giant garter snake relocation plan, which must be approved by the Conservancy prior to work in giant garter snake habitat. The qualified biologist will base the relocation plan on criteria provided by CDFW or USFWS, through the Conservancy.
- If a live giant garter snake is encountered during construction activities, immediately notify the Project's biological monitor and USFWS and CDFW. The monitor will stop construction in the vicinity of the snake, monitor the snake, and allow the snake to leave on its own. The monitor will remain in the area for the remainder of the workday to ensure the snake is not harmed or, if it leaves the site, does not return. If the giant garter snake does not leave on its own, the qualified biologist will relocate the snake consistent with the relocation plan described above.
- Implement the following management practices to minimize disturbances to habitat:
  - Install temporary fencing to identify and protect adjacent marshes, wetlands, and ditches from encroachment from construction equipment and personnel.
  - Maintain water quality and limit construction runoff into wetland areas through the use of hay bales, filter fences, vegetative buffer strips, or other accepted practices. No plastic, monofilament, jute, or similar erosion-control matting that could entangle snakes or other wildlife will be permitted.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, Project construction lead, USACE, and CDFW.*

BIO-8: Yolo HCP/NCCP AMM 16: Swainson's Hawk and White-Tailed Kite

- If the Project cannot avoid potential nest trees (as determined by the qualified biologist) by 1,320 feet, KLRDD will retain a qualified biologist to conduct preconstruction surveys for active nests consistent with guidelines provided by the Swainson's Hawk Technical Advisory Committee (2000), between March 15 and August 30, within 15 days prior to the beginning of the construction activity. The results of the survey will be submitted to the Conservancy and CDFW.
- If active nests are found during preconstruction surveys, a 1,320-foot initial temporary nest disturbance buffer shall be established. If Project-related activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then the qualified biologist will monitor the nest and will, along with KLRDD, consult with CDFW to determine the best course of action necessary to avoid nest abandonment or take of individuals. Work may be allowed only to proceed within the temporary nest disturbance buffer if Swainson's hawk or white-tailed kite are not exhibiting agitated behavior, such as defensive flights at intruders,

getting up from a brooding position, or flying off the nest, and only with the agreement of CDFW and USFWS. The designated onsite biologist or monitor shall be on the site daily while construction-related activities are taking place within the 1,320-foot buffer and shall have the authority to stop work if raptors are exhibiting agitated behavior.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, Project construction lead, Yolo Habitat Conservancy, USFWS, and CDFW.*

BIO-9: Yolo HCP/NCCP AMM 18: Western Burrowing Owl

To avoid impacts to western burrowing owl to the maximum extent practicable, the following is recommended:

- Prior to any ground disturbance during the breeding season (February 1 to August 31) related to covered activities, the qualified biologist will conduct preconstruction surveys for western burrowing owl within 14 days prior to ground disturbance consistent with CDFW's 2012 preconstruction survey guidelines.
- If the biologist finds the site to be occupied by western burrowing owls during the breeding season, KLRDD will avoid all nest sites per the Yolo HCP/NCCP during the remainder of the breeding season or while the nest is occupied by adults or young (occupation includes individuals or family groups that forage on or near the site following fledging). Construction may occur inside of the disturbance buffer during the breeding season if the nest is not disturbed and KLRDD develops an AMM plan that is approved by the Conservancy, CDFW, and USFWS prior to project construction, based on the following criteria:
  - The Conservancy, CDFW, and USFWS approves the Project proponent's AMM plan.
  - A qualified biologist monitors the owls for at least three days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).
  - The same qualified biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.
  - If the qualified biologist identifies a change in owl nesting and foraging behavior as a result of construction activities, the qualified biologist will have the authority to stop all construction related activities within the non-disturbance buffers described above. The qualified biologist will report this information to the Conservancy, CDFW, and USFWS within 24 hours, and the Conservancy will require that these activities immediately cease within the non-disturbance buffer. Construction cannot resume within the buffer until the adults and

juveniles from the occupied burrows have moved out of the Project Area, and the Conservancy, CDFW, and USFWS agree.

- If monitoring indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use by owls, the Project proponent may remove the no-disturbance buffer, only with concurrence from CDFW and USFWS. If the burrow cannot be avoided by construction activity, the biologist will excavate and collapse the burrow in accordance with CDFW's 2012 guidelines to prevent reoccupation after receiving approval from the wildlife agencies.
- If evidence of western burrowing owl is detected outside the breeding season (December 1 to January 31), the Project proponent will establish a non-disturbance buffer around occupied burrows, consistent with the Yolo HCP/NCCP, as determined by a qualified biologist. Construction activities within the disturbance buffer are allowed if the following criteria are met to prevent owls from abandoning important overwintering sites:
- A qualified biologist monitors the owls for at least three days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
- The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.
- If there is any change in owl roosting and foraging behavior as a result of construction activities, these activities will cease within the buffer.
- If the owls are gone for at least one week, the Project proponent may request approval from the Conservancy, CDFW, and USFWS for a qualified biologist to excavate and collapse usable burrows to prevent owls from reoccupying the site if the construction activities cannot avoid the burrow. The qualified biologist will install one-way doors for a 48-hour period prior to collapsing any potentially occupied burrows. After all usable burrows are excavated, the buffer will be removed, and construction may continue.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, Project construction lead, Yolo Habitat Conservancy, USFWS, and CDFW.*

BIO-10: Yolo HCP/NCCP AMM 19: Least Bell's Vireo

The following mitigation measures shall be implemented to avoid or minimize impacts to least Bell's vireo:

- If the activity will encroach within 500 feet of habitat and there are no breeding season records for the species within 0.25 mile of the covered activity within the previous three years, the qualified biologist will conduct planning-level surveys for

active territories, consistent with USFWS (2001) guidelines, during the breeding season (April 1 to July 15).

- If an occupied territory is discovered during planning-level surveys, or there is a record of the species occurring within 0.25 mile of the covered activity within the previous three years, KLRDD will avoid activities within 500 feet of suitable habitat, unless the Conservancy, USFWS, and CDFW approve a shorter distance.
- If an activity occurs within 500 feet of suitable habitat during the breeding season, regardless of whether or not the species was detected during planning-level surveys or there are records for the species in the area, a qualified biologist will conduct preconstruction surveys, consistent with USFWS (2001) guidelines, during the same season when the activity will occur. If active territories are found, KLRDD will avoid activity within 500 feet of the habitat from April 1 to July 15. This buffer may be reduced with approval from the Conservancy, USFWS, and CDFW.
- The Project proponent will avoid disturbance of previous least Bell's vireo territories (up to three years since known nest activity) during the breeding season unless the disturbance is to maintain public safety. Least Bell's vireo uses previous territories; disturbance during the breeding season may preclude birds from using existing unoccupied territories.
- The required buffer may be reduced in areas where barriers or topographic relief features are adequate for protecting the nest from excessive noise or other disturbance. Conservancy staff members will coordinate with the wildlife agencies and evaluate exceptions to the minimum no-disturbance buffer distance on a case-by-case basis. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.
- If occupied territories are identified, a qualified biologist will monitor construction activities in the vicinity of all active territories to ensure that covered activities do not affect nest success.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, construction lead, Yolo Habitat Conservancy, USFWS, and CDFW.*

BIO 11: Yolo HCP/NCCP AMM 21: Tricolored Blackbird

- KLRDD will retain a qualified biologist to identify and quantify (in acres) TRBL nesting and foraging habitat (as defined in Appendix A, Covered Species Accounts of the Yolo HCP/NCCP) within 1,300 feet of the footprint of the covered activity. If a 1,300-foot buffer from nesting habitat cannot be maintained, the qualified biologist will review records maintained by the Conservancy (which will include CNDDB data and data from the TRBL portal) to determine if TRBL nesting colonies have been active in or within 1,300 feet of the Project footprint during the previous five years.

- If there are no records of nesting TRBLs on the site, the qualified biologist will conduct visual surveys to determine if an active colony is present, during the period from March 1 to July 30, consistent with protocol described by Kelsey (2008).
- If an active TRBL colony is present or has been present within the last five years within the planning-level survey area, KLRDD will avoid adverse effects within 1,300 feet of the colony site(s), unless the Conservancy, USFWS, and CDFW approve a shorter distance. If that is approved, the Project proponent will still maintain a 1,300-foot buffer around active nesting colonies during the nesting season but may apply the approved lesser distance outside the nesting season.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, construction lead, Yolo Habitat Conservancy, USFWS, and CDFW.*

BIO-12: Special-Status and Migratory Bird Treaty Act (MBTA) Protected Birds

- A qualified biologist will conduct a preconstruction survey for nesting birds within seven days of commencement of Project activities. The survey will occur within the Project Area and a 100-foot buffer. If an active nest is located, a no-disturbance buffer will be established as determined by the biologist in consultation with CDFW and maintained until the nest is confirmed to be no longer active by the biologist.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, and CDFW.*

BIO-13: Raptors

- A qualified wildlife biologist will conduct a preconstruction survey for nesting raptors, within the Project Area and a 500-foot buffer, within 14 days of commencement of Project activities. If an active nest is located, a no-disturbance buffer will be established as determined by the biologist in consultation with CDFW and maintained until a qualified biologist determines the young have fledged and are no longer reliant upon the nest for survival.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, and CDFW.*

BIO-14: Special-Status Bats

The following mitigation measures shall be implemented to avoid or minimize potential impacts to bat species:

- Prior to commencement of Project activities, a qualified biologist will survey for suitable roosting habitat (e.g., trees or artificial structures) within the Project Area. If no suitable roosting habitat is identified, no further measures are necessary.
- If suitable roosting habitat is identified and cannot be avoided appropriately (as determined by a qualified biologist), a qualified biologist will conduct an evening bat emergence survey that may include acoustic monitoring to determine whether or not bats are present. If roosting bats are found, consultation with CDFW is required prior to initiation of Project activities

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, and CDFW.*

BIO-15: Aquatic Resources Permits

The following mitigation measures shall be implemented to avoid or minimize potential impacts to waters of the U.S.:

- A permit authorization to fill wetlands under the Section 404 of the federal CWA (Section 404 Permit) must be obtained from USACE prior to discharging any dredged or fill materials into any waters of the U.S. Final mitigation measures will be developed as part of the Section 404 Permit process to ensure no-net-loss of wetland function and values.
- A permit authorization from the RWQCB pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Act must be obtained prior to the discharge of material in an area that could affect waters of the U.S./state. Mitigation requirements for discharge to waters of the U.S./state will be developed in consultation with the RWQCB.
- A SAA from CDFW pursuant to Section 1602 of the California Fish and Game Code must be obtained for impacts to features (e.g., the bed, channel, or bank of any river, stream, or lake) that may be subject to Section 1600 of the Fish and Game Code.

Timing/Implementation: *Prior to construction.*

Enforcement/Monitoring: *KLRDD, USACE, RWQCB, and CDFW.*

BIO-16: Compliance with Yolo HCP/NCCP

The following mitigation measures shall be implemented to assure compliance with the Yolo HCP/NCCP:

- A Yolo HCP/NCCP Permit and take coverage must be obtained for covered activities and take of covered species. Permittees must comply with the AMMs set forth in the Yolo HCP/NCCP, and Yolo HCP/NCCP fees must be paid to the Conservancy or in-lieu mitigation provided, subject to Conservancy approval.

Timing/Implementation: *Prior to construction.*

Enforcement/Monitoring: *KLRDD, USACE, RWQCB, and Yolo Habitat Conservancy.*

Cultural Resources

CUL-1: Unanticipated or Post Review Discovery of Cultural Resources

If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for pre-contact and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the lead federal agency, KLRDD, and applicable landowner. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or a Historic Property under Section 106 of the NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.

Timing/Implementation: *During Project construction.*

Enforcement/Monitoring: *KLRDD, qualified professional archeologist, and Project construction lead.*

CUL-2: Unanticipated or Post Review Discovery of Human Remains

If subsurface deposits believed to be human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for pre-contact and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the find includes human remains, or remains that are potentially human, the qualified archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Yolo County Coroner (per Section 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California PRC, and AB 2641 will be implemented. If the coroner determines the remains are Native American and not the result of a crime scene, the coroner will notify the NAHC, which then will designate a Native American MLD for the Project (Section 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (Section 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

Timing/Implementation: *During Project construction.*

Enforcement/Monitoring: *KLRDD, qualified professional archeologist, and Project construction lead, County Coroner, and NAHC.*

Geology and Soils

GEO-1: Discovery of Unanticipated Paleontological Resources

- If paleontological or other geologically sensitive resources are identified during any phase of Project development, the construction manager shall cease operation at the site of the discovery and immediately notify KLRDD. KLRDD shall retain a qualified paleontologist to provide an evaluation of the find and to prescribe mitigation measures to reduce impacts to a less-than-significant level. In considering any suggested mitigation proposed by the consulting paleontologist, the KLRDD shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, Project design, costs, land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the Project Site while mitigation for paleontological resources is carried out.

Timing/Implementation: During Project construction.

Monitoring/Enforcement: KLRDD and the Project construction lead.

Hazards and Hazardous Materials

HAZ-1: Hazardous Materials Management

- Vehicles shall be moved away from the KLRC and any waters of the U.S. or state prior to refueling and lubrication, as well as repairs if feasible. Staging and storage areas for equipment, materials, fuels, lubricants and solvents, shall be located well away from the top of bank and riparian areas. Stationary equipment such as motors, pumps, generators, compressors and welders, located within or adjacent to waters of the State shall be positioned over drip-pans. Debris, rubbish, oil, gasoline or diesel fuel, or other petroleum products, or any other substances which could be hazardous to aquatic life resulting from Project activities shall be prevented from contaminating the soil and/or entering waters of the state. Absorbent materials designated for spill containment shall be used for all activities performed in or within 50 feet of a watercourse that involve use of hazardous materials to be used for spill response and cleanup in the event of an accidental spill.

  Timing/Implementation: *This measure shall be printed on construction plan sets and implemented at all times during construction.*

  Monitoring/Enforcement: *KLRDD and Project construction lead.*

Transportation

TRANS-1: Construction Traffic Management Plan

- A Construction Traffic Management Plan shall be prepared and implemented by the construction contractor to manage and plan for ingress and egress of truck traffic and deliveries of equipment and supplies at the Project access points near the State Route (SR) 113 KLRC bridge in Knights Landing, the County Road (CR) 16 KLRC bridge crossing, and CR 16/CR 102 intersection. Where construction traffic would cross the pedestrian and bicycle routes at the SR 113/CR 102 intersection and SR 113 KLRC bridge, flaggers shall be used during egress and ingress of delivery and material hauling trucks. The Construction Traffic Management Plan shall include proposed times and days of deliveries and material hauling to avoid peak hours to the maximum extent feasible.

  Timing/Implementation: *This measure shall be printed on construction plan sets and implemented at all times during construction.*

  Monitoring/Enforcement: *KLRDD and Project construction lead.*

Tribal Cultural Resources

TCR-1: Tribal Monitoring

- Vegetation removal, soil excavation, and any activity that has the potential to disturb more than 6 inches of original ground northwest of and adjacent to Assessor Parcel Number (APN) 056-170-

037 should be monitored by a qualified tribal monitor representing a consulting tribe. The monitor must be given a minimum of 48 hours' notice of the opportunity to be present during these activities and to coordinate closely with the archaeological monitor, to observe work activities, and assist in ensuring that sensitive tribal resources are not impacted. The tribal monitor must be given a reasonable opportunity to inspect soil and other material as work proceeds to assist in determining if resources significant to the tribes are present. If potential tribal resources are discovered, a reasonable work pause or redirection of work by the contractor may be requested. If the tribe cannot recommend a monitor or if the tribal monitor does not report at the scheduled time, then all work will continue as long as the specified notice was provided. Tribal monitoring will not occur for equipment set-up or tear-down that does not disturb the ground surface more than 6 inches in depth; hydroseeding; paving; placement of imported fill/gravel/rock; restoration; or backfilling of previously excavated areas that were already monitored. Excavated sediment from the KLRC channel will not be subjected to screening; however, any observed cultural materials will be collected and treated in accordance with the unanticipated discovery measures in CUL-1.

Timing/Implementation: Prior to and during Project construction.

Monitoring/Enforcement: KLRDD and Project construction lead, and tribal monitor.

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Appendix C – Confidential Cultural Resource Inventory and Evaluation Report Knights Landing Ridge Cut Erosion, Yolo County, California. ECORP Consulting, Inc., September 2021 and AB-52 Tribal Cultural Resources Notification and Consultation Letters

Appendix D – Noise Model Data Outputs

LIST OF ACRONYMS AND ABBREVIATIONS

Term	Description
µg/m^3	Micrograms per cubic meter
AB	Assembly Bill
AG	Agricultural zone
AMM	Avoidance and Minimization Measure
A-N	Agricultural Intensive (A-N)
APE	Area of Potential Effect
APN	Assessor Parcel Number
AQMP	Air Quality Management Plan
ATCM	Airborne toxics control measure
BCC	Bird of Conservation Concern
BMPs	Best Management Practices
BO	Biological Opinion
BP	Before Present
BRA	Biological Resources Assessment
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAISO	California Independent System Operator
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	Climate Action Plan

Term	Description
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	Methane
CIWMP	California Integrated Waste Management Plan
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon monoxide
CO Plan	Federal Attainment Plan for Carbon Monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CPUC	California Public Utilities Commission
CR	County Road
CRHR	California Register of Historical Resources
CRPR	California Native Plant Rank
CVFPB	Central Valley Flood Protection Board
CWA	Clean Water Act
dBA	A-weighted decibels
DOC	California Department of Conservation
DOT	Department of Transportation
DPM	Diesel particulate matter
DPS	Distinct Population Segment
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EFH	Essential Fish Habitat
EIC	Eastern Information Center
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMS	Emergency Management System
EO	Executive Order
EPIC	Environmental Protection Information Center
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FTA	Federal Transit Administration
GHG	greenhouse gas

Term	Description
GPS	Global Positioning System
HCP	Habitat Conservation Plan
IRWMP	Integrated Regional Water Management Plan
IRWMP	Integrated Regional Water Management Plan
IS/MND	Initial Study/Mitigated Negative Declaration
IWMP	Integrated Waste Management Plan
KLCSD	Knights Landing Community Services District
KLOG	Knights Landing Outfall Gate
KLRC	Knights Landing Ridge Cut
KLRDD	Knights Landing Ridge Drainage District
L_{dn}	Day/Night Average
L_{eq}	Equivalent Noise Level
LESA	Land Evaluation and Site Assessment Model
LOS	Level of Service
LST	Localized Significance Threshold
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendent
MMT	million metric tons
MND	Mitigated Negative Declaration
MPO	Metropolitan Planning Organization
MRLA	Major Resource Land Area
MRZ	Mineral Resource Zone
MSL	Mean sea level
$MTCO_2e$	Metric tons of carbon dioxide equivalent
MTP/SCS	Metropolitan Transportation Plan/Sustainable Communities Strategy
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NCCPA	Natural Communities Conservation Planning Act
NCIS	Northern California Information Center
ND	Negative Declaration
NIOSH	National Institute for Occupational Safety and Health
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NO_x	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTR	National Toxics Rule
NWIC	Northwest Information Center
O_3	Ozone
OHV	Off-highway vehicle
OHWM	Ordinary high-water mark
OPR	California Office of Planning and Research
OSHA	Occupational Health and Safety Administration

Term	Description
PM	Particulate matter
PM_{10}	Particulate matter less than 10 microns in diameter
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter
ppm	Parts per million
PPV	Peak particle velocity
PRC	Public Resources Code
RACT	Reasonably Available Control Technology
RCPG	Regional Comprehensive Plan and Guide
RCRA	Resource Conservation and Recovery Act
ROG	Reactive organic gases
RPS	Renewables portfolio standard
RSP	Rock slope protect
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SACOG	Sacramento Area Council of Governments
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
sDPS	Southern Distinct Population Segment
SGMA	Sustainable Groundwater Management Act
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMARA	Surface Mining and Reclamation Act
SO_2	Sulfur dioxide
SoCAB	South Coast Air Basin
SP	Service population
SR	State Route
SRA	State Responsibility Area
SRBPP	Sacramento River Bank Protection Project
SRFCP	Sacramento River Flood Control Project
SSC	Species of special concern
SSVEMS	Sierra-Sacramento Valley Medical Services Agency
SVAB	Sacramento Valley Air Basin
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TCR	Tribal Cultural Resource
TMDL	Total Maximum Daily Load
TRBL	Tricolored blackbird
UAIC	United Auburn Indian Community of Auburn Rancheria
UCMP	University of California Museum of Paleontology
USACE	U.S. Army Corps of Engineers
USC	United Stated Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency

Term	Description
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VELB	Valley elderberry longhorn beetle
VFZ	Vegetation free zone
VMT	Vehicle miles traveled
YDWN	Yocha Dehe Winton Nation
YSAQMD	Yolo-Solano Air Quality Management District

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1.0 BACKGROUND

1.1 Summary

Project Title:	Knights Landing Ridge Cut Erosion Repair
Lead Agency Name and Address:	Knights Landing Ridge Drainage District 975 Wilson Bend Road Grimes, California 95950
Contact Person and Phone Number:	Meegan Nagy, Deputy Manager 530-812-6269
Project Location:	6.25 miles along both banks of the Knights Landing Ridge Cut canal levee just south of Knights Landing in Yolo County, California
General Plan Designation:	Agricultural (AG)
Zoning:	Agricultural Intensive (A-N)

1.2 Introduction

The Knights Landing Ridge Drainage District (KLRDD) is the lead agency for this Initial Study/Mitigated Negative Declaration (IS/MND) under the California Environmental Quality Act (CEQA). This IS/MND has been prepared to identify and assess the anticipated environmental impacts of the Knights Landing Ridge Cut (KLRC) Erosion Repair Project (Project). This document has been prepared to satisfy CEQA (Pub. Res. Code, Section 21000 et seq.) and state CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.). CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects. A CEQA Initial Study is generally used to determine which CEQA document is appropriate for a Project (Negative Declaration [ND], MND, or Environmental Impact Report [EIR].

1.3 Surrounding Land Uses/Environmental Setting

The Knights Landing Basin is located along the Sacramento River at the northern boundary of Yolo County and northwest end of the Yolo Bypass (Figure 1-1). It is bounded by the Sacramento River Levee System on the east with approximately 15.2 miles of levees that provide protection from flows in the Sacramento

River; the KLRC on the west; the Colusa Basin Drain on the north, and the Yolo Bypass on the south. The Wallace Weir, completed in early 2018, is located a short distance downstream of the southern end of the Project Area on KLRC and prevents special-status anadromous fish from entering the Ridge Cut and subsequently the Colusa Basin Drain. The Knights Landing Outfall Gate (KLOG) fish passage barrier, completed in 2015, is located a short distance upstream of the northern end of the Project Area and prevents special-status anadromous fish from entering the Colusa Basin Drain. KLOG fish passage barrier is currently not operational but is anticipated to be reinstalled in December 2021. Combined (when both are operational), these barriers prevent special-status anadromous fish (e.g., Chinook salmon, steelhead, green sturgeon, from accessing the Project Area. The community of Knights Landing is located at the confluence of the KLRC, the Colusa Basin Drain, and the Sacramento River.

The KLRC runs from the Colusa Basin Drainage Canal to the Yolo Bypass. Perennial water in the canal flows from northwest to southeast. The Project work area shown on Figure 1-2 includes the KLRC levees on the east and west banks of the KLRC, including the waterside levee slope to approximately 20 feet laterally within the water; levee crown; landside levee slope; and landside levee toe roads. This area is also referred to as the Project Area or Project Study Area. The Project Study Area also includes an approximately 2.5-acre triangular staging area east of the east levee toe access road approximately 0.7 miles north of the Yolo CR 16 bridge crossing. The total Project work area is 295.6 acres along the entire 6.25-mile KLRC. Surrounding land uses primarily include agricultural fields (alfalfa and row crops). The unincorporated community of Knights Landing and wastewater detention ponds operated by the Knights Landing Community Services District (KLCSD) are located adjacent to the east levee at the northern end of the Project Area, south of where State Route (SR) 113 crosses the KLRC. County Road (CR) 16 also crosses the KLRC slightly south of the center of the Project Area.

The levee crown includes a gravel road, and the levee slopes consist of ruderal grassland that is regularly maintained. Patches of riparian vegetation are present along the KLRC waterside levee slopes.

Figure 1-1. Project Location and Vicinity

Figure 1-2. Project Study Area

2.0 PROJECT DESCRIPTION

2.1 Project Background

The KLRC is a human-made leveed drainage channel that completed construction by 1925 by local parties to relieve flooding in the Colusa Basin. The KLRC was later incorporated during into the Sacramento River Flood Control Project (SRFCP). Repairs and improvements to the KLRC have been constructed as needed since then.

KLRC conveys flows from the Colusa Drain to the Yolo Bypass. Flows and water levels within the KLRC are dependent on operations at KLOG and flows occurring within the Yolo Bypass. The KLRC is approximately 6.25 miles long and its levees are maintained by KLRDD, the local levee maintaining agency. Erosion can occur along the KLRC levees during high flows, requiring repair. Levees are typically inspected before and after the flood season and after high-water events, but no less than every 90 days, to determine areas requiring repair.

The Project is entirely within the Phase II of the USACE and Central Valley Flood Protection Board's (CVFPB) Sacramento River Bank Protection Project (SRBPP) project area, and its associated programmatic Environmental Impact Statement (EIS)/EIR (State Clearinghouse No. 2009012081, dated March 2020) prepared to cover levee erosion repairs (USACE and CVFPB 2020). Specifically, the USACE and CVFPB studied approximately six miles of the KLRC under Phase II of the SRBPP. Under the SRBPP site selection process, as described in the Post Authorization Change Report for Phase II of the SRBPP (USACE 2020), certain repairs are not economically justified to receive federal funding. Those kinds of repairs would be left within the purview of state and local levee districts.

Therefore, KLRDD is taking the lead for repairs of the levees along the KLRC. KLRDD proposes repairs in phases over the next 10 years as described below. Although the SRBPP EIS/EIR was intended for use by the USACE and CVFPB for USACE-funded projects, the results of the SRBPP EIS/EIR (USACE and CVFPB 2020) are discussed and incorporated herein by reference.

2.2 Project Objectives

To protect property as well as the health and safety of residents, bank repair and levee rehabilitation are needed at erosion sites. The Proposed Project will also attempt to greatly minimize erosion, limiting the eventual loss of nearshore aquatic habitat and riparian habitat that would likely occur if the Proposed Project were not enacted.

The purpose of the Project is to repair existing eroded areas and to efficiently and effectively repair any future erosion. The Project objective is to arrest or avoid streambank erosion that threatens the integrity of the Sacramento River Flood Control Project (SRFCP) levee system.

2.3 Project Characteristics

2.3.1 Erosion Repair Methods

Erosion repairs are expected to include two USACE-approved methods, as listed in the SRBPP EIS/EIR as "Bank Protection Measure 2 - Bank Fill Stone Protection with No On-Site Woody Vegetation" and "Bank Protection Measure 5 - Bank Fill Stone Protection with On-Site Vegetation." Site-specific engineering solutions will be based on the location and magnitude of the erosion at each area. Exhibits from the SRBPP EIS/EIR depicting these erosion repair methods are provided on Figure 2-1 (USACE and CVFPB 2020).

These bank protection measures are site-specific design solutions to control an existing erosion site while minimizing and/or mitigating environmental impacts using the following criteria developed in the SRBPP EIS/EIR for bank protection design, consistent with the Project purpose and need (USACE and CVFPB 2020).

- Restoring the flood damage risk-reduction capability of the originally constructed levee through the use of structurally reliable erosion-control elements.
- To the extent practicable, maintaining fish and wildlife habitat and scenic and recreational values, and replacing habitat losses through the use of onsite mitigation elements overlying or integrated with erosion-control elements.
- Fully mitigating offsite significant residual fish and wildlife habitat losses to the extent justified.
- Minimizing costs of construction and maintaining both erosion-control and onsite habitat mitigation elements.

These measures are conceptual and will be modified to the degree necessary to be suitable for conditions at any given erosion site. As a result, dimensions in Figure 2-1 are typical and will vary based on site-specific conditions and designs.

2.3.1.1 Bank Fill Stone Protection at Locations with No On-Site Woody Vegetation

This measure entails filling the eroded portion of the bank and installing quarry stone along the levee slope. The rock/soil ratio would vary by location and would be determined during site-specific design. Revegetation would occur with an KLRDD-approved seed mix and existing vegetation would only be removed to the extent necessary for the erosion repair. If there is a natural bank distinct from the levee that requires erosion protection, it would be treated with revetment.

Figure 2-1. Typical Bank Protection Measures

2.3.1.2 Bank Fill Stone Protection at Locations with On-Site Woody Vegetation

This measure entails filling the eroded portion of the bank and installing revetment along the waterside levee slope and streambank from streambed to a height determined by site-specific analysis. The revetment would be placed at a slope of 3:1. Any instream woody material would be removed from the bank and would not be replaced on the bank fill stone protection.

Existing vegetation would be removed within the vegetation free zone (VFZ); however, grass would be allowed in this area. Approximately 25 percent of existing vegetation that is outside of the VFZ on the waterside slope is estimated to be retained during construction. This assumption is made for analysis purposes and is based on past construction experience. The actual amount of retained vegetation could vary substantially from site to site during implementation. New vegetation would be limited to native grasses within the VFZ, while woody vegetation could be replaced by planting outside of the VFZ, as allowed by specific site conditions. The long-term goal of vegetation planting is to provide riparian habitat. Planting plans would describe species to be planted within a specific elevation zone and would detail the number, area, and spacing of plants to be installed, and whether the plants are from cuttings or containers. Six inches of soil cover maybe placed on the revetment to support onsite vegetation.

2.3.2 Construction Methods

Hydraulic excavators would be utilized per repair location to remove and reshape existing soil and to place rock and other materials hauled in from commercial sources by truck. Some in-water work would occur, including installing up to 1-ton rock slope protection (RSP) below the water line using land-based methods and equipment, and possible installation of silt curtains within the canal using a small boat. Excavated materials would be incorporated into the work. No excavation or cutting into the landward side of levees would occur. Rock fill materials would be brought in utilizing trucks on existing roads. Any material staging would occur in the immediate vicinity of the work on the levee, on the levee toe roads, or within the designated 2.5-acre staging area at the base of the east levee. Construction details for each erosion repair location are as follows:

- Typical heavy construction equipment used for each Project location would include: two tracked excavators, one bulldozer, one front-end loader, one water truck for dust control, and several dump trucks.
- Maximum excavation depth would be 5 feet in both upland and aquatic areas.
- Daily maximum number of workers per repair location would be 10, including inspectors and monitors but excluding truck drivers.
- Daily construction vehicle trips would include:
    - 10 workers x 2 trips =20 trips
    - RSP Hauling: 4 truckloads/hour x 8 hours/day = 32 dump truck round trips (64 total trips). The nearest RSP source quarries are located approximately 65 miles from the Project Area

- Solid waste generated by the Project would include limited quantities of removed vegetation that would be disposed of at the nearest solid waste disposal facility.
- Access routes to the Project location would be via SR 113 to the northern end, or via CR 16 and CR 17 near the southern end. Vehicles would then use the existing dirt and gravel levee toe roads and the gravel road on the levee crown.

2.4 Project Timing

KLRDD anticipates repairs will be implemented in phases over the next 10 years as erosion areas are identified and funding becomes available.

2.5 Regulatory Requirements, Permits, and Approvals

The following approvals and regulatory permits would be required for implementation of the Proposed Project:

- USACE - CWA Section 404 Dredge and Fill Permit
- RWQCB - CWA Section 401 Water Quality Certification
- CDFW - Section 1602 SAA
- Yolo Conservancy – Yolo Habitat Conservation Plan/Natural Communities Conservation Plan Permit for incidental take of federal- and state-listed species (except fish)

2.6 Consultation with California Native American Tribe(s)

The following California Native American tribes traditionally and culturally affiliated with the Project Area have been notified of the Project: United Auburn Indian Community (UAIC) of Auburn Rancheria and Yocha Dehe Winton Nation (YDWN). The YDWN has requested consultation pursuant to PRC Section 21080.3.1. A summary of the consultation process, including the determination of significance of impacts to Tribal Cultural Resources (TCR), is provided in Section 4.18 of this document.

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3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED AND DETERMINATION

3.1 Environmental Factors Potentially Affected

The Project would potentially affect the environmental factors checked below; there is at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☒ Hazards/Hazardous Materials	☐ Recreation
☐ Agriculture and Forestry Resources	☒ Hydrology/Water Quality	☒ Transportation
☐ Air Quality	☒ Land Use and Planning	☒ Tribal Cultural Resources
☒ Biological Resources	☐ Mineral Resources	☐ Utilities and Service Systems
☒ Cultural Resources	☐ Noise	☐ Wildfire
☐ Energy	☐ Population and Housing	☒ Mandatory Findings of Significance
☒ Geology and Soils	☐ Public Services	
☐ Greenhouse Gas Emissions		

3.1.1.1 Determination

On the basis of this initial evaluation:

I find that the Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	☐
I find that although the 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 Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	☐
I find that the 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 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 Project, nothing further is required.	☐

Meegan Nagy

Meegan Nagy
Deputy Manager

12/6/21
Date

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4.0 ENVIRONMENTAL CHECKLIST AND DISCUSSION

4.1 Aesthetics

This section of the document describes the existing conditions in the Project Area, the regulatory framework necessary to evaluate potential impacts on aesthetics, and potential short-and long-term, and cumulative impacts that could result from the Project. Impacts on scenic resources, public views, the visual character of the area, and lighting and glare are discussed below. The discussion contained in this chapter is based upon a qualitative description of the setting derived from photographs, satellite imagery, and site visits.

4.1.1 Environmental Setting

4.1.1.1 Existing Scenic Resources

State Scenic Highways

The California Scenic Highway Program protects and enhances the scenic beauty of California's highways and adjacent corridors. A highway can be designated as scenic based on how much natural beauty can be seen by users of the highway, the quality of the scenic landscape, and if development impacts the enjoyment of the view (California Department of Transportation [Caltrans] 2021).

Yolo County has no designated federal or state scenic highways. Caltrans identifies a portion of SR 16 (from approximately the unincorporated community of Capay at CR 85, north to the county boundary) as eligible for designation as a State Scenic Highway, but is not officially designated. This portion of SR 16 is not located near the Project Area. Yolo County has designated CR 16 as a local scenic roadway (County of Yolo 2009). However, the portion of CR16 that crosses the Project Area is not shown or described on Figure IV. N-1:Yolo County 2030 Countywide General Plan Draft EIR Scenic Highways, Visual Analysis Subareas and Photo Locations (LSA 2009).

4.1.1.2 Existing Public Views

A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public, providing or relating to views of impressive or beautiful natural scenery where a vista is defined as a distant view through or along an avenue or opening. For the purposes of this analysis, the term *viewshed* is used in reference to the surface area visible from a viewpoint or a series of viewpoints: that portion of the landscape that would be visible from a particular location and which could be visually affected by changes to land use or vegetation and ground cover in those areas (LSA 2009).

Panoramic views from public view locations along area roadways include the Coast Range hills to the west, the Sutter Buttes, a remnant volcano with a peak elevation approximately 2,000 feet above the surrounding valley floor, to the northeast, and the Sierra Nevada foothills further to the east.

However, the only public views of the Project Area are relatively small portions (approximately 2.5 mile north and south) of KLRC visible from two bridge crossings of KLRC; one at SR 113 in Knights Landing and the other at CR16 approximately three miles south of SR 113 bridge. The SR 113 bridge includes 3-foot-

wide sidewalks along the bridge, affording longer views of KLRC to pedestrians than moving vehicles. The CR 16 bridge crossing does not contain sidewalks and is in a more remote, rural area with a low occurrence of pedestrian viewers. Views of the Project Area from the bridge crossings include water in the KLRC inner channels, areas of riparian vegetation and large trees lining the inner channel and water side levee banks, floodplain areas within the levees with mostly ruderal grasslands, and developed areas, such as the levee crown gravel road, and the toe of slope roads.

The remainder of the Project Area is only visible and accessible from private gravel and dirt agricultural roads at the levee crowns or levee toe of slopes. However, access to the KLRC is restricted to the public at both bridges by locked gates to all levee roads with No Trespassing and No Parking signs.

Although the Sacramento River ranges from one-half to one mile east of the Project Area, due to the height of the Sacramento River Levee, the Sacramento River is not readily visible from the SR 113 and CR 16 bridge crossings nor from KLRC levees in the Project Area.

4.1.1.3 Visual Character of the Project Site

The Project Area is located near the unincorporated community of Knights Landing in the Sacramento Valley in a predominantly rural area surrounded by primarily undeveloped agricultural lands with some residential, commercial, and light industrial development adjacent to the northern end of the Project Area in Knights Landing.

4.1.1.4 Existing Sources of Light and Glare

Because of the predominantly rural character of the Project Area, night lighting and glare mostly occur within and around the developed community of Knights Landing. Existing sources of ambient nighttime lighting include exterior lighting along buildings for safety, lights within buildings that illuminate the exteriors of buildings through windows; street lighting; and vehicle headlights, mostly along SR 113. Glare could be created by reflection of natural (i.e., sunlight) and artificial light off existing windows and building surfaces in the Knights Landing area.

4.1.2 Regulatory Framework

4.1.2.1 Federal

National Scenic Byways Program

The National Scenic Byways program is part of the U.S. Department of Transportation (DOT) Federal Highway Administration (FHWA). Under the program, the U.S. Secretary of Transportation recognizes certain roads as National Scenic Byways or All-American Roads based on their archaeological, cultural, historic, natural, recreational, and scenic qualities.

National Wild and Scenic Rivers Act

The National Wild and Scenic Rivers Act preserves certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations.

4.1.2.2 State

State Scenic Highway Program

The State Scenic Highway Program was established to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. A local jurisdiction adopts a scenic Corridor Protection Program, applies to Caltrans for scenic highway approval, and receives notification from Caltrans that the highway has been designated as a Scenic Highway. When a city or county nominates an eligible scenic highway for official designation, it defines the scenic corridor, which is land generally adjacent and visible to a motorist on the highway. California laws governing the State Scenic Highway Program are found in the Streets and Highways Code, Sections 260 through 263.

4.1.2.3 Local

Yolo County

The following goals and policies in the Land Use and Community Character Element of the County of Yolo 2030 General Plan (Yolo County 2009) are applicable to the Project:

Policy CC-1.2: Preserve and enhance the rural landscape as an important scenic feature of the county.

Policy CC-1.3: Protect the rural night sky as an important scenic feature to the greatest feasible extent where lighting is needed.

Policy CC-1.12: Preserve and enhance the scenic quality of the county's rural roadway system. Prohibit projects and activities that would obscure, detract from, or negatively affect the quality of views from designated scenic roadways or scenic highways.

Policy CC-1.13: The following routes are designated as local scenic roadways, as shown in Figure LU-3 (Scenic Highways) [of the Draft General Plan, included as Figure IV.N-1 in this EIR]:

- State Route 16 (Colusa County line to Capay)
- State Route 128 (Winters to Napa County line)
- County Roads 116 and 116B (Knights Landing to eastern terminus of County Road 16)
- County Roads 16 and 117 and Old River Road (County Road 107 to West Sacramento)
- South River Road (West Sacramento City Limits to Sacramento County line).

Policy CC-1.16: The following features shall be stringently regulated along designated scenic roadways and routes with the intent of preserving and protecting the scenic qualities of the roadway or route:

- Signage
- Architectural design of adjoining structures
- Construction, repair and maintenance operations
- Landscaping

- Litter control
- Water quality
- Power poles, towers, above-ground wire lines, wind power and solar power devices and antennae

Policy CC-1.17: Existing trees and vegetation and natural landforms along scenic roadways and routes shall be retained to the greatest feasible extent. Landscaping shall be required to enhance scenic qualities and/or screen unsightly views and shall emphasize the use of native plants and habitat restoration to the extent possible. Removal of trees, particularly those with scenic and/or historic value, shall be generally prohibited along the roadway or route.

Yolo County Oak Woodland Conservation and Enhancement Plan

The Parks and Natural Resources Management Division published the Yolo County Oak Woodland Conservation and Enhancement Plan in January 2007. Because 87 percent of the county's oak woodlands are privately owned, the purpose of this plan is to help coordinate voluntary oak woodland conservation and enhancement efforts and guide oak woodland mitigation. This plan establishes a program to identify areas in Yolo County with the highest value habitat. Conservation and enhancement of these high value areas are addressed by encouraging landowners to preserve these areas from urban and rural development. With this plan, the county is able to apply for state money and other funding sources.

4.1.3 Aesthetics (I) Environmental Checklist and Discussion

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐

Less-than significant-impact.

Although the Yolo County 2030 General Plan lists CR 16 as a local scenic roadway, it does not describe KLRC as a scenic resource or vista. KLRC is a human-made drainage channel with levees and riparian vegetation, with no unique or outstanding visual features typical of several similar drainage channels in the Central Valley. Although the Project will replace some areas of eroded and vegetated soil levees with uniform and bare rock slope protection, resulting in a more unnatural and engineered visual quality, the general public's view of these areas will be brief from vehicles driving over the SR 113 and CR 16 bridges. Project changes in levee materials and tree removal will not affect distant and diffuse views of the mountains, hills, and Sutter Buttes. Therefore, Project impacts on scenic vistas are less than significant.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒

No impact.

There are no state scenic highways and no other scenic resources in the Project vicinity. Therefore, there is **no impact** in this area.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐

Less-than-significant impact.

The Project will involve removing trees and shrubs from the VFZ of the waterside slopes of the KLRC levees and channel banks. Some woody vegetation may be replanted within certain areas of the RSP to replace riparian habitat, as determined on a case-by-case basis. Areas of removed vegetation replaced by RSP along levee banks would create visual breaks in the riparian zone that are a common visual occurrence in several other human-made channels and would only be visible by the public from vehicles crossing the SR 113 and CR 16 bridges, and occasional pedestrians on the SR 113 bridge. In addition, heavy equipment operating on and around KLRC levees and access roads during Project construction would be visible from these two bridges only temporarily. For these reasons, the Project would not substantially degrade the visual character of the site and surroundings, resulting in a less-than-significant impact.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Would the project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Less-than-significant impact.

The Project will not use any permanent materials that will create a new source of light or glare. Some glare could occur from sunlight shining on metal equipment or machinery during Project construction, but this would be temporary and not substantial. While nighttime work is not anticipated, there is a chance that it may be required during the Project that may require temporary construction lighting. Temporary construction lighting will be directed away from any existing roadways and residential development to maintain consistency with Yolo County 2030 General Plan Policy CC-1.3, protecting the rural night sky. Therefore, the Project would have a less than significant impact in this area.

4.1.4 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.2 Agriculture and Forestry Resources

4.2.1 Environmental Setting

The Project Site is zoned A-N Agricultural Intensive (Yolo County 2021) and consists of the KLRC, associated levees and floodplains within the levees, the farm access roads at the existing toe of the landward levee slope, and a 2.5-acre triangular staging area east of the east levee toe access road, approximately 0.7 mile north of the CR 16 bridge crossing. Most lands adjacent to the Project are actively used for farming (primarily alfalfa and row crops), except for urban developed lands in Knights Landing, and some wastewater settling ponds zoned public/quasi-public just south of Knights Landing along the eastern side of the Project Area. No forestry uses or operations occur on the Project Site or adjacent lands.

The California Department of Conservation (DOC) manages the Farmland Mapping and Monitoring Program (FMMP), which identifies and maps significant farmland. Farmland is classified using a system of five categories, including Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land. The classification of farmland as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance is based on the suitability of soils for agricultural production, as determined by a soil survey conducted by the Natural Resources Conservation Service (NRCS). The California DOC manages the California Important Farmland Finder, an interactive website program that identifies the Project Area as being within an area of Urban and Built-up Land (DOC 2021).

According to the California Important Farmland Finder, the majority of the Project Area is classified as Water Area, consisting of the KLRC and its associated levees (DOC 2021). The Project will utilize dirt and gravel access roads along the base of the levee landward slopes. These toe of slope access roads, and the 2.5-acre triangular staging area east of the east levee toe access road, approximately 0.7 mile north of the CR 16 bridge crossing, are within areas classified as Prime Farmland or Farmland of Local Potential (DOC 2021). Land adjacent to the KLRC east levee and portions of the west levee in Knights Landing are classified as Urban and Built-Up Lands. Most of the toe of slope access roads and the staging area within the Project Area are under active Williamson Act contracts (Yolo County Assessor's Office 2018).

4.2.2 Regulatory Framework

4.2.2.1 Federal

Farmland Protection Policy Act (7 United States Code [USC Section 4201)

The purpose of the Farmland Protection Policy Act is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. Projects are subject to Farmland Protection Policy Act requirements if they irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or rely on assistance from a federal agency (U.S. Department of Agriculture [USDA] 2020).

4.2.2.2 State

California Department of Conservation, Division of Land Resource Protection

The California DOC applies the NRCS soil classifications to designate agricultural lands as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. Agricultural lands with these designations are referred to as *Farmland*.

Williamson Act

The California Land Conservation Act, better known as the Williamson Act, is a non-mandated state policy providing for protection of agricultural and open space lands that meet local size and land use criteria. Land under a Williamson Act contract is restricted to agricultural uses for a term of no less than 10 years.

Farmland Mapping and Monitoring Program

The Important Farmland Inventory System initiated in 1975 by the USDA NRCS classifies land based on 10 soil and climatic characteristics. The DOC started a similar system of mapping and monitoring for California in 1980, known as the Farmland Mapping and Monitoring Program.

California Agriculture Land Evaluation and Site Assessment (LESA) Model

The California Agriculture LESA model was developed in 1997 based on the federal LESA system. It can be used to rank the relative importance of farmland and the potential significance of its conversion on a site-by-site basis. The California LESA model considers the following factors: land capability, Storie Index, water availability (drought and non-drought conditions), land uses within 0.25 mile, and protected resource lands (e.g., Williamson Act lands) surrounding the property. A score can be derived and used to determine if the conversion of a property would be significant. Under CEQA, lead agencies may refer to the LESA model in their environmental analysis but are not required to do so.

4.2.2.3 Local

Yolo County

The following goals and policies of the County of Yolo 2030 Countywide General Plan (County of Yolo 2009) are applicable to the Project:

GOAL LU-2 Agricultural Preservation. Preserve farm land and expand opportunities for related business and infrastructure to ensure a strong local agricultural economy. (See the Agriculture and Economic Development Element for a more comprehensive treatment of this issue.)

Policy LU-2.4. Vigorously conserve, preserve, and enhance the productivity of the agricultural lands in areas outside of adopted community growth boundaries and outside of city "Spheres of Influence".

Policy LU-3.4 Locate and design services and infrastructure to only serve existing and planned land uses. Actions that will induce growth beyond planned levels are prohibited.

Policy LU-3.5. Avoid or minimize conflicts and/or incompatibilities between land uses.

Policy LU-3.6. Maintain the compatibility of surrounding land uses and development, so as not to impede the existing and planned operation of public airports, landfills and related facilities and community sewage treatment facilities.

GOAL CC-1. Preservation of Rural Character. Ensure that the rural character of the County is protected and enhanced, including the unique and distinct character of the unincorporated communities.

GOAL AG-1. Preservation of Agriculture. Preserve and defend agriculture as fundamental to the identity of Yolo County.

Policy AG-1.1. Protect and enhance the county's four key agricultural sectors. This includes: (1) retaining existing growers and processors of crops; (2) encouraging the growth of emerging crops and value-added processing: (3) supporting small and organic producers and their ability to serve visitors; and (4) enhancing the transfer of new technologies into practical applications for seeds, crops, fuels, alternative energy, food processing, etc.

Policy AG-1.14. Preserve agricultural lands using a variety of programs, including the Williamson Act, Farmland Preservation Zones (implemented through the Williamson Act), conservation easements, an Agricultural Lands Conversion Ordinance and the Right-to-Farm Ordinance.

Policy AG-1.18. When undertaking improvement of public roadways and drainage facilities, consult with adjoining farmland owners and incorporate designs that minimize impacts on agriculture.

4.2.3 Agriculture and Forestry Resources (II) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

No impact.

The Project will use existing dirt and gravel farm roads along portions of the landward levee toe of slope for access to some of the Project construction sites. These existing farm access roads are within privately-owned agricultural parcels classified as Prime Farmland or Farmland of Potential Local Importance. The 2.5-acre Project staging area is a graded dirt lot formerly used for agricultural materials storage and by KLRDD for levee maintenance equipment and materials staging/storage. The staging area is not active farmland. Temporary and intermittent Project activities will not change the use of the access roads or staging area and will not convert Prime Farmland to nonagricultural use. Thus, there is no impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

No Impact

Although some of the existing levee toe of slope access roads that will be used by the Project are on lands zoned for agricultural use and under active Williamson Act contracts, temporary and intermittent Project activities (equipment and vehicle access and materials staging) will not conflict with current agricultural uses or Williamson Act contracts. Therefore, there is **no impact** in this area.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒

No impact.

The Project Site is not located in a forestland protection or timber production area. The Project would have no impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒

No impact.

No identified forest lands exist on the Project Site or within the vicinity of the Project. The Project would have **no impact** in this area.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

No impact.

The Proposed Project is located within unincorporated Yolo County on land zoned for agricultural use but used as a human-made flood control drainage channel. Project activities involve grading, excavation of eroded soils, and placement of revetment on KLRC levees, but would not expand landside levee footprints into adjacent Prime Farmlands or result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use, resulting in no impact.

4.2.4 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.3 Air Quality

4.3.1 Environmental Setting

The Project Area is located within Yolo County. The California Air Resource Board (CARB) has divided California into regional air basins according to topographic features, and Yolo County is located in a region identified as the Sacramento Valley Air Basin (SVAB). The SVAB is relatively flat, bordered by mountains to the east, west, and north and by the San Joaquin Valley to the south. Air flows into the SVAB from the San Francisco Bay Area through the Carquinez Strait, moving across the Sacramento Delta, and bringing pollutants from the heavily populated Bay Area. Hot, dry summers and cool, rainy winters characterize the climate. Characteristic of SVAB winter weather are periods of dense and persistent low-level fog, which are most prevalent between storm systems. The region's intense heat and sunlight, from

May to October, lead to high ozone pollutant concentrations. Summer inversions are strong and frequent but are less troublesome than those that occur in the fall. Autumn inversions, formed by warm air subsiding in a region of high pressure, have accompanying light winds that do not provide adequate dispersion of air pollutants.

Both the U.S. Environmental Protection Agency (USEPA) and CARB have established ambient air quality standards for common pollutants. These standards represent safe levels for contaminants to prevent specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The six criteria air pollutants are ozone (O_3), carbon monoxide (CO), particulate matter (PM), nitrogen oxides (NO_x), sulfur dioxide (SO_2), and lead. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. The Yolo County portion of the SVAB is designated as a nonattainment area for O_3 and fine $PM_{2.5}$ (2.5 microns or less in diameter) under the federal standards and O_3 and coarse PM_{10} (10 microns or less in diameter) under the state standards (CARB 2019).

Ambient air quality in Yolo County can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains over 60 monitoring stations throughout California. The Woodland-Gibson Road air quality monitoring station, located approximately 7 miles southwest of the Project Area (41929 E Gibson Road, Woodland), is the closest station and monitors ambient concentrations of O_3, PM_{10} and $PM_{2.5}$. Ambient emission concentrations will vary due to localized variations in emission sources and climate and should be considered generally representative of ambient concentrations within the Project Area. Table 4.3-1 summarizes the most recent published data concerning O_3, PM_{10}, and $PM_{2.5}$ since 2017 from the Woodland-Gibson Road monitoring stations for each year that the monitoring data is provided.

Table 4.3-1. Summary of Ambient Air Quality Data

Pollutant Standards	2017	2018	2019
O_3			
Max 1-hour concentration (ppm)	0.089	0.095	0.078
Max 8-hour concentration (ppm) (state/federal)	0.074 / 0.074	0.085 / 0.085	0.067 / 0.067
Number of days above state 1-hr standard	0	1	0
Number of days above state/federal 8-hour standard	2 / 2	2 / 2	0 / 0
PM_{10}			
Max 24-hour concentration (µg/m^3) (state/federal)	130.8 / 128.5	212.4 / 201.1	83.0 / 80.6
Number of days above state/federal standard	18.4 / 0	24.5 / 6.1	* / 0
$PM_{2.5}$			
Max 24-hour concentration (µg/m^3) (state/federal)	60.1 / 60.1	165.4 / 165.4	27.8 / 27.8
Number of days above federal standard	12.3	12.3	*

Source: CARB 2020
µg/m^3 = micrograms per cubic meter; ppm = parts per million
* = Insufficient data available

4.3.2 Regulatory Framework

4.3.2.1 Federal

Clean Air Act

The federal Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish the National Ambient Air Quality Standards (NAAQS), with states retaining the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the Supreme Court found that carbon dioxide (CO_2) is an air pollutant covered by the CAA; however, no NAAQS have been established for CO_2.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those sensitive receptors most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The USEPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 4.3-3 lists the federal attainment status of the Northern Sacramento Valley Air Basin for the criteria pollutants.

4.3.2.2 State

California Clean Air Act

The California CAA allows the state to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the California Ambient Air Quality Standards (CAAQS). CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

California State Implementation Plan

The federal CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with

jurisdiction over them. The CAA amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register.

Tanner Air Toxics Act and Air Toxics "Hot Spots" Information and Assessment Act

CARB's statewide comprehensive air toxics program was established in 1983 with AB 1807, the Toxic Air Contaminant (TAC) Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure (ATCM) for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology) to minimize emissions.

CARB also administers the state's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by Senate Bill (SB) 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

Mobile Source Strategy

CARB released updates to the Mobile Source Strategy in 2016. This demonstrates how the state will meet air quality standards, decrease health risks from transportation emissions, and reduce petroleum consumption over the next 15 years. This includes engine technology that is effectively 90 percent cleaner than today's current standards, with clean, renewable fuels comprising half the fuels burned.

The strategy also relies on the increased use of renewable fuels to ensure that air pollutant reductions are achieved while meeting the ongoing demand for liquid and gaseous fuels in applications where combustion technologies remain, including in heavy-duty trucks and equipment and light-duty hybrid vehicles. The estimated benefits of the Mobile Source Strategy in reducing emissions from mobile sources includes a 50 percent reduction in the consumption of petroleum-based fuels statewide.

Diesel Risk Reduction Plan

The identification of diesel particulate matter (DPM) as a TAC in 1998 led CARB to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (Risk Reduction Plan) in October 2000. The Risk Reduction Plan's goals include an 85 percent reduction in DPM

by 2020 from the 2000 baseline (CARB 2000). The Risk Reduction Plan includes regulations to establish cleaner new diesel engines, cleaner in-use diesel engines (retrofits), and cleaner diesel fuel.

Heavy-Duty Vehicle Idling Emission Reduction Program

The purpose of CARB's ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling is to reduce public exposure to DPM and criteria pollutants by limiting the idling of diesel-fueled commercial vehicles. The driver of any vehicle subject to this ATCM is prohibited from idling the vehicle's primary diesel engine for greater than five minutes at any location and is prohibited from idling a diesel-fueled auxiliary power system for more than five minutes to power a heater, air conditioner, or any ancillary equipment on the vehicle if it has a sleeper berth and the truck is located within 100 feet of a restricted area (homes and schools).

Beginning in 2008, CARB's Final Regulation Order, Requirements to Reduce Idling Emissions from New and In-Use Trucks, has required that new 2008 and subsequent model-year heavy-duty diesel engines be equipped with an engine shutdown system that automatically shuts down the engine after 300 seconds of continuous idling operation once the vehicle is stopped, the transmission is set to neutral or park, and the parking brake is engaged.

4.3.2.3 Regional and Local

The local air quality regulating authority in Yolo County portion is the Yolo-Solano Air Quality Management District (YSAQMD). The YSAQMD's primary responsibility is ensuring that the NAAQS and CAAQS are attained and maintained in the Yolo County portion of the SVAB. The YSAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, and conducting public education campaigns, as well as many other activities. The YSADMD has also adopted various rules and regulations for the control of stationary and area sources of emissions. Provisions applicable to the Proposed Project are summarized as follows:

- **Rule 2.5- Nuisance**: The purpose of this rule is to protect the health and safety of the public from source operations that emit or may emit air contaminants or other materials. It prohibits emissions of air contaminants or other materials "which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public."
- **Rule 2.11- Particulate Matter Concentrations**: This rule is intended to protect the ambient air quality within the YSAQMD's jurisdiction by establishing a standard for PM emissions. Per the definitions of Rule 2.11, PM is defined as any material that is emitted as a liquid or solid particles, or gaseous materials that becomes liquid or solid particles when collected at standard conditions. PM meeting the foregoing definition shall not be released from any single source operation, dust, fumes, or other total suspended PM emissions in excess of 0.1 grain per cubic foot of gas at dry standard conditions.

- **Rule 3.1- General Permit Requirements**: This rule establishes permitting processes (i.e., Authority to Construct and Permit to Operate) to review new and modified sources of air pollution.

Additionally, the Yolo County General Plan Conservation and Open Space Element contains goals and policies seeking to reduce the emission of air pollutants. For instance, Policy CO-6.6 highlights the county's goal to implement YSAQMD BMPs to reduce emissions and control dust during construction activities. Examples of YSAQMD BMPs include:

- Water all active construction areas at least twice daily.
- Haul trucks shall maintain at least two feet of freeboard.
- Cover all trucks hauling soil, sand, and other loose materials.
- Apply nontoxic binders (e.g., latex acrylic copolymer) to exposed areas after cut-and-fill operations and hydroseed areas.
- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).
- Plant tree windbreaks on the windward perimeter of construction projects if adjacent to open land.
- Plant vegetative ground cover in disturbed areas as soon as possible.
- Cover inactive storage piles
- Sweep streets if visible soil material is carried out from the construction site.
- Treat accesses to a distance of 100 feet from the paved road with a 6-inch to-12 inch layer of wood chips or mulch.
- Treat accesses to a distance of 100 feet from the paved road with a 6-inch layer of gravel

4.3.3 Air Quality (III) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒

No impact.

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a SIP that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce

pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the California CAA requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the NAAQS and CAAQS. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

The YSAQMD prepared the "Reasonably Available Control Technology (RACT) State Implementation Plan" (RACT SIP), a regional blueprint for achieving air quality standards and healthful air in the portions of the SVAB that are under YSAQMD's jurisdiction. The RACT SIP establishes a program of rules and regulations directed at reducing air pollutant emissions and achieving state (California) and national air quality standards. The RACT SIP incorporates the latest scientific and technical information and planning assumptions, including the latest population growth forecasts for the YSAQMD jurisdiction. Projections for achieving RACT SIP air quality goals are based on assumptions regarding population, housing, and growth trends. Thus, determining Project consistency with the RACT SIP focuses on whether or not the Proposed Project exceeds the assumptions utilized in preparing the forecasts presented its air quality planning documents. The primary source of data employed to form the basis for the projections of air pollutant emissions in unincorporated Yolo County, which encompasses the Project Site, is the Yolo County General Plan.

The Project is proposing to repair eroded areas along the KLRC levees. The Project does not conflict with any of the land use assumptions in the Yolo County General Plan. Specifically, the Project does not propose to amend the Yolo County General Plan, does not include development of new housing or employment centers, and would not induce population or employment growth. Therefore, the Project would not affect local plans for population growth, and the Proposed Project would be considered consistent with the population, housing, and employment growth projections utilized in the preparation of the RACT SIP. Additionally, as shown in Table 4.3-2, Project construction would not generate emissions that would exceed YSAQMD significance thresholds, which were established to achieve national air quality standards. Once implementation of the Proposed Project is complete, it would not generate operational emissions.

Thus, the Project would be consistent with the emission-reduction goals of the YSAQMD Attainment Plans. No impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐

Less-than-significant impact.

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulatively considerable.

Implementation of the Proposed Project could result in air quality impacts during Project implementation. Once implementation of the Proposed Project is complete, it would not be a source of criteria air pollutants.

4.3.3.1 Project Construction Emissions

Construction associated with the Proposed Project would generate short-term emissions of criteria air pollutants, including reactive organic gases (ROG), CO, NO_X, PM_{10}, and $PM_{2.5}$. The largest amount of ROG, CO, and NO_X emissions would occur during the earthwork phase. PM_{10} and $PM_{2.5}$ emissions would occur from fugitive dust (due to earthwork and excavation) and from construction equipment exhaust. Exhaust emissions from implementation-related activities include emissions associated with the transport of machinery and supplies to and from the Project Area, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to and from the site. Implementation-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact.

Emissions generated from onshore, off-road equipment, ground disturbance, haul truck trips, and worker commute trips are calculated using the CARB-approved California Emissions Estimator Model (CalEEMod) computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. Emissions generated by Project marine vessels (workboat) are estimated using EMission FACtor, also called EMFAC, OFFROAD 2017. OFFROAD 2017 is a software package used to generate emissions inventory data for off-road mobile sources. See Appendix A for more information regarding Project equipment and duration used in this analysis.

Project construction was modeled starting in March 2022 and lasting approximately four months. It is noted that the Project would be implemented in phases over the next 10 years as erosion areas are identified and funding becomes available. Each phase would have similar construction equipment, activities, and duration. As such, Table 4.3-2 presents only one year of predicted maximum construction-generated emissions for a conservative analysis. Construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency, combined with state regulations limiting engine idling times, would further reduce the amount of Project implementation related emissions in the future.

Predicted maximum construction-generated emissions for implementation of the Proposed Project are summarized in Table 4.3-2.

Table 4.3-2. Construction-Related Emissions

Construction Phase	Pollutant					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Project Implementation (Modeled Year 2022)	0.08	0.74	-	-	3.70	-
YSAQMD Potentially Significant Impact Threshold	*10 tons/year*	*10 tons/year*	*n/a*	*n/a*	*80 lbs./day*	*n/a*
Exceeds YSAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: California Air Pollution Control Officers Association CalEEMod version 2020.4.0; EMFAC2017. Refer to Appendix A for Model Data Outputs.

As shown in Table 4.3-2, all criteria pollutant emissions would remain below their respective thresholds during Project construction. Furthermore, as previously described, Yolo County General Plan Policy CO-6.6 requires YSAQMD BMPs, such as the watering of unpaved roads two times per day, for all construction activities in the county. Thus, adherence to Yolo County General Plan Policy CO-6.6 would result in the implementation of dust-suppressing BMPs during Project construction. Criteria pollutant emissions generated during Project implementation would not result in a violation of air quality standards, and no health effects from Project criteria pollutants would occur. A less than significant impact would occur as a result of implementation of the Proposed Project.

4.3.3.2 Operational Emissions

The Proposed Project involves repair to eroded areas along the KLRC levee. It would not include the addition of new permanent stationary or mobile sources of emissions to the Project Site. Therefore, operational emissions would have no impact on long-term air quality.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

Less than significant impact

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases, such as asthma, emphysema, and bronchitis. The nearest sensitive receptors to the Project Area are residences located on Ridge Cut Road, in the community of Knights Landing, with the closest located approximately 100 feet distant from the northern Project Site boundary.

4.3.3.3 Project Implementation-Generated Air Contaminants

Implementation-related activities would result in temporary, short-term emissions of DPM, ROG, NO_X, CO, and PM_{10} from the exhaust of off-road, heavy-duty diesel equipment for material extraction; soil hauling truck traffic; and other miscellaneous activities. The portion of the SVAB which encompasses the Project Site is designated as a nonattainment area for federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3 and PM_{10} standards (CARB 2019). Thus, existing O_3, PM_{10}, and $PM_{2.5}$ levels in the SVAB are at unhealthy levels during certain periods. However, as shown in Table 4.3-2, the Project would not exceed the YSAQMD construction emission thresholds, which were established to protect the public health and welfare.

The health effects associated with O_3 are generally associated with reduced lung function. Because the Project would not involve construction activities that would result in O_3 precursor emissions (ROG or NO_X) in excess of the YSAQMD thresholds, the Project is not anticipated to substantially contribute to regional O_3 concentrations and the associated health impacts.

CO tends to be a localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. The Project would not involve construction activities that would result in CO emissions in excess of the YSAQMD thresholds. Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

PM_{10} and $PM_{2.5}$ contain microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. PM exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. For construction activity, DPM is the primary TAC of concern. The potential cancer risk from the inhalation of DPM outweighs the potential for all other health impacts (i.e., noncancer chronic risk, short-term acute risk) and health impacts from other TACs. Based on the emission modeling conducted, the maximum onsite construction-related daily emissions of exhaust PM_{10}, considered a surrogate for DPM and includes emissions of exhaust $PM_{2.5}$, would be approximately 0.74 pound per day during the relatively short time period that construction activities are anticipated to take place (see Attachment A). PM_{10} exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM . As with O_3 and NO_X, the Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed the YSAQMD's thresholds. Accordingly, the Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, the Project would not result in a potentially significant contribution to regional or localized concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants. As such, the impact would be less than significant.

4.3.3.4 Post-Implementation Air Contaminants

Once implementation of the Project is complete, it would not result in the development of any substantial sources of air toxics. There are no stationary sources associated with the operations of the Project. Nor would the Project attract mobile sources that spend long periods queuing and idling at the site. Therefore, the Project would not be a source of TACs.

4.3.3.5 Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. In 1993, much of the state was designated nonattainment under the CAAQS and NAAQS for CO. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration across the entire state is now designated as attainment. Detailed modeling of Project-specific CO "hot spots" is not necessary and thus this potential impact is addressed qualitatively.

A CO "hot spot" would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the 8-hour standard of 9 ppm were to occur. A Project conducted in Los Angeles County by the South Coast Air Quality Management District (SCAQMD) is helpful in showing the amount of traffic necessary to result in a CO Hotspot. The SCAQMD analysis prepared for CO attainment in the SCAQMD's *1992 Federal Attainment Plan for Carbon Monoxide* in Los Angeles County, and a Modeling and Attainment Demonstration prepared by the SCAQMD as part of the 2003 Air Quality Management Plan, can be used to demonstrate the potential for CO exceedances of these standards. The SCAQMD conducted a CO hot spot analysis as part of the 1992 CO Federal Attainment Plan at four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. Despite this level of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992). To establish a more accurate record of baseline CO concentrations affecting the South Coast Air Basin, a CO "hot spot" analysis was conducted in 2003 at the same four busy intersections in Los Angeles at the peak morning and afternoon time periods. This "hot spot" analysis did not predict any

violation of CO standards. The highest 1-hour concentration was measured at 4.6 ppm at Wilshire Boulevard and Veteran Avenue and the highest 8-hour concentration was measured at 8.4 ppm at Long Beach Boulevard and Imperial Highway.

Similar considerations are also employed by other air districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—to generate a significant CO impact.

Once implementation of the Project is complete, it would not generate any new traffic trips to the Project Site. Because the Proposed Project would not increase traffic volumes at any intersection to more than 100,000 vehicles per day, or even 44,000, there is no likelihood of the Project traffic exceeding CO values.

For the reasons discussed above, impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	☒

No Impact.

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the words "strong" or "pungent" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that

the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

During Project implementation, the Proposed Project presents the potential for the generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the site. However, these emissions are short term in nature and will rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. Additionally, odors would be localized and generally confined to the construction area. As such, no impact would occur.

Land uses that are associated with odors include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Proposed Project would not include any of the land uses that have been identified as odor sources. Thus, there would be no impact associated with operational odors.

4.3.4 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.4 Biological Resources

This section describes the existing biological resources, including special-status species and sensitive habitats known to occur or that potentially occur in the proposed Project Area. This information was provided in the *Draft Biological Resources Assessment for the Knights Landing Ridge Cut Erosion Repair Project, Yolo County, California* [(BRA), Appendix B, ECORP 2021b]. This BRA was conducted pursuant to the Yolo HCP/ Natural Communities Conservation Plan (NCCP) guidelines for preliminary land cover and covered species habitat assessments, and planning level surveys for land cover types and covered species habitat. This BRA does not include determinate field surveys conducted according to agency-promulgated protocols (with the exception of the Valley elderberry longhorn beetle [VELB] [*Desmocerus californicus dimorphus*, survey). The conclusions and recommendations presented in this report are based upon a review of the Yolo HCP/NCCP Final EIR/EIS (Ascent 2018) and site reconnaissance.

4.4.1 Environmental Setting

The Project Area is situated in the Sacramento Valley Subregion of the Great Central Valley floristic region of California (Baldwin et. al. 2012). The average minimum low temperature in the vicinity of the Project Area is 38.2˚F and the average maximum high temperature is 91.1˚F. Average annual precipitation is approximately 21.17 inches of rain (National Oceanic and Atmospheric Administration [NOAA] 2021).

4.4.1.1 Yolo County Habitat Conservation Plan/Natural Communities Conservation Plan

The Yolo HCP/NCCP is a comprehensive, countywide plan for the conservation of 12 sensitive species and the natural communities and agricultural land on which they depend, as well as a streamlined permitting process to address the effects of a range of future anticipated activities on these 12 species. The Conservancy, which consists of Yolo County and the incorporated cities of Davis, West Sacramento, Winters, and Woodland, developed the Yolo HCP/NCCP. The Yolo HCP/NCCP provide the basis for

issuance of long-term permits under the federal ESA and California Natural Community Conservation Planning Act (NCCPA) that cover an array of public and private activities. Specifically, the Yolo HCP/NCCP will provide the Permittees (i.e., Yolo County, the four incorporated cities, and the Conservancy) with incidental take permits from both the USFWS and the CDFW for the 12 covered species. This action is pursuant to Section 10(a)(1)(B) of the federal ESA and Section 2835 of the NCCPA chapter of the California Fish and Game Code. Permittees must comply with the AMMs set forth in the Yolo HCP/NCCP, and Yolo HCP/NCCP fees must be paid to the Conservancy or in-lieu mitigation provided, subject to Conservancy approval. The Conservancy will consider requests for an HCP/NCCP fee reduction or waiver in exchange for land dedication (title transfer or conservation easement) on a case-by-case basis. The Yolo HCP/NCCP ensures compliance with the federal ESA, NCCPA, and the California ESA for covered activities that may affect the covered species.

4.4.1.2 Vegetation Communities

There are three vegetation communities or land cover types within the Project Area. Vegetation communities and land cover types found within the Project Area included riparian, ruderal grassland, and developed. The riparian community is found along the banks of the KLRC, the ruderal grassland is found on the levee slopes, and the developed is the gravel road on the levee crown and levee toe roads.

Density and successional stage of the riparian vegetation varies throughout the Project Area. Emergent and herbaceous vegetation dominates patches of early successional vegetation, shrubs dominate the mid-successional vegetation, and mature tress dominate the late successional vegetation. Species present within the early successional vegetation of the riparian areas include tule (*Schoenoplectus* sp.), Queen Anne's lace (*Daucus carota*), poison oak (*Toxicodendron diversilobum*), California rose (*Rosa californica*), mugwort (*Artemisia douglasiana*), and perennial pepperweed (*Lepidium latifolium*). Species present within the mid-successional vegetation include box elder (*Acer negundo*), common button bush (*Cephalanthus occidentalis*), sandbar willow (*Salix exigua*), blue elderberry, California blackberry (*Rubus ursinus*), Himalayan blackberry (*Rubus armeniacus*), poison oak, and California rose. Species present within the late successional vegetation include Valley oak (*Quercus lobata*), box elder, fig (*Ficus carica*), Goodding's black willow (*Salix gooddingii*) and other willow species (*Salix* sp.), with the understory dominated by poison oak.

Species present in the ruderal grassland habitat include foxtail barely (*Hordeum murinum*), wild oat (*Avena* sp.), salt grass (*Distichlis spicata*), Italian ryegrass (*Festuca perennis*), red-stemmed filaree (*Erodium cicutarium*), vetch (*Vicia* sp.) and shortpod mustard (*Hirschfeldia incana*).

4.4.1.3 Wildlife

Attachment F of the BRA lists all the special-status plant and animal species identified in the literature review as potentially occurring within the vicinity of the Project Area. Included in this table are the listing status for each species, a brief habitat description, and an evaluation on the potential for each species to occur within the Project Area. The following resources were reviewed to determine the special-status species that had been documented within or in the vicinity of the Project Area or that otherwise had the potential to occur onsite:

- CDFW CNDDB data for the Knights Landing and Grays Bend, California 7.5-minute quadrangles, as well as the 10 surrounding U.S Geological Survey (USGS) quadrangles (CDFW 2021);
- USFWS Information, Planning, and Consultation System Resource Report List for the Project Area (USFWS 2021a);
- California Native Plant Society's (CNPS) electronic Inventory of Rare and Endangered Plants of California was queried for the Knights landing, California and Grays Bend, California 7.5-minute quadrangles and the 10 surrounding quadrangles (CNPS 2021); and
- Yolo HCP/NCCP Appendix A: Covered Species Accounts modeled habitat maps for all covered species within the Yolo HCP/NCCP Plan Area (Conservancy 2018).

Several species and sensitive habitat types were identified in the database and literature searches but are not included in Attachment F because the species have been formally delisted or are only tracked by the CNDDB and possess no special-status, or because the identified sensitive habitats are not located within the Project Area. They are not discussed further in this IS/MND.

ECORP's site reconnaissance surveys were conducted on March 23 to25 and May 20, 2021, pursuant to the Yolo HCP/NCCP guidelines planning level surveys for land cover types and covered species habitat.

Concurrent with the BRA site visits, a determinate-level survey for VELB was conducted for the entire Project Area and all accessible areas within 165 feet of the Project Area. The survey was conducted in accordance with the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (USFWS 2017). All elderberry shrubs observed onsite were mapped with a Global Positioning System (GPS) unit capable of submeter accuracy (EOS Arrow 100 GPS). The biologists searched each shrub for VELB exit holes (as access allowed), estimated height, and documented the general health of the shrub.

Habitats within the Project Area support a variety of common wildlife species. Several species were observed onsite, including the following Yolo HCP/NCCP-covered species: northwestern pond turtle (*Actinemys marmorata*) and Swainson's hawk (*Buteo swainsoni*). A list of all wildlife observed onsite during the site visits is provided as Attachment C of the BRA.

4.4.1.4 Soils

According to the USDA's NRCS via the Web Soil Survey database, (NRCS 2021a), 10 soil types are located within the Project Area: Ca, Capay silty clay, 0 percent slopes, Major Resource Land Area (MLRA) 1; Ck, Clear Lake clay, 0 percent to 1 percent slopes, MLRA 17; Lg, Laugenour very fine sandy loam; Lm, Loamy alluvial land; Sd, Sacramento clay, drained; Sn, Soboba gravelly sandy loam; Sp, Sycamore silt loam, drained 0 percent slopes, MLRA 17; St, Sycamore silty clay loam, drained, 0 percent slopes, MLRA 17; Sv, Sycamore complex, drained, and; Sw, Sycamore complex, flooded. All of these soil units contain hydric components and are considered hydric, except for (St) Sycamore silty clay loam, drained, 0 percent slopes, MLRA 17 (NRCS 2021b). All of these soil units contain hydric components and are considered hydric, except for (St) Sycamore silty clay loam, drained, 0 percent slopes, MLRA 17 (NRCS 2021b).

4.4.1.5 Potential Waters of the U.S.

ECORP biologists conducted an aquatic resources delineation during March and May 2021 site visits, in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Region Supplement) [United State Army Corps of Engineers (USACE) 2008a). A total of 55.520 acres of aquatic resources have been mapped within the Project Area (ECORP 2021b; Figure 3 in Appendix B). These features are further described below. The USACE has not verified the delineation of the aquatic resources.

Knights Landing Ridge Cut

A total of 54.897 acres of the KLRC was mapped within the Project Area. The KLRC is perennial and exhibits bed and bank. It is a human-made leveed drainage channel that completed construction by 1925to relieve flooding in the Colusa Basin. It conveys flow from the Colusa Drain to the Yolo Bypass. Flows and water levels within the KLRC are regulated through the KLOG.

Agricultural Ditches

A total of 0.623 acre of agricultural ditches was mapped within the Project Area. Constructed agricultural ditches are present along the landside levee toe in Project Area adjacent to agricultural fields. Agricultural ditches AD-01, AD-03, and AD-04 were dry, but water was present in AD-02 during the May 20, 2021, survey. The ditches exhibit a bed and bank and ordinary high-water mark (OHWM) and appear to have been constructed to support agriculture irrigation or drainage.

4.4.1.6 Special-Status Plants

A total of 20 special-status plant species were identified as having the potential to occur within the Project Area based on the literature review (Attachment F of the BRA). However, upon further analysis and after the site visit, seven species were determined to be absent from the Project Area due to the lack of suitable habitat. No further discussion of these species is provided in this analysis. Brief descriptions of the remaining 13 species that have the potential to occur within the Project Area are presented below.

Brittlescale

Brittlescale (*Atriplex depressa*) is not listed pursuant to either the federal or California ESAs, but is designated as a California Native Plant Ranking (CRPR) 1B.2 (rare or endangered in California and elsewhere, moderately threatened in California) species. This species is an herbaceous annual that occurs in alkaline and clay soils within chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools (CNPS 2021). Brittlescale blooms from April through October and is known to occur at elevations ranging from 3 feet above mean sea level (MSL) to 1,050 feet above MSL (CNPS 2021). Brittlescale is endemic (native) to California; the current range of this species includes Alameda, Contra Costa, Colusa, Fresno, Glenn, Kings, Merced, Solano, Stanislaus, Tulare, and Yolo counties (CNPS 2021).

There are two CNDDB documented occurrences of brittlescale within 5 miles of the Project Area (CDFW 2021). The slightly to moderately saline soils within the Project Area provide marginally suitable habitat for this species. Brittlescale has low potential to occur onsite.

Pappose Tarplant

Pappose tarplant (*Centromadia parryi* ssp. *parryi*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is an annual herb that occurs often in alkaline soils of chaparral, coastal prairie, meadows and seeps, coastal salt marshes and swamps, and vernally mesic valley and foothill grassland (CNPS 2021). Pappose tarplant blooms from May through November and is known to occur at elevations ranging from sea level to 1,378 feet above MSL (CNPS 2021). Pappose tarplant is endemic to California; the current range of this species includes Butte, Colusa, Glenn, Lake, Napa, San Mateo, Solano, Sonoma and Yolo counties (CNPS 2021).

There are no CNDDB documented occurrences of Pappose tarplant within 5 miles of the Project Area (CDFW 2021). The slightly to moderately saline soils within the Project Area provide marginally suitable habitat for this species. Pappose tarplant has low potential to occur onsite.

Parry's Rough Tarplant

Parry's rough tarplant (*Centromadia parryi* ssp. *rudis*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 (plants of limited distribution – a watch list, moderately threatened in California) species. This species is an herbaceous annual that occurs in vernal pools and valley and foothill grassland with alkaline and vernally mesic soils, seeps, and sometimes roadsides (CNPS 2021). Parry's rough tarplant blooms from May through October and is known to occur at elevations ranging from sea level to 328 feet above MSL (CNPS 2021). Parry's rough tarplant is endemic to California; its current range includes Butte, Colusa, Glenn, Lake, Merced, Modoc, Sacramento, San Joaquin, Solano, Stanislaus and Yolo counties (CNPS 2021).

There are no CNDDB documented occurrences of Parry's rough tarplant within 5 miles of the Project Area (CDFW 2021). The slightly to moderately saline soils within the Project Area provide marginally suitable habitat for this species. Parry's rough tarplant has low potential to occur onsite.

Palmate-Bracted Bird's-Beak

Palmate-bracted bird's-beak (*Chloropyron palmatum*) is listed as endangered pursuant to both the federal and California ESAs, is designated as a CRPR 1B.1 (rare or endangered in California and elsewhere, seriously threatened in California) species, and is a Yolo HCP/NCCP-covered species. This species is an herbaceous, hemiparasitic (possesses chlorophyll and typically carries out photosynthesis, but is partially parasitic on the roots or shoots of a plant host) annual that occurs in alkaline areas in chenopod scrub and valley and foothill grassland (CNPS 2021). Palmate-bracted bird's-beak blooms from May through October and is known to occur at elevations ranging from 16 feet above MSL to 509 feet above MSL (CNPS 2021). Palmate-bracted bird's-beak is endemic to California; the current range of this species includes Alameda, Colusa, Fresno, Glenn, Madera, San Joaquin, and Yolo counties. It is considered to be extirpated from San Joaquin County (CNPS 2021).

There is one CNDDB documented occurrence of palmate-bracted bird's-beak within 5 miles of the Project Area (CDFW 2021). The slightly to moderately saline soils within the Project Area provide marginally suitable habitat for this species. Palmate-bracted bird's-beak has low potential to occur onsite.

San Joaquin Spearscale

San Joaquin spearscale (*Extriplex joaquinana*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is an annual herb that often occurs in alkaline soils in chenopod scrub, meadows seeps, playas, and valley and foothill grassland (CNPS 2021). San Joaquin spearscale blooms from April through October and is known to occur at elevations ranging from 3 feet above MSL to 2,740 feet above MSL (CNPS 2021). San Joaquin spearscale is endemic to California; the current range of this species includes Alameda, Colusa, Contra Costa, Fresno, Glenn, Merced, Napa, Sacramento, San Benito, San Joaquin, Solano, Tulare, and Yolo counties, and is considered to be extirpated from (no longer occurs in) San Joaquin County, and uncertain in San Luis Obispo County (CNPS 2021).

There is one CNDDB documented occurrence of San Joaquin spearscale within 5 miles of the Project Area (CDFW 2021). The slightly to moderately saline soils within the Project Area provide marginally suitable habitat for this species. San Joaquin spearscale has low potential to occur onsite.

Stinkbells

Stinkbells (*Fritillaria agrestis*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is a perennial bulbiferous herb that occurs in clay, sometimes serpentinite areas in chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland (CNPS 2021). Stinkbells bloom from March through June and is known to occur at elevations ranging from 33 feet above MSL to 5,102 feet above MSL (CNPS 2021). This species is endemic to California; its current range includes Alameda, Contra Costa, Fresno, Kern, Mendocino, Merced, Monterey, Mariposa, Placer, Sacramento, Santa Barbara, San Benito, Santa Clara, Santa Cruz, San Luis Obispo, San Mateo, Stanislaus, Tuolumne, Ventura, and Yuba counties, and is considered to be extirpated from Santa Cruz and San Mateo counties (CNPS 2021).

There are no CNDDB documented occurrences of stinkbells within 5 miles of the Project Area (CDFW 2021). The slightly to moderately saline soils within the Project Area provide marginally suitable habitat for this species. Stinkbells has low potential to occur onsite.

Woolly Rose-Mallow

Woolly rose-mallow (*Hibiscus lasiocarpos* var. *occidentalis*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is a rhizomatous, herbaceous perennial that occurs in marshes and freshwater swamps, and often in riprap on sides of levees (CNPS 2021). Rose-mallow blooms from June through September and is known to occur at elevations ranging from sea level to 394 feet above MSL (CNPS 2021). Rose-mallow is endemic to California; the current range of this species in California includes Butte, Contra Costa, Colusa, Glenn, Sacramento, San Joaquin, Solano, Sutter, and Yolo counties (CNPS 2021).

There are three CNDDB documented occurrences of woolly rose-mallow within 5 miles of the Project Area (CDFW 2021). The edges of the wetted channel of the ridge cut within the Project Area provide suitable habitat for this species. Woolly rose-mallow has potential to occur onsite.

Heckard's Pepper-Grass

Heckard's pepper-grass (*Lepidium latipes* var. *heckardii*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is an herbaceous annual that occurs on alkaline flats within valley and foothill grasslands (CNPS 2021). Heckard's pepper-grass blooms from March through May and is known to occur at elevations ranging from 7 feet above MSL to 656 feet above MSL (CNPS 2021). Heckard's pepper-grass is endemic to California; the current range of this species includes Glenn, Merced, Sacramento, Solano, and Yolo counties (CNPS 2021).

There are no CNDDB documented occurrences of Heckard's pepper-grass within 5 miles of the Project Area (CDFW 2021). The slightly to moderately saline soils within the Project Area provide marginally suitable habitat for this species. Heckard's pepper-grass has low potential to occur onsite.

Woolly-Headed Lessingia

Woolly-headed lessingia (*Lessingia hololeuca*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 3 (plants about which more information is needed – a watch list) species. This species is an herbaceous annual that occurs in clay or serpentinite soils in broadleaf upland forests, coastal scrub, lower montane coniferous forests, and valley and foothill grassland (CNPS 2021). Woolly-headed lessingia blooms from June through October and is known to occur at elevations ranging from 49 feet above MSL to 1,001 feet above MSL (CNPS 2021). Woolly-headed lessingia is endemic to California; the current range of this species includes Alameda, Fresno, Monterey, Mendocino, Marin, Napa, Santa Clara, San Mateo, Solano, Sonoma, Tehama, Tuolumne and Yolo counties (CNPS 2021).

There are no CNDDB documented occurrences of woolly-headed lessingia within 5 miles of the Project Area (CDFW 2021). The ruderal grassland within the Project Area provide marginally suitable habitat for this species. Woolly-headed lessingia has low potential to occur onsite.

Cotula Navarretia

Cotula navarretia (*Navarretia cotulifolia*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is an herbaceous annual that occurs on adobe soils in chaparral, cismontane woodland, and valley and foothill grassland (CNPS 2021). Cotula navarretia blooms from May through June and is known to occur at elevations ranging from 13 feet above MSL to 6,004 feet above MSL (CNPS 2021). Cotula navarretia is endemic to California; its current range includes Alameda, Butte, Contra Costa, Colusa, Glenn, Lake, Mendocino, Marin, Napa, San Benito, Santa Clara, Siskiyou, Solano, Sonoma, Sutter, and Yolo counties; distribution and identity are uncertain in Siskiyou County (CNPS 2021).

There are no CNDDB documented occurrences of cotula navarretia within 5 miles of the Project Area (CDFW 2021). The clay soils in ruderal grassland within the Project Area provide marginally suitable habitat for this species. Cotula navarretia has low potential to occur onsite.

California Alkali Grass

California alkali grass (*Puccinellia simplex*) is not listed pursuant to either the federal or California ESAs, and is designated as a CRPR 1B.2 species. This species is an herbaceous annual that occurs in alkaline, vernally mesic chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools along sinks, flats, and lake margins (CNPS 2021). California alkali grass blooms between March and May and is known to occur at elevations ranging from 7 feet above MSL to 3,051 feet above MSL (CNPS 2021). The current range for this species in California includes Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kings, Kern, Lake, Los Angeles, Madera, Merced, Napa, San Bernardino, Santa Clara, Santa Cruz, San Luis Obispo, Solano, Stanislaus, Tulare, and Yolo counties; however, it is presumed extirpated in Kings County (CNPS 2021).

There are no CNDDB documented occurrences of California alkali grass within 5 miles of the Project Area (CDFW 2021). The slightly to moderately saline soils within the Project Area provide marginally suitable habitat for this species. California alkali grass has low potential to occur onsite.

Sanford's Arrowhead

Sanford's arrowhead (*Sagittaria sanfordii*) is not listed pursuant to the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is a perennial rhizomatous herb that occurs in shallow, freshwater marshes and swamps (CNPS 2021). Sanford's arrowhead blooms from May through October, and is known to occur at elevations ranging from sea level to 2,133 feet above MSL (CNPS 2021). Sanford's arrowhead is endemic to California; the current range of this species includes Butte, Del Norte, El Dorado, Fresno, Madera, Merced, Mariposa, Marin, Napa, Sacramento, San Bernardino, San Joaquin, Shasta, Solano, Sutter, Tehama, Tulare, Ventura, and Yuba counties; it is believed to be extirpated from Ventura County (CNPS 2021).

While there are no CNDDB documented occurrences of Sanford's arrowhead within 5 miles of the Project Area (CDFW 2021), the edges of the wetted channel of the ridge cut within the Project Area provide suitable habitat for this species. Sanford's arrowhead has potential to occur onsite.

Suisun Marsh Aster

Suisun marsh aster (*Symphyotrichum lentum*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is an herbaceous rhizomatous (possessing a horizontal usually underground stem that often sends out roots and shoots from its nodes) perennial that occurs in marshes and swamps in brackish and freshwater (CNPS 2021). Suisun marsh aster blooms between May and November and is known to occur at elevations ranging from sea level to 10 feet above MSL (CNPS 2021). Suisun marsh aster is endemic to California; its current range includes Contra Costa, Napa, Sacramento, San Joaquin, Solano, and Yolo counties (CNPS 2021).

While there are no CNDDB documented occurrences of Suisun marsh aster within 5 miles of the Project Area (CDFW 2021), the edges of the wetted channel of the ridge cut within the Project Area provide suitable habitat for this species. Suisun marsh aster has potential to occur onsite.

4.4.1.7 Special-Status Wildlife

Invertebrates

Valley Elderberry Longhorn Beetle

The VELB is listed as threatened pursuant to the federal ESA (USFWS 1980) and is a Yolo HCP/NCCP-covered species. The VELB is completely dependent on its larval host plant, elderberry (*Sambucus* sp.), which occurs in riparian and other woodland and scrub communities (USFWS 1999a; USFWS 2017). Elderberry plants, located within the range of the beetle, with one or more stems measuring 1.0 inch or greater in diameter at ground level are considered to be habitat for the species (USFWS 1999a). The adult flight season extends from late March through July (USFWS 2017). The adults during the time feed on foliage and perhaps flowers, mate, and females lay eggs on living elderberry plants (Barr 1991). The first instar (molting phase) larvae bore into live elderberry stems, where they develop for 1 year to 2 years feeding on the pith. The fifth instar larvae create exit holes in the stems and then plug the holes and remain in the stems through pupation (Talley et al. 2007). The VELB occurs in metapopulations throughout the Central Valley (Collinge et. al 2001 as cited in USFWS 2017). These metapopulations (subpopulations) occur throughout contiguous riparian habitat, which shift over time and spatially based on changing environmental conditions. This temporal and spatial shifting of the metapopulations results in a patchy and ever-changing distribution of the species. Research indicates that dense elderberry shrub clumps in healthy riparian habitat is the primary habitat for the VELB (USFWS 2017). The beetle's current distribution extends from Shasta County in the north to Fresno County in the south and includes everything from the valley floor up into the lower foothills (USFWS 2017). The vast majority of VELB occurrences have been recorded below 500 feet (152 meters); however, rare occurrences have been recorded up to approximately 3,000 feet (USFWS 1999a; 2017).

There are three CNDDB documented occurrences of VELB within 5 miles of the Project Area (CDFW 2021). Additionally, ECORP biologists conducted a determinate VELB survey onsite concurrent with the site reconnaissance visit. During this survey, 69 elderberry shrubs or shrub clusters were found and surveyed (Figure 4 in Appendix B). VELB has potential to occur onsite.

Fish

A total of 13 special-status fish species were identified as having potential to occur within the Project Area based on the literature review. However, upon further analysis and after the site visit, two species were determined to be extirpated from the Project Area. No further discussion of these species is provided in this analysis. Brief descriptions of the remaining 11 species that have the potential to occur within the Project Area are presented below.

Two impassable barriers, the Wallace Weir Fish Rescue Facility and KLOG fish passage barrier, preclude special-status anadromous fish access to the Project Area. The Wallace Weir, completed in early 2018, is located a short distance downstream of the southern end of the Project Area on KLRC. The KLOG fish passage barrier, completed in 2015, is located a short distance upstream of the northern end of the Project Area and prevents fish from entering the Colusa Basin Drain and subsequently the project area. KLOG fish passage barrier is currently not operational but is anticipated to be reinstalled in November

2021. Combined (when both are operational), these barriers prevent special-status anadromous fish (e.g., Chinook salmon, steelhead, and green sturgeon), from accessing the Project Area. However, because the KLOG fish passage barrier is currently not operational, these species have potential to occur within the Project Area and are included in the discussion below. Resident special-status fish with the potential to occur in the Project Area include Sacramento splittail (*Pogonichthys macrolepidotus*), Sacramento hitch (*Lavinia exilicauda*) and hardhead (*Mylopharodon conocephalus*).

Delta Smelt

Delta smelt is listed as threatened pursuant to the federal ESA and endangered pursuant to California ESA. The historical range of this species extended from Suisan Bay upstream to the City of Sacramento on the Sacramento River. However, currently it is only known to occur in the lower reaches of the Sacramento River below Isleton, the San Joaquin River below Mossdale, throughout the Delta and into Suisun Bay (Moyle 2002). It is most abundant in the fresher waters of the Delta and Suisun Bay (Ganssle 1966; Messersmith 1966).

Delta smelt spawn is a small, slender-bodied fish that is found in freshwater from late winter to early summer. Optimal spawning conditions occur during high outflow events that flood vegetated areas of the Delta and Suisun Bay. Female delta smelt produce between 1,000 eggs and 2,600 eggs that sink and attach to the bottom substrate, primarily in sandy and hard-bottom substrates (Wang 1986). Larvae hatch between 10 days and 14 days, and float downstream to areas near the entrapment zone (where salt and fresh water mix). This zone fluctuates depending on outflow and occurs anywhere from the lower Delta, near Antioch, westward to Carquinez Straights, near San Pablo Bay. Delta smelt forage on zooplankton and crustaceans, which are abundant in the area near the entrapment zone. Delta smelt grow rapidly and generally die in their first year following spawning. Some Delta smelt, however, survive to a second year.

There are no CNDDB documented occurrences of Delta smelt within 5 miles of the Project Area (CDFW 2021). Delta Smelt have low potential to occur onsite.

Green Sturgeon (Southern DPS)

NMFS proposed on April 7, 2006, the Southern Distinct Population Segment (sDPS) of green sturgeon, which includes all fish populations south of the Eel River, California, as threatened under the ESA. The agency determined that the Northern Distinct Population Segment (DPS), which includes all populations north of the Eel River (inclusive), do not warrant listing. The designation of the sDPS was based on information demonstrating: (1) the majority of spawning adults are concentrated into one spawning river (i.e., the Sacramento River), (2) existence of continued threats that had not been adequately addressed since the previous green sturgeon status review, (3) downward trends in juvenile abundance, and (4) habitat loss in the upper Sacramento and Feather rivers. The Final Rule establishing take prohibitions for the sDPS was promulgated on June 2, 2010.

Although little is known about the spawning habits of green sturgeon in the Sacramento-San Joaquin system, spawning times are thought to be similar to those documented for the Klamath River (Emmett et al. 1991). There are three general phases in green sturgeon life history: 1) freshwater stage (<3 years old), 2) coastal migrants (3 years to 13 years old for females; 3years to 9 years old for males); and 3) adults (>13

years old for females, >9 years old for males) (Environmental Protection Information Center [EPIC] et al. 2001). Adults typically migrate into fresh water beginning in late February; spawning occurs from March to July, with peak activity from April to June (Moyle et al. 2015). Emigration typically occurs after a period of over-summering followed by out-migration in the fall and winter periods coinciding with increases in flow.

Based on information from catches of green sturgeon eggs, larvae, and juveniles, and additional data derived from monitoring studies of white sturgeon, it appears that green sturgeon in the Sacramento River spawn from above Hamilton City to above Red Bluff Diversion Dam, maybe as far upstream as Keswick Dam (California Department of Fish and Game [CDFG] 2002). Juvenile green sturgeon are believed to reside in freshwater habitats from one year to three years, before emigrating to the Delta under winter high-flow events. However, the timing of emigration is unknown (EPIC et al. 2001). Following emigration from the upper Sacramento River, juvenile green sturgeon are widely distributed throughout the Delta (Radtke 1966).

While there are no CNDDB documented occurrences of sDPS green sturgeon within 5 miles of the Project Area (CDFW 2021), the wetted channel of the ridge cut provides potential short-term holding and non-natal rearing habitat for the species during the migration periods. The sDPS green sturgeon is considered absent when barriers are functioning and has potential to occur within the Project Area when they are not.

Steelhead (Central Valley DPS)

Central Valley DPS steelhead is listed as threatened under the federal ESA. Steelhead, the anadromous (adult fish live in the ocean and migrate to fresh water for breeding) form of rainbow trout, were once abundant in California coastal and Central Valley drainages from the Mexican to Oregon borders. Populations have declined substantially in recent years as a result of habitat loss stemming from dam construction. Existing wild steelhead stocks in the Central Valley are now mostly confined to the upper Sacramento River and its tributaries (McEwan and Jackson 1996).

Adult steelhead, typically averaging 600 millimeter to 800 millimeter in length (Moyle et al. 1989), generally leave the ocean and begin upstream migration to spawning reaches in tributaries to the Sacramento River system from November through January. Spawning (breeding) generally occurs from December through April (McEwan and Jackson 1996). Juvenile steelhead rear in their natal streams for 1 year to 3 years prior to emigrating from the river. Emigration of 1-year to 3-year-old, subadult fish primarily occurs from January through April (Snider and Titus 1996; Sommer 2001). Unlike Chinook salmon, steelhead are iteroparous (i.e., able to spawn repeatedly) and may spawn for up to four consecutive years before dying; however, it is rare for steelhead to spawn more than twice and the majority of repeat spawners are females (Busby et al. 1996). Although one-time spawners comprise the majority, Shapovalov and Taft (1954) report that repeat spawners are relatively numerous (i.e., 17.2 percent) in California streams. Thus, kelts (post-spawning adults) may be present in the action area shortly after spawning (i.e., January through mid-April).

There are two CNDDB documented occurrences of Central Valley DPS steelhead within 5 miles of the Project Area (CDFW 2021) and the wetted channel of the ridge cut provides potential short-term holding and non-natal rearing habitat for the species during the migration periods. Central Valley DPS steelhead is

considered absent when barriers are functioning and has potential to occur within the Project Area when they are not.

Chinook Salmon (Central Valley spring-run Evolutionarily Significant Unit)

Central Valley spring-run Evolutionarily Significant Unit [ESU] Chinook salmon (*Oncorhynchus tshawytscha*; Salmon River Challenge [SRC] salmon) is listed as threatened pursuant to the California and federal ESAs. Historically, SRC salmon were abundant throughout the Sacramento and San Joaquin river systems but were extirpated from the San Joaquin River Watershed and are currently being reintroduced to this system. Naturally spawning populations of SRC salmon are currently believed to be restricted to accessible reaches of the upper Sacramento River, Antelope Creek, Battle Creek, Beegum Creek, Big Chico Creek, Butte Creek, Clear Creek, Deer Creek, Mill Creek, the Feather River, and the Yuba River (CDFG 1998).

SRC salmon begin their migrations into the Sacramento River from March through September (Reynolds et al. 1990). Adult SRC salmon migrate into natal streams (i.e., the upper Sacramento River and tributaries). There, they hold in deep water habitats downstream of spawning grounds during the summer months until their eggs fully develop and become ready for spawning (Reynolds et al. 1990; Yoshiyama et al. 1996). Spawning occurs during mid-August through early October (Reynolds et al. 1990). For habitat to be appropriate for spawning, suitable depths, velocities, and water temperatures must be present (NMFS 2018).

There is one CNDDB documented occurrence of Central Valley spring-run ESU Chinook salmon within 5 miles of the Project Area (CDFW 2021) and the wetted channel of the ridge cut provides potential short-term holding and non-natal rearing habitat for the species during the migration periods. Central Valley spring-run ESU Chinook salmon is considered absent when barriers are functioning and has potential to occur within the Project Area when they are not.

Chinook Salmon (Sacramento River Winter-Run ESU)

Chinook salmon (Sacramento River winter-run ESU) is listed as endangered pursuant to the California and federal ESAs. The ESU includes all naturally spawned populations of winter-run Chinook salmon in the Sacramento River and its tributaries, as well as two artificial propagation programs: (1) winter-run Chinook salmon from the Livingston Stone National Fish Hatchery (NFH) and (2) winter-run Chinook salmon in a captive broodstock program maintained at Livingston Stone NFH and the University of California Bodega Marine Laboratory.

Adult winter-run ESU Chinook salmon upstream spawning migrations through the lower Sacramento River occur from December through July, with peak immigration occurring during the period January through April. The peak period of juvenile emigration through the lower Sacramento River into the Delta generally occurs between January and April (NMFS 1993). Differences in peak emigration periods between these two locations suggest that juvenile winter-run Chinook salmon may exhibit a sustained residence in the upper or mid-reaches of the Sacramento River prior to entering the lower Sacramento River or Delta. Although the location and extent of rearing in these lower or middle reaches is unknown, it is believed that the duration of fry presence in an area is directly related to the magnitude of river flows during the rearing period (Stevens 1989).

There are no CNDDB documented occurrences of Sacramento River winter-run ESU Chinook salmon within 5 miles of the Project Area (CDFW 2021); however, the wetted channel of the ridge cut provides potential short-term holding and non-natal rearing habitat for the species during the migration periods. Sacramento River winter-run ESU Chinook salmon is considered absent when barriers are functioning and has potential to occur within the Project Area when they are not.

Longfin Smelt

Longfin smelt (*Spirinchus thaleichthys*) is listed as threatened pursuant to the California ESA, is a candidate for listing under the federal ESA. Longfin smelt is an anadromous smelt (family Osmeridae) found in California's bay, estuary, and nearshore coastal environments from San Francisco Bay north to Lake Earl, near the Oregon border. The San Francisco Estuary and the Sacramento-San Joaquin Delta supports the largest longfin smelt population in California (CDFG 2009a).

The longfin smelt is a relatively small fish that exhibits a two-year life history. Though little is known regarding spawning, it is thought longfin smelt may spawn over coarse gravel or sandy substrates similar to other Osmerids (fish in the smelt family). This species also inhabits various depths depending on the time of day and life history stage, with adults inhabiting deeper areas close to the bottom during the day and becoming more associated with surface waters at night. Like other species of Osmerids, population declines are likely due to habitat degradation and loss (CDFG 2009a).

There are two CNDDB documented occurrences of longfin smelt within 5 miles of the Project Area (CDFW 2021) and the wetted channel of the ridge cut provides potential habitat for the species. Longfin Smelt have a low potential to occur onsite.

Sacramento Splittail

Sacramento splittail is not listed pursuant to either the federal or California ESAs; however, the USFWS in 1999 had listed it as a threatened species but s subsequently delisted it in 2003 in light of new information regarding the biology and status of the species (Moyle et al. 2004). The CDFW has currently designated it as a species of special concern (SSC) due to declining abundance and distribution. Major factors that may threaten the abundance and distribution of Sacramento splittail include major dams, water quality degradation associated with agricultural activities, alteration of the Sacramento-San Joaquin River Estuary, and invasive species (Moyle et al. 2015).

Sacramento splittail is a relatively large (i.e., 40 centimeters standard length [SL]) and long-lived (i.e., seven years to 10 years) warm water fish typically found at water temperatures ranging from 5°C to 24°C (Moyle 2002). When acclimated to elevated temperatures, splittail can tolerate temperatures up to 33°C (Moyle 2002). Adult splittail typically reach sexual maturity in their second year. Upon reaching maturity, adult splittail migrate upstream from November through February (Moyle 2002). Adults spawn on floodplains or flooded edge habitats in March and April at water temperatures between 14°C to 19°C (Moyle 2002) and then move back downstream. Eggs acquire adhesive properties following exposure to water and adhere to vegetation or other benthic substrates. Fertilized eggs generally hatch in three days to five days and larvae begin feeding on plankton soon thereafter. Juvenile splittail inhabit shallow, low-velocity habitats with abundant vegetation as they migrate downstream to the Delta. Emigration through the lower

Sacramento River occurs from February through August, with peak emigration occurring from March through June (Moyle 2002). Splittail are benthic foragers that feed primarily on aquatic invertebrates, although detritus may make up a substantial proportion of their diet (Moyle et al. 2015).

There is one CNDDB documented occurrence of Sacramento splittail within 5 miles of the Project Area (CDFW 2021). This species has occurred historically in the region and within the Project Area (PISCES 2014) and, thus, Sacramento splittail has potential to occur and is likely present.

Sacramento Hitch

Sacramento hitch is not listed pursuant to either the federal or California ESAs; however, the CDFW has designated it as an SSC due to long-term declines in abundance and distribution (Moyle et al. 2015). Major factors that may threaten the abundance and distribution of Sacramento hitch include major dams, water quality degradation associated with agricultural activities, alteration of the Sacramento-San Joaquin River Estuary, and invasive species (Moyle et al. 2015).

Sacramento hitch are relatively large (i.e., up to 35 centimeters SL), deep bodies cyprinids that occur in warm low-elevation water bodies, including clear streams, turbid sloughs, lakes, and reservoirs (Moyle 2002). They have wide environmental tolerances, capable of withstanding short-term temperatures of nearly 38°C and salinities as high as nine parts per 1,000 (Moyle 2002). Sacramento hitch are omnivorous, feeding on zooplankton, filamentous algae, and aquatic and terrestrial insects (Moyle et al. 2015). Females typically mature in years two or three, while males mature in years one, two, or three. Spawning typically occurs in riffles of streams and in sloughs after spring rains increase flows and temperatures reach 14°C to 18°C (Moyle 2002). Sacramento hitch are broadcast spawners that occur in groups with vigorous splashing. A spawning female releases 9,000 eggs to 63,000 eggs into the water column, which are fertilized by one male to five males immediately after their release. Fertilized eggs swell to approximately four times their initial size after settling into the substrate. Larvae hatch in three days to seven days at 15°C to 22°C and become free-swimming within three days to four days (Moyle et al. 2015).

There are no CNDDB documented occurrences of this species within 5 miles of the Project Area (CDFW 2021). However, the Project Area is within the known range of, and provides suitable habitat for this species and, thus, Sacramento hitch has low potential to occur.

Hardhead

Hardhead is not listed pursuant to either the federal or California ESAs; however, the CDFW has designated it as an SSC due to declining numbers and small, isolated populations (Moyle et al. 2015). Primary threats to the species include dams and diversions, water quality degradation associated with agricultural activities, and invasive species (Moyle et al. 2015).

Hardhead occur in relatively undisturbed clear and cool (i.e., up to 20°C maximum summer temperature) low- to mid-elevation streams below approximately 1,500 meters (Moyle et al. 2015). Hardhead are primarily bottom-feeding fish that forage on aquatic invertebrates and aquatic vegetation, but will also prey on drifting invertebrates, plankton, and algae and terrestrial insects (Moyle et al. 2015). Hardhead reach maturity at age two and spawn primarily in April and May (Moyle 2002). Adult fish migrate into

smaller tributary streams and aggregate in pools, returning to their home pools in larger rivers after spawning. Females produce over 20,000 eggs, which are deposited in sand or gravel substrates in riffles, runs, or heads of pools (Moyle 2002). After hatching, larval fish are believed to remain in near-shore areas with dense cover, gradually moving downstream and into deeper habitats with increased growth.

There are no CNDDB documented occurrences of this species within 5 miles of the Project Area (CDFW 2021). However, the Project Area is within the known range of this species. Hardhead has low potential to occur.

Pacific Lamprey

Pacific lamprey is not listed pursuant to either the federal or California ESAs; however, the CDFW has designated it as an SSC. Pacific lampreys occur along the Pacific coast from Hokkaido Island, Japan, through Alaska and south to Rio Santo Domingo in Baja California. Anadromous forms of Pacific lamprey occur below impassable barriers throughout their range. In California, Pacific lampreys occur from Los Angeles to Del Norte counties and the rivers in the Central Valley (Moyle 2002; Moyle et al. 2015).

Adult Pacific lampreys are micro predators (i.e., they feed on prey larger than themselves) during their oceanic existence, consuming the body fluids of a variety of fishes. They share many habitat requirements with Pacific salmonids (*Oncorhynchus* spp); particularly, cold, clear water for spawning and incubation. They also require a wide range of habitats across life stages. Lampreys will migrate considerable distances and only major barriers, such as dams, are able to stop them. Pacific lampreys have more diverse life histories than generally recognized: they may have more than one run or individuals that do not migrate to sea within the same river system. However, the general run trend is low numbers of migrants in October and November and higher numbers in the spring. (Moyle et al. 2015).

There are no CNDDB documented occurrences of Pacific lamprey within 5 miles of the Project Area (CDFW 2021). Pacific Lamprey has low potential to occur onsite.

River Lamprey

River lamprey is not listed pursuant to either the federal or California ESAs; however, the CDFW has designated it as an SSC. River lampreys occur in coastal streams from just north of Juneau, Alaska, south to San Francisco Bay. In California, they have been recorded from the Sacramento and San Joaquin Delta while migrating, tributaries to the San Francisco Estuary (Napa River, Sonoma Creek, Alameda Creek), and tributaries to the Sacramento and San Joaquin rivers (e.g., Tuolumne River, Stanislaus River, Cache Creek) (Moyle et al. 2015).

The western river lamprey is a small, predatory species. The habitat requirements and environmental tolerances of spawning adults and ammocoetes have not been studied in California. Presumably, like other lampreys, adults need clean, gravelly riffles in permanent streams for spawning, while ammocoetes require sandy to silty backwaters or stream edges in which to bury themselves, where water quality is continuously high and temperatures do not exceed 25°C (Moyle et al. 2015).

There are no CNDDB documented occurrences of river lamprey within 5 miles of the Project Area (CDFW 2021); however, the wetted channel of the ridge cut provides potential habitat for the species. River Lamprey has low potential to occur onsite.

Reptiles

A total of two special-status reptile species were identified as having the potential to occur within the Project Area based on the literature review (Attachment F). Upon further analysis and after the reconnaissance site visit, both species were determined to have potential to occur within the Project Area. Brief descriptions of each of these species are provided below.

Northwestern Pond Turtle

The northwestern pond turtle is not listed pursuant to either the federal or California ESAs; however, it is designated as a CDFW SSC and is a Yolo HCP/NCCP-covered species. Northwestern pond turtles occur in a variety of fresh and brackish water habitats, including marshes, lakes, ponds, and slow-moving streams (Jennings and Hayes 1994). This species is primarily aquatic; however, they typically leave aquatic habitats in the fall to reproduce and to overwinter (Jennings and Hayes 1994). Deep, still water with abundant emergent woody debris, overhanging vegetation, and rock outcrops is optimal for basking and thermoregulation. Although adults are habitat generalists, hatchlings and juveniles and hatchlings require shallow edge water with relatively dense submergent or short emergent vegetation in which to forage. Northwestern pond turtles are typically active between March and November. Mating generally occurs during late April and early May and eggs are deposited between late April and early August (Jennings and Hayes 1994). Eggs are deposited within excavated nests in upland areas, with substrates that typically have high clay or silt fractions (Jennings and Hayes 1994). The majority of nesting sites are located within 650 feet (200 meters) of the aquatic sites; however, nests have been documented as far as 1,310 feet (400 meters) from the aquatic habitat.

There are two CNDDB documented occurrences of northwestern pond turtle within 5 miles of the Project Area (CDFW 2021). The channel and basking sites (e.g., partially submerged wooden debris) within the ridge cut in the Project Area provides suitable habitat for this species and the species was observed during the reconnaissance survey. Northwestern pond turtle is present onsite.

Giant Garter Snake

The giant garter snake is listed as a threatened species pursuant to both the California and federal ESAs and is a Yolo HCP/NCCP-covered species. Giant garter snakes typically inhabit perennial ponds, marshes, slow-moving streams, and agricultural ditches containing adequate water during the spring and summer months. Giant garter snakes are most active from early spring through mid-fall (USFWS 1999b). The giant garter snake is endemic to the floors of the Sacramento and San Joaquin valleys of California and probably occurred historically from Butte County south to Buena Vista Lake in Kern County (USFWS 1999b).

Seasonally, the giant garter snake becomes active in early spring, emerging from overwintering sites to bask on emergent willows, tules, saltbush, and riprap (Hansen and Tremper in Rossman et al. 1996).

Generally, by May, all giant garter snakes have emerged and are actively foraging for food. Males immediately start searching for mates (USFWS 1999b). Live young are born in late July through early September (Hansen and Hansen 1990) and, by October, most snakes begin searching for overwintering sites. Most are in their overwintering sites by November (Hansen and Hansen 1990). The exact timing of activities is dependent on current climatic conditions. Males are sexually mature in approximately three years. Females, which achieve sexual maturity at larger size, mature in five years (G. Hansen pers. comm. in USFWS 1999b).

The giant garter snake is one of the most aquatic garter snakes (USFWS 1999b). It is rarely found far from water and occupies habitat, such as marshes and sloughs, irrigation and drainage canals, small lakes and ponds, rice agricultural fields, and low gradient streams (USFWS 1999b). Waters inhabited by this species typically feature substrates of soil, mud, or other fines. Giant garter snakes tend to be absent from larger rivers and wetlands with sand, gravel, cobble, or rock substrates, as well as from areas with extensive shading.

Small mammal burrows, crayfish burrows, and soil cracks on south- or west-facing slopes are used as retreats during the active season, as is riprap along drainage ditches and canals (USFWS 1999b). Giant garter snakes use grassy bank-side habitats for basking and use higher elevation uplands for cover and retreat from floodwaters during the inactive winter season (USFWS 1999b). Essential habitat components required are permanent water to support a sufficient prey base, emergent vegetation for escape cover and foraging habitat, near-bank upland habitat for basking, and higher-elevation habitats for winter refugia (USFWS 1999b and references therein). Networks of canals near rice agriculture (aquatic agriculture) are positively associated with giant garter snake presence, however, population density and body condition are lower in rice agriculture than in natural landscapes (Halstead et al. 2010).

There are 30 CNDDB documented occurrences of giant garter snake within 5 miles of the Project Area (CDFW 2021). The channel within the ridge cut in the Project Area provides suitable aquatic habitat and the level provides suitable upland habitat for this species. Giant garter snake has potential to occur within the Project Area.

Birds

A total of 31 special-status bird species were identified as having potential to occur within the Project Area based on the literature review (Attachment F). Upon further analysis and after the reconnaissance site visit, 19 species were considered to be absent from the Project Area due to the lack of suitable habitat, or the because the Project Area is out of the range for the species. No further discussion of these species is provided in this analysis. A brief description of the remaining 12 species that have the potential to occur within the Project Area is presented below

White-Faced Ibis

The white-faced ibis is not listed pursuant to either the California or federal ESAs; however, is currently tracked in the CNDDB and is on the CDFW watch list. In California, white-faced ibis are found locally breeding in suitable habitats throughout the length of the state except for portions of the central and north coast, heavily forested regions, and the Mojave Desert. Suitable nesting habitat includes shallow

marshes with islands of emergent vegetation (Ryder and Manry 2020). Nesting typically occurs during May through July.

There is one CNDDB documented occurrence of white-faced ibis within 5 miles of the Project Area (CDFW 2021). The emergent vegetation within the channel of the Project Area provides suitable habitat for this species. White-faced ibis has potential to occur within the Project Area.

White-Tailed Kite

White-tailed kite (*Elanus leucurus*) is not listed pursuant to either the California or federal ESAs; however, the species is fully protected pursuant to Section 3511 of the California Fish and Game Code. This species is a common resident in the Central Valley and the entire length of the California coast, and all areas up to the Sierra Nevada foothills and southeastern deserts (Dunk 2020). In Northern California, white-tailed kite nesting occurs from March through early August, with nesting activity peaking from March through June. Nesting occurs in trees within riparian, oak woodland, savannah, and agricultural communities that are near foraging areas, such as low elevation grasslands, agricultural, meadows, farmlands, savannahs, and emergent wetlands (Dunk 2020).

While there are no CNDDB documented occurrences of white-tailed kite within 5 miles of the Project Area (CDFW 2021), the trees within the channel of the Project Area provides suitable habitat for this species. White-tailed kite has potential to occur within the Project Area.

Northern Harrier

Northern harrier (*Circus hudsonius*) is not listed pursuant to either the California or federal ESAs; however, USFWS considers the species a Bird of Conservation Concern (BCC) and the CDFW considers it a SSC. This species is known to nest within the Central Valley, along the Pacific Coast, and in northeastern California. The northern harrier is a ground-nesting species, and typically nests in emergent wetland/marsh, open grasslands, or savannah communities usually in areas with dense vegetation (Smith et al. 2020). Foraging occurs within a variety of open environments, such as marshes, agricultural fields, and grasslands. Nesting occurs during April through September.

While there are no CNDDB documented occurrences of northern harrier within 5 miles of the Project Area (CDFW 2021), the vegetation within the channel in the Project Area provides suitable habitat for this species. Northern harrier has potential to occur within the Project Area.

Swainson's Hawk

The Swainson's hawk is listed as a threatened species, is protected pursuant to the California ESA, and is a Yolo HCP/NCCP-covered species. This species nests in North America (Canada, western U.S., and Mexico) and typically winters from South America north to Mexico. However, a small population has been observed wintering in the Sacramento-San Joaquin River Delta (Bechard et al. 2010). In California, the nesting season for Swainson's hawk ranges from mid-March to late August.

Swainson's hawks nest within tall trees in a variety of wooded communities, including riparian, oak woodland, roadside landscape corridors, urban areas, and agricultural areas, among others. Foraging

habitat includes open grassland, savannah, low-cover row crop fields, and livestock pastures. In the Central Valley, Swainson's hawks typically feed on a combination of California vole (*Microtus californicus*), California ground squirrel (*Otospermophilus beecheyi*), ring-necked pheasant (*Phasianus colchicus*), many passerine birds, and grasshoppers (*Melanopulus species*). Swainson's hawks are opportunistic foragers and will readily forage in association with agricultural mowing, harvesting, disking, and irrigating (Estep 1989). The removal of vegetative cover by such farming activities results in more readily available prey items for this species.

There are 96 documented CNDDB occurrences of Swainson's hawk within 5 miles of the Project Area (CDFW 2021), including at least two that appear to be within the Project Area itself. The trees and established stick nests within the Project Area provide suitable habitat for this species. Swainson's hawk has potential to occur within the Project Area.

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is not listed pursuant to either the California or federal ESAs; however, USFWS considers the species a BCC and the CDFW considers it a SSC. It is a Yolo HCP/NCCP-covered species. Burrowing owls inhabit dry open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. They can also inhabit developed areas, such as golf courses, cemeteries, roadsides within cities, airports, vacant lots in residential areas, school campuses, and fairgrounds (Poulin et al. 2020). This species typically uses burrows created by fossorial (adapted for digging) mammals, most notably the California ground squirrel, but may also use human-made structures, such as concrete culverts or pipes; concrete, asphalt, or wood debris piles; or openings beneath concrete or asphalt pavement (CDFG 2012). The breeding season typically occurs between February 1 and August 31 (California Burrowing Owl Consortium 1993; CDFG 2012).

There is one CNDDB documented occurrence of burrowing owl within 5 miles of the Project Area (CDFW 2021). The potential for burrows to occur along the maintained banks of the ridge cut within the Project Area provides marginal suitable habitat for this species. Burrowing owl has low potential to occur within the Project Area.

Nuttall's Woodpecker

The Nuttall's woodpecker (*Dryobates nuttallii*) is not listed pursuant to either the California or federal ESAs; however, it is considered a USFWS BCC. They are resident from Siskiyou County south to Baja California. Nuttall's woodpeckers nest in tree cavities primarily within oak woodlands, but also can be found in riparian woodlands (Lowther et al. 2020). Breeding occurs during April through July.

While there are no CNDDB documented occurrences of Nuttall's woodpecker within 5 miles of the Project Area (CDFW 2021), the oak and cottonwood trees provide suitable habitat within the Project Area. Nuttall's woodpecker has potential to occur within the Project Area.

Least Bell's Vireo

The least Bell's vireo (*Vireo bellii pusillus*) is listed as endangered pursuant to both the federal and California ESAs and is a Yolo HCP/NCCP-covered species. This subspecies has experienced range contraction in California, and small breeding populations were concentrated in coastal Southern California by the 1980s (Kus et al. 2020). As a result of habitat preservation and restoration, their abundance and distribution has increased throughout Central and Southern California from coastal Santa Clara County to San Diego County; and Owens Valley, Death Valley and scattered oases in the Mojave Desert (Kus et al. 2020). Least Bell's vireo builds nests in a variety of shrubs and small trees typically in riparian scrub along drainages or elsewhere near water (Kus et al. 2020). Nesting habitat consists of dense, low, shrubby vegetation in riparian areas, brushy fields, young second-growth forest of woodlands, scrub oak, coastal chaparral, and mesquite brushlands (Kus et al. 2020). Breeding occurs during April through July.

While there are no CNDDB documented occurrences of least Bell's vireo within 5 miles of the Project Area (CDFW 2021), habitat for the species is mapped within the Project Area (Attachment D). The vegetation and trees within the ridge cut of the Project Area provide marginal suitable habitat for this species. Least Bell's vireo has low potential to occur within the Project Area.

Yellow-Billed Magpie

The yellow-billed magpie (*Pica nuttallii*) is not listed pursuant to either the California or federal ESAs; however, it is considered a USFWS BCC. This endemic species is a yearlong resident of the Central Valley and Coast Ranges from San Francisco Bay to Santa Barbara County. Yellow-billed magpies build large, bulky nests in trees in a variety of open woodland habitats, typically near grassland, pastures or cropland. Nest building begins in late-January to mid-February, which may take up from 6 weeks to 8 weeks to complete, with eggs laid during April-May, and fledging during May-June (Koenig and Reynolds 2020). The young leave the nest at about 30 days after hatching (Koenig and Reynolds 2020). Yellow-billed magpies are highly susceptible to West Nile Virus, which may have been the cause of death to thousands of magpies from 2004 to 2006 (Koenig and Reynolds 2020).

While there are no CNDDB documented occurrences of yellow-billed magpie within 5 miles of the Project Area (CDFW 2021), the oak, cottonwood and willow trees provide suitable habitat within the Project Area. Yellow-billed magpie has potential to occur within the Project Area.

Oak Titmouse

The oak titmouse (*Baeolophus inornatus*) is not listed pursuant to either the California or federal ESAs; however, it is considered a USFWS BCC. The oak titmouse breeding range includes southwestern Oregon south through California's Coast, Transverse and Peninsular ranges, western foothills of the Sierra Nevada, into Baja California; they are absent from the humid northwestern coastal region and the San Joaquin Valley (Cicero et al. 2020). They are found in dry oak or oak-pine woodlands but may also use scrub oaks or other brush near woodlands (Cicero et al. 2020). Nesting occurs during March through July.

While there are no CNDDB documented occurrences of oak titmouse within 5 miles of the Project Area (CDFW 2021), the oak trees provide suitable habitat within the Project Area and the species was observed during surveys. Oak titmouse has potential to occur within the Project Area.

Song Sparrow "Modesto"

The song sparrow (*Melospiza melodia*) is considered one of the most polytypic songbirds in North America (Miller 1956 as cited in Arcese et al. 2020). The subspecies *Melospiza melodia heermanni* includes as synonyms *M. m. mailliardi* (the Modesto song sparrow) and *M. m. cooperi* (Arcese et al. 2020). The Modesto song sparrow is not listed and protected pursuant to either the California or federal ESAs; however, it is considered a CDFW SSC. The subspecies *M. m. heermanni* can be found in central and southwestern California to northwestern Baja California (Arcese et al. 2020). Song sparrows in this group may have slight morphological differences but they are genetically indistinguishable from one other. The Modesto song sparrow occurs in the Central Valley from Colusa County south to Stanislaus County, and east of the Suisun Marshes (Grinnell and Miller 1944). Nesting habitat includes riparian thickets and freshwater marsh communities, with nesting occurring from April through June.

There is one documented CNDDB occurrence of this species located within 5 miles of the Project Area (CDFW 2021). The thickets of the vegetation within the ridge cut of the Project Area provides suitable habitat for this species. Song sparrow has potential to occur within the Project Area.

Tricolored Blackbird (TRBL)

The TRBL (*Agelaius tricolor)* was granted emergency listing for protection under the California ESA in December 2014, but the listing status was not renewed in June 2015. After an extensive status review, the California Fish and Game Commission listed TRBLs as a threatened species in 2018. In addition, it is currently considered a USFWS BCC, a CDFW SSC, and is a Yolo HCP/NCCP-covered species. This colonial nesting species is distributed widely throughout the Central Valley, Coast Range, and into Oregon, Washington, Nevada, and Baja California (Beedy et al. 2020). TRBLs nest in colonies that can range from several pairs to several thousand pairs, depending on prey availability, the presence of predators, or level of human disturbance. The TRBL nesting habitat includes emergent marsh, riparian woodland/scrub, blackberry thickets, densely vegetated agricultural and idle fields (e.g., wheat, triticale, safflower, fava bean fields, thistle, mustard, cane, and fiddleneck), usually with some nearby standing water or ground saturation (Beedy et al. 2020). They feed mainly on grasshoppers during the breeding season, but may also forage upon a variety of other insects, grains, and seeds in open grasslands, wetlands, feedlots, dairies, and agricultural fields (Beedy et al. 2020). The nesting season is generally from March through August.

There are nine CNDDB documented occurrences of TRBL within 5 miles of the Project Area (CDFW 2021). The emergent vegetation within the ridge cut of the Project Area provides suitable habitat for this species. The TRBL has potential to occur within the Project Area.

Bullock's Oriole

The Bullock's oriole (*Icterus bullockii*) is not listed pursuant to either the California or federal ESAs; however, it is considered a USFWS BCC. The species' breeding range includes much of western North America from southern Canada into northern Mexico (Flood et al. 2020). Bullock's orioles breed throughout much of California except at higher elevations of larger mountain ranges and in eastern desert ranges from Oregon to Baja California. Nests are placed in isolated trees, often at woodland edges, along wooded waterways, or in urban habitat, such as shelterbelts and parks (Flood et al. 2020). Common nest tree species include sycamores (*Platanus*), cottonwoods (*Populus*), willows, as well as deciduous oaks. This species can nest as a single pair or in colonies (Flood et al. 2020). Breeding occurs from April through June.

While there are no CNDDB documented occurrences of Bullock's oriole within 5 miles of the Project Area (CDFW 2021), the cottonwood and willow trees within the Project Area provide suitable habitat for this species. Bullock's oriole has potential to occur within the Project Area.

Mammals

A total of three special-status mammal species were identified as having the potential to occur within Project Area based on the literature review (Attachment F). Upon further analysis and after the reconnaissance site visit, one species was determined to not have potential to occur within the Project Area due to the absence of suitable habitat. No further discussion of the species is provided in this analysis. A brief description of the two remaining species that have potential to occur within the Project Area is presented below.

Pallid Bat

The pallid bat (*Antrozous pallidus*) is not listed pursuant to either the federal or California ESAs; however, CDFW considers this species an SSC. This is a large, light-colored bat with long, prominent ears and pink, brown, or grey wing and tail membranes. This species ranges throughout North America, from the interior of British Columbia, south to Mexico, and east to Texas. The pallid bat inhabits low elevation (below 6,000 feet) rocky arid deserts and canyonlands, shrub-steppe grasslands, karst (limestone cave and sinkhole) formations, and higher elevation coniferous forest (above 7,000 feet). This species roosts alone or in groups in the crevices of rocky outcrops and cliffs, caves, mines, trees, and in various human structures, such as bridges, and barns. Pallid bats are feeding generalists that glean a variety of arthropod prey from surfaces as well as capturing insects on the wing. Foraging occurs over grasslands, oak savannahs, ponderosa pine forests, slopes, gravel roads, lava flows, fruit orchards, and vineyards. Although this species uses echolocation to locate prey, often they use only passive acoustic cues. This species is not thought to migrate long distances between summer and winter sites (Western Bat Working Group [WBWG] 2021).

There are no CNDDB documented occurrences of pallid bat within 5 miles of the Project Area (CDFW 2021); however, the trees within the ridge cut and bridged that cross the wetted ridge cut channel within the Project Area provide suitable habitat for this species. Pallid bat has potential to occur within the Project Area.

Western Red Bat

The western red bat (*Lasiurus blossevillii*) is not listed pursuant to either the California or federal ESAs; however, this the CDFW considers this species an SSC. The western red bat is easily distinguished from other western bat species by its distinctive red coloration. This species is broadly distributed, its range extending from southern British Columbia in Canada through Argentina and Chile in South America and including much of the western United States. This solitary species day roosts primarily in the foliage of trees or shrubs in edge habitats bordering streams or open fields, in orchards, and occasionally urban areas. They may be associated with intact riparian habitat, especially with willows, cottonwoods, and sycamores. This species may occasionally utilize caves for roosting as well. They feed on a variety of insects, and generally begin to forage one hour to two hours after sunset. This species is considered highly migratory; however, the timing of migration and the summer ranges of males and females may be different. Winter behavior of this species is poorly understood (WBWG 2021).

There is one CNDDB documented occurrence of western red bat within 5 miles of the Project Area (CDFW 2021). The willow and cottonwood trees within the ridge cut of the Project Area provide suitable habitat for this species. Western red bat has potential to occur within the Project Area.

4.4.1.8 Wildlife Movement Corridors

The Project Area is located within a matrix of agricultural fields, dirt access roads and paved roads, and rural residences (Figure 2 in Appendix B). The wetted channel, vegetation and banks of the ridge cut within the Project Area have the potential to serve as a wildlife corridor for both aquatic and terrestrial wildlife species.

4.4.1.9 Critical Habitat and Essential Fish Habitat

The Project Area is not located within the range of designated Critical Habitat for special-status species (USFWS 2021c). The Project Area is located within designated EFH for Chinook salmon.

4.4.2 Regulatory Framework

This section identifies environmental review and consultation requirements, as well as permits and approvals that must be obtained from local, state, and federal agencies before implementation of the Project.

4.4.2.1 Federal Regulations

Federal Endangered Species Act

The ESA protects plants and animals that both the USFWS and the NFMS list as endangered or threatened. Section 9 of ESA prohibits the taking of listed wildlife, where take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging up, damaging, or destroying any listed plant on nonfederal land in knowing violation of state law (16 USC 1538). Under

Section 7 of ESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat. Through consultation and the issuance of a Biological Opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of the ESA provides for issuance of incidental take permits where no other federal actions are necessary provided a HCP is developed.

Section 7

Section 7 of ESA mandates that all federal agencies consult with USFWS and/or NMFS to ensure that federal agencies' actions do not jeopardize the continued existence of a listed species or adversely modify critical habitat for listed species. The adverse modifications will require formal consultation with USFWS or NMFS if direct and/or indirect effects will occur to critical habitat that appreciably diminish the value of critical habitat for both the survival and recovery of a species. The applicant must conduct a biological assessment for the purpose of analyzing the potential effects of the project on listed species and critical habitat to establish and justify an "effect determination," if adverse effects are likely. The federal agency reviews the biological assessment and prepares a BO if it concludes that the project may adversely affect a listed species or its habitat. The BO may recommend *reasonable and prudent alternatives* to the project to avoid jeopardizing or adversely modifying habitat.

Critical Habitat and Essential Habitat

Critical Habitat is defined in Section 3 of ESA as:

1. the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the ESA, on which are found those physical or biological features essential to the conservation of the species and that may require special management considerations or protection; and
2. specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

For inclusion in a Critical Habitat designation, habitat within the geographical area occupied by the species at the time it was listed must first have features that are essential to the conservation of the species. Critical habitat designations identify, to the extent known and using the best scientific data available, habitat areas that provide essential life cycle needs of the species (areas on which are found the primary constituent elements). Primary constituent elements are the physical and biological features that are essential to the conservation of the species and that may require special management considerations or protection. These include, but are not limited to, the following:

- Space for individual and population growth and for normal behavior
- Food, water, air, light, minerals, or other nutritional or physiological requirements
- Cover or shelter

- Sites for breeding, reproduction, or rearing (or development) of offspring
- Habitats that are protected from disturbance or are representative of the historical, geographical, and ecological distributions of a species

Excluded essential habitat is defined as areas that were found to be essential habitat for the survival of a species and assumed to contain at least one of the primary constituent elements for the species but were excluded from the Critical Habitat designation. The USFWS has stated that any action within the excluded essential habitat that triggers a federal nexus will be required to undergo the Section 7(a)(1) process, and the species covered under the specific critical habitat designation would be afforded protection under Section 7(a)(2) of ESA.

Migratory Bird Treaty Act

The MBTA implements international treaties between the United States and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities, such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game Code.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 (as amended) provides for the protection of bald eagle and golden eagle by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit [16 USC 668(a); 50 CFR 22]. USFWS may authorize take of bald eagles and golden eagles for activities where the take is associated with, but not the purpose of, the activity and cannot practicably be avoided (50 CFR 22.26).

Federal Clean Water Act

The purpose of the federal CWA is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into waters of the U.S. without a permit from the USACE. The definition of waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas:

> "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 7b).

The USEPA also has authority over wetlands and may override a USACE permit.

Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification

or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; the RWQCB issues this certification or waiver.

4.4.2.2 State Regulations

Species of Special Concern

The CDFW defines the SSC as a species, subspecies, or distinct population of an animal native to California that are not legally protected under ESA, the California ESA, or the California Fish and Game Code, but currently satisfy one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding role.
- The species is listed as federally (but not state) threatened or endangered, or meets the state definition of threatened or endangered but has not formally been listed.
- The species has or is experiencing serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status.
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for state threatened or endangered status.
- SSC are typically associated with threatened habitats. Project-related impacts to SSC, state-threatened or endangered species are considered significant under CEQA.

California Rare Plant Ranks

The CNPS maintains the *Inventory of Rare and Endangered Plants of California* (CNPS 2014), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, or low populations. Plant species meeting one of these criteria is assigned to one of six CRPRs. The rank system was developed in collaboration with government, academia, nongovernmental organizations, and private sector botanists. The CDFW and the CNPS manage the system. The CRPRs are currently recognized in the CNDDB. The following are definitions of the CNPS CRPRs:

- Rare Plant Rank 1A – presumed extirpated in California and either rare or extinct elsewhere
- Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere
- Rare Plant Rank 2A – presumed extirpated in California, but more common elsewhere
- Rare Plant Rank 2B – rare, threatened, or endangered in California but more common elsewhere
- Rare Plant Rank 3 – a review list of plants about which more information is needed
- Rare Plant Rank 4 – a watch list of plants of limited distribution

Additionally, the CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 1 through 3, with 1 being the most threatened and 3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

- Threat Rank 0.1 – Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)
- Threat Rank 0.2 – Moderately threatened in California (20 percent to 80 percent occurrences threatened/moderate degree and immediacy of threat)
- Threat Rank 0.3 – Not very threatened in California (<20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known)

Factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Rank and differences in Threat Ranks do not constitute additional or different protection (CNPS 2014). Depending on the policy of the lead agency, substantial impacts to plants ranked 1A, 1B, or 2 are typically considered significant under CEQA Guidelines Section 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 3 or 4.

California Fish and Game Code

California Endangered Species Act

The California ESA (California Fish and Game Code §§ 2050-2116) generally parallels the main provisions of the federal ESA but, unlike its federal counterpart, the California ESA applies the take prohibitions to species proposed for listing (called *candidates* by the state). Section 2080 of the California Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. *Take* is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California ESA allows for incidental take during lawful development projects. State lead agencies are required to consult with the CDFW to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered, threatened or candidate species or result in destruction or adverse modification of essential habitat.

Fully Protected Species

The state of California first began to designate species as *fully protected* prior to the passage of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the state and federal ESAs. The regulations that implement the Fully Protected Species Statute (California Fish and Game Code § 4700 for mammals, § 3511 for birds, § 5050 for reptiles and amphibians, and § 5515 for fish) provide that fully protected species may not be taken or possessed at any time.

Furthermore, CDFW prohibits any state agency from issuing incidental take permits for fully protected species. CDFW will issue licenses or permits for take of these species for necessary scientific research or live capture and relocation pursuant to the permit.

Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 was enacted with the intent to "preserve, protect and enhance rare and endangered plants in this state." The CDFW administers the NPPA. The Fish and Wildlife Commission has the authority to designate native plants as *endangered* or *rare* and to protect endangered and rare plants from take. The California ESA of 1984 (California Fish and Game Code Sections 2050-2116) provided further protection for rare and endangered plant species, but the NPPA remains part of the California Fish and Game Code.

Birds of Prey

Sections 3800, 3513, and 3503 of the California Fish and Game Code specifically protect birds of prey. Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the commission or a CDFW -approved mitigation plan for mining operations. Section 3513 specifically prohibits the take or possession of any migratory nongame bird as designated in the MBTA.

Section 3503 of the California Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Additionally, Subsection 3503.5 prohibits the take, possession, or destruction of any birds and their nests in the orders Strigiformes (owls) or Falconiformes (hawks and eagles). These provisions, along with the federal MBTA, serve to protect nesting raptors.

California Streambed Alteration Notification/Agreement

Section 1602 of the California Fish and Game Code requires the submission of a SAA to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW reviews the proposed actions and, if necessary, submits measures to protect affected fish and wildlife resources to the applicant. The SAA is the final proposal mutually agreed upon by CDFW and the applicant. Projects that require an SAA often also require a permit from the USACE under Section 404 of the CWA. The conditions of the Section 404 permit and the SAA overlap in these instances.

Porter-Cologne Water Quality Act

The RWQCB implements water quality regulations under the federal CWA and the Porter-Cologne Water Quality Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Stormwater NPDES General Construction Permit, for discharges of stormwater runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). Under the Porter-Cologne Water Quality Act, the RWQCB

regulates actions that would involve "discharging waste, or proposing to discharge waste, with any region that could affect the water of the state" (Water Code 13260(a)). Waters of the state are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code 13050 (e)). The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into waters of the state, that are not regulated by the USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of a Waste Discharge Requirements for these activities.

California Environmental Quality Act

Per CEQA Guidelines Section 15380, a species not protected on a federal or state list may be considered rare or endangered if the species meets certain specified criteria. These criteria follow the definitions in the federal and California ESAs, and Sections 1900-1913 of the California Fish and Game Code, which deal with rare or endangered plants or animals. Section 15380 was included in the CEQA Guidelines primarily to deal with situations where a project under review may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW.

CEQA Significance Criteria

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant and are particularly relevant to SSC. Generally, impacts to listed (rare, threatened, or endangered) species are considered significant and require lead agencies to prepare an EIR to thoroughly analyze and evaluate the impacts. Assessment of "impact significance" to populations of non-listed species (e.g., SSC) usually considers the proportion of the species' range that will be affected by a project, impacts to habitat, and the regional and population level effects.

Specifically, Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant. Based on these examples, impacts to biological resources would normally be considered significant if the project would:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- have a substantial adverse effect on federally protected waters of the U.S., including wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional or state habitat conservation plan.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA because, although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population-wide or region-wide basis.

4.4.2.3 Local Regulations

Yolo County 2030 Countywide General Plan – Conservation and Open Space Element

The Yolo County 2030 Countywide General Plan is a statement of the community's land use values that guides land use decisions in the county: zoning, specific plans, area plans, subdivisions, capital improvements, development agreements and many other land use actions must be consistent with the adopted General Plan. The General Plan Conservation and Open Space Element provides direction regarding the preservation of open space and the conservation, continued enjoyment, and enhancement of natural resources in Yolo County. This element anticipates full integration of the Yolo HCP/NCCP as a tool for multispecies protection.

Yolo County Oak Woodland Conservation and Enhancement Plan

The Parks and Natural Resources Management Division published the Yolo County Oak Woodland Conservation and Enhancement Plan in January 2007. Since 87 percent of the county's oak woodlands are privately owned, the purpose of this plan is to help coordinate voluntary oak woodland conservation and enhancement efforts and guide oak woodland mitigation. This plan establishes a program to identify areas in Yolo County with the highest value habitat. Conservation and enhancement of these high value areas is addressed by encouraging landowners to preserve these areas from urban and rural development. With this plan, the county is able to apply for state money and other funding sources.

Yolo County Habitat Conservation Plan/Natural Communities Conservation Plan

The Yolo HCP/NCCP is a comprehensive, countywide plan for the conservation of 12 sensitive species and the natural communities and agricultural land on which they depend, as well as a streamlined permitting process to address the effects of a range of future anticipated activities on these 12 species. The Conservancy, which consists of Yolo County and the incorporated cities of Davis, West Sacramento, Winters, and Woodland, developed the Yolo HCP/NCCP. The Yolo HCP/NCCP provide the basis for issuance of long-term permits under the federal ESA and California Natural Community Conservation Planning Act (NCCPA) that cover an array of public and private activities. Specifically, the Yolo HCP/NCCP will provide the Permittees (i.e., Yolo County, the four incorporated cities, and the Conservancy) with

incidental take permits from both the USFWS and the CDFW for the 12 covered species. This action is pursuant to Section 10(a)(1)(B) of the federal ESA and Section 2835 of the NCCPA chapter of the California Fish and Game Code. Permittees must comply with the Avoidance and Minimization Measures (AMMs) set forth in the Yolo HCP/NCCP, and Yolo HCP/NCCP fees must be paid to the Conservancy or in-lieu mitigation provided, subject to Conservancy approval. The Conservancy will consider requests for an HCP/NCCP fee reduction or waiver in exchange for land dedication (title transfer or conservation easement) on a case-by-case basis. The Yolo HCP/NCCP ensures compliance with the federal ESA, NCCPA, and the California ESA for covered activities that may affect the covered species.

4.4.3 Biological Resources (IV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	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 Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐

Less than significant with mitigation incorporated.

The Project would result in temporary and permanent construction-related impacts to the upland and aquatic resources that provide habitat for special-status species within the Project Area. Potential impacts to upland habitats include temporary disturbance associated with the use of excavators to remove and reshape the ridge cut bank in erosion repair areas. The Project would result in permanent and temporary impacts to aquatic habitat and the associated bank from construction activities, such as using a small boat to install a silt curtain within the canal, or excavation of soil and placement of soil and rocks along the bank. As such, the Project would potentially have a significant impact, either directly or through habitat modifications, on special-status species identified by CDFW, USFWS, and NMFS. However, no permanent effects on Critical Habitat or EFH as identified by NMFS will occur. Impacts by species or habitat group are summarized below, along with corresponding mitigation measures that will reduce impacts to less than significant levels. Therefore, this impact is less than significant with mitigation incorporated.

4.4.3.1 Impacts to Special-Status Plants

There is potential for 13 special-status plant species to occur within the Project Area. Upland staging and erosion stabilization areas would generate a temporary disturbance but would not result in permanent habitat modifications. Vegetation removal and/or placement of soil and rocks along the bank could result in permanent habitat modifications that could result in a significant impact to special-status plants. Implementation of mitigation measures BIO-1, BIO-2 and BIO-3 would avoid or minimize potential effects to special-status plants and reduce impacts to less than significant levels.

4.4.3.2 Impacts to Valley Elderberry Longhorn Beetle

There are numerous elderberry shrubs, the host species for VELB, in the Project Area. Because the shrubs occur in riparian habitat, they are suitable habitat for VELB and potentially occupied habitat (USFWS 2017). The Project may result in adverse effects to VELB through construction activities within 165 ft of elderberry shrubs and/or removal of elderberry shrubs. The Project would avoid direct impacts (removal) of elderberry shrubs when practicable and will implement mitigation measures BIO-1 and BIO-4 to minimize the potential for direct effects on VELB and reduce impacts to less than significant levels.

4.4.3.3 Impacts to Special-Status Fish Species, Critical Habitat, and Essential Fish Habitat

Eleven special-status fish species, including five federally listed species and one species that is a candidate for federal listing (four of which are also state-listed species), have potential to occur in the Project Area. Direct impacts to special-status fish species could occur as a result of erosion control measures (e.g., soil or rock removal and revetment placement) through scraping bottom substrates and causing downstream turbidity. Implementation of mitigation measure BIO-5 would minimize the effects of the Project on listed and special-status fish species and reduce impacts to less than significant levels.

The Project Area does not include designated Critical Habitat for special-status species; however, it does include designated EFH for Chinook salmon. Erosion control operations (e.g., soil or rock removal and revetment placement) would temporarily disturb designated EFH by scraping bottom substrates and causing turbidity downstream. These temporary effects would not result in permanent impacts or loss of EFH. Implementation of mitigation measure BIO-5 would minimize the effects of the Project on EFH to the minimum practicable, thus reducing impacts to a less than significant level.

4.4.3.4 Impacts to Northwestern Pond Turtle

Northwestern pond turtles may occur in the upland (levee banks) and wetted channel portions of the Project Area. The upland areas (i.e., banks of the KLRC levee) provide suitable turtle nesting habitat. Disturbance of the bank during rock and soil removal and or replacement could adversely affect nesting turtles. However, implementation of mitigation measure BIO-6 is expected to avoid or minimize potential effects to this species in upland portions of the Project Area. In aquatic habitat, direct mortality is not anticipated. More likely, this species may inadvertently be disturbed from basking sites or foraging activities due to noise and disturbance associated with erosion control operations. Overall, the effects are expected to be temporary and minimized by the implementation of BIO-6, thus reducing impacts to a less than significant level.

4.4.3.5 Impacts to Giant Garter Snake

Giant garter snake has the potential to occur in the wetted channel of the Project Area. Direct impacts to giant garter snake could occur as a result of erosion control measures (e.g., soil or rock removal and revetment placement) through scraping bottom substrates and causing downstream turbidity. Direct mortality could also occur due to the presence of equipment within the channel during erosion control and/or vegetation removal activities. However, implementation of mitigation measure BIO-7 is expected

to avoid or minimize potential effects to this species to the minimum practicable, resulting in less than significant impacts.

4.4.3.6 Impacts to Special-Status Birds

One federally listed,- and three state-listed, bird species have the potential to occur in the Project Area and there is potential for additional special-status bird species in the Project Area. Upland staging areas would generate a temporary disturbance that could displace nesting birds from the Project Area for the duration of construction but would not result in permanent habitat modifications. Existing roadways will be used for vehicle and construction access. The Project may require removal of riparian vegetation that may provide suitable nesting habitat; however, vegetation removal will be minimized to only the extent necessary to complete the erosion repairs. If special-status birds initiate nesting prior to the start of construction, mitigation measures BIO-8 through BIO-13 would be implemented to avoid direct effects and reduce impacts to less than significant levels. These mitigation measures require preconstruction surveys and establishment of buffers and monitoring at nest sites until young have fledged or nests are no longer active.

4.4.3.7 Impacts to Special-Status Mammals

There are two special-status mammals (bat species) with potential to occur in the Project Area. The Project may require vegetation removal and, therefore, could result in temporary or permanent adverse effects of habitat modification for special-status mammals. Impacts would be temporary if vegetation replanting of similar species within the habitat would also occur. Replanting of vegetation will depend on erosion control measure BIO-14 required at each location, such as placement of rock. Implementation of mitigation measure would minimize the potential for effects to special-status mammals.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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 Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐

Less-than-significant impact.

The Project Area supports riparian vegetation along a human-made channel (KLRC). Construction access and staging will occur in upland, disturbed areas of the Project Area, such as the established levee crown gravel road and dirt levee roads, and in the designated 2.5-acre staging area at the base of the east levee. Some vegetation clearing or tree removal may be necessary to implement erosion repairs; however, vegetation removal will be minimized to the extent practicable. The Project would not result in permanent adverse effects to riparian habitats. There are no Sensitive Natural Communities as defined by CDFW or the Yolo HCP/NCCP within the Project Area. Compliance with the Avoidance and Minimization Measures set forth in the Yolo HCP/NCCP for take coverage of sensitive species and obtaining a SAA pursuant to

Section 1602 of the California Fish and Game Code for any activity that will impact riparian habitats and including minimization measures to ensure protections for affected fish and wildlife resources, would ensure that impacts to riparian habitat are less than significant with mitigation incorporated.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐

Less than significant with mitigation incorporated.

The Project would have no direct impact on federally protected wetlands; however, the KLRC and agricultural ditches onsite have an OHWM and are potential waters of the U.S./state. Project implementation would temporarily disturb the banks of the ridge cut during proposed erosion repair measures. Additionally, placement of soil and rock for erosion control may result in permanent impacts to waters of the U.S./state. Implementation of erosion control measures and BMPs included in mitigation measure BIO-1 and obtaining permit authorizations from federal and state regulatory agencies as outlined in mitigation measure BIO-15, would reduce impacts to aquatic resources to less than significant levels with mitigation incorporated.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☒	☐	☐

Less than significant with mitigation incorporated.

The ridge cut channel is a potential migratory corridor for native fish. Project erosion control activities, including the potential use of silt curtains within the canal, have the potential to interfere with natural movements of resident and migratory fish species on a temporary basis resulting in a potentially significant impact. Implementation of mitigation measure BIO-5 for special-status fish species described in Section 4.4.3 (a) above are expected to avoid and minimize potential effects to fish and reduce impacts to a less than significant level.

The ridge cut and associated vegetation, trees, and banks within the Project Area provide migratory opportunities for wildlife. Establishment of the staging areas and operation of equipment is likely to temporarily disturb and displace wildlife from portions of the Project Area. Some wildlife, such as birds or

nocturnal species, are likely to continue to use the habitats opportunistically for the duration of construction. Once construction is complete, wildlife movements are expected to resume.

The Project Area does not include a known nursery site. Evidence of a potential wildlife nursery site was observed during the field reconnaissance due to the presence of several juvenile, black-crowned night herons (*Nycticorax nycticorax*), along with adults, roosting within the vegetation of the ridge cut. Potential impacts to individual nesting birds and potential wildlife nursery sites would be reduced to less than significant levels by implementation of mitigation measures BIO-8 through BIO-13 described in Section 4.4.3 (a) above.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

No impact.

If trees cannot be avoided, they will be removed in compliance with the Yolo County Oak Woodland Conservation and Enhancement Plan, as described in the General Plan. The Project will not conflict with a Yolo County policy or ordinance protecting biological resources, including tree ordinances. The KLRDD would coordinate with Yolo County to secure the necessary variance, permit, or approval if a conflict is identified. Therefore, there is no impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☒	☐	☐

Less than significant with mitigation incorporated.

The Yolo HCP/NCCP covers the Project Area, as described in Section 4.4.2.3. The BRA and the mitigation measures herein regarding covered species were formulated in accordance with the Yolo HCP/NCCP conditions on covered activities. The Project would have significant impacts to the special-status species covered under the Yolo HCP/NCCP without mitigation measures BIO-2, BIO-4 and BIO-6 through BIO-11. In addition, KLRDD must obtain A Yolo HCP/NCCP Permit and take coverage for covered activities and take of covered species as described in mitigation measure BIO-16. There are no other approved local, regional, or state habitat conservation plans applicable to this Project. Therefore, the Project would not conflict with a local, regional, or state conservation plan with implementation of the mitigation measures mentioned above. This impact is less than significant with mitigation incorporated.

4.4.4 Mitigation Measures

4.4.4.1 BIO-1: Erosion Control Measures and Best Management Practices

The Project will implement erosion control measures and BMPs to reduce the potential for sediment or pollutants within the Project Area. Measures may include:

- Erosion control measures will be implemented between waters of the U.S., and the outer edge of the staging areas, prior to commencement of construction activities. Such identification and erosion control measures will be properly maintained until construction is completed and the soils have been stabilized.
- The use of fiber rolls for erosion control or other appropriate erosion control method that are certified by the California Department of Food and Agriculture as weed free.
- Seed mixtures applied for erosion control will not contain California Invasive Plant Council designated invasive species (http://cal-ipc.org) and will be composed of a KLRDD-approved seed mix.
- Trash generated onsite will be promptly and properly removed.
- Any fueling in the upland portion of the Project Area will use appropriate secondary containment techniques to prevent spills.
- A qualified biologist will conduct a mandatory Worker Environmental Awareness Program for all contractors, work crews, and any onsite personnel on the potential for special-status species to occur in the Project Area. The training will provide an overview of habitat and characteristics of the species, the need to avoid certain areas, and the possible penalties for noncompliance.

Timing/Implementation: *This measure shall be printed on construction plan sets and implemented at all times during construction.*

Enforcement/Monitoring: *KLRDD and Project construction lead.*

4.4.4.2 BIO-2: Yolo Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) Avoidance and Minimization Measure (AMM) 11: Palmate-Bracted Bird's Beak

- In accordance with Yolo HCP/NCCP AMM 11, to determine if palmate-bracted bird's-beak is present and could be affected, a qualified biologist will conduct a planning-level survey for this species for any covered activities that will take place within 250 feet of suitable habitat. The survey will be conducted during the period from May 31 to September 30 and will be consistent with the CDFW's Protocols for Surveying and Evaluating Impacts to Special-status Native Plant Populations and Natural Communities.

- In accordance with Yolo HCP/NCCP AMM 11, KLRDD will avoid occupied habitat where palmate-bracted bird's beak has been located within any of the last 15 years (seed viability could be as little as three years and as much as six years, as described in Appendix A of the Yolo HCP/NCCP). KLRDD also will avoid any new occurrences of this species identified during planning-level surveys. Avoidance will require a 250-foot setback from the occupied habitat, or greater distance, depending on the site-specific topography to avoid hydrologic effects. A shorter buffer distance may apply if is determined to avoid effects and is approved by the Conservancy, USFWS, and CDFW. Mortality of palmate-bracted bird's beak individuals will be avoided, except as needed through management activities that provide an overall benefit to the species.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, and Project construction lead.*

4.4.4.3 BIO-3: Other Special-Status Plant Species

- Preconstruction floristic surveys shall be conducted for any areas of proposed ground disturbance (i.e., grading or earthwork) in the Project Area with the potential to support special-status plants. A qualified botanist shall survey the area of ground disturbance and a 25-foot buffer during the appropriate blooming period prior to the start of Project activity.
- If no special-status plants are found during the preconstruction surveys, no further measures are necessary.
- If surveys identify any special-status plants, they shall be flagged and avoided with a 25-foot no-disturbance buffer during Project activities. If this avoidance is not feasible, KLRDD shall consult with the CDFW to determine whether alternative avoidance measures that are equally protective are possible.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, CDFW, and Project construction lead.*

BIO-4: Valley Elderberry Longhorn Beetle

The following mitigation measures will avoid or minimize potential impacts to the VELB:

- Obtain ESA take coverage under the Yolo HCP/NCCP for direct effects to VELB. The Project will be conducted in accordance with the AMMs set forth in the Yolo HCP/NCCP to avoid Project effects to ESA-listed VELB.
- Elderberry shrubs will be avoided to the extent practicable. To avoid take of VELB fully, KLRDD will maintain a buffer of at least 100 feet from any elderberry shrubs with stems greater than one inch in diameter at ground level. If necessary, lesser buffers may be applied, in accordance with Yolo HCP/NCCP AMM 1.

- For elderberry shrubs that cannot be avoided with a designated buffer distance, as described above, the qualified biologist will quantify the number of stems one inch or greater in diameter that could be affected, and the presence or absence of exit holes. The Conservancy will use this information to determine the number of plants or cuttings to plant on a riparian restoration site to help offset the loss. Additionally, prior to construction, KLRDD will transplant elderberry shrubs identified within the Project footprint that cannot be avoided.
- Transplantation will only occur if a shrub cannot be avoided and, if indirectly affected, the indirect effects would otherwise result in the death of stems or the entire shrub. If KLRDD chooses, in coordination with a qualified biologist, not to transplant the shrub because the activity would not likely result in death of stems of the shrub, then the qualified biologist will monitor the shrub annually for a five-year monitoring period. The monitoring period may be reduced with concurrence from the wildlife agencies if the latest research and best available information at the time indicates that a shorter monitoring period is warranted. If death of stems at least one inch in diameter occurs within the monitoring period, and the qualified biologist determines that the shrub is sufficiently healthy to transplant, KLRDD will transplant the shrub, as described elsewhere in AMM 12, in coordination with the qualified biologist. If the shrub dies during the monitoring period, or the qualified biologist determines that the shrub is no longer healthy enough to survive transplanting, then the Conservancy will offset the shrub loss consistent with this measure.
    - KLRDD will transplant the shrubs into a Conservancy-approved location in the Yolo HCP/NCCP reserve system. Elderberry shrubs outside the Project footprint but within the 100-foot buffer will not be transplanted.
    - Transplanting will follow the following measures:
        1. Monitor: A qualified biologist will be onsite for the duration of the transplanting of the elderberry shrubs to ensure the effects on elderberry shrubs are minimized.
        2. Timing: KLRDD will transplant elderberry plants when the plants are dormant, approximately November through the first two weeks of February, after they have shed their leaves. Transplanting during the non-growing season will reduce shock to the plant and increase transplantation success.
        3. Transplantation procedure:

            a. Cut the plant back three feet to six feet from the ground or to 50 percent of its height (whichever is taller) by removing branches and stems above this height. Replant the trunk and stems measuring one inch or greater in diameter. Remove leaves that remain on the plants.
            b. Relocate plant to approved location in the reserve system, and replant as described in the Yolo HCP/NCCP Section 6.4.2.4.1.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, Yolo Habitat Conservancy, and Project construction lead.*

BIO-5: Fish

If Project activities occur within the wetted channel of the ridge cut, the following mitigation measures shall be implemented to avoid or minimize potential impacts to special-status fish species:

- If KLOG fish passage barrier is not in place and operational, request USACE to initiate Section 7 consultation with the NMFS through the CWA Section 404 process on the Project effects to ESA-listed fish species and acquire a BO for the Project. Implement all conditions of the BO.
- If KLOG fish passage barrier is not in place and operational, implement work within the wetted channel during a limited work window (likely June 15 through October 15) to avoid the most sensitive life stages of ESA-listed anadromous fish species.
- If the KLOG fish passage barrier is not in place and operational, consult with CDFW and, if necessary, secure Incidental Take Permit 2081, pursuant to Section 2080 of the California Fish and Game Code for the California ESA-listed fish (i.e., spring-run and winter-run Chinook salmon, delta smelt, and longfin smelt).
- Deploy measures, as practicable, to reduce sediment resuspension, such as a turbidity curtain, if feasible, given the flow volume and velocity in the Project Area.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, USACE, CDFW, and Project construction lead.*

BIO-6: Yolo HCP/NCCP AMM14: Western Pond Turtle

If modeled upland habitat will be impacted (see Attachment D of the BRA Report for the Project), the following mitigation shall be implemented:

- A qualified biologist must be present and will assess the likelihood of western pond turtle nests occurring in the disturbance area (based on sun exposure, soil conditions, and other species habitat requirements).
- If a qualified biologist determines that there is a moderate to high likelihood of western pond turtle nests within the disturbance area, the qualified biologist will monitor all initial ground disturbing activity for nests that may be unearthed during the disturbance and will move out of harm's way any turtles or hatchlings found.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD and qualified biologist.*

BIO-7: Yolo HCP/NCCP AMM15: Giant Garter Snake

KLRDD cannot avoid effects of construction activities on aquatic habitat; therefore KLRDD will implement the measures below to minimize effects of construction projects:

- Conduct preconstruction clearance surveys using USFWS-approved methods within 24 hours prior to construction activities within identified giant garter snake aquatic and adjacent upland habitat. If construction activities stop for a period of two weeks or more, conduct another preconstruction clearance survey within 24 hours prior to resuming construction activity.
- Restrict all construction activity involving disturbance of giant garter snake habitat to the snake's active season, May 1 through October 1. During this period, the potential for direct mortality is reduced because snakes are expected to move and avoid danger.
- Dewatering is not feasible for the KLRC; therefore netting and salvage of giant garter snake prey items may be necessary to discourage use by snakes.
- Provide Conservancy-approved environmental awareness training for construction personnel. Training may consist of showing a video prepared by a qualified biologist, or an in-person presentation by a qualified biologist. In addition to the video or in-person presentation, training may be supplemented with the distribution of approved brochures and other materials that describe resources protected under the Yolo HCP/NCCP and methods for avoiding effects. The training may be conducted simultaneously with the Workers Awareness Training.
- A qualified biologist will prepare a giant garter snake relocation plan, which must be approved by the Conservancy prior to work in giant garter snake habitat. The qualified biologist will base the relocation plan on criteria provided by CDFW or USFWS, through the Conservancy.
- If a live giant garter snake is encountered during construction activities, immediately notify the Project's biological monitor and USFWS and CDFW. The monitor will stop construction in the vicinity of the snake, monitor the snake, and allow the snake to leave on its own. The monitor will remain in the area for the remainder of the workday to ensure the snake is not harmed or, if it leaves the site, does not return. If the giant garter snake does not leave on its own, the qualified biologist will relocate the snake consistent with the relocation plan described above.
- Implement the following management practices to minimize disturbances to habitat:
  - Install temporary fencing to identify and protect adjacent marshes, wetlands, and ditches from encroachment from construction equipment and personnel.
  - Maintain water quality and limit construction runoff into wetland areas through the use of hay bales, filter fences, vegetative buffer strips, or other accepted practices. No plastic, monofilament, jute, or similar erosion-control matting that could entangle snakes or other wildlife will be permitted.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, Project construction lead, USACE, and CDFW.*

BIO-8: Yolo HCP/NCCP AMM 16: Swainson's Hawk and White-Tailed Kite

- If the Project cannot avoid potential nest trees (as determined by the qualified biologist) by 1,320 feet, KLRDD will retain a qualified biologist to conduct preconstruction surveys for active nests consistent with guidelines provided by the Swainson's Hawk Technical Advisory Committee (2000), between March 15 and August 30, within 15 days prior to the beginning of the construction activity. The results of the survey will be submitted to the Conservancy and CDFW.
- If active nests are found during preconstruction surveys, a 1,320-foot initial temporary nest disturbance buffer shall be established. If Project-related activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then the qualified biologist will monitor the nest and will, along with KLRDD, consult with CDFW to determine the best course of action necessary to avoid nest abandonment or take of individuals. Work may be allowed only to proceed within the temporary nest disturbance buffer if Swainson's hawk or white-tailed kite are not exhibiting agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, and only with the agreement of CDFW and USFWS. The designated onsite biologist or monitor shall be on the site daily while construction-related activities are taking place within the 1,320-foot buffer and shall have the authority to stop work if raptors are exhibiting agitated behavior.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, Project construction lead, Yolo Habitat Conservancy, USFWS, and CDFW.*

BIO-9: Yolo HCP/NCCP AMM 18: Western Burrowing Owl

To avoid impacts to western burrowing owl to the maximum extent practicable, the following is recommended:

- Prior to any ground disturbance during the breeding season (February 1 to August 31) related to covered activities, the qualified biologist will conduct preconstruction surveys for western burrowing owl within 14 days prior to ground disturbance consistent with CDFW's 2012 preconstruction survey guidelines.
- If the biologist finds the site to be occupied by western burrowing owls during the breeding season, KLRDD will avoid all nest sites per the Yolo HCP/NCCP during the remainder of the breeding season or while the nest is occupied by adults or young

(occupation includes individuals or family groups that forage on or near the site following fledging). Construction may occur inside of the disturbance buffer during the breeding season if the nest is not disturbed and KLRDD develops an AMM plan that is approved by the Conservancy, CDFW, and USFWS prior to project construction, based on the following criteria:

- The Conservancy, CDFW, and USFWS approves the Project proponent's AMM plan.
- A qualified biologist monitors the owls for at least three days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).
- The same qualified biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.
- If the qualified biologist identifies a change in owl nesting and foraging behavior as a result of construction activities, the qualified biologist will have the authority to stop all construction related activities within the non-disturbance buffers described above. The qualified biologist will report this information to the Conservancy, CDFW, and USFWS within 24 hours, and the Conservancy will require that these activities immediately cease within the non-disturbance buffer. Construction cannot resume within the buffer until the adults and juveniles from the occupied burrows have moved out of the Project Area, and the Conservancy, CDFW, and USFWS agree.
- If monitoring indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use by owls, the Project proponent may remove the no-disturbance buffer, only with concurrence from CDFW and USFWS. If the burrow cannot be avoided by construction activity, the biologist will excavate and collapse the burrow in accordance with CDFW's 2012 guidelines to prevent reoccupation after receiving approval from the wildlife agencies.
- If evidence of western burrowing owl is detected outside the breeding season (December 1 to January 31), the Project proponent will establish a non-disturbance buffer around occupied burrows, consistent with the Yolo HCP/NCCP, as determined by a qualified biologist. Construction activities within the disturbance buffer are allowed if the following criteria are met to prevent owls from abandoning important overwintering sites:
- A qualified biologist monitors the owls for at least three days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
- The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.

- If there is any change in owl roosting and foraging behavior as a result of construction activities, these activities will cease within the buffer.
- If the owls are gone for at least one week, the Project proponent may request approval from the Conservancy, CDFW, and USFWS for a qualified biologist to excavate and collapse usable burrows to prevent owls from reoccupying the site if the construction activities cannot avoid the burrow. The qualified biologist will install one-way doors for a 48-hour period prior to collapsing any potentially occupied burrows. After all usable burrows are excavated, the buffer will be removed, and construction may continue.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, Project construction lead, Yolo Habitat Conservancy, USFWS, and CDFW.*

BIO-10: Yolo HCP/NCCP AMM 19: Least Bell's Vireo

The following mitigation measures shall be implemented to avoid or minimize impacts to least Bell's vireo:

- If the activity will encroach within 500 feet of habitat and there are no breeding season records for the species within 0.25 mile of the covered activity within the previous three years, the qualified biologist will conduct planning-level surveys for active territories, consistent with USFWS (2001) guidelines, during the breeding season (April 1 to July 15).
- If an occupied territory is discovered during planning-level surveys, or there is a record of the species occurring within 0.25 mile of the covered activity within the previous three years, KLRDD will avoid activities within 500 feet of suitable habitat, unless the Conservancy, USFWS, and CDFW approve a shorter distance.
- If an activity occurs within 500 feet of suitable habitat during the breeding season, regardless of whether or not the species was detected during planning-level surveys or there are records for the species in the area, a qualified biologist will conduct preconstruction surveys, consistent with USFWS (2001) guidelines, during the same season when the activity will occur. If active territories are found, KLRDD will avoid activity within 500 feet of the habitat from April 1 to July 15. This buffer may be reduced with approval from the Conservancy, USFWS, and CDFW.
- The Project proponent will avoid disturbance of previous least Bell's vireo territories (up to three years since known nest activity) during the breeding season unless the disturbance is to maintain public safety. Least Bell's vireo uses previous territories; disturbance during the breeding season may preclude birds from using existing unoccupied territories.
- The required buffer may be reduced in areas where barriers or topographic relief features are adequate for protecting the nest from excessive noise or other

disturbance. Conservancy staff members will coordinate with the wildlife agencies and evaluate exceptions to the minimum no-disturbance buffer distance on a case-by-case basis. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.

- If occupied territories are identified, a qualified biologist will monitor construction activities in the vicinity of all active territories to ensure that covered activities do not affect nest success.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, construction lead, Yolo Habitat Conservancy, USFWS, and CDFW.*

BIO 11: Yolo HCP/NCCP AMM 21: Tricolored Blackbird

- KLRDD will retain a qualified biologist to identify and quantify (in acres) TRBL nesting and foraging habitat (as defined in Appendix A, Covered Species Accounts of the Yolo HCP/NCCP) within 1,300 feet of the footprint of the covered activity. If a 1,300-foot buffer from nesting habitat cannot be maintained, the qualified biologist will review records maintained by the Conservancy (which will include CNDDB data and data from the TRBL portal) to determine if TRBL nesting colonies have been active in or within 1,300 feet of the Project footprint during the previous five years.
- If there are no records of nesting TRBLs on the site, the qualified biologist will conduct visual surveys to determine if an active colony is present, during the period from March 1 to July 30, consistent with protocol described by Kelsey (2008).
- If an active TRBL colony is present or has been present within the last five years within the planning-level survey area, KLRDD will avoid adverse effects within 1,300 feet of the colony site(s), unless the Conservancy, USFWS, and CDFW approve a shorter distance. If that is approved, the Project proponent will still maintain a 1,300-foot buffer around active nesting colonies during the nesting season but may apply the approved lesser distance outside the nesting season.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, construction lead, Yolo Habitat Conservancy, USFWS, and CDFW.*

BIO-12: Special-Status and Migratory Bird Treaty Act (MBTA) Protected Birds

- A qualified biologist will conduct a preconstruction survey for nesting birds within seven days of commencement of Project activities. The survey will occur within the Project Area and a 100-foot buffer. If an active nest is located, a no-disturbance buffer will be established as determined by the biologist in consultation with CDFW and maintained until the nest is confirmed to be no longer active by the biologist.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, and CDFW.*

BIO-13: Raptors

- A qualified wildlife biologist will conduct a preconstruction survey for nesting raptors, within the Project Area and a 500-foot buffer, within 14 days of commencement of Project activities. If an active nest is located, a no-disturbance buffer will be established as determined by the biologist in consultation with CDFW and maintained until a qualified biologist determines the young have fledged and are no longer reliant upon the nest for survival.

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, and CDFW.*

BIO-14: Special-Status Bats

The following mitigation measures shall be implemented to avoid or minimize potential impacts to bat species:

- Prior to commencement of Project activities, a qualified biologist will survey for suitable roosting habitat (e.g., trees or artificial structures) within the Project Area. If no suitable roosting habitat is identified, no further measures are necessary.
- If suitable roosting habitat is identified and cannot be avoided appropriately (as determined by a qualified biologist), a qualified biologist will conduct an evening bat emergence survey that may include acoustic monitoring to determine whether or not bats are present. If roosting bats are found, consultation with CDFW is required prior to initiation of Project activities

Timing/Implementation: *Prior to and during construction.*

Enforcement/Monitoring: *KLRDD, qualified biologist, and CDFW.*

BIO-15: Aquatic Resources Permits

The following mitigation measures shall be implemented to avoid or minimize potential impacts to waters of the U.S.:

- A permit authorization to fill wetlands under the Section 404 of the federal CWA (Section 404 Permit) must be obtained from USACE prior to discharging any dredged or fill materials into any waters of the U.S. Final mitigation measures will be developed as part of the Section 404 Permit process to ensure no-net-loss of wetland function and values.

- A permit authorization from the RWQCB pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Act must be obtained prior to the discharge of material in an area that could affect waters of the U.S./state. Mitigation requirements for discharge to waters of the U.S./state will be developed in consultation with the RWQCB.
- A SAA from CDFW pursuant to Section 1602 of the California Fish and Game Code must be obtained for impacts to features (e.g., the bed, channel, or bank of any river, stream, or lake) that may be subject to Section 1600 of the Fish and Game Code.

Timing/Implementation: *Prior to construction.*

Enforcement/Monitoring: *KLRDD, USACE, RWQCB, and CDFW.*

BIO-16: Compliance with Yolo HCP/NCCP

The following mitigation measures shall be implemented to assure compliance with the Yolo HCP/NCCP:

- A Yolo HCP/NCCP Permit and take coverage must be obtained for covered activities and take of covered species. Permittees must comply with the AMMs set forth in the Yolo HCP/NCCP, and Yolo HCP/NCCP fees must be paid to the Conservancy or in-lieu mitigation provided, subject to Conservancy approval.

Timing/Implementation: *Prior to construction.*

Enforcement/Monitoring: *KLRDD, USACE, RWQCB, and Yolo Habitat Conservancy.*

4.5 Cultural Resources

ECORP prepared a Cultural Resources Inventory and Evaluation Knights Landing Ridge Cut Erosion Report (Cultural Resources Inventory Report) for the Proposed Project (ECORP 2021c, Appendix C) to determine if cultural resources were present in or adjacent to the Project Area and assess the sensitivity of the Project Area for undiscovered or buried cultural resources. The cultural context of the Project Area, including regional and local prehistory, ethnography, and regional and Project Area histories can be found in the report in Appendix C. Appendix C also contains copies of required AB-52 tribal notification and consultation letters (see Section 4.18 below). Due to confidentiality guidelines, Appendix C is included under separate cover.

4.5.1 Environmental Setting

The Project Area is located along the 6.25-mile-long KLRC. The area is within a rural setting between Knights Landing and Yolo Bypass in Yolo County. Land use is predominantly agricultural in this region, but several small towns and communities are scattered across the landscape. The Project Area is situated at elevations ranging between 27 feet above MSL to 45 feet above MSL.

The cultural setting of the Project Area is summarized below. A more comprehensive cultural context is provided in the confidential cultural resources technical report in Appendix C (ECORP 2021b).

4.5.1.1 Pre-Contact History

It is generally believed that human occupation of California began at least 10,000 years before present (BP). The archaeological record indicates that between approximately 10,000 BP and 8,000 BP, a predominantly hunting economy existed, characterized by archaeological sites containing numerous projectile points and butchered large animal bones. Groups from this time period included only small numbers of individuals who did not often stay in one place for extended periods. Around 8,000 BP, there was a shift in focus from hunting toward a greater reliance on plant resources. Archaeological evidence of this trend consists of a much greater number of milling tools (e.g., metates and manos) for processing seeds and other vegetable matter. In sites dating to after about 5,000 BP, archaeological evidence indicates that reliance on both plant gathering and hunting continued as in the previous period, with more specialized adaptation to particular environments. During this period, new peoples from the Great Basin began entering Southern California. These immigrants, who spoke a language of the Uto-Aztecan linguistic stock, seem to have displaced or absorbed the earlier population of Hokan-speaking peoples.

4.5.1.2 Ethnography

Ethnographically, the Project Area is in the central portion of the territory occupied by the Penutian-speaking Hill Patwin. Patwin is part of the Wintun linguistic family. The ethnographic Hill Patwin occupied the territory including the lower hills of the eastern Coast Range mountain slope, in the Long, Indian, Bear, Capay, Cortina, and Napa valleys. The descendants of the traditional Patwin, including the Yocha Dehe Wintun Nation, continue to reside in the region. The ethnography of the Project Area is discussed in more detail in the TCR section of this document.

4.5.1.3 Project Area History

During the early stage of land development in Yolo County, many enterprising newcomers emigrated to the region, with a primary focus on ranching and agriculture. In 1850, George and John Stephens acquired property on Cache Creek and constructed an adobe granary - the first adobe structure in Yolo County. The Stephens brothers raised cattle and farmed dry grains on their ranch. As their wealth increased, they started the Stephens Agricultural and Livestock Company and they owned the Cottonwood Ditch Company. At one point in time, the brothers owned 8,000 acres of land in Yolo County.

Extensive irrigation systems were built to support the growing agricultural community. Prior to the 1860s, the primary Sacramento Valley crop was wheat, watered primarily by tributaries flowing west down from the Sierra Nevada, as well as flood plains and alluvial fans created by the confluence of the Sacramento and San Joaquin rivers. However, a widespread drought and flood cycle from 1863 to 1865, coupled with an unstable wheat market and soil exhaustion, led the wheat growers in the Central Valley to embrace the benefits of irrigation and flood control. As more farmers turned to irrigated crops, they saw more returns on the investment in irrigation, and the systems began to proliferate. Communal arrangements for water distribution were developed, as opposed to individual landowners footing the bill on their land alone. Irrigation districts, along with private and municipal water companies, were initiated and became crucial

to the large-scale development and success of irrigated agriculture. The Wright Act of 1887 provided for the formation of irrigation districts throughout the Central Valley that fell under the democratic control of the water users themselves. By 1929, there were 15 irrigation districts in the Sacramento Valley. The U.S. Reclamation Service (the predecessor to the U.S. Bureau of Reclamation) noticed the benefits of these systems and began establishing their own reclamation projects involving irrigation to help westerners improve their lands. With these federal involvements, improvements such as concrete lining and upkeep were made to many of the canals and districts. The Yolo County Flood Control and Water Conservation District was established in 1951 and today manages several important water infrastructure elements including dams, canals, laterals, a hydroelectric plant, and reservoirs serving the water needs of residents of Davis, Winters, Capay, Esparto, and the surrounding lands.

Along with the increase of farmland and irrigation, a number of other enterprises began to emerge, most importantly, gravel mining in the 1870s. Exposed and easily accessible, gravel extraction along Cache Creek has a history that is more than 100 years old, making it one of the most historic enterprises in Yolo County today. The KLRC was constructed by 1925 and was designed to alleviate flooding by draining water into the Yolo Basin. This allowed for additional farming in the affected areas, not only by draining swampy areas, but also provided water to other agricultural areas.

4.5.2 Regulatory Framework

4.5.2.1 State Evaluation Criteria

Under state law (CEQA), cultural resources are evaluated using California Register of Historical Resources (CRHR) eligibility criteria to determine whether any of the sites are Historical Resources as defined by CEQA, which requires that impacts to Historical Resources be identified and, if the impacts would be significant, apply mitigation measures to reduce the impacts.

A Historical Resource is one that 1) is listed in or has been determined eligible for listing in the CRHR by the State Historical Resources Commission; 2) is included in a local register of historical resources, as defined in PRC 5020.1(k); 3) has been identified as significant in a historical resources survey, as defined in PRC 5024.1(g); or 4) is determined to be historically significant by the CEQA lead agency [CCR Title 14, Section 15064.5(a)]. In making this determination, the CEQA lead agency usually applies the CRHR eligibility criteria.

For this Project, only the fourth definition of a Historical Resource is applicable because there are no resources previously determined eligible or listed on the CRHR; there are no resources included in a local register of historical resources, and no resources identified as significant in a qualified historical resources survey.

The eligibility criteria for the CRHR are as follows [CCR Title 14, §4852(b)]:

(1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the U.S.;

(2) It is associated with the lives of persons important to local, California, or national history;

(3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or

(4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition, the resource must retain integrity, which is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association (14 CCR §4852(c)).

Historical buildings, structures, and objects are usually eligible under Criteria 1, 2, and 3 based on historical research and architectural or engineering characteristics. Archaeological sites are usually eligible under Criterion 4, the potential to yield information important in prehistory or history. An archaeological test program may be necessary to determine whether the site has the potential to yield important data. Whether the site has the potential to yield important information is based on the results of the test program. Cultural resources determined eligible for the National Register of Historic Places (NRHP) by a federal agency are automatically eligible for the CRHR.

Impacts to a Historical Resource (as defined by CEQA) are significant if the resource is demolished or destroyed or if the characteristics that made the resource eligible are materially impaired (14 CCR§15064.5(a)).

4.5.2.2 Federal Evaluation Criteria

Under federal regulations implementing Section 106 of the NHPA (36 CFR 800), cultural resources identified in the Project APE must be evaluated using NRHP and eligibility criteria. The eligibility criteria for the NRHP are as follows (36 CFR 60.4):

> "The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess aspects of integrity of location, design, setting, materials, workmanship, feeling, association, and
> (a) is associated with events that have made a significant contribution to the broad patterns of our history;
> (b) is associated with the lives of a person or persons significance in our past;
> (c) embodies the distinctive characteristics of a type, period or method of construction, or represents the work of a master, or possesses high artistic value, or represents a significant and distinguishable entity whose components may lack individual distinction; or
> (d) has yielded or may be likely to yield information important in prehistory or history."

In addition, the resource must be at least 50 years old, barring exceptional circumstances (36 CFR 60.4).

Historical buildings, structures, and objects are usually eligible under Criteria A, B, and C based on historical research and architectural or engineering characteristics. Archaeological sites are usually eligible under Criterion D, the potential to yield information important in prehistory or history. An archaeological test program may be necessary to determine whether the site has the potential to yield important data.

The lead federal agency, in this case, USACE, makes the determination of eligibility based on the results of the test program and seeks concurrence from the State Historic Preservation Officer.

Effects to NRHP-eligible resources (Historic Properties) are adverse if the project could alter, directly or indirectly, any of the characteristics of a Historic Property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

4.5.3 Cultural Resources (V) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐

Less than significant levels with mitigation incorporated.

The analysis of cultural resources was based on a records and literature search conducted at the Northwest Information Center (NWIC) and the Northeast Information Center of the California Historical Resources Information System at Sonoma State University and California State University, Chico, respectively, on April 7, 2021. The records search was to determine the extent of previous surveys within a 1.0-mile radius of the Project location.

In addition to the official records and maps for archaeological sites and surveys in Yolo County, the following historic references were also reviewed: Historic Property Data File for Yolo County (OHP 2012); The National Register Information System (National Park Service [NPS] 2020); Office of Historic Preservation (OHP), California Historical Landmarks (OHP 2019); California Historical Landmarks (OHP 1996 and updates); California Points of Historical Interest (OHP 1992 and updates); Directory of Properties in the Historical Resources Inventory (1999); Caltrans Local Bridge Survey (Caltrans 2019); Caltrans State Bridge Survey (Caltrans 2018); and Historic Spots in California (Kyle 2002). Other references examined include a RealQuest Property Search and historic General Land Office land patent records (Bureau of Land Management 2020). ECORP mailed letters to the Yolo County Historical Society on August 4, 2021, to solicit comments or obtain historical information that the repository might have regarding events, people, or resources of historical significance in the area; no response was received.

ECORP surveyed the Project Area for cultural resources on June 10 and 11, 2021.

Previous investigations by other firms resulted in the recording of three resources associated with the abandoned Central California Railroad, as well as two pumping facilities, the levees, and the KLRC within the Project Area. ECORP was able to locate all the resources, except for the two pump houses, which have been demolished and replaced by modern structures.

4.5.3.1 California Pacific Railroad Route through Yolo County

The California Pacific Railroad has been documented in three different forms within the Project Area (Linear P-57-194, Bridge Abutments – P-57-142/CA-YOL-185H; and District – P-57-970) from the main Southern Pacific Railroad in Davis and into Sutter County at the Sacramento River in Knights Landing and includes a spur that extended from Knights Landing to a now defunct sugar beet farm. The line north of Cache Creek had been abandoned in the 1930s and the tracks were removed from the Project Area in 1974 (Crull 2015). In 2015, Scott Crull, Ph.D., RPA, documented the entire line within Yolo County; however, the alignment appears to have been recorded twice. Once as a district (P-57-970) and again as a linear feature (P-57-194) that appears to be associated with the main Southern Pacific Railroad that traverses Yolo County east to west from Davis to West Sacramento. Additionally, Dr. Crull recorded the bridge abutments that carried the railroad alignment across the KLRC as a third resource (P-57-142). In 2019, Environmental Science Associates revisited portions of the resource at the KLRC and found them to be in a similar state as documented by Dr. Crull. They recommended that these resources to not be eligible for the National Register or California Register. There were no remnants of the railroad visible on the levees or within the KLRC, other than the extant bridge abutments, which remain as described by Crull in 2015 and Environmental Science Associates in 2019.

The levees on either side of the KLRC are part of the SRFCP (P-57-519). They were originally recorded as part of the KLRC but the California Department of Water Resources (DWR) added the levees to the SRFCP Levee Unit 127, which includes the levees adjacent to Sacramento River within Yolo County. These levees span the entire length of the KLRC on both sides, with the western levee extending farther south approximately 0.4 mile and connects to the Yolo Basin Levee. The ECORP survey covered the entire length of both levees south of Highway 113. ECORP found the levees to be as described on the 523 California Department of Parks and Recreation forms, as they had a gravel covered roadway across the top and the sides had been bladed clear of vegetation throughout a majority of the length of the levee. Other areas contain dried grasses along the sides of the levees; levee grasses were actively being burned at the time of the survey. When part of the KLRC, the levees were determined to not be eligible for the National Register or California Register through the Section 106 process. Based on aerial photographs, large segments of the eastern levees were extended by as much as 40 feet into the adjoining fields.

When the levees were added to the SRFCP Levee Unit 127 by the DWR, they recommended the levee system to not be eligible for the National or California Registers.

4.5.3.2 Knights Landing Ridge Cut

The KLRC (P-57-706) is a 6.75-mile-long, 500-foot-wide (700 feet, including the levees) channel that spans from the Colusa Basin Drainage Channel in Knights Landing to the Yolo Bypass. The KLRC had construction completed by 1925 and was designed to alleviate flooding by draining water into the Yolo Basin. This allowed for additional farming in the affected areas, not only by draining swampy areas, but also provided water to other agricultural areas. Kathleen Les first documented the KLRC in 1986 and it has been updated multiple times over the last 35 years. The original recording included the levees on both sides of the ridge cut, as well as the Colusa Basin Drainage Channel. The KLRC was separated from the Colusa Basin Drainage Channel cultural site record form in 2014, and the levees were added to the SRFCP

Levee Unit 127 cultural site record form in 2016. The KLRC was determined to not be eligible through the Section 106 process.

USACE previously documented these two pump houses (P-57-667 and P-57-671) and noted that they were located in ditches outside of the KLRC. These pump houses were wood frame shacks on concrete foundations with corrugated metal sides that housed pumps to transfer water between the KLRC and the ditches that lined the adjacent fields. The ECORP survey revealed that both structures have been demolished and replaced with modern structures. Based on aerial photographs, the replacement occurred in 2015 or 2016.

In summary, there are no historical resources present within the Project Area. All cultural resources have been determined to not be eligible for the NRHP or CRHR. There are no unique archaeological resources present.

With the modification of the Project Area to exclude the newly recorded resource (KLRC-010), the remaining historical resources within the Project Area have been previously determined not eligible for the NRHP or the CRHR and are not considered to be Historical Resources under CEQA or Historic Properties under Section 106 NHPA. However, due to the presence of alluvium along the KLRC channel, and given the likelihood of pre-contact cultural resources sites located along perennial waterways, there exists the potential to cause a substantial adverse change to unanticipated (or post-review) cultural resource discoveries during Project construction, although these deposits would no longer be intact as that material has been reworked to form the levee. Mitigation measure **CUL-1** will be implemented by the KLRDD to reduce this potentially significant impact to less than significant levels with mitigation incorporated.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐

Less than significant levels with mitigation incorporated.

As discussed above, no archeological resources within the Project Area have been previously determined to be eligible for the NRHP or the CRHR under CEQA or Historic Properties under Section 106 NHPA. A search of the Sacred Lands File by the California NAHC returned a positive result on September 2, 2021, indicating the presence of Native American cultural resources near the Project Area. The NAHC letter requested that the Project contact the UAIC. A record of all correspondence is provided in Attachment B of Appendix C.

In addition, due to the presence of alluvium along the KLRC channel, and given the likelihood of pre-contact cultural resources sites located along perennial waterways, there exists the potential to cause a substantial adverse change to unanticipated (or post-review) cultural resource discoveries during Project construction, although these deposits would no longer be intact as that material has been reworked to

form the levee. Mitigation measure CUL-1 will be implemented by the KLRDD to reduce this potentially significant impact to less than significant levels with mitigation incorporated.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Less than significant levels with mitigation incorporated.

There are no known dedicated cemeteries within the Project Area. However, there exists a low potential for buried pre-contact or historical human remains in the Project Area because pre-contact archaeological sites are likely to be located along perennial waterways, such as the American River. Thus, Project construction may disturb unknown (or post-review) human remains. Mitigation measure CUL-2 will be implemented by the KLRDD to reduce this potentially significant impact to less than significant levels with mitigation incorporated.

4.5.4 Mitigation Measures

CUL-1: Unanticipated or Post Review Discovery of Cultural Resources

If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for pre-contact and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the lead federal agency, KLRDD, and applicable landowner. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or a Historic Property under Section 106 of the NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.

Timing/Implementation: *During Project construction.*

Enforcement/Monitoring: *KLRDD, qualified professional archeologist, and Project construction lead.*

CUL-2: Unanticipated or Post Review Discovery of Human Remains

If subsurface deposits believed to be human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for pre-contact and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the find includes human remains, or remains that are potentially human, the qualified archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Yolo County Coroner (per Section 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California PRC, and AB 2641 will be implemented. If the coroner determines the remains are Native American and not the result of a crime scene, the coroner will notify the NAHC, which then will designate a Native American MLD for the Project (Section 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (Section 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

Timing/Implementation: *During Project construction.*

Enforcement/Monitoring: *KLRDD, qualified professional archeologist, and Project construction lead, County Coroner, and NAHC.*

4.6 Energy

4.6.1 Environmental Setting

Energy consumption is analyzed in this document due to the potential direct and indirect environmental impacts associated with the Project. Such impacts include the depletion of nonrenewable resources (oil, natural gas, coal, etc.) and emissions of pollutants during the Project implementation. The impact analysis focuses on the source of energy that is relevant to the Proposed Project: the equipment-fuel necessary for Project implementation.

4.6.1.1 Fuel Consumption

Vehicle fuel and watercraft (workboat) fuel use is typically measured in gallons (e.g., of gasoline or diesel fuel). Automotive fuel and workboat fuel consumption in Yolo County from 2016 to 2020 is shown in Table 4.6-1. Fuel consumption has decreased between 2016 and 2020.

Table 4.6-1. Automotive and Workboat Fuel Consumption in Yolo County 2016-2020

Year	Total Automotive and Workboat Fuel Consumption (gallons)
2020	1,928,399,336
2019	2,059,222,204
2018	2,186,327,672
2017	2,244,034,589
2016	2,307,572,845

Source: CARB 2017

4.6.2 Regulatory Framework

4.6.2.1 State

Senate Bill 350

In October 2015, the legislature approved, and the Governor signed, SB 350, which reaffirms California's commitment to reducing its greenhouse gas (GHG) emissions and addressing climate change. Key provisions include an increase in the renewables portfolio standard (RPS), higher energy efficiency requirements for buildings, initial strategies toward a regional electricity grid, and improved infrastructure for electric vehicle charging stations. Specifically, SB 350 requires the following to reduce statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33 percent to 50 percent by 2030, with interim targets of 40 percent by 2024, and 25 percent by 2027.

- Double the energy efficiency in existing buildings by 2030. This target would be achieved through the California Public Utilities Commission (CPUC), the California Energy Commission (CEC), and local publicly owned utilities.
- Reorganize the California Transmission Plan to develop more regional electrify transmission markets and to improve accessibility in these markets, which would facilitate the growth of renewable energy markets in the western United States.

Established in 2002 under SB 1078 and accelerated by SB 107 (2006) and SB 2 (2011), California's RPS obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33 percent of their electricity from renewable energy sources by 2020. Eligible renewable resources are defined in the 2013 RPS to include biodiesel; biomass; hydroelectric and small hydro (30 megawatts or less); Los Angeles Aqueduct hydropower plants; digester gas; fuel cells; geothermal; landfill gas; municipal solid waste; ocean thermal, ocean wave, and tidal current technologies; renewable derived biogas; multi-fuel facilities using renewable fuels; solar photovoltaic; solar thermal electric; wind; and other renewables that may be defined later. Governor Edmund Gerald (Jerry) Brown signed SB 350 on October 7, 2015, which expands the RPS by establishing a goal of 60 percent of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses upon which an energy efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, establish efficiency targets for electrical and gas corporations consistent with this goal. SB 350 also provides for the transformation of the CAISO into a regional organization to promote the development of regional electricity transmission markets in the western states and to improve the access of consumers served by the CAISO to those markets, pursuant to a specified process.

Senate Bill 100

In 2018, SB 100 (the California 100 Percent Clean Energy Act) was signed by Governor Brown, codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045, Specifically, SB 100 sets the goal of powering the state with 100 percent clean and carbon free electricity by 2045.

4.6.2.2 Local

The following goals, policies and actions relating to energy production, usage and conservation within Yolo County 2030 Countywide General Plan – Conservation and Open Space Element are applicable to the Project:

GOAL CO-7 Energy Conservation. Promote energy efficiency and conservation.

Policy CO-7.1 Encourage conservation of natural gas, oil and electricity, and management of peak loads in existing land uses.

Policy CO-7.3 Require all projects to incorporate energy-conserving design, construction, and operation techniques and features into all aspects of the project including buildings, roofs, pavement, and landscaping.

4.6.3 Energy (VI) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐

Less-than-significant impact.

Addressing energy impacts requires an agency to make a determination as to what constitutes a significant impact. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed land use project. The amount of fuel necessary for Project implementation was estimated using ratios provided in the Climate Registry's General Reporting Protocol for the Voluntary Reporting Program, Version 2.1. For the purpose of this analysis, the amount of fuel necessary for Project implementation was calculated and compared to that consumed in Yolo County.

Table 4.6-2. Proposed Project Fuel Consumption

Year	Annual Consumption	Percentage Increase Countywide
Project Implementation Fuel Consumption		
Project Implementation	65,025 gallons	0.003 percent

Source: Climate Registry 2016
Notes: The Project increase in fuel consumption is compared with the countywide fuel consumption in 2020, the most recent full year of data.

As shown in Table 4.6-2, the Project's fuel consumption during the implementation period is estimated to be 65,025 gallons of fuel for each year that activities occur. This would increase the annual countywide fuel use by 0.003 percent. Project construction activities are anticipated to begin in March 2022 lasting approximately four months spanning over a 10-year period as erosion areas are identified and funding becomes available. As such, Project implementation would have a nominal effect on local and regional energy supplies. No unusual Project characteristics would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in the region or the state. Construction contractors would purchase their own gasoline and diesel fuel from local suppliers and would judiciously use fuel supplies to minimize costs due to waste and subsequently maximize profits. Additionally, construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency combined with state regulations limiting engine idling times, would further reduce the amount of transportation fuel demand during Project implementation. For these reasons, it is expected that construction fuel consumption associated with the Project would not be any

more inefficient, wasteful, or unnecessary than other similar development projects of this nature. For these reasons, this impact would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Less-than-significant impact.

This impact analysis focuses on fuel consumption during the one-time implementation period. As discussed above, this would have a nominal effect on local and regional fuel consumption. Furthermore, the main goal of the Project is to repair eroded areas along the KLRC levees to avoid or arrest streambank erosion that threatens the KLRC levee system. Additionally, once the Project is complete, it would not be a source of energy consumption. For these reasons, the Project would not conflict with or obstruct any state or local energy efficiency plans and the impact would be less than significant.

4.6.4 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.7 Geology and Soils

4.7.1 Environmental Setting

The Project Area is situated at elevations ranging between 27 feet above MSL to 45 feet above MSL. Changes in elevation are due primarily to the human-made earthen levees containing the KLRC. The surrounding topography of the region is mostly flat within the Sacramento Valley.

4.7.1.1 Geomorphic Setting

The Project is located within the Great Valley geomorphic province of California and consists of gently sloping to level alluvial plains. The geology of the Sacramento Valley is a large, asymmetric, structural trough (syncline) formed by westward-tilting blocks of plutonic and metamorphic rocks on the eastern side and highly folded and faulted blocks of metamorphic rocks (Franciscan) on the western side (ICF 2020). This basin has been partially filled by a thick sequence (up to 12.4 miles [20 km] thick) of sedimentary rocks and alluvial deposits that range from late Jurassic to Historical in age. During the Pleistocene (between 2.6 million years ago to 11,700 years ago), erosion of the Sierra Nevada led to the deposition of large alluvial fans at the base of the foothills along the eastern side of the Sacramento Valley. Glacial conditions are generally credited for the deposition of these fans, while subsequent interglacial periods are marked by landscape stability, soil formation, and channel incision. Subsequent depositional cycles during the Holocene (11,700 years ago to present) progressively buried downstream sections of many older alluvial fans and also led to the formation of inset stream terraces and nested alluvial fans along the foothills (Rosenthal and Willis 2017).

The current and historic floodplains are filled with Holocene and Pleistocene Epoch alluvial deposits. Natural levees formed through the deposition of alluvium during periods of flooding. As floodwaters lost energy, the coarser materials settled out close to the rivers, forming natural levees and sandbars in the vicinity of the river channel. Farther from the floodplains are Pleistocene terrace deposits. These deposits were ancient floodplains formed by streams that existed during the most recent period of alpine glaciation (ICF 2012).

The geomorphology of the region describes the Sacramento River as once migrating frequently and freely within its meander belt, which typically exceeded several thousand feet in width. Prior to European-American settlement, the river and its tributaries along the valley floor would naturally overflow and flood the adjacent lands, replenishing wetlands and depositing sediments. The floodplains have historically provided fluvial geomorphic roles for the Sacramento River and other rivers and creeks in the Project Area because the flow loss to the flood basins causes the Sacramento River to downsize in the downstream direction in its lower reaches (ICF 2012). The Sacramento River's channel morphology and sediment transport regime have been progressively altered by human activities since the late 1800s. These activities include the removal of riparian vegetation and the construction of levees and dams for flood control and water supply.

4.7.1.2 Regional Seismicity and Fault Zones

An active fault, according to California DOC, Division of Mines and Geology, is a fault that has indicated surface displacement within the last 11,000 years. A fault that has not shown geologic evidence of surface displacement in the last 11,000 years is considered inactive.

There is no evidence of recent (i.e., Holocene) faulting within the Project Area and no faults are mapped to cut valley alluvium at or near the Project area (ICF 2020). The nearest known potentially active fault mapped is the Dunnigan Hills fault, located approximately 8 miles west of the Project Area, which is estimated to be capable of producing an earthquake with a maximum possible Richter Scale magnitude of 6.0 (Yolo County 2009). The Dunnigan Hills fault is considered potentially active but the California Geological Survey (CGS) has not delineated it as an Alquist-Priolo Earthquake Fault Zone, indicating that the CGS does not consider it likely to generate surface rupture. A number of older faults (e.g., Capay, Sweitzer, East Valley, and West Valley faults) occur in the western part of the county; however, displacement of these faults apparently occurred more than 1.6 million years ago. Accordingly, these faults are generally considered inactive.

4.7.1.3 Soils

According to the USDA's NRCS via the Web Soil Survey database, (NRCS 2021), 10 soil types are located within the Project Area, as shown in Figure 2 of the BRA and Table 4.7-1: Ca, Capay silty clay, 0 percent slopes, MLRA 1; Ck, Clear Lake clay, 0 percent to 1 percent slopes, MLRA 17; Lg, Laugenour very fine sandy loam; Lm, Loamy alluvial land; Sd, Sacramento clay, drained; Sn, Soboba gravelly sandy loam; Sp, Sycamore silt loam, drained 0 percent slopes, MLRA 17; St, Sycamore silty clay loam, drained, 0 percent slopes, MLRA 17; Sv, Sycamore complex, drained, and; Sw, Sycamore complex, flooded. All of these soil

units contain hydric components and are considered hydric, except for (St) Sycamore silty clay loam, drained, 0 percent slopes, MLRA 17 (NRCS 2021b).

The Web Soil Survey also identifies drainage, flooding, erosion, runoff, frost action, and the linear extensibility potential for the Project soils. According to this survey, the Project soils are moderately well drained and somewhat excessively drained, have a low to moderate runoff potential, and have no potential for flooding or frost action. The Project Site soils also have a slight to moderate erosion potential and low to very high linear extensibility (shrink-swell) (NRCS 2021).

Table 4.7-1. Project Area Soil Characteristics

Soil (Map Unit Symbol, Map Unit Name)	Percentage of Site	Drainage	Flooding Frequency Class	Frost Action[1]
Ca, Capay silty clay, 0 percent slopes, MLRA 17.	<0.01	Moderately well drained	Rare	None
Ck, Clear Lake clay, 0 percent to 1 percent slopes, MLRA 17	5.2	Moderately well drained to poorly drained	Rare	None
Lg, Laugenour very fine sandy loam	3.1	Poorly Drained	Rare	None
Lm, Loamy alluvial land	3.6	Well Drained	Rare	None
Sd, Sacramento clay, drained	41.2	Poorly drained	None	None
Sn, Soboba gravelly sandy loam	0.2	Excessively Drained	Rare	None
Sp, Sycamore silt loam, drained 0 percent slopes, MLRA 17	7.3	Somewhat poorly drained	Rare	None
St, Sycamore silty clay loam, drained, 0 percent slopes, MLRA 17	15.8	Somewhat poorly drained	Rare	None
Sv, Sycamore complex, drained	21.2	Somewhat poorly drained	None	None
Sw, Sycamore complex, flooded	0.7	Somewhat poorly drained	Occasional	None
	Runoff Potential[2]	**Linear Extensibility[3]**	**Erosion Hazard[4]**	
Ca, Capay silty clay, 0 percent slopes, MLRA 117.	C (moderate)	High	None to Slight	
Ck, Clear Lake clay, 0 percent to 1 percent slopes, MLRA 17	C/D (high)	Very High	None to Slight	
Lg, Laugenour very fine sandy loam	B (low/moderate)	Low	Slight	
Lm, Loamy alluvial land	ND	Low	ND	

Soil (Map Unit Symbol, Map Unit Name)	Percentage of Site	Drainage	Flooding Frequency Class	Frost Action[1]
Sd, Sacramento clay, drained	C (moderate)	Moderate to High	None to Slight	
Sn, Soboba gravelly sandy loam	A (low)	Low	Slight	
Sp, Sycamore silt loam, drained 0 percent slopes, MLRA 17	B (low/moderate)	Low	None to Slight	
St, Sycamore silty clay loam, drained, 0 percent slopes, MLRA 17	C (moderate)	Moderate	None to Slight	
Sv, Sycamore complex, drained	C (moderate)	Moderate	None to Slight	
Sw, Sycamore complex, flooded	C (moderate)	Moderate	None to Slight	

Source: NRCS 2021a
Notes:
ND = No data in Soil Survey Report for this parameter

1. Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.
2. Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation.
   Group A: Soils having a high infiltration rate (low runoff potential) when thoroughly wet.
   Group B: Soils having a moderate infiltration rate when thoroughly wet.
   Group C: Soils having a slow infiltration rate when thoroughly wet.
   Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet.
3. Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent, moderate if 3 percent to 6 percent, high if 6 percent to 9 percent, and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.
4. The ratings are both verbal and numerical. The hazard is described as *slight*, *moderate*, *severe*, or *very severe*. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation ofAG bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and offsite damage are likely, and erosion-control measures are costly and generally impractical.

4.7.1.4 Paleontological Resources

Kenneth Finger, Ph.D., Consulting Paleontologist (Finger 2021), prepared a paleontological assessment for the Proposed Project to determine if paleontological resources were present in or adjacent to the Project Area and assess the sensitivity of the Project Area for undiscovered paleontological resources. The paleontological assessment for the Project includes University of California Museum of Paleontology (UCMP) database results, more details about the geology, and the probability of finding fossil specimens.

4.7.2 Regulatory Framework

4.7.2.1 Federal

Earthquake Hazard Reduction Act of 1977 (Amended 2004)

The Earthquake Hazard Reduction Act includes provisions for earthquake hazard reduction measures to improve design and construction methods and practices, land-use controls and redevelopment, prediction and early-warning systems, coordinated emergency preparedness plans, and public education/involvement programs. The Earthquake Hazard Reduction Act led to the creation of the National Earthquake Hazards Reduction Program, which is a collaborative effort among the Federal Emergency Management Agency (FEMA), the National Institute of Standards and Technology, the National Science Foundation, and the USGS.

4.7.2.2 State

California Building Code and California Health and Safety Code

California provides minimum standards for building design through the California Building Code (CBC, CCR, Title 24). The state earthquake protection law (California Health and Safety Code Section 19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. The CBC identifies seismic factors that must be considered in structural design, as well as regulates the excavation of foundations and retaining walls, construction on unstable soils, such as expansive soils and areas subject to liquefaction, and regulates grading activities, including drainage and erosion control.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (PRC Division 2, Chapter 7.5) provides policies and criteria to assist cities, counties, and state agencies prohibit the location of developments and structures for human occupancy across the trace of active faults. To assist cities and counties, the state geologist delineates and compiles maps of earthquake fault zones to encompass all potentially and recently active traces of faults.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (PRC Division 2, Chapter 7.8 and CCR Title 14, Article 10) provides for a statewide seismic hazard mapping and technical advisory program to assist cities and counties in protecting the public health and safety from the effects of strong ground shaking, liquefaction, landslides or other ground failure and other seismic hazards caused by earthquakes.

4.7.2.3 Local

County of Yolo 2030 Countywide General Plan

The following goals and policies of the Yolo County 2030 Countywide General Plan- Health and Safety Element (County of Yolo 2006) are applicable to the Project:

GOAL HS-1 Geologic Hazards. Protect the public and reduce damage to property from earthquakes and other geologic hazards

Policy HS-1.1 Regulate land development to avoid unreasonable exposure to geologic hazards.

Policy HS-1.2 All development and construction proposals shall be reviewed by the county to ensure conformance to applicable building standards.

Policy HS-1.3 Require environmental documents prepared in connection with CEQA to address seismic safety issues and to provide adequate mitigation for existing and potential hazards identified.

Action HS-A2 Rely upon the most current and comprehensive geological hazard mapping available in the evaluation of potential seismic hazards associated with proposed new development. (Policy HS-1.3).

4.7.3 Geology and Soils (VII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐

i) No impact.

The Project Site is not located within an Alquist-Priolo Earthquake Zone (CGS 2011). There would be no impact related to fault rupture.

ii) Less-than-significant impact.

According to CGS' Earthquake Shaking Potential for California mapping, the Project Site is located in an area with a low likelihood of experience ground shaking (CGS 2016). During most earthquakes, only weaker masonry buildings would be damaged. However, very infrequent earthquakes could still cause

strong shaking in the area (CGS 2016). Project actions will involve replacing eroded and unstable levee slopes with revetment and re-grading and compacting to reduce potential impacts from earthquake ground shaking. The proposed improvements would not involve the construction of any structures intended for human occupancy or the construction or modification of any structure in an area subject to seismic ground shaking or seismic-related ground failure. Thus, this impact would be less than significant.

iii) Less-than-significant impact.

Liquefaction occurs when loose sand and silt saturated with water behaves like a liquid when shaken by an earthquake. Liquefaction can result in the following types of seismic-related ground failure:

- Loss of bearing strength – soils liquefy and lose the ability to support structures
- Lateral spreading – soils slide down gentle slopes or toward stream banks
- Flow failures – soils move down steep slopes with large displacement
- Ground oscillation – surface soils, riding on a buried liquefied layer, are thrown back and forth by shaking
- Flotation – floating of light buried structures to the surface
- Settlement – settling of ground surface as soils reconsolidate
- Subsidence – compaction of soil and sediment

Liquefaction potential has been found to be greatest where the groundwater level and loose sands occur within a depth of about 50 feet or less. DOC provides mapping for areas susceptible to liquefaction in California. According to this mapping, the Project Site is not located in a seismic hazard liquefaction zone (CGS 2020). However, some of the Project Site soils have moderate to high linear extensibility ratings, which is directly related to shrink-swell potential and liquefaction potential. All bank protection/levee construction or modification conducted as part of the proposed program of improvements would be designed based on the results of detailed geotechnical engineering studies and would be required to comply with standard engineering practices for levee design. Because the design and construction of all modifications to the KLRC under the Project would meet or exceed applicable design standards for static and dynamic stability, expansive soils, secondary effects related to ground shaking, and seepage, and the low potential for seismic ground shaking, the Project would result in less than significant impacts with regard to seismic-related ground failure, including liquefaction.

iv) Less-than-significant impact.

The Project Area includes human-made earthen levees with slopes up to 20 feet in elevation gain that could be susceptible to landslides during a seismic event. Because the Project objective is to arrest or avoid streambank erosion that threatens the integrity of the KLRC levees by replacing eroded and unstable levee slopes with revetment and re-grading, potential impacts from minor landslides and

slumping would be reduced from current levels. As such, the potential for landslides would be a less-than-significant impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

Less-than-significant impact.

The Project design includes incorporating excavated materials from the Project Site into the work, thus limiting the net loss of topsoil. Some minor soil erosion may occur during Project construction due to vegetation removal, re-grading levee slopes, and RSP placement. However, BMPs included as part of the SWPPP for the Project would be implemented to manage erosion and any loss of topsoil during construction-related activities (see Section 4.10.2, Hydrology and Water Quality). Soil erosion impacts would be reduced to a less than significant impact with implementation of BMPs and a SWPPP.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒

No impact.

The Project is designed to stabilize and improve existing eroding and unstable levee and channel banks. In addition, no permanent structures would be constructed under the Project. Therefore, the Project would not put the population at risk of adverse impacts associated with landslides, lateral spreading, subsidence, liquefaction, or collapse. Therefore, there would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒

No impact.

No permanent structures would be constructed under the Project. Therefore, the Project would not put the population at risk of adverse impacts associated with any expansive soils in the area. Therefore, there would be **no impact.**

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

No impact.

No permanent structures would be constructed under the Project. Therefore, sewage disposal would not be required for this Project. Therefore, there would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Less than significant impact with mitigation incorporated.

The paleontological assessment conducted for the Project found that the KLRC cuts through Holocene alluvium and Holocene basin deposits, which are both too young to be fossil-containing and, therefore, have no paleontological sensitivity or potential. Because all Holocene deposits are not fossil-containing due to their recent age, the records search performed on UCMP database focused on the late Pleistocene deposits that presumably lie below them. No vertebrate localities in Yolo or Sacramento counties are within 10 miles of the KLRC. Although paleontological resources sites were not identified in the Project Area, there is the possibility that unanticipated paleontological resources will be encountered during ground-disturbing Project-related activities requiring mitigation. Therefore, this impact is less than significant with mitigation incorporated. As such, mitigation measure GEO-1 is included to reduce impacts on unknown paleontological resources to a less than significant level.

4.7.4 Mitigation Measures

4.7.4.1 GEO-1: Discovery of Unanticipated Paleontological Resources

If paleontological or other geologically sensitive resources are identified during any phase of Project development, the construction manager shall cease operation at the site of the discovery and immediately notify KLRDD. KLRDD shall retain a qualified paleontologist to provide an evaluation of the find and to prescribe mitigation measures to reduce impacts to a less-than-significant level. In considering any

suggested mitigation proposed by the consulting paleontologist, the KLRDD shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, Project design, costs, land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the Project Site while mitigation for paleontological resources is carried out.

Timing/Implementation: During project construction.

Monitoring/Enforcement: KLRDD and the Project construction lead.

4.8 Greenhouse Gas Emissions

4.8.1 Environmental Setting

GHG emissions are released as byproducts of fossil fuel combustion, waste disposal, energy use, land use changes, and other human activities. This release of gases, such as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and chlorofluorocarbons, creates a blanket around the earth that allows light to pass through but traps heat at the surface, preventing its escape into space. While this is a naturally occurring process known as the greenhouse effect, human activities have accelerated the generation of GHGs beyond natural levels. The overabundance of GHGs in the atmosphere has led to an unexpected warming of the earth and has the potential to severely impact the earth's climate system.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e). Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

The local air quality agency regulating the SVAB is the YSAQMD, the regional air pollution control officer for the Project Area. The Appendix G thresholds for GHGs do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines Section 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 CCR15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change." (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines § 15130(f)). As a note, the CEQA Guidelines were amended in response to SB 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines Section 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The YSAQMD has not yet adopted a GHG significance threshold. Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). Thus, in the absence of any GHG emissions significance thresholds, the projected emissions are compared to the GHG thresholds recommended by the Sacramento Metropolitan Air Quality Management District (SMAQMD), the air pollution control officer for Sacramento County. The SMAQMD threshold of 1,100 metric tons of CO_2e annually for evaluating

Project emissions from implementation activities is considered appropriate for the purposes of this analysis due to the proximities of Sacramento and Yolo counties, the similarities between both geomorphic and urban patterns of the two neighboring air district jurisdictions, and given that they are both located in the SVAB. Once implementation of the Project is complete, it would not be a source of GHG emissions.

For the purposes of this analysis, the SMAQMD bright-line numeric threshold of 1,100 metric tons annually is employed to provide a comparison of Project construction GHG emissions.

In Center for Biological Diversity v. Department of Fish and Wildlife (2015) 62 Cal. 4th 2014, 213, 221, 227, following its review of various potential GHG thresholds proposed in an academic project [Crockett, Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World (July 2011), 4 Golden Gate U. Envtl. L. J. 203], the California Supreme Court identified the use of numeric bright-line thresholds as a potential pathway for compliance with CEQA GHG requirements. The Project found numeric bright line thresholds designed to determine when small projects were so small as to not cause a cumulatively considerable impact on global climate change was consistent with CEQA. Specifically, PRC Section 21003(f) provides it is a policy of the state that "[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." The Supreme Court-reviewed project noted, "[s]ubjecting the smallest projects to the full panoply of CEQA requirements, even though the public benefit would be minimal, would not be consistent with implementing the statute in the most efficient, expeditious manner. Nor would it be consistent with applying lead agencies' scarce resources toward mitigating actual significant climate change impacts." (Crockett, Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World (July 2011), 4 Golden Gate U. Envtl. L. J. 203, 221, 227.)

4.8.2 Regulatory Framework

4.8.2.1 State

Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed AB 32 (Health and Safety Code Section 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires CARB to design and implement feasible

and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions).

AB 32 requires the updating of the Scoping Plan at least every five years. The latest update, the 2017 Scoping Plan Update, addresses the 2030 target established by SB 32 as discussed below and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. The key programs that the Scoping Plan Update build on include increasing the use of renewable energy in the state, the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and reduction of methane emissions from agricultural and other wastes.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include § 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the state's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

Senate Bill 100 of 2018

In 2018, SB 100 was signed by Governor Brown, codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 RPS.

Phase I and 2 Heavy-Duty Vehicle GHG Standards

CARB has adopted a new regulation for GHG emissions from heavy-duty trucks and engines sold in California. It establishes GHG emission limits on truck and engine manufacturers and harmonizes with the USEPA rule for new trucks and engines nationally. Existing heavy-duty truck vehicle regulations in California include engine criteria emission standards, tractor-trailer GHG requirements to implement SmartWay strategies (i.e., the Heavy-Duty Tractor-Trailer Greenhouse Gas Regulation), and in-use fleet retrofit requirements, such as the Truck and Bus Regulation. In September 2011, the USEPA adopted their new rule for heavy-duty trucks and engines. The USEPA rule has compliance requirements for new compression and spark ignition engines, as well as trucks from Class 2b through Class 8. Compliance requirements begin with model year 2014 with stringency levels increasing through model year 2018. The rule organizes truck compliance into three groupings, which include a) heavy-duty pickups and vans; b) vocational vehicles; and c) combination tractors. The USEPA rule does not regulate trailers. CARB staff has worked jointly with the USEPA and the National Highway Traffic Safety Administration on the next phase of federal GHG emission standards for medium-duty trucks and heavy-duty truck vehicles, called federal Phase 2. The federal Phase 2 standards were built on the improvements in engine and vehicle efficiency required by the Phase 1 emission standards and represent a significant opportunity to achieve further GHG reductions for 2018 and later model year heavy-duty truck vehicles, including trailers. In February 2019, the Office of Administrative Law approved the Phase 2 Heavy-Duty Vehicle GHG Standards that became effective April 1, 2019. The Phase 2 GHG standards are needed to offset projected vehicle miles traveled (VMT) growth and keep heavy-duty truck CO_2 emissions declining. The federal Phase 2 standards

establish for the first time, federal emissions requirements for trailers hauled by heavy-duty tractors. The federal Phase 2 standards are more technology-forcing than the federal Phase 1 standards, requiring manufacturers to improve existing technologies or develop new technologies to meet the standards. The federal Phase 2 standards for tractors, vocational vehicles, and heavy-duty pick-up trucks and vans would be phased-in from 2021-2027, additionally for trailers, the standards are phased-in from 2018 (2020 in California) through 2027.

4.8.2.2 Local

Sacramento Area Council of Government Metropolitan Transportation Plan/Sustainable Communities Strategy

The Sacramento Area Council of Government's (SACOG) Metropolitan Transportation Plan/Sustainable Communities Strategy 2020 (MTP/SCS) is the latest update of a long-range policy and planning program that establishes GHG emissions goals for automobiles and light-duty trucks for the year 2035, and thus establishes an overall GHG target for the region beyond 2020 applicable to these subsectors of the transportation sector. CARB assigned SACOG a 19 percent GHG reduction target from 2005 levels by 2035. The GHG reduction target is the percent reduction in passenger vehicle GHG emission per capita, compared to year 2005. This change represents a reduction from just over 23 pounds per capita on a given weekday in 2005 to just under 19 pounds by 2035 (SACOG 2020).

Yolo-Solano Air Quality Management District

The local air quality agency regulating the SVAB is the YSAQMD, the regional air pollution control officer for the Project Area. The YSAQMD has primary responsibility for developing and implementing rules and regulations to maintain the NAAQS and attain the CAAQS, permitting new or modified sources, developing air quality management plans, and adopting and enforcing air pollution regulations for all projects in the SVAB. The AB 32 Scoping Plan does not specify an explicit role for local air districts with respect to implementing statewide GHG reduction strategies, but it does state that CARB will work actively with air districts in coordinating emissions reporting, encouraging and coordinating GHG reductions, and providing technical assistance in quantifying reductions. The ability of air districts to control emissions (both criteria pollutants and GHGs) is provided primarily through permitting, but also via their role as a CEQA lead or commenting agency, the establishment of CEQA thresholds, and the development of analytical requirements for CEQA documents.

County of Yolo 2030 Countywide General Plan.

The following goals and policies of the Yolo County 2030 Countywide General Plan- Conservation and Open Space Element (County of Yolo 2009) are applicable to the Project:

GOAL CO-8 Climate Change. Reduce GHG emissions and plan for adaptation to the future consequences of global climate change.

Policy CO-8.1 Assess current GHG emission levels and adopt strategies based on scientific analysis to reduce global climate change impacts.

Policy CO-8.2 Use the development review process to achieve measurable reductions in GHG emissions.

Action CO-A121 Require new development to incorporate designs and/or programs to reduce travel demand and vehicle emissions. (Policy CO-8.2, Policy CO-8.4).

4.8.3 Greenhouse Gas Emissions (VIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐

Less-than-significant impact.

4.8.3.1 Project Implementation Greenhouse Gas Emissions

Activities associated with the implementation of the Project that would generate GHGs include worker commute trips, haul trucks carrying supplies and materials to and from the Project Site, and off-road construction equipment (e.g., dozers, loaders, excavators).

Project construction activities were modeled starting in March 2022 and lasting approximately four months. It is noted that the Project would be implemented in phases over the next 10 years as erosion areas are identified and funding becomes available. Each phase would have similar construction equipment, activities, and duration. As such, Table 4.8-1 presents only one year of predicted maximum construction-generated emissions for a conservative analysis. Construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency, combined with state regulations limiting engine idling times, would further reduce the amount of implementation related GHG emissions for future years of the Project.

Table 4.8-1 illustrates the GHG emissions that would result from implementation of the Project.

Table 4.8-1. Implementation-Related GHG Emissions

Emissions Source	CO_2e (Metric Tons/Year)
Implementation 2022	141
Potentially Significant Impact Threshold	*1,100*
Exceed Significance Threshold?	**No**

Source: CalEEMod version 2020.4.0. Refer to Appendix A for Model Data Outputs

As shown in Table 4.8-1, Project construction would not result in the exceedance of 1,100 metric tons of CO_2e during Project implementation. Once implementation is complete, the generation of these GHG emissions would cease. A **less than significant impact** would occur

4.8.3.2 Post-Implementation Greenhouse Gas Emissions

The Proposed Project would not include the provision of new permanent stationary or mobile sources of emissions and, therefore, by its very nature, would not generate quantifiable GHG emissions. Therefore, no impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Less-than-significant impact.

The Yolo County Climate Action Plan (CAP) commits the county to reduce GHG emissions to 1990 levels by 2020, 27 percent below 1990 levels by 2030, 53 percent below 1990 levels by 2040, and 80 percent below 1990 levels by 2050. Additionally, California promulgates several mandates and goals to reduce statewide GHG emissions, including the goal to reduce statewide GHG emissions to 40 percent below 1990 levels by the year 2030 and 80 percent below 1990 levels by the year 2050 (SB 32). The Proposed Project is subject to compliance with the Yolo County CAP. As discussed previously, the Proposed Project, during implementation, would generate GHG emissions that would not surpass GHG significance thresholds,. As such, a less than significant impact would occur.

4.8.4 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.9 Hazards and Hazardous Materials

4.9.1 Environmental Setting

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined by the California Health and Safety Code, § 25501 as follows:

> "Hazardous material" means any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

A hazardous material is defined in Title 22, Section 662601.10, of the CCR as follows:

> A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.

The release of hazardous materials into the environment could potentially contaminate soils, surface water, and groundwater supplies.

The Yolo County Community Services Department Environmental Health Division (Environmental Health) manages the regulation and enforcement of the most hazardous materials in Yolo County. Environmental Health is charged with the responsibility of enforcement of pertinent California health laws, rules, and regulations, and is responsible for responding to incidents involving any release or threatened release of hazardous materials. Environmental Health programs and services strive to prevent human injury and illness and promote well-being by identifying and evaluating environmental sources and hazardous agents; and limiting exposures to hazardous physical, chemical, and biological agents in air, soil, food, and other environmental media or settings that may adversely affect human health. Environmental Health is responsible for requiring all business that use hazardous materials to comply with the state-required hazardous materials business plan submittal and registration with the California Environmental Reporting System. Requirements and recommendations from Environmental Health are presented through the land use development process to mitigate or prevent any foreseeable health hazards or environmental degradation in the areas of hazardous materials and waste, solid waste, water supply, sewage disposal, vector control, food, housing, and recreational health.

ECORP searched the California Department of Toxic Substances Control's (DTSC) EnviroStor online database for listed hazardous material sites within one-half -mile radius of the Project Area and found no active sites. ECORP searched the State Water Resources Control Board's (SWRCB) GeoTracker online database for hazardous materials sites within one-half mile of the Project Area and found one open case:

- Wallace Ranch Property (SL0611346244) at CR 116, approximately 2,000 feet east of the northeastern portion of the Project Site. This open Cleanup Program Site case is listed as of July 13, 2010, for a reported diesel fuel leak. Cleanup Program Sites: includes all "non-federally owned" sites that are regulated under the SWRCB's Site Cleanup Program and/or similar programs conducted by each of the nine RWQCBs. No cleanup actions are listed for this site on GeoTracker.

The Project Site is in a predominantly agricultural and rural area of unincorporated Yolo County. Eight wastewater stabilization ponds, operated by the Knights Landing Community Services District (KLCSD) as part of their wastewater treatment facility, are located on 20 acres just south of the community of Knights Landing adjacent to the eastern KLRC levee. One light industrial agricultural equipment storge facility is located at the southwestern corner of the SR 113 bridge crossing. Neither of these facilities is listed as a hazardous materials storage or release site on EnviroStor or GeoTracker.

4.9.1.1 Regulatory Framework

Federal, State, And Local Regulations

Many agencies regulate hazardous substances. At the federal level, the principal agency regulating the generation, transport and disposal of hazardous waste is the USEPA, under the authority of the Resource Conservation and Recovery Act (RCRA). The USEPA regulates hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). California regulations governing hazardous materials are as stringent as (and in some cases, more stringent than) federal regulations. The state has been granted primacy (primary responsibility for oversight) by the USEPA to administer and enforce hazardous waste management programs. State regulations also have detailed planning and management requirements to ensure that hazardous materials are handled, stored, and disposed of properly to reduce human health and environmental risks. California regulations pertaining to hazardous waste management are published in the CCR, previously called the California Administrative Code. The CCR is updated annually and incorporates all legislation and final regulations enacted during the year, as well as specifying the agencies responsible for enforcing the various regulations.

Resource Conservation and Recovery Act

The RCRA of 1976 (substantially amended in 1984), administered by the USEPA, is the principal federal legislation regulating hazardous waste. The RCRA imposes reporting, permitting, and operational control requirements on businesses or individuals that generate, treat, store, or dispose of hazardous materials or hazardous waste. The RCRA is implemented by Title 40 of the CFR. The 1984 amendments to the RCRA involve stringent monitoring of landfills and underground storage tanks for hazardous materials and hazardous wastes.

Comprehensive Environmental Response, Compensation and Liability Act

In response to the need to clean up hazardous waste sites created before implementation of the RCRA, Congress enacted CERCLA in 1980. CERCLA is commonly referred to as Superfund. Subsequently, abandoned hazardous waste sites have to be inspected, cleaned up, and disposed of properly.

Superfund Amendments and Reauthorization Act

The risk of exposure to hazardous waste was addressed in RCRA, CERCLA, and the Superfund Amendments and Reauthorization Act of 1986. As a result of the Superfund Amendments and Reauthorization Act, the Occupational Safety and Health Administration (OSHA) published hazardous waste cleanup regulations in 29 CFR 1910.120.

Department of Toxic Substances Control

22 CCR gives the DTSC responsibility for regulating hazardous waste management at the state level. The DTSC regulates the treatment, storage, and disposal of hazardous waste in accordance with 22 CCR and the RCRA. The DTSC administers the state and federal Superfunds for cleanup of major hazardous waste contamination sites. Under Government Code Section 65962.5, both the DTSC and the SWRCB are

required to maintain lists of sites known to have hazardous substances present in the environment. Both agencies maintain up-to-date lists on their website (DTSC 2021).

Regional Water Quality Control Board

23 CCR charges the nine RWQCBs with responsibility for overseeing water quality control. The RWQCBs are responsible for protecting actual or potential beneficial uses of water, including municipal, industrial, and agricultural water supplies and recreation. Each RWQCB has authority to supervise hazardous waste cleanup at sites referred by local agencies and in cases where water quality is affected or threatened. Either the DTSC or the RWQCB may be responsible for cleanup of sites of significant contamination by hazardous wastes. The two agencies often work together to ensure that their requirements are consistent and are implemented as intended.

California Occupational Safety and Health Administration

Health and safety regulations applying to the investigation and cleanup of sites contaminated with hazardous waste are enforced by the California Occupational Safety and Health Administration under 8 CCR and the adopted federal regulations (29 CFR 1910).

Yolo County Community Services Department Environmental Health Division

Environmental Health regulates the use, storage and disposal of hazardous materials in Yolo County by issuing permits, monitoring regulatory compliance, investigating complaints, and other enforcement activities. Acting as the California Unified Program Agency, Environmental Health oversees remediation of certain contaminated sites resulting from leaking underground storage tanks.

4.9.2 Hazards and Hazardous Materials (IX) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐

Less than significant with mitigation incorporated

The Project would involve the temporary use and transport of fuels, lubricating fluids, and oil for construction equipment and a small motorboat that have the potential to result in minor spills. However, implementation of standard BMPs for management of hazardous materials during construction, combined with compliance with county, state, and federal regulations, as well as mitigation measure HAZ-1 will ensure that the potential risk of spills and adverse impacts on the environment is minimized. Therefore, impacts associated with hazardous materials use would be less than significant with mitigation incorporated.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☒	☐

Less-than-significant impact.

Hazardous materials that would be used during construction of the Proposed Project would include diesel fuel, oil, and gasoline. Routine use of these materials is discussed under Impact 4.9.2(a) above. No hazardous materials would be stored or used at the Project Site after construction. Federal and state laws regulate the handling, storage, and transport of these and other hazardous materials, as well as the mechanisms to respond and clean up any spills along local and regional roadways or levees. Any use of hazardous materials would require the hazardous materials to be utilized, stored, and transported pursuant to state and federal safety regulations and adhere to General Plan policies and actions regarding hazardous materials. Therefore, the Project would have a less than significant impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

No impact.

There are no schools within a 0.25 mile of the Project Site. The nearest school is Science and Technology Academy at Knights Landing, a public charter school located in the community of Knights Landing, approximately 0.45 mile east of the Project Site. Therefore, no impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☒	☐

Less-than-significant impact.

A query of the SWRCB's GeoTracker database indicates that there is one open hazardous waste site, Wallace Ranch Property on CR 116 in Knights Landing, located approximately 0.33 mile east of the northern end of the Project Site (SWRCB 2021). GeoTracker indicates that this is an open Site Assessment Site as of July 13, 2010, due to a reported diesel fuel leak. The database indicates no cleanup actions have been performed. ECORP attempted to contact the Yolo County Environmental Health caseworker listed in GeoTracker to ascertain the current status of this listed hazardous site, but to date has not received any information. Otherwise, there are no other sites compiled pursuant to Government Code 65962.5 on or near the Project Site (DTSC 2020b). Because there are no reports of offsite migration of contaminants from the Wallace Ranch Property site, this site's distance from the Project Site, and the fact that Project excavation depths (maximum 5 feet below ground surface) are not expected to reach groundwater levels, the potential for the Project to affect, or be affected by, this nearby hazardous waste site or any other sites is low. Therefore, this would be a less-than-significant impact.

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

No impact.

The Project Site is within the Sacramento International Airport Influence Area – Referral Area 2, according to the Sacramento International Airport Land Use Compatibility Plan (Mead & Hunt et. al, 2013). However, Referral Area 2 in the Airport Land Use Compatibility Plan indicates locations where airspace protection (other than wildlife hazards) and/or overflight are concerns, but not noise and safety. The Sunrise Dusters Airport, located approximately 2 miles north of the Project Site, is privately owned. Thus, there is no impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐

Less-than-significant impact.

The Project is proposing to repair eroded areas along the KLRC levees to decrease flood risk. Most Project work would occur on property that is not accessible to the general public or any businesses. Project construction would occur in phases over a 10-year period. Each Project phase will require heavy

equipment and RSP be delivered to the Project Site via local roadways such as SR 113, CR102, and CR16 that could be used as emergency evacuation routes. Project truck trip assumptions for RSP Hauling listed in Section 2.3.2 are 32 daily dump truck round trips (64 total trips). This relatively low quantity of daily RSP-hauling truck trips, plus occasional and sporadic heavy duty truck trips for delivering heavy equipment and disposal of removed vegetation from the Project Site, would not result in significant traffic delays or physically interfere with the Yolo County Emergency Operations Plan or the Yolo Operational Area Multi-Hazard Mitigation Plan. Because Project construction and operations would be primarily restricted to undeveloped and inaccessible parcels, except for temporary traffic delays for truck access, the Project would not physically interfere with any emergency response or evacuation plans, and impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

Less-than-significant impact.

The Project would be conducted entirely on KLRDD-controlled land and would involve the use of heavy equipment, including a water truck for dust control. Existing residential and commercial structures are located in the community of Knights Landing near the northern end of the Project Area, while the majority of the land use and vegetation surrounding the Project is agricultural row crops. As discussed in Section 4.20 Wildfire, the Project Site is not located in or near state responsibility areas (SRA), or lands classified as very high fire hazard severity zones (FHSZ). According to the FHSZs in Local Responsibility Area map published by California Department of Forestry and Fire Protection (CAL FIRE 2007), the Project Area is not in any local or state fire hazard severity zone, and the nearest High FHSZs are approximately 20 miles to the east, in the Capay Hills. Although the Project Site does contain some heavily wooded riparian areas along waterside levee banks, and grasslands and bushes within the KLRC floodplain between the levees, is it not surrounded by wildlands or forest, limiting fire spread.

Because the majority of the Project Site is near a perennial body of water, is surrounded mostly by non-flammable vegetation, and could suppress any small grass fires by using the onsite water truck or by the Knights Landing volunteer Fire Department, the risk of injury from wildfires would be less than significant.

4.9.3 Mitigation Measures

4.9.3.1 HAZ-1: Hazardous Materials Management

Vehicles shall be moved away from the KLRC and any waters of the U.S. or state prior to refueling and lubrication, as well as repairs if feasible. Staging and storage areas for equipment, materials, fuels, lubricants, and solvents shall be located away from the top of bank and riparian areas. Stationary equipment, such as motors, pumps, generators, compressors and welders, located within or adjacent to

waters of the state shall be positioned over drip-pans. Debris, rubbish, oil, gasoline or diesel fuel, or other petroleum products, or any other substances which could be hazardous to aquatic life resulting from Project activities shall be prevented from contaminating the soil and/or entering waters of the state. Absorbent materials designated for spill containment shall be used for all activities performed in or within 50 feet of a watercourse that involve use of hazardous materials to be used for spill response and cleanup in the event of an accidental spill.

Timing/Implementation: *This measure shall be printed on construction plan sets and implemented at all times during construction.*

Monitoring/Enforcement: *KLRDD and Project construction lead.*

4.10 Hydrology and Water Quality

4.10.1 Environmental Setting

4.10.1.1 Regional Hydrology

Surface Water

The Project Area is located in the greater Sacramento River hydrologic region. The Sacramento River hydrologic region covers approximately 17.4 million acres (27,200 square miles). The region includes all or large portions of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Sacramento, El Dorado, Yolo, Solano, Lake, and Napa counties. Small areas of Alpine and Amador counties are also within the region. Geographically, the region extends south from the Modoc Plateau and Cascade Range at the Oregon border, to the Sacramento-San Joaquin Delta (DWR 2006).

The Project Area is located within boundaries of the Sacramento Valley Subregion, which is part of the Sacramento River Watershed. The Sacramento Valley represents that portion of the Sacramento River Hydrologic Region starting at Shasta Lake and Redding in the north and extending 250 miles south to Sacramento and the Delta. The watershed is 5,500 square miles in area and is characterized by the agricultural working landscape that lies between the foothills of the Sierra Nevada on the east and the Coast Ranges on the west. flows downstream of the dam are regulated and typically are lower in the winter season (when releases from the dam are reduced for flood protection) and higher in the summer (when water is being released for downstream irrigation needs). The Sacramento Valley can be broadly characterized as a flow-through system, in that most of the water not consumed for irrigation or other purposes eventually returns to the river via various tributaries or percolates to groundwater that recharges local aquifers. Winter flood flows in the valley still occur and are a major management issue. From Butte City downstream, flooding in the Sacramento River is controlled by an elaborate system of levees and bypasses. When river flows reach a certain height, water spills into the Colusa, Sutter, and Yolo Bypass channels in order to minimize risk of flooding to adjacent agricultural lands and major urban centers (including the city of Sacramento) (SRWP 2010).

Groundwater

The DWR manages and monitors groundwater in California. The Project Site is within the Sacramento Valley – Yolo Subbasin, (basin number 5-021.67) of the Sacramento Valley Hydrologic Region (DWR 2006) that includes the majority of Yolo County. Stream percolation, deep percolation of rainwater, and percolation of irrigation water are the principal sources of groundwater recharge in the Sacramento Valley. It is estimated that groundwater storage for all of Yolo County, between 20 feet below the surface and 420 feet below the surface, is 14,038,000 acre-feet (LSA 2009). The Yolo County Subbasin is further divided into smaller subbasins. The Project is within the Sacramento River North Yolo County subbasin, which has a very slow to moderate infiltration rate in the Project Area (LSA 2009).

4.10.1.2 Site Hydrology and Onsite Drainage

The KLRC runs along the western side of the Knights Landing Basin and receives water flows from the Colusa Basin Drain at its northern end which collects streams and creeks originating in the Coast Range along with local drainage from northwest of the Project area. At the south end of the Colusa Basin Drain, flood waters pool at the Knights Landing Ridge and flow through the KLRC into the Yolo Bypass. On the north side of the town of Knights Landing, the Knights Landing Outfall Gates and channel allow water to pass between the Colusa Basin Drain and the Sacramento River to allow controlled flow between the two noted waterways (Yolo County 2019).

During flood conditions, flows from the Sacramento River enter the Yolo Bypass over the fixed Fremont Weir. During low stages on the Sacramento River, flows from the Colusa Trough Drainage Canal are discharged through the KLOGs into the Sacramento River. When the stage of the Sacramento River is high, the gates are closed, and flows from Colusa Trough Drainage Canal are conveyed through KLRC into the Yolo Bypass (Yolo County 2019).

The perennial KLRC channel primarily consists of open water, with large patches of emergent vegetation along the banks, below the OHWM. Four constructed agricultural ditches are present along the landside levee toe in areas of the Project Area adjacent to agricultural fields. The ditches exhibit a bed and bank and OHWM and appear to have been constructed to support agriculture irrigation or drainage (ECORP 2021a). Stormwater would percolate into the ground or flow into the KLRC or one of the agricultural ditches. There are no other waterbodies in the Project Area.

Flood Hazard

The Project Area is mapped within the 100-year floodplain (flood hazard zone A) by FEMA (Flood Insurance Rate Map [FIRM] 06113C0315G effective June 18, 2010 (northern portion), 06113C0455H effective May 16, 2012 (small portion near CR16 crossing), and FIRM 06113C0460H effective May 16, 2012, (southern portion) (FEMA 2021).

Water Quality

The California Water Code (Section 13240), supported by Section 303 of the federal CWA, requires the preparation and adoption of water quality control plans (Basin Plans) to establish water quality standards (i.e., water quality objectives) for the protection of the designated beneficial uses of navigable waters

(RWQCB 2018). California's basin plans also establish water quality standards for groundwater in addition to surface water (RWQCB 2018). The Porter-Cologne Water Quality Control Act requires the RWQCB to establish water quality objectives, which are defined as "...the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area" (RWQCB 2018). The federal government (USEPA) has also established recommended aquatic water quality criteria for determining when water has become unsafe for people and wildlife.

The Project Site is covered under the Basin Plan for the Sacramento River Basin and the San Joaquin River Basin (RWQCB 2018). The Sacramento River Basin covers 27,210 square miles and includes the entire area drained by the Sacramento River (RWQCB 2018). The principal streams are the Sacramento River and its larger tributaries: the Pit, Feather, Yuba, Bear, and American rivers to the east; and Cottonwood, Stony, Cache, and Putah creeks to the west (RWQCB 2018). Major reservoirs and lakes include Shasta, Oroville, Folsom, Clear Lake, and Lake Berryessa. The Sacramento River Basin and the San Joaquin River Basin Plan identifies the following beneficial uses for the for the Yolo Bypass, the closest downstream receiving water for the Project Area: Agriculture (Irrigation and Stock Watering), Recreation (Contact and Other Non-Contact), Fresh Water Habitat (Warm and Cold), Migration (Warm and Cold), Spawning (Warm, and Wildlife Habitat. Water quality objectives for a variety of pollutants are contained in the Basin Plan for the protection of these beneficial uses (RWQCB 2018).

The CWA Section 303(d) establishes the total maximum daily load (TMDL) process to assist in guiding the application of state water quality standards. Section 303(d) requires states to identify streams in which water quality is impaired (i.e., affected by the presence of pollutants or contaminants) and to establish the TMDL— the maximum quantity of a particular contaminant that a water body can assimilate without experiencing adverse effects. Based on the 2018 California Integrated Report (California State Water Resources Control Board 2020) 303(d) listed impairments for the KLRC include Dissolved Oxygen and salinity, both from unknown sources, with no TMDLs established, but TMDLs completed by 2021.

4.10.2 Regulatory Framework

Relevant federal, state, and local laws and regulations pertaining to the protection of groundwater quality, water and sediment quality, and protection of the public from flooding and other hydrologic hazards are discussed below.

4.10.2.1 Federal

Floodplain Development

FEMA is responsible for determining flood elevations and floodplain boundaries based on USACE studies and approved agency studies. FEMA is also responsible for distributing the FIRMS, which are used in the National Flood Insurance Program. These maps identify the locations of special flood hazard areas.

Clean Water Act

The federal CWA was legislated with the primary purpose of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. The USEPA has delegated responsibility for implementation of portions of the CWA, including water quality control planning and control programs, such as the NPDES Program, to the SWRCB and the RWQCBs.

CWA Section 303(c)(2)(b). Section 303(c)(2)(b) of the CWA requires states to adopt water quality standards for all surface waters of the United States based on the water body's designated beneficial use. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria based upon biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numeric standards. Water quality standards applicable to the Proposed Project are listed in the Basin Plan (RWQCB 2018).

CWA Section 303(d). Section 303(d) of the CWA requires that states develop a list of water bodies that do not meet water quality standards (i.e., impaired water bodies), establish priority rankings for waters on the list, and develop action plans, called TMDLs, to improve water quality.

CWA Section 401. Section 401 of the CWA requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. Therefore, a Water Quality Certification under Section 401 of the CWA must accompany the USACE permit that must be issued for the Project pursuant to Section 10 of the Rivers and Harbors Act.

National Pollutant Discharge Elimination System Program

The CWA prohibits discharging "pollutants" through a "point source" into "Waters of the United States" unless they have an NPDES permit. The permit contains limits on what can be discharged, creates monitoring and reporting requirements, and implements other provisions to ensure that the discharge does not diminish water quality and/or people's health.

Safe Drinking Water Act

The Safe Drinking Water Act was established to protect the quality of drinking water in the U.S. This law focuses on all waters actually or potentially designed for drinking use, whether from above ground or underground sources. Pursuant to this act, legally enforceable standards have been set to protect public health.

National Toxics Rule and California Toxics Rule

In 1992, pursuant to the CWA, USEPA promulgated the National Toxics Rule (NTR) criteria to establish numeric criteria for priority toxic pollutants for California. The NTR established water quality standards for 42 priority pollutants not covered at the time under California's statewide water quality regulations. In May 2000, USEPA issued the California Toxics Rule, which promulgated numeric criteria for additional priority pollutants. The California Toxics Rule documentation (Volume 65, pages 31682–31719 of the

Federal Register [65 FR 31682–31719], May 18, 2000), along with amendments in February 2001, "carried forward" the previously promulgated criteria of the NTR, thereby providing a single document listing of water quality criteria for 126 priority pollutants for California surface waters.

Federal Antidegradation Policy

The federal antidegradation policy is designed to protect existing uses and the level of water quality necessary to protect existing uses. The federal policy directs states to adopt a statewide policy that includes the following primary provisions (40 CFR 131.12):

1. Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.
2. Where the quality of waters exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the state finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the state's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located.
3. Where high-quality waters constitute an outstanding national resource, such as waters of national and state parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

4.10.2.2 State

Porter-Cologne Water Quality Control Act and Waste Discharge Requirements

The Porter-Cologne Water Quality Control Act is California's statutory authority for the protection of water quality. Under the Act, California must adopt water quality policies, plans, and objectives (synonymous with the term "criteria" used by USEPA) that ensure beneficial uses of state waters are reasonably protected. The Porter-Cologne Water Quality Control Act requires the nine RWQCBs to adopt water quality control plans that define the beneficial uses of the water bodies throughout the region to be protected, the water quality objectives necessary for reasonable protection of the beneficial uses, and a program of implementation for achieving the water quality objectives. In addition, the act authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements for discharges of waste to surface waters and land. The Feather and Yuba rivers are within the jurisdiction of the Central Valley RWQCB.

Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin

The *Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin* (Basin Plan) (RWQCB 2018) defines the beneficial uses, water quality objectives, implementation programs, and surveillance and monitoring programs for waters of the Sacramento River and San Joaquin River basins. This Basin Plan contains specific numeric water quality objectives for bacteria, dissolved oxygen, pH, pesticides, electrical conductivity, temperature, turbidity, and trace elements, as well as numerous

narrative water quality objectives, which are applicable to certain water bodies or portions of water bodies.

State Water Resources Control Board Resolution No. 68-16: Statement of Policy with Respect to Maintaining High-Quality Waters in California

The goal of SWRCB Resolution No. 68-16 (*Statement of Policy with Respect to Maintaining High-Quality Waters in California*) is to maintain high-quality waters where they exist in the state. Resolution No. 68-16 states, in part:

1. Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the state that any change will be consistent with maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.

2. Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high-quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the state will be maintained.

The SWRCB has interpreted Resolution No. 68-16 to incorporate, and be consistent with, the federal antidegradation policy (RWQCB 2016).

Statewide National Pollutant Discharge Elimination System Storm Water Permit for General Construction Activity

The SWRCB has issued a general NPDES permit for stormwater discharges associated with construction activity of greater than one acre in size—Order 2009-0009-DWQ, as amended by Orders 2010-0014-DWQ and 2012-0006-DWQ (General Construction Permit). The General Construction Permit requires the preparation of a SWPPP that identifies and describes the BMPs to be implemented at construction sites to control pollution from stormwater runoff. Coverage is obtained by submitting an Notice of Intent, risk assessment, post-construction calculations, a site map, the SWPPP, and a signed certification statement by the legally responsible person to the SWRCB prior to construction.

4.10.2.3 Local

County of Yolo 2030 Countywide General Plan

The following General Plan policies and action items would assist in reducing surface water quality impacts of the Project:

Policy CO-5.6 Improve and protect water quality for municipal, agricultural, and environmental uses.

4.10.3 Hydrology and Water Quality (X) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☒	☐	☐

Less-than-significant impact.

Sediment can be suspended in the water during levee repairs, including reconstructing levee slopes, placement of RSP above and below the water line, and riparian vegetation removal. Water quality in KLRC and Yolo Bypass receiving waters may be affected from Project construction activities when contaminants on the sediment particles are either dissolved or resuspended in the water. In-water operations may cause some degradation temporarily to surface waters as concentrations of turbidity, total suspended solids, and other wastes may increase and dissolved oxygen decrease as bank sediments are disturbed in the construction process.

Construction could result in disturbance of more than one acre of land. Thus, compliance with the SWRCB general permit to discharge storm water associated with construction activity could be required. The general permit is known as the SWRCB, Order No. 2009-0009-DWQ (as amended by Orders 2010-0014-DWQ and 2012-006-DWQ), NPDES General Permit No. CAS000002, Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction Activity (General Permit). A Notice of Intent would be required to be submitted for coverage under the General Permit and preparation of a SWPPP would be required.

The SWPPP would need to address any Project-related activities that have the potential to release pollutants, including sediment, in stormwater, such as:

- Excavation work;
- Material stockpiling;
- Waste and soil screening;
- Loading and hauling of waste and construction materials; and
- Winterization of incomplete activities.

The SWPPP must identify the BMPs that would be implemented during construction and the final closure fieldwork to ensure that polluted stormwater runoff does not leave the site. The SWPPP would also need to include a monitoring program to document the effectiveness of the BMPs. Compliance with the SWPPP and implementation of the BMPs would prevent unacceptable degradation of surface water quality.

Section 404 of the CWA establishes a program to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Activities in waters of the U.S. regulated under this program

include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects. Section 404 requires a permit before dredged or fill material may be discharged into waters of the U.S., unless the activity is exempt from Section 404 regulation (e.g., certain farming and forestry activities). The basic premise of the Section 404 program is that no discharge of dredged or fill material may be permitted if: (1) a practicable alternative exists that is less damaging to the aquatic environment or (2) the nation's waters would be significantly degraded. In other words, as a part of the application process for the 404 permit, steps must be shown that have been taken to avoid impacts to wetlands, streams and other aquatic resources; that potential impacts have been minimized; and that compensation will be provided for all remaining unavoidable impacts. A Nationwide Permit pursuant to Title 33 CFR 323.2(d) is required for the Project.

Along with a Nationwide Permit, a CWA Section 401 Water Quality Certification must be obtained from the Central Valley RWQCB prior to initiation of Project activities. A Water Quality Control Plan will be prepared and implemented for the Project as a requirement of the Section 401 Water Quality Certification. The RWQCB would review and approve the Water Quality Control Plan prior to construction, and would require water quality monitoring and sampling for constituents of concern that may include turbidity, settleable solids, dissolved oxygen, and pH during Project construction. The conditions of the Section 401 Water Quality Certification shall also be followed to ensure that applicable constituents of concern meet certain thresholds established by the RWQCB necessary to protect beneficial uses of the KLRC and downstream receiving waters.

Finally, California Fish and Game Code Section 1602 requires any person, state, or local governmental agency, or public utility to notify CDFW prior to beginning any activity that may do one or more of the following:

- Divert or obstruct the natural flow of any river, stream, or lake;
- Change the bed, channel, or bank of any river, stream, or lake;
- Use material from any river, stream, or lake; or
- Deposit or dispose of material into any river, stream, or lake.

All of the permitting requirements discussed above require the identification and implementation of BMPs to reduce the potential for water quality impacts, as necessary. For any in-water work, water quality sampling will be required and BMPs, such as a turbidity curtain or something similar, would likely be required to minimize impacts to fish and water quality downstream. With implementation of the Water Quality Control Plan and other measures required in the Section 401 Water Quality Certification/WDR issued by the RWQCB for the Project, impacts would be reduced to less than significant levels.

Strict permitting compliance, as required through implementation of mitigation measures BIO-15 in Section 4.4 coupled with the use of appropriate BMPs, including those described in mitigation measure BIO-1, would reduce potential water quality impacts during Project activities to a less than significant impact with mitigation incorporated.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐

Less-than-significant impact.

The Project has been initiated to repair eroded areas of levee banks, and to arrest or avoid further streambank erosion that threatens the integrity of the levee system. Although some areas of soil banks will be replaced by more impermeable revetment surface, this change in bank material would not result in the direct decrease of groundwater supplies or recharge. Disposing of removed bank vegetation at either the Woodland Biomass Power, LLC biomass power plant or in a local landfill would not result in or substantially interfere with any potential groundwater recharge at these facilities. While compaction of reconstructed levee soils may result in the inability of rainwater to penetrate the soil, the amount of these soil areas is not of such a size to substantially impede groundwater recharge. As such, the Project would have a less than significant impact on groundwater recharge.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:				
i) result in substantial erosion or siltation on- or off-site;	☐	☒	☐	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☐	☒
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒
iv) impede or redirect flood flows?	☐	☐	☐	☒

i) Less than significant impact with mitigation incorporated.

The Project will repair eroded areas of levee banks, and to arrest or avoid further streambank erosion that threatens the integrity of the levee system. Vegetation removal, grading, and RSP placement during construction could result in substantial temporary erosion and siltation on the site. Once completed, the Project Area would return to its natural state except for a decreased amount of large riparian vegetation on repaired levees to be compliant with the USACE's VFZ requirements for the SRBPP. No structures or paved impervious surfaces would be constructed as a part of the Project. Minor increases in surface water runoff would occur in portions of the levee banks where soils are replaced with RSP.

Strict permitting compliance, as required through implementation of mitigation measure BIO-15, coupled with the use of appropriate BMPs and AMMs described in mitigation measure BIO-1, would reduce potential substantial erosion or siltation onsite or offsite during construction activities to a less than significant impact with mitigation incorporated. In addition, once the Project is completed, the repaired levee banks would result in a decreased risk of erosion or siltation of the water from the levee slopes.

ii) No impact.

The main objective of the Project is to reduce the risk of flooding in the nearby areas by repairing the levees. Therefore, the Project would result in no impacts, and would result in a net reduction in flood hazards in the area.

iii) No impact.

The Project is the repair of existing KLRC levees. The Project would not change the course or direction of the natural drainage of the area. As such, the Project would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite. In addition, storm drainage in the area is provided through natural drainage down the levee banks into KLRC or to adjacent farmland. Four small agricultural drainage ditches at the toe of landward levee slopes could also drain stormwater into adjacent agricultural fields. The Project would not change this drainage. As such, the Project would have **no impact**.

iv) No impact.

The repair of existing levees for erosion control would not impede or redirect flood flows and would decrease the risk of levee breaks that could cause flooding. The Project would have no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐

Less-than-significant impact.

The Project is within a FEMA 100-year Flood Hazard Zone and within a Dam Inundation Zone (LSA 2009). Failure of dams to north or east of Yolo County along the Sacramento River Watershed (Sacramento,

Feather Rivers) would potentially damage farmland in eastern Yolo County, including the Project Area. a catastrophic failure of the Oroville Dam (the largest dam to the north) would result in main channel flood arrival at the northern Yolo County border in approximately 11 hours, and flood waters are predicted to reach Knights Landing in 36 hours with inundation depths expected to be 2 feet to 3 feet (LSA 2009). The risk of inundation of the Project Area from dam failure or a large storm event is low because the annual Project construction period would occur primarily during the dry season. If flood waters were to inundate the Project Area, there would be a low risk that pollutants would be released, because the planned Project equipment and activities are not expected to store or generate large quantities of chemicals and pollutants. Therefore, there would be a less than significant impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☒	☐	☐

Less-than-significant impact.

The KLRC is a part of the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin (RWQCB 2018). This Basin Plan covers the entire area included in the Sacramento and San Joaquin River drainage basins. The Basin Plan provides objectives for the protection of surface and groundwater quality within the Sacramento River Basin. The KLRC levee repairs may result in the potential increase of sediment in the KLRC and Yolo Bypass due to riparian vegetation removal, levee slope grading, and placement of RSP operations. However, increases in sediment during Project construction would be short-term and periodic and would cease upon completion of the Project. Additionally, permit compliance under the biological resources mitigation measures, coupled with the use of appropriate BMPs, as discussed under Item a) previously, would reduce potential water quality impacts during construction activities. As such, the Project would not conflict with or obstruct implementation of Basin Plan goals or objectives. The Project would have a less than significant with mitigation incorporated.

4.10.4 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.11 Land Use and Planning

4.11.1 Environmental Setting

The Project Area includes the east and west levees of the KLRC, which is approximately 6.25 miles long, located in Yolo County, California and is maintained by KLRDD. The KLRC is a human-made leveed drainage channel constructed and completed by 1925 to relieve flooding in the Colusa Basin. It conveys flows from the Colusa Drain at the northern end of the Project to the Yolo Bypass at the southern end.

Flows and water levels within the KLRC are regulated through the KLOG. The entire Project Site has an Agricultural land use designation (Yolo County 2021a).

4.11.1.1 County of Yolo 2030 Countywide General Plan

The County of Yolo 2030 Countywide General Plan was adopted on November 10, 2009 (County of Yolo 2009). The General Plan is the fundamental document governing land use development in the incorporated areas of the county. The Land Use and Community Character Element of the General Plan seeks to preserve and foster the rural character of the county and also establishes goals for regional collaboration and equity, green building standards, sustainable community design and net community benefits from new growth. Growth boundaries have been established for every community and each of the four cities in the county.

The following General Plan Land Use Element policies apply to the Project:

GOAL LU-2 Agricultural Preservation. Preserve farmland and expand opportunities for related business and infrastructure to ensure a strong local agricultural economy. (See the Agriculture and Economic Development Element for a more comprehensive treatment of this issue.)

GOAL CC-1 Preservation of Rural Character. Ensure that the rural character of the county is protected and enhanced, including the unique and distinct character of the unincorporated communities.

Policy CC-1.1 Encourage private landowners of both residential and commercial properties to maintain their property in a way that contributes to the attractive appearance of Yolo County, while recognizing that many of the land uses in the county, including agriculture and light industry, require a variety of on-site structures, equipment, machinery and vehicles in order to operate effectively.

Policy CC-1.17 Existing trees and vegetation and natural landforms along scenic roadways and routes shall be retained to the greatest feasible extent. Landscaping shall be required to enhance scenic qualities and/or screen unsightly views and shall emphasize the use of native plants and habitat restoration to the extent possible. Removal of trees, particularly those with scenic and/or historic value, shall be generally prohibited along the roadway or route.

Policy CC-3.7 In addition to Table LU-10, achieve the following within the Knights Landing Specific Plan growth boundary:

A. Ensure that the downtown area remains the community's primary commercial center.
B. Develop specific and detailed analysis regarding how existing planned residential and commercial growth would impact key issues, including: 1) the loss of prime farmland; 2) levee stability and flood protection; and 3) traffic impacts to State Highway 113 and local roads.
C. 100-year flood protection for all development within the growth boundary.

4.11.2 Land Use and Planning (XI) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒

No impact.

The Project involves levee repair activities that would not block access to any community. No permanent structures would be built. Therefore, there would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☒	☐	☐

Less than significant with mitigation incorporated.

The Project as proposed would not change the Yolo County 2030 Countywide General Plan agricultural land use and zoning. The Project would result in potentially significant impacts on other environmental issue areas that would result in inconsistencies with local plans and policies listed above. However, with implementation of mitigation measures for other issue areas, impacts would be reduced to less than significant levels. Therefore, this impact is less than significant with mitigation incorporated.

4.11.3 Mitigation Measures

Implementation of all mitigation measures for other issue areas would be required.

4.12 Mineral Resources

This section of the document describes the existing conditions in the Project Area, the regulatory framework necessary to evaluate potential impacts on mineral resources from the Project, and potential short-term, long-term, and cumulative impacts that could result from the Project. Impacts associated with the loss of mineral resources are discussed below.

4.12.1 Environmental Setting

Minerals means "any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances, including, but not limited to, coal, peat, and bituminous rock, but excluding geothermal resources, natural gas, and petroleum," according to the Surface Mining and Reclamation Act (SMARA). The extraction of mineral resources in Yolo County has

historically been limited to the extraction of clay, sand, soils, and rock, and natural gas (County of Yolo 2009).

Yolo County contains areas classified by the State Geologist as Mineral Resource Zone (MRZ)-1, MRZ-2, and MRZ-3 for concrete aggregate production. MRZ-1 indicates an area where little likelihood exists for the presence of significant mineral deposits. MRZ-2 indicates areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists. MRZ-3 indicates areas containing mineral deposits, the significance of which requires further evaluation. All of the MRZs in Yolo County are associated with six aggregate mines currently in operation; all located on the stream terraces of Cache Creek within the Capay Valley at least 10 miles west of the Project Area. There are no areas within Yolo County designated by the State Mining and Geology Board to have regional or statewide significance (County of Yolo 2009). The closest active aggregate quarry is the Shriners Sacramento River Mid-Valley Phase III, operated by the DWR, approximately 1.5 mile east of the Project Area (DOC 2016).

According to the DOC, there are approximately 25 gas fields located within Yolo County. Natural gas has been produced from the Dunnigan Hills northwest of Woodland, from the Fairfield Knolls gas field northeast of Winters, and from the Rumsey Hills area east of Rumsey. Natural gas wells have also been established in Clarksburg, Yolo, and Davis. The closest gas field to the Project Area is approximately 1 mile to the east, near the Sacramento River, below the Sutter and Yolo Bypasses (LSA 2009). No natural gas production, storage, or transmission infrastructure or pipelines have been identified within the Project Area.

4.12.2 Regulatory Framework

4.12.2.1 Federal

There are no federal regulations that pertain to mineral resources.

4.12.2.2 State

Surface Mining and Reclamation Act

SMARA regulates the mining activities (PRC Section 2710 et seq. and its regulations at 14 CCR Section 3500 et seq.). Under this Act, the California State Mining and Geology Board provides a comprehensive surface mining and reclamation policy to assure that adverse environmental impacts are minimized and mined lands are reclaimed. SMARA also encourages the production, conservation, and protection of the state's mineral resources.

The purpose of this act is to create and maintain an effective and comprehensive surface mining and reclamation policy with regulation of surface mining operations so as to assure that:

1. adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition which is readily adaptable for alternative land uses;
2. the production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, wildlife, range and forage, and aesthetic enjoyment; and

3. residual hazards to the public health and safety are eliminated. These goals are achieved through land use planning by allowing a jurisdiction to balance the economic benefits of resource reclamation with the need to provide other land uses.

California Geological Survey

The CGS (formally the Division of Mines and Geology) has classified regions of the state according to the presence or absence of significant mineral resources. The land classification is presented in the form of MRZs (DOC 2020c). CGS guidelines for establishing the MRZs are as follows:

- MRZ-1: Areas where available geologic information indicates there is little or no likelihood for presence of significant mineral resources.
- MRZ-2a: Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present. Areas classified MRZ-2a contain discovered mineral deposits as determined by such evidence as drilling records, sample analysis, surface exposure, and mine information. Land included in the MRZ-2a category is of prime importance because it contains known economic mineral deposits.
- MRZ-2b: Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present. Areas classified MRZ-2b contain discovered mineral deposits that are either inferred reserves as determined by limited sample analysis, exposure, and past mining history or are deposits that presently are sub-economic. Further exploration and/or changes in technology or economics could result in upgrading areas classified MRZ-2b to MRZ-2a.
- MRZ-3a: Areas containing known mineral occurrences of undetermined mineral resource significance. Further exploration within these areas could result in the reclassification of specific localities as MRZ-2a or MRZ-2b.
- MRZ-3b: Areas containing inferred mineral occurrences of undetermined mineral resource significance. Land classified MRZ-3b represents areas in geologic settings that appear to be favorable environments for the occurrence of specific mineral deposits. Further exploration could result in the reclassification of all or part of these areas as MRZ-3a or specific localities as MRZ-2a or MRZ-2b.
- MRZ-4: Areas of no known mineral occurrences where geologic information does not rule out the presence or absence of significant mineral resources.

4.12.2.3 Local

Yolo County Code

Chapter 5. Surface Mining Reclamation, in Title 10 of the Yolo County code (known as the Surface Mining Reclamation Ordinance of Yolo County) ensures reclamation of mined lands to minimize the adverse effects of mining on the environment and to protect public health and safety. It requires that reclamation

plans be adapted to site-specific conditions and be designed to reclaim mined areas so as to maximize beneficial uses; in particular, agriculture, wildlife habitat, or recreation.

Yolo County Conservation and Open Space Element

The following is a list of relevant General Plan policies and actions related to mineral resources.

Policy CO-3.1: Encourage the production and conservation of mineral resources, balanced by the consideration of important social values, including recreation, water, wildlife, agriculture, aesthetics, flood control, and other environmental factors.

Policy CO-3.2: Ensure that mineral extraction and reclamation operations are compatible with land uses both onsite and within the surrounding area and are performed in a manner that does not adversely affect the environment.

Policy CO-3.3: Encourage the extraction of natural gas where compatible with both onsite and surrounding land uses, and when performed in a manner that does not adversely affect the environment.

Policy CO-3.4: Within the Delta Primary Zone, ensure compatibility of permitted land use activities with applicable, natural gas policies of the Land Use and Resource Management Plan of the Delta Protection Commission.

4.12.3 Mineral Resources (XII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	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?	☐	☐	☒	☐

Less-than-significant impact.

Project construction would require large amounts of important mineral resources, such as quarry stone used for RSP. As indicated in the Aggregate Sustainability in California Map Sheet 52 (Clinkenbeard & Guys 2018), the Project Area is located in the Sacramento-Fairfield aggregate Production-Consumption (P-C) Region, which includes Yolo County. Although there are numerous permitted aggregate supplies in this P-C Region, as of January 1, 2017, they do not exceed the projected need over the next 50 years (Clinkenbeard & Guys 2018). However, there are substantial amounts of permitted aggregate resources available in nearby P-C Regions and counties to supply the Project needs. For example, permitted reserves are 679 million tons in the Yuba City-Marysville region, 109 million tons in the Sacramento-Fairfield region, 327 million tons in Sacramento County, and 263 million tons in the North San Francisco Bay P-C Region (Clinkenbeard & Guys 2018). The amount of quarry stone and needed for the Project is, therefore, not expected to substantially affect the availability of this mineral resource. Additionally, the Project would be implemented only along leveed river banks—areas in which mineral resource recovery is already

prohibited because such activities would undermine the structural integrity of the levees. Therefore, this impact would be **less than significant**.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

No impact.

Although there is a known local aggregate quarry and a natural gas field within two-mile radius of the Project Area according to the Yolo County General Plan EIR (LSA 2009, DOC 2016), Project ground-disturbing activities would only occur within the levee prisms that are built with non-aggregate fill soils. Therefore, the Project would not disturb or remove any locally important mineral or gas resources and have **no impact** in this area.

4.12.4 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.13 Noise

4.13.1 Environmental Setting

4.13.1.1 Noise Fundamentals

Noise is generally defined as sound that is loud, disagreeable, or unexpected. The selection of a proper noise descriptor for a specific source is dependent on the spatial and temporal distribution, duration, and fluctuation of the noise. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise include the average hourly noise level (in L_{eq}) and the average daily noise levels/community noise equivalent level (in L_{dn}/CNEL). The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL are measures of community noise. Each is applicable to this analysis and defined as follows:

- **Equivalent Noise Level (L_{eq})** is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- **Day-Night Average (L_{dn})** is a 24-hour average L_{eq} with a 10-dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.

- **Community Noise Equivalent Level (CNEL)** is a 24-hour average L_{eq} with a 5-dBA weighting during the hours of 7:00 p.m. to 10:00 p.m. and a 10-dBA weighting added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively.

Noise can be generated by a number of sources, including mobile sources, such as automobiles, trucks and airplanes, and stationary sources, such as construction sites, machinery, and industrial operations. Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB for each doubling of distance from a stationary or point source (USEPA 1971). Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (FHWA 2011). Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed (FHWA 2011).

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60- to 70-dBA range, and high, above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 dBA to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 dBA to 75 dBA) or dense urban or industrial areas (65 dBA to 80 dBA). Regarding increases in dBA, the following relationships should be noted in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived by humans.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference.
- A change in level of at least 5 dBA is required before any noticeable change in community response would be expected. An increase of 5 dBA is typically considered substantial.
- A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Noise Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as hospitals, historic sites, cemeteries, and certain recreation areas are considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses.

The nearest noise-sensitive land uses to the Project Site are residences located on Ridge Cut Road, in the community of Knights Landing, with the closest located approximately 100 feet from the northern Project Site boundary.

4.13.1.2 Vibration Fundamentals

Ground vibration can be measured several ways to quantify the amplitude of vibration produced. This can be through peak particle velocity (PPV) or root mean square velocity. These velocity measurements measure maximum particle at one point or the average of the squared amplitude of the signal, respectively.

Vibration impacts on people can be described as the level of annoyance and can vary depending on an individual's sensitivity. Generally, low-level vibrations may cause window rattling but do not pose any threats to the integrity of buildings or structures.

4.13.1.3 Existing Ambient Noise Environment

The Project Site is located along approximately 6.25 miles of the KLRC canal, on the Sacramento River, just south of the community of Knights Landing in Yolo County. It is surrounded mainly by undeveloped land consisting of levees, canals, drainage basins and flood basins along with agricultural land. The noise environment in the Project Area is impacted by activities taking place on the Sacramento River, agricultural activity and vehicles on adjacent roadways.

4.13.1.4 Existing Ambient Noise Measurements

To quantify existing ambient noise levels in the Project Area, ECORP conducted eight short-term noise measurements on July 23, 2021. The noise measurement sites were representative of typical existing noise exposure within and immediately adjacent to the Project Site during the daytime (see Appendix D for a visual depiction of the Noise Measurement Locations). The 15-minute measurements were taken between 11:33 a.m. and 2:32 p.m. Short-term (L_{eq}) measurements are considered representative of the noise levels throughout the day. The average noise levels and sources of noise measured at each location are listed in Table 4.13-1.

Table 4.13-1. Existing (Baseline) Noise Measurements

Location Number	Location	L_{eq} dBA	L_{min} dBA	L_{max} dBA	Time
1	Cul-de-sac at End of Reed Street; at Property Line Near Levee	**40.4**	33.2	54.9	11:33 a.m. – 11:48 a.m.
2	100 Feet West of South Oak Grove Avenue /SR 113 Intersection; Between Orchard and SR 113	**56.8**	36.0	64.9	11:52 a.m. – 12:07 p.m.
3	70 Feet South of SR 113 Centerline, on Levee Access Driveway	**64.9**	47.7	77.5	12:31 p.m. – 12:46 p.m.
4	130 Feet South of Locust Street/Daniel Street Intersection; Near Property Line of Residence	**48.6**	37.9	70.4	12:10 p.m. – 12:25 p.m.
5	Driveway of Zamora Creek Ranch Estate	**67.7**	39.0	81.1	12:52 p.m. – 1:07 p.m.
6	On Levee, 60 Feet West of Sacramento River, 60 Feet East of E-116B/River Front Road/Levee Intersection	**42.1**	31.2	63.5	2:17 p.m. – 2:32 p.m.
7	100 Feet North of Drainage Canal; 1,000 Feet West of E-16/E-16 Intersection at Gray's Bend	**41.6**	30.7	61.3	1:51 p.m. – 2:06 p.m.
8	On Levee at End of E-17, 100 Feet West of Canal	**35.9**	30.8	52.5	1:20 p.m. – 1:35 p.m.

Source: Measurements were taken by ECORP with a Larson Davis SoundExpert LxT precision sound level meter, which satisfies the American National Standards Institute for general environmental noise measurement instrumentation. Prior to the measurements, the SoundExpert LxT sound level meter was calibrated according to manufacturer specifications with a Larson Davis CAL200 Class I Calibrator. See Appendix D for noise measurement outputs.

As shown in Table 4.13-1, the ambient recorded noise levels range from 35.9 dBA L_{eq} to 67.7 dBA L_{eq} near the Project Site. The most common noise in the Project vicinity is produced by automotive vehicles (e.g., cars, trucks, buses, motorcycles) on area roadways as well as activities taking place on the Sacramento River and agricultural activity at nearby properties.

4.13.2 Regulatory Framework

4.13.2.1 Federal

Occupational Safety and Health Act of 1970

The OSHA regulates onsite noise levels and protects workers from occupational noise exposure. To protect hearing, worker noise exposure is limited to 90 decibels with dBA over an 8-hour work shift (29 Code of Regulations [CFR] 1910.95). Employers are required to develop a hearing conservation program

when employees are exposed to noise levels exceeding 85 dBA. These programs include provision of hearing protection devices and testing employees for hearing loss on a periodic basis.

4.13.2.2 State

State of California General Plan Guidelines

California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land use compatibility criteria. The State of California General Plan Guidelines (State of California 2003), published by the Governor's Office of Planning and Research (OPR), also provides guidance for the acceptability of projects within specific CNEL/Ldn contours. The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

State Office of Planning and Research Noise Element Guidelines

The State OPR Noise Element Guidelines include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The Noise Element Guidelines contain a land-use compatibility table that describes the compatibility of various land uses with a range of environmental noise levels in terms of the CNEL.

4.13.2.3 Local

Yolo County General Plan

The Yolo County General Plan Noise Element (originally adopted in 1976) identified noise sources, such as roadways, rails, and airports, within the county. Noise land use compatibility guidelines listed by the U.S. Department of Housing and Urban Development are included in the Noise Element. The 1983 revision of the General Plan Noise Elements provides general policies but does not establish any noise level standards. The Yolo County does not have a noise ordinance or other noise enforcement code at the present time (County of Yolo 2005).

4.13.3 Noise (XIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐

Less-than-significant impact.

4.13.3.1 Project Implementation Noise

Noise associated with implementation of the Project would be temporary and would vary depending on the nature of the activities being performed. Noise generated would primarily be associated with the operation of off-road equipment for onsite erosion control activities as well as vehicle traffic on area roadways associated with material hauling and worker commutes. The construction noise associated with Project implementation would require the use of heavy-duty equipment and noise from such sources typically occurs intermittently and varies depending on the nature or phase of activities. Noise generated by equipment, including earth movers, material handlers, and portable generators, can reach high levels. Typical operating cycles for these types of equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). During Project implementation, exterior noise levels could negatively affect sensitive land uses in the vicinity of the Project Site.

Nearby noise-sensitive land uses consist of residences located on Ridge Cut Road, in the community of Knights Landing, with the closest located approximately 100 feet distant from the northern Project Site boundary. The County does not promulgate a numeric threshold pertaining to the noise associated with construction. This is due to the fact that construction noise is temporary, short term, intermittent in nature, and would cease on completion of the Project. Furthermore, construction would occur throughout the Project Site and would not be concentrated at one point.

To estimate the worst-case onsite construction noise levels that may occur at the nearest noise-sensitive receptor in the Project vicinity to evaluate the potential health-related effects (physical damage to the ear) from construction noise, the construction equipment noise levels were calculated using the Roadway Noise Construction Model and compared against the construction-related noise level threshold established in the Criteria for a Recommended Standard: Occupational Noise Exposure prepared in 1998 by the National Institute for Occupational Safety and Health (NIOSH). A division of the U.S. Department of Health and Human Services, NIOSH identifies a noise level threshold based on the duration of exposure to the source. The NIOSH construction-related noise level threshold starts at 85 dBA for more than 8 hours per day; for every 3-dBA increase, the exposure time is cut in half. This reduction results in noise level thresholds of 88 dBA for more than 4 hours per day, 92 dBA for more than 1 hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. For the purposes of this analysis, the lowest, more conservative threshold of 85 dBA L_{eq} is used as an acceptable threshold for construction noise at the nearby sensitive receptors.

The anticipated short-term construction noise levels generated for the necessary equipment were calculated using the Roadway Noise Construction Model for erosion control activities anticipated for the Proposed Project. It is acknowledged that the majority of construction equipment is not situated at any one location during construction activities, but rather spread throughout the Project Site and at various distances from sensitive receptors. Therefore, this analysis employs Federal Transit Administration (FTA) guidance for calculating construction noise, which recommends measuring construction noise produced

by all construction equipment operating simultaneously from the center of the Project (FTA 2018), which in this case is approximately 400 feet from the nearest sensitive receptor. The anticipated short-term construction noise levels generated for the necessary equipment is presented in Table 4.13-2.

Table 4.13-2. Construction Average (dBA) Noise Levels at Nearest Receptor- Project Site

Equipment	Estimated Exterior Construction Noise Level at Nearest Residences	Construction Noise Standards (dBA L_{eq})	Exceeds Standards?
Erosion Control Activities			
Excavator (2)	58.7 (each)	*85*	**No**
Bulldozer (1)	59.6	*85*	**No**
Front End Loader (1)	57.1	*85*	**No**
Water Truck (1)	54.4	*85*	**No**
Dump Truck (3)	54.4 (each)	*85*	**No**
Motorboat (1)	62.2	*85*	**No**
Combined Erosion Control Activities Equipment	**67.0**	*85*	**No**

Source: Construction noise levels were calculated by ECORP Consulting using the FHWA Roadway Noise Construction Model (FHWA 2006) and noise reference measurements for motorboats (88 dBA at the source) provided by the U.S. Coast Guard. Refer to Appendix D for Model Data Outputs.

Notes: Construction equipment used during construction derived from information provided by the Project proponent. Consistent with FTA recommendations for calculating construction noise, construction noise was measured from the center of the Project Site (FTA 2018), which is 400 feet from the nearest residence.

L_{eq} = The equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the Leq of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.

As shown in Table 4.13-2, no individual or cumulative piece of construction equipment would exceed the NIOSHA threshold of 85 dBA L_{eq} at the nearest residence during construction activities.

4.13.3.2 Offsite Construction Worker Traffic Noise

Project implementation would result in minimal additional traffic on adjacent roadways over the time that construction occurs. According to the Project proponent, implementation of the Project would result in 42 total daily trips (10 worker trips and 32 dump truck trips). The worker trips would largely occur within two distinct segments of the day, the morning and afternoon, and would be traveling to the staging area for the Project located on the east side of the KLRC within the area identified as the Yolo Bypass. The haul trips would occur intermittently throughout the workday, delivering RSP to eroded areas through the Project Site. As such, it can be assumed that the 42 total daily trips would be distributed over multiple roadways within the Project Area. According to the Caltrans *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (2013), doubling of traffic on a roadway is required to result in an increase of 3 dB (outside of the laboratory, a 3-dBA change is considered a just-perceivable difference). Due to the temporary nature of implementation related activities, the relatively low number of worker trips per day,

and the dispersed nature of worker and haul trips for the Project, its contribution to existing traffic noise during Project implementation would not be perceptible.

As discussed above, construction noise produced as a result of the Project would result in a less-than significant-impact.

4.13.3.3 Post-Project Implementation

The Project is proposing repairs to eroded areas along the KLRC levees. Upon completion of the Project, it would not attract new stationary or mobile sources of noise beyond what is currently experienced. The Proposed Project would have no noise impact once Project implementation is complete. No impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in generation of excessive ground-borne vibration or ground-borne noise levels?	☐	☐	☒	☐

Less-than-significant impact.

4.13.3.4 Implementation-Generated Vibration

Excessive ground-borne vibration impacts result from continuously occurring vibration levels. Increases in ground-borne vibration levels attributable to the Project would be primarily associated with short-term construction-related activities. Construction on the Project Site would have the potential to result in varying degrees of temporary ground-borne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance.

Implementation-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. It is noted that pile drivers would not be necessary during Project construction. Vibration decreases rapidly with distance and it is acknowledged that construction activities would occur throughout the Project Site and would not be concentrated at the point closest to sensitive receptors. Ground-borne vibration levels associated with typical construction equipment at a distance of 25 feet are summarized in Table 4.13-3.

Table 4.13-3. Representative Vibration Source Levels for Construction Equipment

Equipment Type	PPV at 25 Feet (inches per second)
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Hoe Ram	0.089
Jackhammer	0.035
Small Bulldozer/Tractor	0.003
Vibratory Roller	0.210

Source: FTA 2018; Caltrans 2020

The county does not regulate vibrations associated with construction. However, a discussion of construction vibration is included for full disclosure purposes. For comparison purposes, the Caltrans (2020b) recommended standard of 0.2 inch per second PPV with respect to the prevention of structural damage for older residential buildings is used as a threshold. This is also the level at which vibrations may begin to annoy people in buildings. Consistent with FTA recommendations for calculating vibration generated from construction equipment, construction vibration was measured from the center of the Project Site (FTA 2018). The nearest structure of concern to the construction site, with regard to ground-borne vibrations, is located approximately 400 feet from Project Site center in the community of Knights Landing.

Based on the representative vibration levels presented for various construction equipment types in Table 4.13-3 and the construction vibration assessment methodology published by the FTA (2018), it is possible to estimate the potential Project construction vibration levels. The FTA provides the following equation:

$$[PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}]$$

Table 4.13-4 presents the expected Project-related vibration levels at a distance of 400 feet.

Table 4.13-4. Construction Vibration Levels at 400 Feet

Receiver PPV Levels (in/sec)[1]					Peak Vibration	Threshold	Exceed Threshold
Large Bulldozer, Caisson Drilling, & Hoe Ram	Loaded Trucks	Jack-hammer	Small Bulldozer	Vibratory Roller			
0.00139	0.00118	0.0005	0.00004	0.00328	0.00328	*0.2*	**No**

Notes: [1]Based on the Vibration Source Levels of Construction Equipment included on Table 4.13-3 (FTA 2018). Distance to the nearest structure of concern is approximately 400 feet measured from Project Site center.

As shown in Table 4.13-4, vibration as a result of construction activities would not exceed 0.2 PPV at the nearest structure. Thus, Project construction would not exceed the recommended threshold. The impact would be less than significant.

4.13.3.5 Post-Implementation Vibration

Upon completion of the Project, the Project Site would not include the use of any stationary equipment beyond current conditions that would result in excessive ground-borne vibration levels. For this reason, no impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 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?	☐	☐	☐	☒

No impact.

The Project Site southern boundary is located approximately 3.48 miles northwest of the Sacramento International Airport and the Project Site northern boundary is located approximately 2.0 miles south of the privately owned Sunrise Dusters Airport that services single-engine crop-dusting aircraft only. Per Figures HS-9 and HS-10 of the Health and Safety Element of the County's General Plan (2009), the Project Site is located outside of the 70 dBA CNEL contour lines of the Sacramento International Airport. The Project would not expose workers to short-term excessive noise levels during implementation. Thus, no impact would occur with implementation of the Project.

4.13.4 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.14 Population and Housing

4.14.1 Environmental Setting

According to the U.S. Census Bureau (U.S. Census Bureau 2019), which provides estimated population and housing unit demographics by year throughout the state, the estimated population of Knights Landing Census Designated Place was 1,036 in 2019. No housing exists or is planned on the Project Site.

According to Yolo County General Plan (County of Yolo 2009), there are two communities in Yolo County that qualify as "legacy" disadvantaged communities based on a 2010 median household income of less than $46,166 and a housing stock built before 1963. The Knights Landing community is one of these

communities with a community in existence since at least 1939 with a population of 900, and 370 households with a median household income of $45,510 (County of Yolo 2009).

4.14.2 Regulatory Framework

4.14.2.1 Federal

There are no federal regulations that pertain to population and housing relevant to this Project.

4.14.2.2 State

Senate Bill 244

SB 244 requires cities and counties to address the infrastructure and service needs of unincorporated disadvantaged communities in their general plans. SB 244 defines an unincorporated disadvantaged community as a place that meets the following criteria (County of Yolo 2009):

- Contains 10 or more dwelling units in close proximity to one another;
- Is either within a city Sphere of Influence, is an island within a city boundary, or is geographically isolated and has existed for more than 50 years; and
- Has a median household income that is 80 percent or less than the statewide median household income.

For cities and counties, SB 244 requires that before the due date for adoption of the next housing element after January 1, 2012, the general plan land use element must be updated to: identify unincorporated disadvantaged communities; analyze for each identified community the water, wastewater, stormwater drainage, and structural fire protection deficiencies and needs; and identify financial funding alternatives for the extension of services to identified communities.

4.14.2.3 Local

Yolo County Housing Element

The Yolo County Housing Element has identified the Knights Landing community as a disadvantaged community. The Housing Element discusses that the Knights Landing community is in a special flood hazard zone subject to inundation by the 100-year flood (1 percent chance per year) due to the possibility of a levee break. Therefore, the existing levees would need to be improved to be viable for development in the special flood hazard zone.

4.14.3 Population and Housing (XIV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒

No impact.

The Project entails maintenance of existing drainage channel levees for erosion control and would not include any new homes or businesses, nor would it create new permanent employment in the surrounding area that could induce substantial unplanned population growth in neighboring communities and cities. No specific planned development undertakings are dependent on the Project. As such, the Project would not result in a demand for new housing, resulting in no impact. In addition, the Project would reduce the potential for flooding of the Knights Landing community, a disadvantaged community. Therefore, repairs of the levees would result in a net benefit on the potential for development of new housing in Knights Landing.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

No impact.

No persons or residences would be displaced or removed as a result of the Proposed Project; therefore, the Project would have no impact. Repairs of the levees would reduce the risk of displacement of residents during a flood event.

4.14.4 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.15 Public Services

4.15.1 Environmental Setting

Public services include fire protection, police protection, parks and recreation, and schools. Generally, impacts in these areas are related to an increase in population from a residential development. Levels of

service are generally based on a service-to-population ratio, except for fire protection, which is usually based on a response time.

4.15.1.1 Police Services

The Yolo County Sheriff–Coroner Department (Sheriff's Office) provides law enforcement services to the unincorporated areas of Yolo County. The Sheriff's Office is responsible for patrolling the county, administering the county jail and work program, providing security to the Yolo County Court System, providing animal services, and serving as the county coroner. Sheriff Office headquarters is located at 140 Tony Diaz Drive in Woodland (LSA 2009). The Sheriff's Office Patrol Section is maintained under the authority of the Yolo County Sheriff's Office Field Operations Division. Deputies serve the communities of Brooks, Capay, Clarksburg, Dunnigan, Esparto, Guinda, Knights Landing, Madison, Rumsey, Yolo, and Zamora, along with the unincorporated county area. Patrol territory is divided into four geographic zones with designated units assigned to each zone. Deputies answer calls for service, provide presence and support to the public, and represent the Sheriff's Office at community events and meetings, and by participating in area programs. Any traffic complaints, concerns or collisions occurring on state highways within the unincorporated area of Yolo County are handled by the California Highway Patrol.

4.15.1.2 Fire Services

The Knights Landing Fire Department, located at 42115 6th Street in the unincorporated community of Knights Landing, provides volunteer fire protection services, fire suppression, and emergency medical services, and rescue services to the Project Area. It has "automatic aid" agreements with the nearby Dunnigan, Elkhorn, Sutter Basin, and Zamora Fire Protection Districts. The Knights Landing Fire Protection District has 20 volunteer fire fighters and five non-firefighting employees, two fire engines, one grass truck, and one jet boat. The Knights Landing Fire Department is currently able to respond to emergency calls within three to five minutes on average (LSA 2009).

The Sierra-Sacramento Valley Medical Services Agency (SSVEMS) is designated as the local Emergency Management Services (EMS) Agency for Yolo County, and acts as the regional Joint Powers EMS Agency for the counties of Nevada, Placer, Sutter, Yolo and Yuba (LSA 2009). The SSVEMS performs emergency transportation monitoring and related administrative functions in accordance with the Yolo County Ambulance Service and Medical Transportation Ordinance. Other responsibilities include the planning, development, and implementation of all EMS components, including regional trauma system planning. The SSVEMS has partnered with American Medical Response to provide 9-1-1 emergency services throughout Yolo County (LSA 2009). In accordance with federal and state regulations and guidelines, including those administered by the California Emergency Medical Services Authority, the SSVEMS has established a response-time goal for Knights Landing of "within 20 minutes 90 percent of the time". The primary emergency medical facility serving the Project Area is Woodland Memorial Hospital located approximately 16 miles to the southwest.

4.15.1.3 Schools

The Woodland Joint Unified School District boundaries cover the Project Area. The nearest school to the Project Area is Science and Technology Academy at Knights Landing, a K-6 charter school operated by the

Woodland Joint Unified School District, located at 9544 Mill Street in Knights Landing, approximately 0.45 miles east of the northern portion of the Project Area. There are no other schools within 5 miles of the Project Area.

4.15.1.4 Parks

No public parks are adjacent or near the Project Area. The closest public park is Knights Landing Boat Launch and River Access Park located at 9350 State Highway 45 at the junction of the Sacramento River and Sycamore Slough, approximately one-half mile northeast of the SR 113 KLRC Bridge.

4.15.1.5 Other Public Facilities

The Knights Landing Branch of the Yolo County Library, located at 42351 Third Street in Knights Landing and approximately 0.75 mile east of the northern portion of the Project Area, serves the community of Knights Landing and surrounding unincorporated areas of Yolo County (County of Yolo 2021b).

4.15.2 Regulatory Framework

4.15.2.1 Federal

There are no federal regulations that pertain to public services and are relevant to this Project.

4.15.2.2 State

There are no state regulations that pertain to public services and are relevant to this Project.

4.15.2.3 Local

Yolo County Public Facilities and Services Element

Although the Public Facilities and Services Element is not explicitly required by state law, the topics addressed in the Element are integral to the county's overall planning strategy and form an important basis for setting growth and development policy (County of Yolo 2009). State law (Section 65302b) also requires the county to include information on "the general location and extent of existing and proposed… public utilities and facilities." The county has addressed these items in the Public Facilities and Services Element of the General Plan (County of Yolo 2009). Below are the relevant goals and policies of this Element that would be relevant to the Project:

Goal PF-3: Community Parks. Provide access to community and neighbor-hood parks in all unincorporated communities.

Policy PF-4.1: Ensure the provision of appropriate law enforcement service and facilities to serve existing and planned land uses.

GOAL PF-5: Fire and Emergency Medical Services. Support fire and emergency service providers to enhance the protection of life and property.

GOAL PF-6: Schools. Collaborate with educational groups to develop school facilities and programs that serve the evolving needs of current and future residents.

GOAL PF-7: Library Services. Provide library services to meet the changing informational and social needs of each community.

4.15.3 Public Services (XV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☒	☐
Fire Protection?	☐	☐	☒	☐
Police Protection?	☐	☐	☒	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other Public Facilities?	☐	☐	☐	☒

Less-than-significant impact.

4.15.3.1 Fire Protection

Project construction would result in a need for fire protection services to respond to any potential fire or emergency medical service incidents that may occur at the site. However, the Project Site is located in a part of the county that currently receives these services from the Knights Landing Fire Department. The Project would not result in the need for new fire personnel or facilities, as services can adequately be provided by existing personnel out of existing facilities. Therefore, this impact is less than significant.

4.15.3.2 Police Services

Project construction would result in a need for police protection services to respond to any potential incidents that may occur at the site. However, the Project Site is located in a part of the county that currently receives police services from the Yolo County Sheriff-Coroner's Office. The Project would not result in the need for new police personnel or facilities, as services can adequately be provided by existing personnel out of existing facilities. Therefore, this impact is less than significant.

4.15.3.3 Schools

The Project does not propose any housing and would not include any other components that would result in an increased demand for schools. As such, there would be no need for additional facilities to maintain acceptable service ratios for schools. No impact would occur.

4.15.3.4 Parks

The Project does not propose any housing or population that would require additional recreational facilities and would not include any other components that would result in an increased demand for parks. As such, there would be no need for additional facilities to maintain acceptable service ratios for parks. **No impact** would occur.

4.15.3.5 Other Public Facilities

The Project does not propose any housing or population that would require additional demand on other public services, such as libraries or public buildings. As such, there would be no need for additional facilities to maintain acceptable service ratios. No impact would occur.

4.15.4 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.16 Recreation

4.16.1 Environmental Setting

Recreational opportunities are limited in the Project Area. Access to KLRC is controlled by KLRDD and adjacent private landowners, and public access is not allowed. Boats from the connecting Colusa Basin and Yolo Bypass cannot access KLRC due to human-made weirs and flood gates at each end of the Project Area. The KLRC may be used periodically for fishing from the shore. The closest public park is Knights Landing Boat Launch and River Access Park located at 9350 State Highway 45 at the junction of the Sacramento River and Sycamore Slough, approximately one-half mile northeast of the SR 113 KLRC Bridge.

The Yolo County Parks and Resources Department is responsible for implementing plans that guide the management of recreational resources in the county. One of these plans is the Yolo County Parks and Open Space Master Plan. The Parks and Open Space Master Plan (County of Yolo 2006) was adopted by the Board of Supervisors in 2006 and establishes a detailed framework for the management primarily of resource parks and open space recreation in Yolo County. This plan establishes programmatic policies and guidelines for the management, use, and future development of county park facilities through 2025. The plan provides goals and future actions specific to each individual park. In addition, it focuses on key countywide strategies that promote long-term planning with the goal of increasing the overall amount of parkland and open space. It also promotes policies that seek to increase the range and availability of outdoor recreation activities. A primary goal of the plan is to increase the existing inventory of park and

open space, and a related policy is to increase the provision of essential public services, including parking areas, signage, and drinking water, at all existing and future recreation areas.

4.16.2 Regulatory Framework

4.16.2.1 Federal

There are no federal regulations that pertain to recreation and are relevant to this Project.

4.16.2.2 State

There are no state regulations that pertain to recreation and are relevant to this Project.

4.16.2.3 Local

Yolo County Land Use Element

Policy LU-7.2 Support and participate in countywide, regional and other multiagency planning efforts related to housing, tourism, air quality, open space, green infrastructure, recreation, agriculture, habitat conservation, energy, emergency preparedness and flood protection.

Policy LU-7.3 Coordinate with other stakeholder agencies and entities to continue local and regional planning efforts to preserve agriculture, open space and natural resources while meeting housing needs, basic infrastructure and service levels, county economic development goals and county fiscal objectives.

Yolo County Conservation and Open Space Element

Policy CO-1.28 Balance the needs of agriculture with recreation, flood management, and habitat, within the Yolo Bypass.

4.16.3 Recreation (XVI) Materials Checklist

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) 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?	☐	☐	☐	☒

No Impact.

The deterioration of parkland infrastructure is partly related to use level which is driven by the local population and recreation demand. Given that the Project would not result in a significant or direct population increase, the Project would not generate increase recreational facility use that would lead to premature deterioration facilities. Therefore, the Proposed Project would not increase the use of park and recreational facilities resulting in substantial physical deterioration. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒

No impact.

The Project does not include or allow for the creation of recreational facilities. As such, the Proposed Project will have no impact due to construction and expansion of recreational facilities. No impact would result.

4.16.4 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.17 Transportation

This section of the document describes the existing conditions in the Project Area, the regulatory framework necessary to evaluate potential impacts on transportation from the Project, and potential short-term and long-term impacts that could result from the Project. Impacts from VMT generated from the Project and traffic safety are discussed below. Impacts on transit service and on bike paths and trails are also discussed below.

4.17.1 Environmental Setting

4.17.1.1 Roadway System

Roadway classifications for each roadway segment in the Project Area are described in more detail below;

Interstate-5 (I-5) is an important north/south route that in Yolo County primarily provides for the transportation of goods by trucks. Woodland is the primary trucking center for the agricultural and warehousing industry along I-5 and generates high truck traffic during the harvest seasons. From the Sacramento County line to the Colusa County line, I-5 is a four-lane freeway and provides connections to the communities of Dunnigan, Zamora, and Yolo.

State Route 113 serves as an important link for agricultural and commercial traffic to I-5 and Interstate-80. The segment between Davis and Woodland is a four-lane freeway that terminates at I-5. SR 113 continues from I-5 in Woodland as a two-lane conventional highway north to the town of Knights Landing and continues into Sutter County. The SR 113 Transportation Concept Report (Caltrans, May 2000) contains the 20-year improvement concept for SR 113. The concept and ultimate facility for the section between I-5 and the Yolo/Sutter County line is to maintain the existing two-lane conventional highway. The concept Level of Service (LOS) is E for SR 113 through Yolo County. LOS E represents operating conditions at or

near capacity where speeds are reduced to a low but relatively uniform value, freedom to maneuver is difficult, and unstable operation is frequent (LSA 2009).

County Road 102 is a key two-lane county roadway carrying more than 500 p.m. peak hour trips. Major two-lane county roads serve travel that is primarily intra-county rather than of regional or statewide importance. Major two-lane county roads carry traffic between communities and/or other areas of the county, compared with minor two-lane roads which support local traffic. These facilities provide regional network continuity, or may serve through-traffic demand where projected volumes do not warrant a four-lane roadway.

County Roads 16 and 17 are a minor two-lane county roads. They function primarily as a collector facilities. Minor two-lane county roads primarily provide access to adjacent land and travel over relatively short distances. Minor two-lane county roads primarily carry local traffic, as compared with major two-lane roads that carry intra-county traffic.

Caltrans has designated all state and federal highways within Yolo County as truck routes. No county roadways within the unincorporated parts of Yolo County are designated as truck routes (LSA 2009).

4.17.1.2 Proposed Truck Routes

The proposed routes for truck trips and deliveries are described below. Trucks are currently planned to travel to and from the Project Site near Knights Landing to deliver RSP to various segments of the Project Site, including the staging area at the east bank toe of slope north of the CR 16 bridge crossing. The source of RSP used for the Project has not been determined. However, this analysis assumes that RSP sources will be approximately 65 miles from the Project Site from suppliers in either Napa County to the west or El Dorado County to the southeast. Regardless of source site, RSP deliveries will most likely access the Project Site via the CR 102 exit of SR 113 exit off I-5 in Woodland. Another possible route that could also be used for equipment and material deliveries to the Project Site, worker trips to the Project Site, and/or disposal of removed vegetation at offsite locations is from the north via SR 99 and SR 113.

Access to Project Site from the South Via I-5

- Egress and Ingress to/from CR 102 (primary planned route)
- I-5 in Woodland;
- Exit CR 102 North;
- Right on CR 17 (3.75 miles from I-5), or
- Right on CR16 (4.8 miles from I-5), or
- Right on SR 113 North (8 miles from I-5), then immediate right at KLRC levee road

Egress and Ingress to/from SR 113 (alternate primary route)

- I-5 in north Woodland; and
- Exit SR 113 north to KLRC levee road near CR 102 intersection (9.5 miles from I-5)

Access to Project Site from the North Via SR 99 in Sutter County

Egress and Ingress to/from SR 99

- SR 99 approximately 6 Miles South of Yuba City;
- Exit SR 113 South/Tudor Road; and
- West, then south on SR 113 to KLRC bridge (17 miles from SR 99).

4.17.1.3 Transit Facilities

The Yolo County Transportation District operates YOLOBUS, which serves the residents of Yolo County and provides regional, intercity, and local fixed-route services throughout the county. For the fixed-route service, 10 routes are local (within Yolo County), and eight routes provide commuter route service to Sacramento County and Solano County. In fiscal year 2003–2004, the Yolo County Transportation District served approximately 1.2 million riders. YOLOBUS operates Route 216 from East Main Street in Woodland to Knights Landing along CR 102 and SR 113. YOLOBUS Route 216 bus service includes one round trip in the morning and one round trip in the afternoon on Mondays, Wednesdays and Fridays, and one trip on the second Saturday of each month.

4.17.1.4 Bicycle Facilities

The bicycle and pedestrian transportation system in Yolo County is composed of local and regional bikeways and trails. Yolo County is a favorable area for bicycling because of its flat terrain, mild climate, and relatively short distance between cities. The County of Yolo Bicycle Transportation Plan was updated by the Yolo County Transportation Advisory Committee in December 2006. The Board of Supervisors adopted the plan on November 28, 2006. According to the Yolo County Bicycle Transportation Plan, five major bikeways exist within the unincorporated area, including Class II bike lanes (on-street 6-feet wide bike lanes marked by pavement striping) along CR 102 (LSA 2009). The county has developed a Parks and Open Space Master Plan (County of Yolo 2006) that includes descriptions and resources of hiking trails within the unincorporated parts of the county; however, this Parks and Open Space Master Plan does not identify any hiking or recreational trails within or adjacent to the Project Area (County of Yolo 2006).

4.17.2 Regulatory Framework

4.17.2.1 Federal

There are no federal regulations that pertain to transportation and are relevant to this Project.

4.17.2.2 State

There are no federal regulations that pertain to transportation and are relevant to this Project.

4.17.2.3 Regional

Sacramento Area Council of Governments

The federal government has designated SACOG as the Metropolitan Planning Organization (MPO) for the Sacramento region, including Sutter and Yuba counties. SACOG works with its 28-member cities and counties to conduct transportation infrastructure planning and to provide funding assistance for cities, counties, transit operators, and other entities responsible for providing for the travel needs of the region's residents (SACOG 2019). SACOG generated a regional transportation plan, the 2020 MTP/SCS (SACOG 2019), a "20-year multimodal transportation plan that is financially feasible, achieves health standards for clean air, and addresses statewide climate goals" (SACOG 2019). The four priority policy areas of the MTP/SCS include:

- Build vibrant places for today's and tomorrow's residents;
- Foster the next generation of mobility solutions;
- Modernize the way we pay for transportation infrastructure; and
- Build and maintain a safe, reliable, and multimodal transportation system.

4.17.2.4 Local

Yolo County General Plan

The following goals and policies of the Yolo County 2030 Countywide General Plan (County of Yolo 2009) are applicable to the Project:

Policy CI-3.1: Maintain LOS C or better for roadways and intersections in the unincorporated county. In no case shall land use be approved that would either result in worse than LOS C conditions or require additional improvements to maintain the required LOS, except as specified below. The intent of this policy is to consider LOS as a limit on the capacity of the county's roadways.

- SR 113 (Sutter County Line to CR 102) – LOS F is acceptable.
- SR 113 (CR 102 to Woodland City Limits) – LOS D is acceptable.
- CR 102 (CR 13 to CR 17) – LOS D is acceptable, assuming that passing lanes and appropriate intersection improvements are constructed. The county will secure a fair share towards these improvements from planned development.
- CR 102 (CR 17 to the Woodland City Limit) - LOS E is acceptable, assuming that passing lanes and appropriate intersection improvements are constructed. The county will secure a fair share towards these improvements from planned development.

The following roadways were identified in the Circulation Element as needing spot improvements for portions of the identified segment, including, but not limited to, intersection control and lane configuration improvements, passing lanes and/or wider travel lanes and shoulders:

- CR 102 between CR 13 and Woodland City Limit.

4.17.3 Transportation (XVII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☒	☐	☐

Less than significant with mitigation incorporated.

The Project potentially would generate a substantial amount of construction traffic along roadways within unincorporated Yolo County and the community of Knights Landing. Offsite import of RSP for levee repair would potentially result in up to 64 truck trips per day on area roadways. In addition, trips associated with approximately 10 workers commuting to and from the job site, periodic offsite transport of vegetation removed from the Project, and deliveries of equipment, materials, and supplies would also result in a significant number of trips on area roadways per day. Heavy construction traffic could damage area roadways as well as bike lanes on CR 102. Construction traffic can also contribute to congestion on local roadways, especially at the SR 113 and CR 102 intersection near the KLRC bridge in Knights Landing where ingress/egress will occur to the KLRC levee roads over the short-term during implementation of the Project. Therefore, the Project has the potential to conflict with local and regional goals for safe and reliable transportation systems.

Implementation of mitigation measure TRANS-1 would require preparation of a Construction Traffic Management Plan to minimize construction traffic impacts on area roadways, transit routes, and bicycle facilities to the maximum extent feasible. Peak hours would be avoided to the maximum extent, and detours, traffic control, and signage would be implemented to minimize disruption to bicycle facilities and local traffic at the SR 113/CR 102 intersection and CR 16 access points to the Project. Because the Project would be short-term in nature, with implementation of mitigation measure TRANS-1, impacts would be reduced to less than significant with mitigation incorporated.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐

Less-than-significant-impact.

The Project potentially would generate a substantial amount of construction traffic along roadways within unincorporated Yolo County over the short term. Import of RSP would potentially result in up to 64 truck

trips per day on area roadways. In addition, trips associated with approximately 10 workers commuting to and from the job site, periodic offsite transport of vegetation removed from the Project, and deliveries of equipment, materials, and supplies would also result in a significant number of trips on area roadways per day if all were to occur in a single day. However, implementation of the Project would not generate vehicle trips over the long term. Therefore, impacts associated with VMT would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☒	☐	☐

Less-than-significant with mitigation incorporated.

As discussed under Impact a) above, the substantial number of anticipated truck trips per day on area roadways could create hazardous conditions at ingress and egress points at the intersection of SR 113 and CR 102 and the intersection of CR 16 and CR 102, respectively. In addition, Class II bike lanes and pedestrian sidewalks intersect the SR 113 ingress and egress point as well. Without mitigation, safety impacts would be adverse and significant.

However, implementation of a Construction Traffic Management Plan, as described in mitigation measure TRANS-1, would ensure that truck traffic is managed at these intersections and access points with detours, traffic control, and signage to minimize conflicts between truck traffic and normal day-to-day traffic on roadways, and pedestrians and bicyclists using adjacent sidewalks and bike lanes. With implementation of TRANS-1, impacts would be less than significant with mitigation incorporated.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in inadequate emergency access?	☐	☒	☐	☐

Less-than-significant with mitigation incorporated.

Although heavy truck trips during Project construction could create temporary and periodic delays for emergency vehicle access on SR 113 and CR 102 during ingress/egress to Project access points, delays would be less than significant with implementation of the Traffic Management Plan outlined in mitigation measure TRANS-1. TRANS-1 includes construction contractor notification and consultation with emergency service providers to maintain emergency access and facilitate the passage of emergency vehicles on state highways and county streets. Therefore, this impact is less than significant with mitigation incorporated.

4.17.4 Mitigation Measures

TRANS-1: Construction Traffic Management Plan.

The construction contractor shall prepare and implement a Construction Traffic Management Plan to manage and plan for any lane closures or detours for roadways or bicycle facilities, and ingress and egress of truck traffic and deliveries of equipment and supplies at the Project access points near the SR 113 KLRC bridge in Knights Landing, the CR 16 KLRC bridge crossing, and CR 16/CR 102 intersection. Where construction traffic would cross the pedestrian and bicycle routes at the SR 113/CR 102 intersection and KLRC bridge, flaggers shall be used during egress and ingress of delivery and material hauling trucks. The Construction Traffic Management Plan shall include proposed times and days of deliveries and material hauling to avoid peak hours to the maximum extent feasible.

Timing/Implementation: *This measure shall be printed on construction plan sets and implemented at all times during construction.*

Monitoring/Enforcement: *KLRDD and Project construction lead.*

4.18 Tribal Cultural Resources

This section describes the affected environment and regulatory setting for TCRs in the Project Area. The following analysis of the potential environmental impacts related to TCRs is derived primarily from the following sources:

- California NAHC Sacred Lands File Search, August 4, 2021;
- ECORP Consulting, Inc.'s Confidential Cultural Resources Inventory and Evaluation Knights Landing Ridge Cut Erosion Report (Cultural Resources Inventory Report) (ECORP 2021b, Appendix C);
- Confidential AB-52 tribal consultation record between KLRDD and Yocha Dehe Wintun Nation (Appendix C).

TCRs are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe, and which meet specific definitions in state law (PRC Section 21047[a]). While these may share the same forms and characteristics of cultural resources, as described in Chapter 3.5 of this document, these resources have special meaning to Native American tribes. They may also take other forms that do not satisfy the definition of cultural resources or archaeological sites. These can include traditional plant gathering areas, locations used for ritual or spiritual practice, lines of sight, or other areas of sacred space.

State law requires that TCRs be addressed separately from cultural resources and that confidentiality of these resources, as disclosed during tribal consultation under Assembly Bill 52, be maintained. In accordance with Section 21082.3(c)(1) of the PRC, "… information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native

American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with subdivision (r) of Section 6254 of, and Section 6254.10 of, the Government Code, and subdivision (d) of Section 15120 of Title 14 of the CCR, without the prior consent of the tribe that provided the information." Therefore, the details of tribal consultation summarized herein are provided in a confidential administrative record and not available for public disclosure without written permission from the tribes. However, all pertinent information necessary to provide substantial evidence for impact determinations is summarized in this section of the IS/MND.

4.18.1 Environmental Setting

4.18.1.1 Ethnographic, Religious, and Cultural Context

Ethnographically, the Project Area is in the eastern portion of the territory occupied by the Penutian-speaking River Patwin. The Patwin territory included both the River and Hill Patwin and extended from the southern portion of the Sacramento River Valley to the west of the river, from the town of Princeton south to San Pablo and Suisun bays. As a language, Patwin (meaning "people") is a part of the Wintu linguistic family, which has three main groups: Southern or Patwin; Central, of Glenn and Tehama counties; and the Northern, of the upper Sacramento, lower Pit, and the upper Trinity drainages (Johnson 1978). The Hill Patwin territory includes the lower hills of the eastern Coast Range mountain slope (Long, Indian, Bear, Capay, Cortina, and Napa Valley). Between there and the foothills, the grassy plains were largely unsettled, used mainly as a foraging ground by both valley and hill groups (Johnson 1978). Patwin pre-contact population numbers are not precise, but Kroeber (1976) estimates 12,500 for the Wintu, Nomlaki, and Patwin groups. These numbers reflect groups prior to the 1833 malaria epidemic.

Individual and extended families "owned" hunting and gathering grounds, and trespassing was discouraged. Residence and marriage were generally matrilocal, but unrestricted. Politically, the Patwin were divided into "tribelets," made up of a primary village and a series of outlying hamlets, presided over by a more or less hereditary chief. Villages typically included family dwellings, acorn granaries, a sweathouse, and a dance house, owned by the chief. The chief had unrestricted power and presided over economic and ceremonial decisions (Johnson 1978).

Subsistence activities centered around hunting of deer, Tule elk, antelope, bear, ducks, geese, quail, turtles, fish, and other small animals. Hunting of deer often took the form of communal drives, with the actual killing of the deer performed by individuals or groups. Decoys were used for attracting such game as deer and ducks. Nets and holding pens were used for fishing, which was also an important part of normal subsistence activities. Types of fish included sturgeon, salmon, perch, chub, sucker, hardhead, pike, trout, steelhead, and mussels. Although acorns were the staple of the Patwin diet, they also harvested sunflower, alfilaria, clover, bunchgrass, wild oak, and yellow flower, which was parched or dried, then pounded into a meal. Buckeye, pine nuts, juniper berries, manzanita berries, blackberries, wild grapes, brodiaea bulbs, and tule roots were also collected. Each village had its own locations for these food sources, and the village chief was in charge of assigning particular families to each collecting area. Game was prepared by roasting, baking, or drying the meat. Tobacco was collected along the river and inhaled,

but not cultivated. Salt was scraped off rocks (in the Cortina region) or by burning a grass found on the plains (Johnson 1978).

Patwin houses were built in the form of a dome, using tree branches for the framing, then covered with thatch and earth. House floors were typically dug out and the walls were built up as a mound, with the entrance to the building made through the roof (Powers 1976). As described by Kroeber (1976) and Johnson (1978), the closest village location was Moso, on the north bank of Cache Creek around the town of Capay. No positive cultural material has been located or observed to support this claim.

One of the most distinctive aspects of the Patwin culture was the cult system, found throughout northern central California. The main feature of the cult was the occurrence of one or more secret societies, whose membership was by strict initiation, each with its own series of dances and rituals (Johnson 1978). Patwin culture is most distinctive in that it possessed three secret societies: the ghost, Hesi, and Kuksu. These involved elaborate ceremonial activities consisting of singing and dancing (Foster 1995). Membership included mostly males, beginning around the ages of eight to 16, but on limited occasions included high-status women (Johnson 1978). Everyday Patwin life centered on the rituals performed within the secret societies. Details involving the ceremonies varied, but most had sacred dances requiring careful preparation, costume, and music. These dances could last several days. Detailed summaries are provided by Kroeber (1932) and Loeb (1933).

The earliest historical accounts of the Project Area begin with Spanish mission registers of baptisms, marriages, and deaths of Indians. By 1800, Native Americans were taken from the Patwin settlement of Aguastos in the south-central area, and from other villages, by emissaries of Mission Dolores. In addition, missions San Jose and Sonoma actively proselytized the southern Patwin. Between the 1830s and 1840s, both Mexicans and Americans rapidly overtook the Patwin territory under the authority of the Mexican government (Johnson 1978).

The Spanish arrived on the central California coast in 1769, and by 1776 it had been explored by José Canizares. In 1808, Gabriel Moraga crossed into the territory, and in 1813 a major battle was fought between the Miwok and the Spaniards near the mouth of the Cosumnes River. In 1833, an epidemic, most likely to be malaria, raged through the Sacramento Valley, killing an estimated 75 percent of the native population. The discovery of gold in 1848 at Sutter's Mill, near the Nisenan village of Colluma (now Coloma) on the South Fork of the American River, drew thousands of miners into the area, and led to widespread killing and the virtual destruction of traditional Native American cultures.

4.18.2 Regulatory Framework

4.18.2.1 Assembly Bill 52

In 2015, AB 52 amended CEQA to require that: 1) a lead agency provide notice to those California Native American tribes that requested notice of projects proposed by the lead agency; and 2) for any tribe that responded to the notice within 30 days of receipt with a request for consultation, the lead agency must consult with the tribe. Topics that may be addressed during consultation include TCRs, the potential significance of project impacts, type of environmental document that should be prepared, and possible mitigation measures and project alternatives.

Pursuant to AB 52, Section 21073 of the PRC defines California Native American tribes as "a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of the Statutes of 2004." This includes both federally and non-federally recognized tribes.

Section 21074(a) of the PRC defines TCRs for the purpose of CEQA as:

1) Sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

    a. included or determined to be eligible for inclusion in the CRHR; and/or
    b. included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; and/or
    c. 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Because criteria a and b also meet the definition of a Historical Resource under CEQA, a TCR may also require additional consideration as a Historical Resource. TCRs may or may not exhibit archaeological, cultural, or physical indicators.

Recognizing that California tribes are experts in their TCRs and heritage, AB 52 requires that CEQA lead agencies provide tribes that requested notification an opportunity to consult at the commencement of the CEQA process to identify TCRs. Furthermore, because a significant effect on a TCR is considered a significant impact on the environment under CEQA, consultation is used to develop appropriate avoidance, impact minimization, and mitigation measures.

In accordance with Section 21082.3(c)(1) of the PRC, "… information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with subdivision (r) of Section 6254 of, and Section 6254.10 of, the Government Code, and subdivision (d) of Section 15120 of Title 14 of the CCR, without the prior consent of the tribe that provided the information." Therefore, the details of tribal consultation summarized herein are provided in a confidential administrative record (Appendix C) and not available for public disclosure without written permission from the tribes.

4.18.3 Tribal Cultural Resources (XVIII) Environmental Checklist and Discussion

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

Less-than-significant impact with mitigation incorporated.

Information about TCRs was drawn from: 1) the results of a search of the Sacred Lands File of the NAHC; 2) existing ethnographic information about pre-contact lifeways and settlement patterns; 3) information on archaeological site records obtained from surveys of the Project Area and the California Historical Resources Information System; and 4) the tribal consultation record under AB 52 for the Project.

4.18.3.1 Sacred Lands File Search

A search of the NAHC Sacred Lands File was requested on August 4, 2021. The NAHC responded on September 2, 2021, that the Sacred Lands File search was positive, which means there is a resource listed on the Sacred Lands File recorded near the Project Area. The NAHC requested to contact the UAIC. As part of the AB 52 consultation, KLRDD contacted the UAIC who deferred consultation to the YDWN. The UAIC and YDWN were on the NAHC's list and were among the tribes contacted by the KLRDD, as summarized above.

4.18.3.2 Ethnographic Information

The ethnographic information reviewed for the Project, including ethnographic maps (Johnson 1978), shows the closest ethnographic village location as *Yo'doi*, which is located along the western bank of the Sacramento River, approximately 2 miles north of Knights Landing.

4.18.3.3 Archaeological Site Records

The entire Project Area was subjected to an archaeological survey and records search review. The entire Project Area had been previously surveyed, and no Native American cultural resource locations had been previously identified within its boundaries. However, one Native American resource was noted near the KLRC north of SR 113, and multiple resources were identified adjacent to the Sacramento River within a 0.5-mile radius surrounding the Project Area.

4.18.3.4 Tribal Consultation

At the time KLRDD was ready to initiate CEQA review, it had received written requests to receive Project notices from the following two California Native American Tribes, which identified themselves as being traditionally and culturally affiliated with the lands subject to KLRDD's jurisdiction:

- UAIC
- YDWN

On July 6, 2021, KLRDD determined that they had a complete Project description and was ready to begin review under CEQA. KLRDD sent initial notification letters on July 6, 2021, to both tribes with Project information and an invitation to consult on the Project. KLRDD requested responses to the offer to consult within 30 days of the receipt of the letter. Both the UAIC and YDWN responded to the initial letter. The resulting correspondence and consultation are described below, and documented in confidential Appendix C.

4.18.3.5 United Auburn Indian Community of Auburn Rancheria

On July 22, 2021, UAIC responded stating the tribe determined there is a TCR in the Project Area that may be impacted by the Project. However, they indicated that if KLRDD initiates consultation with YDWN, then they would defer consultation to YDWN.

On August 16, 2021, KLRDD responded to UAIC's email stating that it had received a request for consultation from YDWN and will be initiating consultation with them. In addition, KLRDD attached a formal initiation letter to UAIC offering UAIC the opportunity to still consult on the Project as long as a response was received within 30 days of August 8, 2021. The letter further stated that if a response is not received within 30 days, then the KLRDD will consider consultation with UAIC closed.

August 17, 2021: KLRDD received an emailed response from a Ms. Starkey stating that UAIC is electing to defer to YDWN; however, if YDWN is unable to consult, UAIC requested to be contacted to reassess the need to consult.

4.18.3.6 Yocha Dehe Winton Nation

On August 12, 2021, YDWN responded to KLRDD accepting the opportunity to initiate AB-52 consultation for the Project and requesting the latest cultural resources Project and the Project description.

On August 17, 2021, KLRDD sent a letter and the Project description to YDWN; the invitation was to attend a virtual meeting with KLRDD on August 25, 2021, to discuss the Project.

During the August 25, 2021, meeting, YDWN representative Laverne Bill informed KLRDD that the area between SR 113 and the Colusa Basin Drainage Canal was sensitive for Native American resources and requested a Native American monitor during Project work in that area. He also requested monitors for Project work on Tribally owned land (APN 056-170-037). Mr. Bill requested that the tribe provide cultural awareness training to KLRDD construction staff annually. On September 13, 2021, Mr. Bill provided the KLRDD with a Treatment Protocol, which was used to create the mitigation measures below.

Pre-contact archaeological sites may be considered to be TCRs. Records search data did not reveal any pre-contact archaeological sites adjacent to the Project Area, and ethnographic data shows no known village sites mapped in the area. Because no TCRs were identified during survey-level data or by tribes in consultation with KLRDD, the Proposed Project would not cause a substantial adverse action to a known TCR. However, there is potential to unearth unanticipated TCRs during Project construction, due to the highly sensitive nature of portions of the Project Area identified by the YDWN representative. Implementation of TCR-1 would reduce Project impacts to unanticipated TCRs in the Project Area to a less-than-significant impact with mitigation incorporated.

4.18.4 Mitigation Measures

4.18.4.1 TCR-1: Tribal Monitoring

A qualified tribal monitor representing a consulting tribe should monitor any vegetation removal, soil excavation, and any activity that has the potential to disturb more than six inches of original ground northwest of and adjacent to APN 056-170-037. The monitor must be given a minimum of 48 hours of notice for the opportunity to be present during these activities and to coordinate closely with the archaeological monitor, to observe work activities, and assist in ensuring that sensitive tribal resources are not impacted. The monitor must be given a reasonable opportunity to inspect soil and other material as work proceeds to assist in determining if resources significant to the tribes are present. If potential tribal resources are discovered, a reasonable work pause or redirection of work by the contractor may be requested. If the tribe cannot recommend a monitor or if the tribal monitor does not report at the scheduled time, then all work will continue as long as the specified notice was provided. Tribal monitoring will not occur for equipment set-up or tear-down that does not disturb the ground surface more than six inches in depth; hydroseeding; paving; placement of imported fill/gravel/rock; restoration; or backfilling of previously excavated areas that were already monitored. Excavated sediment from the KLRC channel will not be subjected to screening; however, any observed cultural materials will be collected and treated in accordance with the unanticipated discovery measures in CUL-1.

Timing/Implementation: Prior to and during Project construction.

Monitoring/Enforcement: KLRDD and Project construction lead, and tribal monitor.

4.19 Utilities and Service Systems

This section of the document describes the existing conditions in the Project Area, the regulatory framework necessary to evaluate potential impacts on utilities and service systems from the Project, and potential short-term and long-term impacts that could result from the Project. Impacts from the Project on water supply, wastewater treatment, and solid waste generation are discussed below

4.19.1 Environmental Setting

4.19.1.1 Water Service

Groundwater is used as the domestic water supply in unincorporated Yolo County, and surface water is most commonly used for agricultural irrigation (LSA 2009). Potable water for residents of Knights Landing are served by the KLCSD, which pumps all water for domestic uses from three groundwater wells. In total, the three wells have a supply of approximately 3,400 gallons per minute (gpm). Not including fire protection demand, the wells can supply the town's current average daily demand of 167 gpm and peak demand of 694 gpm (LSA 2009). The distribution system was built in the 1970s and consists of 6-inch pipes that are undersized. Existing non-residential fire flows do not meet current requirements and the pipes need expansion to provide adequate pressures for fire flows. Another issue is that the water supply is untreated, and there have been some issues with bacterial contamination. There is no potable water infrastructure on the Project Site.

4.19.1.2 Wastewater

KLCSD provides wastewater services in the Project Area. KLCSD owns and operates the Knights Landing Wastewater Treatment Facility consisting of a wet well lift station, eight wastewater stabilization ponds on 20 acres, and a 31.5-acre spreading basin (County of Yolo 2007). This facility treats the sewage through aeration, providing a marginal level of secondary treatment prior to pumping effluent to ponds for evaporation and percolation into the ground. The 20-acre wastewater stabilization ponds are located adjacent to the Project and the KLRC east bank toe of slope access road, south of the developed Knights Landing community. The Knights Landing Wastewater Treatment Facility has a capacity of 185,000 gallons per day average dry weather flow and can treat 48.4 million gallons influent flow annually.

4.19.1.3 Solid Waste

The Yolo County Division of Integrated Waste Management provides solid waste and recycling services. In the unincorporated portion of Yolo County, most of the solid waste is generated by non-residential business uses (LSA 2009). Residential and commercial waste and recycling are taken to either the Yolo County Central Landfill, located approximately 8.71 miles south of Project Site, or the Esparto Convenience Center. The Central Landfill, a 722-acre facility, is a Class III solid waste landfill, which provides comprehensive solid waste and recycling services, including municipal solid waste, organic waste recycling, salvaging, household hazardous waste, and business hazardous waste. Permitted maximum

disposal (throughput) at the Central Landfill is 1,800 tons per day. The total remaining solid waste capacity at the Central landfill is 35,171,142 cubic yards (California Department of Resources Recycling and Recovery [CalRecycle] 2020).

Vegetation waste generated from the Project could be accepted at the Woodland Biomass Power, LLC biomass power plant at 1786 East Kentucky Avenue in Woodland. The plant utilizes 260,000 tons of woody biomass fuel annually: that creates electricity to meet the needs of 25,000 homes. All renewable energy generated at Woodland Biomass Power is sold to Pacific Gas & Electric under a Power Purchase Agreement. The plant's fuel comes from a variety of sources, including: wood chips, urban wood waste, logs from forest thinning, tree/orchard trimmings, and agricultural waste, such as nut shells and fruit pits. The plant also offers the local community a free drop off program to dispose of compliant wood waste. Woodland Biomass utilizes 50,000 or more tons of fuel a year that would have gone to a landfill or open-field burned.

4.19.2 Regulatory Framework

4.19.2.1 Federal

There are no federal regulations that pertain to utilities and are relevant to this Project.

4.19.2.2 State

Water Supply

California Department of Water Resources

The DWR is responsible for the management and regulation of water usage, including the delivery of water to two-thirds of California's population through the nation's largest state-built water development and conveyance system, the State Water Project. Working with other agencies and the public, DWR develops strategic goals and near-term and long-term actions to conserve, manage, develop, and sustain California's watersheds, water resources, and water management systems. DWR also works to prevent and respond to floods, droughts, and catastrophic events that would threaten public safety, water resources and management systems, the environment, and property.

Urban Water Management Planning Act

In 1983, the California legislature enacted the Urban Water Management Planning Act (Water Code Section 10610–10656). This act states that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre feet per year, should make every effort to ensure the appropriate level of reliability in its water service to meet the needs of its various categories of customers during normal, dry, and multiple-dry years. This act requires that urban water suppliers adopt an Urban Water Management Plan at least once every five years and submit it to the DWR.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) established a new structure for managing California's groundwater resources at the local level by local agencies. This act required Groundwater Sustainability Agencies (GSAs) to form in the state's high- and medium-priority basins and subbasins by June 30, 2017. The California Water Code states that a Groundwater Sustainability Agency shall have five years from the date of reprioritization to be managed under a Groundwater Sustainability Plan (GSP). The planning deadline for California's first round of Groundwater Sustainability Plan was January 31, 2020, for basins subject to critical conditions of overdraft, and January 31, 2022, for all other high- and medium-priority basins.

Statewide Water Conservation Act of 2009 (Senate Bill X7-7)

In November 2009, the California state legislature passed SB X7-7 requiring a 20 percent reduction in per capita urban water use by 2020, with an interim target of 10 percent in 2015. The legislation required urban water users to develop consistent water use targets and to use those targets in their Urban Water Management Plans.

Assembly Bill (AB) 1668 and Senate Bill (SB) 606

AB 1668 and SB 606 establish guidelines for efficient water use and a framework for the implementation and oversight of the new standards, which must be in place by 2022. The two bills strengthen the state's water resiliency in the face of future droughts.

Solid Waste

California Department of Resources Recycling and Recovery (CalRecycle); formerly the California Integrated Waste Management Board)

CalRecycle oversees, manages, and monitors waste generated in California. It provides limited grants and loans to help California cities, counties, businesses, and organizations meet the state waste reduction, reuse, and recycling goals. CalRecycle develops, manages, and enforces waste disposal and recycling regulations, including AB 939 and SB 1016.

Assembly Bill (AB) 939

AB 939 (PRC 41780) requires cities and counties to prepare Integrated Waste Management Plans (IWMPs) and to divert 50 percent of solid waste from landfills beginning in calendar year 2000 and each year thereafter. AB 939 also requires cities and counties to prepare Source Reduction and Recycling Elements (SRRE) as part of their IWMPs. These SRRE is designed to develop recycling services to achieve diversion goals, stimulate local recycling in manufacturing, and stimulate the purchase of recycled products.

Senate Bill (SB) 1016

SB 1016 requires that the 50-percent solid waste diversion requirement established by AB 939 be expressed in pounds per person per day. SB 1016 also changed the CalRecycle review process for each

municipality's IWMP. The CalRecycle Board reviews a jurisdiction's compliance with diversion rate targets in accordance with a specified schedule.

4.19.2.3 Local

Wastewater

Yolo County Public Services and Facilities Element

Goal PF-1: Wastewater Management. Provide efficient and sustainable solutions for wastewater collection, treatment, and disposal.

Policy PF-1.1 Require discretionary projects to demonstrate adequate long-term wastewater collection, treatment, and disposal capacity, including full funding for land acquisition, facility design and construction, and long-term operations and maintenance for needed wastewater treatment and disposal facilities. Where such funding is dependent upon a community vote, approval of the project by the county shall be contingent upon a successful voting outcome.

Policy PF-1.8 Promote 200-year flood protection for all wastewater treatment facilities.

Water Supply

Integrated Regional Water Management Plan.

In 2007, the county adopted the Integrated Regional Water Management Plan (IRWMP), which is a multiagency effort to coordinate water policies among the various jurisdictions of Yolo County (LSA 2009). The Water Resources Association of Yolo County, in conjunction with the DWR, developed the IRWMP. The IRWMP serves as an update to the county's 1992 water management plan, addressing major topics, such as water supply, water quality, flood management, enhancement of aquatic and riparian habitat, and improvement of the county's recreational opportunities. Other water supply and quality issues that Yolo County must address include increasingly stringent water quality regulations, availability of adequate water supplies during severe drought conditions, subsidence problems as a result of groundwater overdraft, rising costs of providing water services, and increasingly complex and expensive regulatory compliance. Many of these issues have been addressed through the IRWMP.

Yolo County Conservation and Open Space Element

Policy CO-5.3: Strive to manage the county's groundwater resources on a sustainable yield basis that can provide water purveyors and individual users with reliable, high-quality groundwater to serve existing and planned land uses during prolonged drought periods.

Yolo County Agriculture and Economic Development Element

Policy AG-2.1: Protect areas identified as significantly contributing to groundwater recharge from uses that would reduce their ability to recharge or would threaten the quality of the underlying aquifers.

Solid Waste

Yolo County Integrated Waste Management Plan.

The California Integrated Waste Management Act of 1989 requires each county to prepare a County Integrated Waste Management Plan (CIWMP). Yolo County's CIWMP includes the following documents, the SRRE, the Household Hazardous Waste Element, and the Non-disposal Facility Element for Yolo County and the cities of Davis, West Sacramento, Winters, and Woodland, plus the Countywide Siting Element and the County Summary Plan (LSA 2009). The CIWMP documents cover the following issues:

- County demographics;
- Waste quantities generated in the county;
- Funding sources for administration of the countywide siting element and summary plan;
- Administrative responsibilities for the plan;
- Program implementation;
- Permitted disposal capacity and quantities of waste disposed of in the county;
- Available markets for recyclable materials; and
- Plan implementation schedule.

The Integrated Waste Management Act requires each city and county to review its SRRE or the CIWMP at least once every five years.

Yolo County Code

Title 2, Chapter 7 of the Yolo County Code addresses litter and contaminants. The code governs the disposal of solid waste generated by residential, commercial, and industrial properties within Yolo County (LSA 2009). On June 24, 2008, the Yolo County Board of Supervisors adopted a Construction and Demolition Debris Recycling and Diversion Ordinance (Yolo County Code Title 6, Chapter 16) that requires construction, demolition, and renovation projects to dispose of their job waste in an environmentally sustainable manner. This ordinance is in accordance with AB 939, which requires local jurisdictions to divert 50 percent of discarded materials from the landfill.

Yolo County Public Facilities and Services Element

Policy PF-9.1: Meet or exceed state waste diversion requirements.

Policy PF-9.2: Manage property to ensure adequate landfill space for existing and planned land uses.

Policy PF-9.3: Employ innovative strategies to ensure efficient and cost-effective solid waste and other discarded materials collection, disposal, transfer and processing.

Policy PF-9.4: Prioritize disposal and processing capacity at the landfill for waste materials generated within Yolo County, but accept waste materials from outside the county when capacity is available and the rates cover the full cost of disposal and processing.

Policy PF-9.8: Require salvage, reuse or recycling of construction and demolition materials and debris at all construction sites.

Policy PF-9.9: Encourage use of salvaged and recycled materials in construction.

4.19.3 Utilities and Service Systems (XIX) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒

No impact.

The Project would not require the use of existing municipal water or wastewater services. Portable toilets and a portable water supply would be utilized for workers. Most of the construction equipment would operate on diesel fuel. Any use of electricity would be minimal and short-term in nature during the course of implementing the Project. Therefore, the Project would not result in the need to increase or expand any infrastructure or facilities for utilities or service systems. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒

No impact.

The Project would not require the use of the existing municipal water service. A portable water supply would be utilized for project activities (e.g., for dust control and for workers). The Project would have a minimal demand for water occurring over a short duration. Therefore, impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐

Less-than-significant impact.

The Project would not require the use of the existing municipal wastewater services. Portable toilets would be utilized for construction workers. The Project would have a minimal demand on wastewater services occurring over a short duration. Therefore, impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐

Less-than-significant impact.

Most of the soil excavated for the Project would be reused on the site. Beneficial reuse of limited quantities of removed vegetation from Project construction activities material would be implemented to the maximum extent feasible, either for disposal at the Yolo County Central landfill, or donated to the Woodland Biomass Power, LLC biomass power plant to use to create renewable electricity. Therefore, the Project would meet the requirements of AB 939 and the goals of the Yolo County Division of Integrated Waste Management to reduce solid waste disposal by 50 percent since AB 939 was passed.

The Yolo County landfill has a limit of 1,800 tons per day. The daily maximum volume/weight for business donations to the Woodland Biomass Power plant is not known. However, the daily volume of removed vegetation from the Project is not expected to comprise a significant percent of the daily disposal limit of the landfill under a worst-case scenario. Because daily disposal limits could still be met, disposal of removed vegetation from the Project would remain a less than significant impact on the capacity of the landfill.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Less-than-significant impact.

As discussed above, beneficial reuse of the removed soil and vegetation would be implemented to the maximum extent feasible, either for disposal at the Yolo County Central landfill, donated for reuse at the Woodland Biomass Power, LLC biomass power plant, or reused as construction fill. Therefore, the Project would meet the requirements of AB 939 and the goals of the Yolo County Division of Integrated Waste Management to reduce solid waste disposal by 50 percent since AB 939 was passed, as well as the goals and policies and municipal code of Yolo County in the Project Area to reduce solid waste generation and disposal. Therefore, impacts would be less than significant.

4.19.4 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.20 Wildfire

This section of the document describes the existing conditions in the Project Area, the regulatory framework necessary to evaluate potential impacts on wildfire from the Project, and potential short-term and long-term impacts that could result from the Project. Impacts from the Project on the risk of wildfire and wildfire management in the area are discussed below.

4.20.1 Environmental Setting

CAL FIRE provides fire protection services for privately owned wildlands, as well as emergency services, in 36 of the state's 58 counties via contracts with local governments (CAL FIRE 2020a).

CAL FIRE has established SRAs or "lands exclusive of cities and federal lands regardless of ownership, classified by the State Board of Forestry as areas in which the primary financial responsibility for preventing and suppressing fires is that of the state. These are lands covered wholly or in part by timber, brush, undergrowth, or grass, whether of commercial value or not, which protect the soil from erosion, retard runoff of water or accelerated percolation, and lands used principally for range or forage purpose" (CAL FIRE 2020a).

CAL FIRE has also established FHSZs in SRAs, which are mapped areas that designate zones (based on factors such as fuel, slope, and fire weather) with varying degrees of fire hazard (i.e., moderate, high, and very high). FHSZ maps evaluate wildfire hazards, which are physical conditions that create a likelihood that an area will burn over a 30- to 50-year period (CAL FIRE 2020b). Moderate, high, and very high FHSZs are

found in areas where the state has financial responsibility for fire protection and prevention (SRAs). In addition, Very High FHSZs have been established in Local Responsibility Areas.

The areas within Yolo County in or near the Project Area are not within an SRA (CAL FIRE 2020b). In addition, there are no FHSZs in or adjacent to the Project Area. The nearest FHSZs are located approximately 20 miles to the west, in the Capay Hills. The Project Site does contain some heavily wooded riparian areas along waterside levee banks, and grasslands and bushes within the KLRC floodplain between the levees, is it not surrounded by wildlands or forest, limiting fire spread.

4.20.2 Regulatory Framework

4.20.2.1 Federal

There are no relevant policies or regulations pertaining to wildfire management at the federal level.

4.20.2.2 State

California Fire Code (Title 24, Part 9, California Code of Regulations)

The California Fire Code incorporates the Uniform Fire Code with necessary California amendments. The CBC requires that new buildings located in any FHSZ within SRAs, any local agency in a Very High FHSZ, or any Wildland-Urban Interface Fire Area, designated by the enforcing agency for which an application for a building permit is submitted, comply with all sections of the California Fire Code.

4.20.2.3 Local

Yolo County Public Facilities and Services Element

Policy PF-5.3: Require assertive fire protection measures in all development to supplement limited rural fire district resources.

Policy PF-5.8: Anticipate and adapt to potential changes in frequency and severity of wildfires resulting from predicted effects of global warming.

Action PF-A29: Require that new development comply with all state and local requirements within the SRA. (Policy PF-5.3)

Yolo County Health and Safety Element

Policy HS-3.1: Manage the development review process to protect people, structures, and personal property from unreasonable risk from wildland fires.

Policy HS-3.2: Encourage well-organized and efficient coordination between fire agencies and the county.

4.20.3 Wildfire (XX) Environmental Checklist and Discussion

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐

Less-than-significant impact.

The Project Site is not in an area designated by CAL FIRE as a SRA or FHSZ (CAL FIRE 2020b). Although the proposed truck routes for the Project, including CR 102 and SR 113, are likely to serve as evacuation routes for the residents of the community of Knights Landing during an emergency (LSA 2009), the Project would be required to implement a traffic management plan, as described in mitigation measure TRANS-1, that would reduce traffic impacts in the event of an emergency and evacuation order. In addition, the Project would be short term in nature. Therefore, the Project would have a less than significant impact with mitigation incorporated on emergency evacuations.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

No impact.

The Project Site is not in an area designated by CAL FIRE as a SRA or FHSZ (CAL FIRE 2020b). Furthermore, no Very High FHSZs are located nearby. The Project would have no impact in this area.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

No impact.

The Project Site is not in an area designated by CAL FIRE as an SRA or FHSZ. Furthermore, no Very High FHSZs are located nearby. Also, the Project would not require the installation of any new infrastructure. Thus, the Project would have no impact.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

No impact.

The Project Site is not in an area designated by CAL FIRE as an SRA or FHSZ. Furthermore, no Very High FHSZs are located nearby. Also, the Project would not involve construction of structures. Thus, the Project would have no impact in this area.

4.20.4 Mitigation Measures

No mitigation measures are required.

4.21 Mandatory Findings of Significance

4.21.1 Mandatory Findings of Significance (XXI) Environmental Checklist and Discussion

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐

Less-than-significant with mitigation incorporated.

Section 4.4 Biological Resources describes how the Project has the potential to impact special-status plants and animals, including Palmate-bracted Birds Beak, Valley elderberry longhorn beetle, special-status fish species, northwestern pond turtle, giant garter snake, Swainson's hawk, white-tailed kite, western burrowing owl, least Bells' vireo, TBL, pallid bat, and other species protected by federal, state, and

the Yolo County HCP/NCCP regulations. Section 4.4 also describes how the Project has the potential to impact KLRC and other waters of the US. With implementation of mitigation measures BIO-1 through BIO-16, these potential impacts to biological resources will be reduced to less than significant levels.

Section 4.5 Cultural Resources and Section 4.18 Tribal Cultural Resources describe how the Project would have potential to impact cultural resources and TCRs. However, with implementation of mitigation measures CUL-1, CUL-2, and TCR-1, this potential impact would be reduced to a level that is considered less than significant.

Section 4.7 Geology and Soils describes how future development of the site may result in the potential to impact paleontologically sensitive resources. Mitigation measure GEO-1 would reduce this impact to less than significant with mitigation incorporated.

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) 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)?	☐	☒	☐	☐

Less-than-significant with mitigation incorporated.

Implementation of the Project, in conjunction with other approved or pending undertakings in the region, including, but not limited to, other levee repairs along 99 river miles of waterways of the Sacramento River Flood Control System listed within Yolo County (USACE 2018), has the potential to result in cumulatively considerable impacts to the physical environment, especially to biological resources. However, the implementation of Project-specific mitigation measures proposed in the relevant subsections of this document would ensure that the Project would have a less than considerable contribution to cumulative impacts on these resources in the region. Therefore, potential cumulative impacts would be reduced to a level that is considered less than significant with mitigation incorporated.

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Less-than-significant with mitigation incorporated.

Section 4.9 Hazards and Hazardous Materials describes the potential for adverse impacts to workers and nearby residents from reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Mitigation measure HAZ-1 would reduce this impact to a less than significant level. Section 4.16 describes that Project heavy-duty truck traffic would contribute to congestion on local roadways, especially at the SR 113 and CR 102 intersection where ingress/egress will occur to the KLRC levee roads over the short-term during Project construction, resulting in potential conflicts with local and regional goals for safe and reliable transportation systems and impacts to emergency access. However, mitigation measure TRANS-1 would reduce this impact to a less than significant with mitigation incorporated.

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LIST OF APPENDICES

Appendix A – Air Quality, GHG, and Energy Usage Use Model Data Outputs

Appendix B – Biological Resources Assessment

Appendix C – Cultural Inventory and Evaluation Report (confidential and under separate cover)

Appendix D – Noise Model Data Outputs

APPENDIX A

Air Quality/GHG/Energy Usage Data Model Outputs

APPENDIX B

Biological Resources Assessment for the Knights Landing Ridge Cut Erosion Repair Project, Yolo County, California. ECORP Consulting, Inc., September 2021

APPENDIX C

Confidential Cultural Resource Inventory and Evaluation Report Knights Landing Ridge Cut Erosion, Yolo County, California. ECORP Consulting, Inc., September 2021 and AB-52 Tribal Cultural Resources Notification and Consultation Letters

APPENDIX D

Noise Model Data Outputs