

Appendix B. Detailed Analyses

- 2.1 Transportation and Circulation
- 2.2 Recreation
- 2.3 Public Utilities and Services
- 2.4 Land Use and Prime and Unique Farmlands
- 2.5 Social Impacts to At-Risk Communities
- 2.6 Socioeconomic Conditions
- 3.1 Aesthetics/Visual Resources
- 3.2 Geologic Resources
- 3.3 Hydraulics and Hydrology
- 3.4 Water Quality
- 3.5 Air Quality
- 3.6 Greenhouse Gas Emissions and Energy Consumption
- 3.7 Noise and Vibration
- 3.8 Hazards and Hazardous Materials
- 4.1 Vegetation and Wildlife
- 4.2 Aquatic Resources and Fisheries
- 4.3 Special Status Species
- 5.1 Cultural Resources

2.1 Transportation and Circulation

This section describes the existing transportation networks within the project vicinity, identifies the regulatory framework, and assesses the potential impacts to transportation and mobility.

2.1.1 Existing Conditions/Affected Environment

The existing transportation networks within the project vicinity most likely to be affected by the project include regional and local roadways, bicycle facilities, and railroads.

Regional and Local Roadways

Major highways used to access the project sites include Interstate 5 (I-5), I-80, I-80 Business, State Route (SR) 160, SR 84, and U.S. Highway 50. Other major roads used to access project sites and haul materials primarily include Howe Avenue, Watt Avenue, Folsom Boulevard, Fair Oaks Boulevard, Exposition Boulevard, American River Drive, Raley Boulevard, Vinci Avenue, and Dry Creek Rd. A complete description of haul routes and access areas for each project component can be found in Section 3.5, “Alternative 2: Proposed Action”.

Bicycle and Pedestrian Facilities

The Jedediah Smith Memorial Trail extends 32-miles from Discovery Park near where I-5 crosses the American River, to Beal’s Point Recreation Area. The trail can be accessed from most parks in the American River Parkway and several parks in Folsom. The trail is paved and is commonly used by bicyclists for commuting and recreational purposes.

The American River Erosion Contracts 3B North and South, 4A, and 4B include sites located alongside the Jedediah Smith Memorial Bike Trail.

The Sacramento River Parkway includes a paved trail along the levee top from Garcia Bend Park to Freeport Boulevard, passing through the project site for the Sacramento River Erosion Contract 3.

The Sacramento Northern Bike Trail extends from C Street in midtown Sacramento to the community of Elverta in northern Sacramento County. The Sacramento Northern Bike Trail passes the American River Erosion Contract 4A and Magpie Creek Project (MCP) components.

Railroads

As described in the ARCF GRR Final EIS/EIR, existing conditions and the affected environment for the project area on railroads are as follows (USACE 2016, p. 222):

“The Sacramento area has several railroad crossings, including the Union Pacific Railroad (UPRR), the Western Pacific Railroad (WPRR), the Northern Sacramento Railway, and the Yolo Shortline railroad tracks. The Sacramento Valley Station is a major rail hub utilized by several rail companies, including Amtrak and the Sacramento Regional Transit District light rail. These rail lines connect the greater Sacramento area with goods, services, and public transportation. There is a portion of the Sacramento

Southern Railroad located along the Sacramento River that is still in recreational use by the California State Railroad Museum.”

The Union Pacific Railroad (UPRR) extends through the American River Erosion Contract 4A project site, crossing the American River and the American River Parkway on an elevated viaduct.

2.1.2 Applicable Laws, Regulations, Policies, and Plans

Federal

No Federal laws, regulations, policies, or plans are applicable to the Proposed Alternatives.

State

No State laws, regulations, policies, or plans are applicable to the Proposed Alternatives.

Local

Sacramento County General Plan of 2005 to 2030

The Transportation Policy Plan established in the Circulation Element of the Sacramento County General Plan of 2005 to 2030 sets out goals, policies, and implementation measures for mobility, roadways, transit, bicycle and pedestrian facilities, transportation systems management, rail transportation, and air transportation (County of Sacramento 2022). The Circulation Element’s goals and policies relating to the Proposed Action are listed below.

GOAL: Provide mobility for current and future residents of Sacramento County through complete streets and through a balanced and interconnected transportation system that includes all modes of travel - automobile, transit, pedestrian and bicycling.

Policy CI-1. Provide complete streets to provide safe and efficient access to a diversity of travel modes for all urban, suburban, and rural land uses within Sacramento County except within certain established neighborhoods where particular amenities (such as sidewalks) are not desired. Within rural areas of the County, a complete street may be accommodated through roadway shoulders of sufficient width or other means to accommodate all modes of travel.

GOAL: Provide safe, continuous, efficient, integrated, and accessible bicycle and pedestrian systems that encourage cycling and walking as a viable transportation mode and as a form of recreation and exercise.

Policy CI-34. Construct and maintain bikeways and multi-use trails to minimize conflicts between bicyclists, pedestrians, and motorists.

City of Sacramento 2035 General Plan Mobility Element

The Mobility Element of the City of Sacramento 2035 General Plan establishes policies to create a well-connected transportation network, encourage walking short distances, support biking long and short distances, improve public transit, reduce greenhouse gases and air pollution, and

continue accommodating vehicular traffic (City of Sacramento 2015). The Mobility Element's goals and policies relating to the Proposed Action are listed below.

Goal M 4.3 Neighborhood Traffic. Enhance the quality of life within existing neighborhoods through the use of neighborhood traffic management and traffic calming techniques, while recognizing the City's desire to provide a grid system that creates a high level of connectivity.

Goal M 1.3 Barrier Removal. Improve accessibility and system connectivity by removing physical and operational barriers to safe travel.

Policy M 1.3.4 Barrier Removal for Accessibility. The City shall remove barriers, where feasible, to allow people of all abilities to move freely and efficiently throughout the city.

American River Parkway Plan

The American River Parkway (Parkway) encompasses approximately 29 miles of open space extending across multiple jurisdictions from the Folsom Dam to the American River's confluence with the Sacramento River. The American River Parkway Plan (Parkway Plan) provides guidance to land use decisions affecting the Parkway including preservation, use, development, and administration. The management plan for the California Wild and Scenic Rivers Act is also included within the Parkway Plan. The Parkway Plan is adopted as an element of the County of Sacramento General Plan and mentioned within the City of Sacramento and City of Rancho Cordova General Plans. Parkway policies relevant to transportation effects of the Proposed Action include (County of Sacramento 2008, p. 21, 23):

Flood Control 4.13. Flood control berms, levees, and other facilities should be, to the extent consistent with proper operation and maintenance of these facilities, open to the public for approved uses, such as hiking, biking, and other recreational activities.

Recreation 5.13. A separate designated pedestrian trail shall be provided along the entire length of the parkway. The pedestrian trail will be adjacent to the existing paved Jedediah Smith Memorial (bicycle) trail, here practical, given the width of the area and location of trees and other natural resources. New trail sections shall avoid heavily vegetated areas and low floodplain locations subject to frequent inundation. This trail shall not be paved; instead, it shall have a naturalistic design and surface that is stable, firm, and slip-resistant in order to support assistive devices for persons with disabilities.

2.1.3 Analysis of Environmental Effects

Analysis Methodology

This analysis uses the standard from the Institute of Transportation Engineers (ITE) for assessing the effects of construction projects that create temporary traffic increases. ITE's recommended threshold is 50 or more new peak-direction truck trips during the peak-hour (ITE 1988). Therefore, if 50 or more new truck trips per hour during the a.m. or p.m. peak hours (6 to 9 a.m. and 4 to 7 p.m. in the project area) results from the project, it would constitute a substantial increase in traffic, relating to existing traffic load and capacity of the street, and significant effect relating to traffic. Construction of the project components would require use of heavy vehicles for earthwork and to haul materials to and from the project sites. Total estimated truck trips

required to construct each project component are presented in Table 2.1-1. Haul routes that would be used for delivery of equipment and materials to and from the sites are shown in Chapter 2, “Project Alternatives.” Heavy vehicles affect traffic flow by taking up more roadway space and having poorer operating capabilities than passenger cars, especially relating to acceleration, deceleration, and ability to maintain speeds on grades (T.R.B. 2000). Other environmental effects to the transportation network were evaluated based on conditions in the vicinity of the project and the magnitude and duration of activities relating to construction and operation of the Proposed Action.

Table 2.1-1. Total Truck Trips by Project Component

| Project Component | Total Truck Trips | Average Trips per Workday |
|---|--------------------------------|---------------------------|
| Magpie Creek Project (MCP) | 6,672 | 37 |
| American River Erosion Contract 3B (North and South) and American River Erosion Contract 4B | 24,750 | 138 |
| American River Erosion Contract 4A | 3,287 | 28 |
| Sacramento River Erosion Contract 3 | Materials transported by barge | N/A |
| ARMS | 72,996 | 405 |
| SRMS | 100 | 13 |
| TOTAL TRUCK TRIPS | 126,348 | N/A |

Basis of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. These thresholds, and the impact analysis that follows, also take into consideration the significance of an action while providing distinction between direct and indirect effects as required under NEPA (40 CFR 1508.1(g)). The alternatives under consideration were determined to result in a significant impact related to transportation and circulation if they would do any of the following:

- a. conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities (including adding 50 or more new truck trips during a.m. or p.m. peak hours);
- b. conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b);
- c. substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- d. result in inadequate emergency service.

Effects Not Discussed in Detail

Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b). (2.1-b)

The purpose of CEQA Guidelines section 15064.3(b) is to provide criteria for determining significance of transportation impacts using vehicle miles traveled (VMT). VMT is the total number of miles of automobile traffic attributable to a project.

The project is not a development or transportation project and is not expected to influence the region's development pattern or induce population growth. Therefore, the project would not affect future traffic patterns or VMT, and this issue is not addressed further in the SEIS/SEIR.

Effects from Piezometer Network. Transportation-related impacts from construction of the piezometer network are expected to be minimal; the equipment for the installations would consist of a drill rig and a support vehicle to provide well installation supplies. Furthermore, the piezometer installation would occur scattered across the entire ARCF 2016 Project footprint, thereby spreading this minor increase in truck traffic (one or two vehicles per day) across a larger number of roadways. No additional haul routes would be required beyond those already identified for the ARCF 2016 Project, and no temporary roads or ramps would be required to install piezometers. Additionally, no road closures or substantial disruptions to nearby bike trails would occur. Therefore, this project component would not cause additional direct or indirect transportation impacts and is not discussed further in this section.

2.1.3.1 *Effects Analysis*

No Action Alternative

The No Action Alternative includes the authorized project components from Alternative 2 in the 2016 GRR FEIS/EIR (USACE 2016, p. 45-58). Since 2016, substantial portions of the authorized project have been constructed, as described in supplemental documents listed in Section 2.1.1, "Related Documents and Resources," in the SEIS/SEIR document, and the authorized project includes implementation of all mitigation measures adopted and incorporated into the project. Alternative 2 included all the levee improvements discussed in Alternative 1 of the ARCF GRR Final EIS/EIR (USACE 2016, p. 31-45); however, the extent of the levee raises along the Sacramento River were significantly less due to the widening of the Sacramento Weir and Bypass included in Alternative 2. The authorized actions from Alternative 2 are described in the ARCF GRR Final EIS/EIR as follows (USACE 2016, p. 45-46):

"Alternative 2 would include all of the levee improvements discussed in Alternative 1, except for the extent of the levee raises along the Sacramento River will be significantly less. Instead of implementing the majority of levee raises included in Alternative 1, the Sacramento Weir and Bypass would be widened to divert more flows into the Yolo Bypass. The levees along the American River, NEMDC, Arcade, Dry Creek, Robla Creek, and Magpie Creek, would be improved to address identified seepage, stability, erosion, and height concerns through the methods described under Alternative 1. The levees along the Sacramento River would be improved to address identified seepage, stability, and erosion concerns through the measures described under Alternative 1. Due to environmental, real estate, and hydraulic constraints within the American River North and South basins, the majority of the levees would be improved within the existing levee footprint to the extent practicable."

Impacts to transportation previously analyzed under the ARCF GRR Final EIS/EIR, and thus for the No Action Alternative in this SEIS/SEIR, would include use of heavy vehicles to transport materials along highways and local roads that provide access to the project levees. Haul trucks would increase traffic on major streets such as Watt Avenue, Fair Oaks Boulevard, Howe

Avenue, and Folsom Boulevard for American River levee improvements and on Pocket Road, Freeport Boulevard, and Riverside Boulevard for Sacramento River improvements.

Impacts under the No Action Alternative would be short-term and significant until construction is completed. However, after construction is completed, there would be no long-term impacts and traffic would return to pre-project conditions.

Proposed Action Alternative

2.1-a, c Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, or substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

CEQA Impact Conclusion: Significant and Unavoidable

NEPA Impact Conclusion: Significant and Unavoidable

Magpie Creek, American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Significant and Unavoidable

NEPA Impact Conclusion (Design Refinements): Significant and Unavoidable.

The Proposed Action does not alter transportation routes that will substantially increase hazards due to a geometric design feature or incompatible use for any of the project components.

Heavy construction vehicles will primarily access the MCP project components via Raley Blvd from Elk Horn Blvd or I-80. Other local roads for site access and hauling include Vinci Avenue, Main Avenue, Bell Avenue, Rose Street, Dry Creek Road, and Santa Ana Road. Construction will occur in phases over time with different haul routes used depending on which element is under construction at the time. Total truck trips for material hauling at the MCP over the entire construction materials are presented in Table 2.1-1. Heavy truck traffic would not interfere with pedestrian or bicycle routes.

There are no pedestrian or bicycle routes at the ARMS. The ARMS would be accessed via Northgate Boulevard and existing power line maintenance roads. From Northgate Boulevard, trucks would access the regional road network via Garden Highway, SR 160, I-5, I-80 Business, or I-80. Construction activities would require fill materials hauled to the site and demolition and debris materials hauled offsite. Total estimated truck trips required to construct the ARMS and the MPC is presented in Table 2.1-1.

The increased heavy truck traffic through the haul routes would alter normal traffic flows, potentially slowing traffic down and making it more challenging for other drivers to navigate around local roads. The increased truck traffic could disturb residential areas thereby conflicting with the County of Sacramento's goal to enhance the quality of life in neighborhood through traffic management. The total number of truck trips for each project component would not be

evenly split over the duration of the construction period. Rather, there would be some days with many more heavy vehicles hauling materials to and from the project sites while other days may not have any. Therefore, it is likely that there would be some days when heavy truck traffic would exceed the ITE-recommended threshold of 50 trips per a.m. or p.m. peak hours on some roadways. This would be a significant impact. The follow mitigation measure has been identified to address this impact.

Mitigation Measure TRANS-1: Prepare and Implement a Traffic Control and Road Maintenance Plan.

Before the start of project-related construction activities for each project component, the Project Partners will require the contractor to prepare and implement a Traffic Control and Road Maintenance Plan. This plan will describe the timing and methods of traffic control to be used during construction. All on-street construction traffic will be required to comply with the local jurisdiction's standard construction specifications. The items listed below will be included in the plan and implemented as terms of the construction contracts:

- Follow the standard construction specifications of affected jurisdictions and obtain the appropriate encroachment permits, if required. Encroachment permit conditions, as known at the time of construction contract solicitation, will be included in the construction contract. Encroachment permit conditions will be enforced by USACE and the local agency that issues the encroachment permit.
- Provide a site-specific access plan specifying the roadways on which construction workers are allowed travel to access the work sites and borrow areas.
- Provide adequate parking for construction trucks, equipment, and construction workers within the designated staging areas throughout the construction period. If inadequate space for parking is available at a given work site, the construction contractor will provide an off-site staging area and, as needed, coordinate the daily transport of construction vehicles, equipment, and personnel to and from the work site.
- Queue trucks only in areas and at times allowed by the appropriate local jurisdiction.
- Post warnings about the potential presence of slow-moving vehicles during construction.
- Proposed lane closures will be coordinated with the appropriate local jurisdiction and be minimized to the extent possible during the morning and evening peak traffic periods. Construction specifications will limit lane closures during commuting hours where feasible, and lane closures will be kept as short as possible. If a road must be closed, detour routes and/or temporary roads will be made to accommodate traffic flows. Signs will be provided to direct traffic through detours.
- Post signs providing advance notice of upcoming construction activities at least 1 week in advance so that motorists and cyclists can avoid traveling through affected areas during these times.

- Provide bicycle detours to allow for continued use by bicycle commuters. Always maintain safe pedestrian and bicyclist access around the construction areas. Construction areas will be secured as required by the applicable jurisdiction to prevent pedestrians and bicyclists from entering the work site, and all stationary equipment will be located as far away as possible from areas where bicyclists and pedestrians are present. Signage for street detours will be located outside of the bike lanes and up on the curb where feasible and posted at least 1 week prior to construction affecting pedestrian and bicyclist access.
- Notify (by means such as physical signage, internet postings, letters, or telephone calls) and consult with emergency service providers at least 1 week in advance to inform them of construction activities, maintain emergency access, and facilitate the passage of emergency vehicles on city streets during construction activities. Emergency vehicle access will always be made available.
- The construction contractor will document pre- and post- construction conditions on roadways used during construction. This information will be used to assess damage to roadways used during construction. The contractor will repair all potholes, fractures, or other visual damages associated with project work.
- Comply with Caltrans requirements by submitting this Traffic Control and Road Maintenance Plan to Caltrans for review of traffic controls and points of access from the State highway system (SR-160, I-5, I-80 Business, and I-80) for haul trucks and other construction equipment.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measure TRANS-1, which was previously adopted and incorporated into the ARCF 2016 Project, would include traffic control plans, signage, and notification of trips. However, there is no feasible mitigation available to reduce the total number of truck trips required to transport the required materials to the project sites to a less-than-significant level. This short-term impact would therefore remain significant and unavoidable.

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B

CEQA Impact Conclusion (Entire Proposed Action): Significant and Unavoidable.

NEPA Impact Conclusion (Design Refinements): Significant and Unavoidable.

Materials used to construct American River Erosion Contract 4A will primarily be hauled via SR 160, I-80 Business, or I-5, then along local roads including Del Paso Boulevard, Arden Way, Richards Boulevard, Garden Highway, Expo Parkway, Leisure Lane, Commerce Circle, and Lathrop Way. The activities requiring use of the haul routes, site prep, tree clearing, and construction activities, are anticipated to take place in 2026 to 2027. Total estimated truck trips

for the American River Erosion Contract 4A project component during this period are presented in Table 2.1-1.

Materials used to construct American River Erosion Contract 3B North and South and the American Erosion Contract 4B, would primarily be hauled from I-80 or U.S. 50 to local roads via Howe Avenue, Watt Avenue, and Fair Oaks Boulevard, among several others. It is anticipated that site prep and tree clearing would begin in 2026 and construction would occur over two years beginning in 2026 and vegetation monitoring occurring in 2027. The total truck trips resulting from the Proposed Action components of American River Contract 3B over the 3-year period are presented in Table 2.1-1. American River Erosion Contract 4B is still in conceptual designs and when truck trips were estimated, the American River Erosion Contract 4B schedule was not known. Consequently, haul traffic for American River Erosion Contract 4B has been grouped with American River Erosion Contract 3B to provide the most conservative truck trip estimation for the area.

The increased heavy truck traffic from transport of materials to and from sites, which would occur through the haul routes, would alter normal traffic flows, potentially slowing traffic down and making it more challenging for other drivers to navigate around. However, a high frequency of heavy truck traffic should only occur during erosion control improvements and would not occur during clearing, plant establishment, and monitoring phases. The increased heavy truck traffic could disturb residential areas thereby conflicting with the County of Sacramento's goal to enhance the quality of life in neighborhood through traffic management. The total number of truck trips for each project component would not be evenly split over the duration of the construction period. Rather, there would be some days with many more heavy vehicles hauling materials to and from the project sites while other days may not have any. Therefore, it is likely that there would be some days when heavy truck traffic would exceed the ITE recommended standard of 50 truck trips per a.m. or p.m. peak hour on some roadways. This would be a significant impact during construction. The following mitigation measure has been identified to address this impact.

Mitigation Measure TRANS-1: Prepare and Implement a Traffic Control and Road Maintenance Plan.

Please refer to Impact 2.1-a,c Project Components MCP and ARMS above for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Although Mitigation Measure TRANS-1 would include traffic control plans, signage, and notification of trips, there is no feasible mitigation available to reduce the total number of truck trips required to transport the required materials to the project sites. The amount of material to be transported cannot be reduced with the proposed action, nor can the number of truck trips necessary to transport the required amount of materials be reduced. There are no other feasible ways to transport materials to the project sites, and the transport routes already have been

selected to minimize transport mileage, congestion, and impacts. This impact would therefore remain significant and unavoidable.

As described in Chapter 2 “Project Alternatives”, erosion protection work from American River Contract 3B North (Site 3-1 and 4-2), American River Erosion Contract 4B and American River Erosion Contract 4A would impact the Jedediah Smith Memorial Bike Trail. These impacts would be temporary only occurring during the construction season. The American River Erosion Contract 4A includes an erosion protection berm that would block the current path of the Jedediah Smith Memorial Bike Trail underneath the California SR 160 bridge. The Proposed Action includes a permanent re-route of the bike trail on the south side of the wetland, following an existing equestrian, hiking and off-road bike trail for Site 4A. Detours needed for work along the Jedediah Smith Memorial Bike Trail would be coordinated with the Sacramento County Department of Parks and Recreation to ensure they are safe and comply with recreational policies established within the Parkway Plan. While commuter traffic along the bike trail would be significantly impacted, detours would be conducted in compliance with all local and regional plans as required by Mitigation Measure TRANS-1, reducing the transportation impact to bicycle and pedestrian facilities to less than significant with mitigation incorporated.

Sacramento River Erosion Contract 3

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated.

NEPA Impact Conclusion (Design Refinements): Short-term and Minor effects that are Less than Significant with Mitigation Incorporated.

Materials would be hauled to the project location for erosion work by barge; therefore, this project component would include only incidental truck trips for small volumes of materials not transportable by barge. Cut trees would be chipped and hauled away by dump truck and construction workers would travel along existing freeways, highways, county and city roads and levee patrol roads to access the project sites and staging area located at Garcia Bend Park. Tree removal is expected to occur over approximately 4 months. This short-term impact would be less than significant. There would be no long-term impacts.

As described in Chapter 2, "Project Alternatives," erosion protection work would impact the Sacramento River Parkway trail between Garcia Bend Park and Freeport Boulevard. These impacts would be temporary, only occurring during the construction season, expected during summer months. Commuter traffic along the bike trail will be significantly impacted.

Mitigation Measure TRANS-1: Prepare and Implement a Traffic Control and Road Maintenance Plan.

Please refer to Impact 2.1-a,c, Project Components MCP and ARMS above for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measure TRANS-1, which was previously adopted for the ARCF 2016 Project would reduce the transportation-related short-term impact to bicycle and pedestrian facilities to less than significant with mitigation incorporated. Additionally, detours for work disrupting this segment of the Sacramento River Parkway trail would be coordinated with the City of Sacramento, and local and regional plans. There would be no long-term impacts.

Sacramento River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated.

NEPA Impact Conclusion (Design Refinements): Short-term and Minor effects that are Less than Significant with Mitigation Incorporated

There are no pedestrian or bicycle routes at the SRMS. The Sacramento River Mitigation site at Grand Island would be accessed via Grand Island Road and by private maintenance roads within the site. From Grand Island Road, trucks and workers would access the regional road network via SR 160, SR 84, I-5, I-80, I-580, and I-680. Construction activities would require hauling fill and excavating earthwork using heavy vehicles along the abovementioned routes. Estimated earthwork and material needs would require approximately 100 truck trips occurring over two construction seasons, specifically 2026 and 2027(see table 2.1-1). Any roads or other access areas damaged by construction activities would be fully repaired and restored to preconstruction condition. It is unlikely the threshold of 50 truck trips per day will be exceeded from the construction of the Sacramento River Mitigation site; however, there is potential that this threshold could be exceeded. For that reason, this short-term impact during construction is considered potentially significant. The following mitigation measure has been identified to address this short-term impact.

Mitigation Measure TRANS-1: Prepare and Implement a Traffic Control and Road Maintenance Plan.

Please refer to Impact 2.1-a,c Project Components MCP and ARMS above for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementation of TRANS-1 includes preparation of a traffic control plan to reduce road hazards resulting from associated truck traffic near the site. Furthermore, pre- and post-construction road surveys will be implemented as part of TRANS-1 to ensure that road conditions will be restored to pre-construction status. Therefore, **following** mitigation measure TRANS-1 will address this short-term impact and will reduce it to a less than significant level. there will be no long-term impacts.

2.1-d Result in inadequate emergency service.

CEQA Significance Conclusion: *Less than Significant with Mitigation Incorporated*

NEPA Significance Conclusion: Short-term and Moderate effects that are Less than Significant with Mitigation Incorporated.

Magpie Creek Project, American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, Sacramento River Mitigation Site, American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated.

NEPA Impact Conclusion (Design Refinements): Short-term and Moderate effects that are Less than Significant with Mitigation Incorporated.

Raley Boulevard would be closed to through traffic between Santa Ana Avenue and Vinci Avenue for a 3-month period during the construction of the new crossing structure associated with the MCP. A portion of Del Paso Boulevard could be temporarily closed for the entire construction season between Northgate Boulevard and Railroad Drive during construction of American River Erosion Contract 4A. During this time, all traffic, including emergency vehicles, would be required to follow detour routes. The American River Erosion Contract 3B, American River Erosion Contract 4B, Sacramento River Erosion Improvements, and Sacramento River and American River Mitigation components would not alter emergency routes during construction activities or during long-term operations. Additionally, no staging areas would block or inhibit the flow of traffic. However, both the temporary closure of the Watt Avenue boat launch and the use of heavy trucks could present a delay to emergency operators on roadways and at the Watt Avenue access point for water rescue services. Therefore, this short-term impact would be significant. The following mitigation measure has been identified to address this impact and reduce it to a less than significant level.

Mitigation Measure TRANS-1: Prepare and Implement a Traffic Control and Road Maintenance Plan.

Please refer to Impact 2.1-a,c Project Components MCP and ARMS above for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measure TRANS-1, which was previously adopted for the ARCF 2016 Project, will requires the provision of detour routes in consultation with the City of Sacramento, will ensures that access for emergency service vehicles will be maintained at all times, and requires informing emergency service providers prior to construction activities. Because detours will be provided and emergency service providers will be informed of construction activities, this impact will be a less than significant. There would be no long-term impact.

Alternatives Comparison

The number of truck trips for each Alternative is provided is Table 2.1-2 below.

Table 2.1-2. Truck Trips by Alternative

| Alternative | Truck Trips |
|----------------|-------------|
| Alternative 3a | 586 |
| Alternative 3b | 4,058 |
| Alternative 3c | 3,282 |
| Alternative 3d | 2,495 |
| Alternative 4a | 45,000 |
| Alternative 4b | 48,875 |
| Alternative 5a | 0 |
| Alternative 5b | 62,500 |
| Alternative 5c | 0 |

Alternative 3a

Alternative 3a would only change the American River Contract 4A by replacing the waterside berm with a landside berm between the levee and the State Route 160 bridge piers. This would avoid temporary or permanent bike trail closures that are part of the Proposed Action. In addition to avoiding impacts to the bike trail, a similar or slightly smaller number of materials and equipment would be needed compared to the Proposed Action. All other project components would be the same as the Proposed Action. Impact conclusions for Alternative 3a are presented in Table 2.1-3.

Table 2.1-3. Alternative 3a Effects on Transportation

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|----------------------------|--|--------------------|---|---|
| 2.1-a, c: Conflict with transportation plans or increase hazards | American River Contract 4A | Slight modifications to the design would avoid impact to bike trail in Alternative 3. Other impacts would be the same as the Proposed Action | TRANS-1 | Significant and Unavoidable after all feasible mitigation | Significant and Unavoidable |
| 2.1-d: Result in inadequate emergency service | American River Contract 4A | No change from Proposed Action | TRANS-1 | Less than Significant after Mitigation | Short-term and Negligible effects that are Less than Significant after Mitigation |

Alternative 3b, 3c, and 3d

In Alternative 3b, the bike detour would follow parallel to the railroad to the existing location of the bike trail instead of going under the railroad. In Alternative 3c, the bike route would be rerouted a short distance through an existing wetland. In Alternative 3d, the bike detour would go closer to the riverbank and follow the railroad to the existing location of the bike trail. All other project components would be the same as the Proposed Alternative. Impact conclusions for Alternatives 3b, 3c and 3d are presented in Table 2.1-4.

The modifications to the bike re-route under these Alternatives would not substantially change the distance and the materials volumes and associated truck trips would be unchanged from the

Proposed Action. Therefore, impacts would remain the same as the Proposed Action, Significant and Unavoidable.

Table 2.1-4. Alternative 3b, 3c, and 3d Effects on Transportation

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|----------------------------|---|--------------------|---|---|
| 2.1-a, c: Conflict with transportation plans or increase hazards | American River Contract 4A | No change from Proposed Action | TRANS-1 | Significant and Unavoidable after all feasible mitigation | Significant and Unavoidable |
| 2.1-d: Result in inadequate emergency service | American River Contract 4A | No change from Proposed Action | TRANS-1 | Less than Significant after Mitigation | Short-term and Negligible effects that are Less than Significant after Mitigation |

Alternative 4a – CEQA-Only

Alternative 4a would only change the ARMS. This alternative would retain a portion of the existing pond, which would reduce the need for fill material and associated truck trips compared to the Proposed Action. In Alternative 4a, the materials would include import of approximately 536,000 cy of material, compared to about 857,000 cy of material under the Proposed Action. Due to the substantial reduction in material volume, truck trips would be reduced to approximately 45,000 over the entire construction period, a reduction of approximately 30 percent compared to the Proposed Action. While this impact would be reduced compared to the Proposed Action, it would likely still exceed the 50 truck trips per peak hour threshold and therefore would be considered a Significant and Unavoidable impact, similar to the Proposed Action. Impact conclusions for Alternative 4a are presented in Table 2.1-5.

Table 2.1-5. Alternative 4a Effects on Transportation

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion |
|--|----------|---|--------------------|---|
| 2.1-a, c: Conflict with transportation plans or increase hazards | ARMS | Heavy truck traffic would be reduced under this alternative, but still would exceed 50 truck trips per peak hour. Therefore, the impact conclusion would be the same under this alternative, significant and unavoidable. | TRANS-1 | Significant and Unavoidable after all feasible mitigation |
| 2.1-d: Result in inadequate emergency service | ARMS | No change from Proposed Action. | TRANS-1 | Less than Significant after Mitigation |

Alternative 4b – CEQA-Only

Alternative 4b would only change the ARMS. This alternative would retain a portion of the existing pond, which would reduce the need for fill material and associated truck trips compared to the Proposed Action. In Alternative 4b, the materials would include import of about 799,000

cy of material, compared to about 857,000 cy of material under the Proposed Action. Due to the reduction in material volume, this alternative would require approximately 15 percent fewer truck trips compared to the Proposed Action. While this impact would be reduced compared to the Proposed Action, it will likely still exceed the 50 truck trips per peak hour threshold and therefore would be considered a Significant and Unavoidable impact, similar to the Proposed Action. Impact conclusions for Alternative 4b are presented in Table 2.1-6.

Table 2.1-6. Alternative 4b Effects on Transportation

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion |
|--|----------|---|--------------------|---|
| 2.1-a, c: Conflict with transportation plans or increase hazards | ARMS | Heavy truck traffic would be reduced under this alternative, but still would exceed 50 truck trips per peak hour. Therefore, the impact conclusion would be the same under this alternative, significant and unavoidable. | TRANS-1 | Significant and Unavoidable after all feasible mitigation |
| 2.1-d: Result in inadequate emergency service | ARMS | No change from Proposed Action. | TRANS-1 | Less than Significant after Mitigation incorporated |

Alternative 5a and 5c

Alternative 5a includes an alternative financial solution as opposed to constructing the SRMS. Conservation Bank Credits would be used for mitigation in lieu of the construction of SRMS.

Alternative 5c combines three approaches to complete the Sacramento River Mitigation requirements including 1) Purchasing Delta smelt credits from an approved conservation bank 2) Funding a NMFS recovery plan project (Sunset Pumps) to remove a weir, allowing fish passage to benefit chinook steelhead and green sturgeon and 3) Funding the improvements at Sunset Pumps would increase water availability, which would then be directed to two local wildlife refuges, benefiting the Western Yellow Billed Cuckoo. The Sunset Pumps project is listed as high priority BOR, DWR, and USFWS, and is subject to separate NEPA/CEQA analysis prior to implementation.

There would be no new project-related construction or disturbance associated with Alternative 5a and 5c, as existing mitigation banks would be used or funds will be provided for the Sunset Pumps Project. Consequently, there would be no impacts to transportation for the SRMS project component for these alternatives. Impact conclusions for Alternative 5a are presented in Table 2.1-7.

All other project components (American River 3B, American River Erosion Contract 4A, Sacramento River, Magpie, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action.

Table 2.1-7. Alternative 5a & 5c Effects on Transportation

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Conclusion |
|--|-----------------------------|--|--------------------|------------------------------|-------------------------|
| 2.1-a, c: Conflict with transportation plans or increase hazards | Sacramento River Mitigation | Alternative 5a would include purchase of mitigation credits and Alternative 5c to fund support for Sunset Pumps project, and so there would be no transportation impacts associated with the Sacramento River Mitigation project component, avoiding the related impacts of the Proposed Action. | None | No Impact | No Impact |
| 2.1-d: Result in inadequate emergency service | Sacramento River Mitigation | Alternative 5a would include purchase of mitigation credits and Alternative 5c to fund support for Sunset Pumps project, and so there would be no transportation impacts associated with the Sacramento River Mitigation project component, avoiding the related impacts of the Proposed Action. | None | No Impact | No Impact |

Alternative 5b

Alternative 5b includes an alternative design for improvements to the SRMS project component. All other project components (American River Erosion Contract 3B, American River Erosion Contract 4A, MCP, SRMS, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. Watermark Farms, located on the right bank of the Sacramento River between RM 50.5 and 51.25, would be used as the mitigation site for Sacramento River-related habitat impacts under Alternative 5b. This alternative would require approximately 1 million cubic yards of material to be imported for levee construction. Habitat creation would have balanced cut and fill, with approximately 530,000 cubic yards of material being moved on-site. This increased import of soil material would result in a substantial increase in truck trips for Alternative 5b compared to the Proposed Action. Unlike the Proposed Action, the truck trips required to implement Alternative 5b (see Table 2.1-2) would likely result in more than 50 truck trips per day during some periods of construction, and Alternative 5b would have a significant and unavoidable impact on transportation, compared to a less-than-significant impact after mitigation for the Proposed Action.

Alternative 5b would also require a rerouting of South River Road and would likely require temporary closures or lane reductions during construction. Although this impact would be reduced to a less-than-significant level after implementing Mitigation Measure TRANS-1, which

requires notification of emergency services providers and coordination to minimize effects on the roadway network, the Proposed Action would construct the SRMS at a location which would not require road realignments, closures, or lane reductions during construction. This impact would be greater than the impact of the Proposed Action, although it would nevertheless be reduced to a less-than-significant level after mitigation. Impact conclusions for Alternative 5b are presented in Table 2.1-8.

Table 2.1-8. Alternative 5b Effects on Transportation

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|----------|--|--------------------|---|--|
| 2.1-a, c: Conflict with transportation plans or increase hazards | SRMS | Alternative 5b would include construction of Sacramento River Mitigation at Watermark Farm. Approximately 1 million cubic yards of soil would need to be imported, a substantial increase in material transport over the Proposed Action. | TRANS-1 | Significant and Unavoidable after all feasible mitigation | Significant and Unavoidable |
| 2.1-d: Result in inadequate emergency service | SRMS | Alternative 5b would include construction of Sacramento River Mitigation at Watermark Farm. This alternative would include a rerouting of South River Road and could affect emergency access during construction, an increased impact compared to the Proposed Action. | TRANS-1 | Less than Significant after Mitigation | Short-term and Moderate after Mitigation |

2.2 Recreation

2.2.1 Existing Conditions/Affected Environment

Water-based Recreational Opportunities

The environmental setting described in Section 3.14.1 of the ARCF GRR Final EIS/EIR covering water-based recreational resources is applicable to the aquatic recreational resources found within the project site. It describes boating as an important recreational resource along both the American and Sacramento Rivers. American River Erosion Contract 3B, American River Erosion Contract 4B, American River Erosion Contract 4A, and the American River Mitigation site (ARMS) are all along the American River. Sacramento River Erosion Contract 3 and the Sacramento River Mitigation site (SRMS) are along the Sacramento River. Typical recreation activities on the American River include but are not limited to swimming, picnicking, rafting, kayaking, paddleboarding, and fishing. The ARMS property has been privately owned, so recreational use of the area is limited for public users. The Sacramento River is typically used for motorized boating, fishing, and waterskiing.

The Watt Avenue Boat launch is within the American River Erosion Contract 3B footprint. According to a recent survey of recreational use within the American River Parkway collected by Sacramento County Regional Parks, 56% of those surveyed reported enjoying access to the American River and 11% reported enjoying fishing (Sacramento County 2023a).

Garcia Park and Miller Park, which both have public boat launches, are within the Sacramento River Erosion Contract 3 footprint. In addition, there are private boat docks within the Sacramento River Erosion Contract 3 footprint.

Land-based Recreational Opportunities

The environmental setting described in Section 3.14.1 of the ARCF GRR Final EIS/EIR covering land-based recreational resources is generally applicable to the land-based recreational resources found within the project sites. Generally, it describes the primary recreational resource that could be affected by the flood risk reduction work as multi-use trails. In particular, the Jedediah Smith Memorial Trail, which is a multi-use trail in the American River Parkway connecting Discovery Park with Folsom Lake, is described as an important and heavily used recreational resource. In addition, bicyclists and pedestrians use the tops of the levees (levee crowns) along the Sacramento River and American River. Commuters also regularly use the trails, particularly paved trails, to get to work. The Sacramento Northern Bike Trail, which connects Elverta and Rio Linda with the City of Sacramento, crosses through the Magpie Creek Project (MCP) site (Figure 2.2-4). In addition, the Sacramento Northern Bike Trail connects with the Jedediah Smith Memorial Trail just north of the American River Erosion Contract 4A site and just south of the ARMS. The Sacramento Northern Bike Trail is 8.8 miles (Sacramento 2011, Appendix D).

American River Erosion Contract 3B, American River Erosion Contract 4A, American River Erosion Contract 4B, and the ARMS are all within the American River Parkway (Figure 2.2-1 and Figure 2.2-2). Although the ARMS is located in the American River Parkway, it has not historically been accessible to the public; however, for recreation; wildlife on the property can be

viewed from a distance. The environmental setting described in Section 3.14.1 of the ARCF GRR Final EIS/EIR describes the American River Parkway in detail. It describes that the Lower American River is designated as a recreational river both under the Federal Wild and Scenic Rivers Act (Heritage Conservation & Recreation Service 1980) and the State Wild and Scenic Rivers Act (Public Resources Code Section 5093.545h) for its outstandingly remarkable (Federal) and extraordinary (State) anadromous fishery resource and recreational values. The American River Parkway Plan supplies guidance on how to manage land use in the American River Parkway. Other recreational activities within the American River Parkway include walking, cycling, running, hiking, bird watching, wildlife viewing, and horse riding. Recreational events, such as Ride the Parkway, Run the Parkway, Great American Triathlon, and the American River Half Marathon, occur within the American River Parkway. According to a recent survey of recreational use within the American River Parkway collected by Sacramento County Regional Parks, 76% of those surveyed reported walking jogging, or running on trails; 64% reported enjoying nature, birds, wildlife and views; 59% bicycling for fun and recreation; 18% bicycling to commute for transportation; and 2% horseback riding. Only 3% of those surveyed indicated that they do not use the Parkway for any activities (Sacramento County 2023a).

The American River Parkway Natural Resources Management Plan's (NRMP) sections for the Watt Avenue B and SARA Park Area Plan (where Contract 3B improvements would be constructed) lists only one official trail in the Contract 3B South project vicinity: the equestrian/pedestrian trail along the levee toe (Sacramento County 2023a, pages 8-67 and 8-73). The American River Parkway's NRMP also lists only two trails in the Contract 3B North project vicinity: the Jedediah Smith Memorial Trail and a separate equestrian/hiking trail which both run parallel to the river (Sacramento County 2023a, page 8-61, 8-67 and 8-73). Although there are many social trails (unofficial, user-created paths that form over time when people repeatedly take detours off of designated trails), including trails to river access points in the Contract 3B South area, these trails are not designated or actively managed by the Sacramento County Department of Regional Parks.

Sacramento Erosion Contract 3 is located adjacent to the Sacramento River Parkway (Figure 2.2-3). The Sacramento River Parkway is designated along the east side of the river from I-80 in South Natomas to the southern city limit near the community of Freeport (City of Sacramento 2012) and is managed by the City of Sacramento. The Sacramento River Parkway is partially developed for recreational use, with a mix of private and public lands. Currently, portions of the Sacramento River Parkway have paved bike trails for bike and pedestrian access to and adjacent to the Sacramento River. Other areas of the Sacramento River Parkway have gravel roads that can be used for bike and pedestrian access, while levee access to other sections is fenced off to the public by landowners living adjacent to the levee.

There are also several local parks and developed recreation areas within the project site:

Larchmont Community Park

Larchmont Community Park is approximately 12 acres and is managed by the Cordova Recreation and Park District. This park is adjacent to the American River levee near the College Green East neighborhood (Figure 2.2-1) and has large soccer fields, multi-use fields, tennis

courts, a playground, and picnicking areas (Cordova Recreation and Park District 2023). The soccer fields are heavily used by youth soccer programs (Taylor 2022).

University Park

The American River Erosion Contract 2 Supplemental Environmental Impact Statement and Environmental Impact Report (EIS/EIR) sufficiently describes University Park and is incorporated here by reference. This park is approximately 3.4 acres (City of Sacramento 2023b) and is managed by the City of Sacramento. University Park is just east of Howe Avenue (Figure 2.2-1). University Park is under powerlines, but has open grassy fields, benches, and a small playground. In addition, there is a dog park in the southern portion of University Park.

Camp Pollock

The Sacramento Valley Conservancy manages Camp Pollock, which is approximately 11 acres (Sacramento Valley Conservancy 2023). Camp Pollock is located on the right bank of the American River within the American River Parkway just downstream of the State Route (SR) 160 Bridges (Figure 2.2-2). The Sacramento Valley Conservancy allows kayaking, canoeing, paddle boarding, fishing, weddings, youth educational camping, and events with over 200 people at Camp Pollock (Sacramento Valley Conservancy 2023). In addition, there is a native plant nursery at Camp Pollock.

Discovery Park

The Sacramento County Department of Regional Parks and Recreation manages Discovery Park. Discovery Park is 302 acres and is located on the right bank of the American River within the American River Parkway near Interstate (I) 5 (Figure 2.2-2). Discovery Park is popular for rafters and waders. The property has a boat launch, archery range, and is often used for large outdoor events such as concerts.

Garcia Bend Park

The Sacramento River East Levee Contract 2 Supplemental Environmental Assessment (SEA) and EIR discusses Garcia Bend Park, and that discussion is incorporated by reference. This park is located in the Pocket Neighborhood along Pocket Road (Figure 2.2-3). Garcia Bend Park is managed by the City of Sacramento and contains a boat launch, picnic areas, soccer fields, tennis courts, and playgrounds. Overall, the park is 18.9 acres.

Miller Regional Park

Sacramento River East Levee Contract 2 Supplemental EIR/EA discusses Miller Regional Park. This park is located approximately 3 miles north of the Proposed Action and is just south of I-80. The City of Sacramento manages the 40.3-acre Miller Regional Park. The recreational resources available at Miller Park include picnic areas and a boat launch.

Walter S. Ueda Parkway

The City of Sacramento manages the Walter S. Ueda Parkway, and the recreational area is 491.84 acres (City of Sacramento 2023d). The area contains a 12.5-mile walking path. Only the

most northeastern section between Rio Linda Boulevard and Rose Street is within the Project Site (Figure 2.2-4).

Dry Creek Parkway

Sacramento County manages the Dry Creek Parkway, and the recreational facility is 1,300 acres (Sacramento County 2003). The Dry Creek Parkway is a 6-mile corridor that contains recreational resources such as a golf course, horse trails, picnic facilities, soccer fields, and hiking trails (Sacramento County 2023d). Only the most southern section between Rio Linda Boulevard and Rose Street is within the Project Site (Figure 2.2-4).

Watt Avenue Boat Launch

Sacramento County Department of Regional Parks manages the Watt Avenue Boat Launch. The Watt Avenue boat launch has two boat ramps and many parking spots. This recreational facility is in the American River Parkway on the left bank just under the Watt Avenue bridge and is a popular spot for kayakers, canoers, and paddleboarders to access the American River.

Waterton Way River Access

Sacramento County Department of Regional Parks manages the Waterton Way River Access. This recreational facility has parking spots and access to the American River Parkway, though the area has been closed to vehicle access recently. It is located on the left bank in the Larchmont Riviera neighborhood near the Manlove Pump Detention Basin (Figure 2.2-1).

Kadema Drive River Access

This recreational facility has parking spots and access to the American River Parkway. It is located on the right bank across from Oak Meadow Park.

Estates Drive River Access

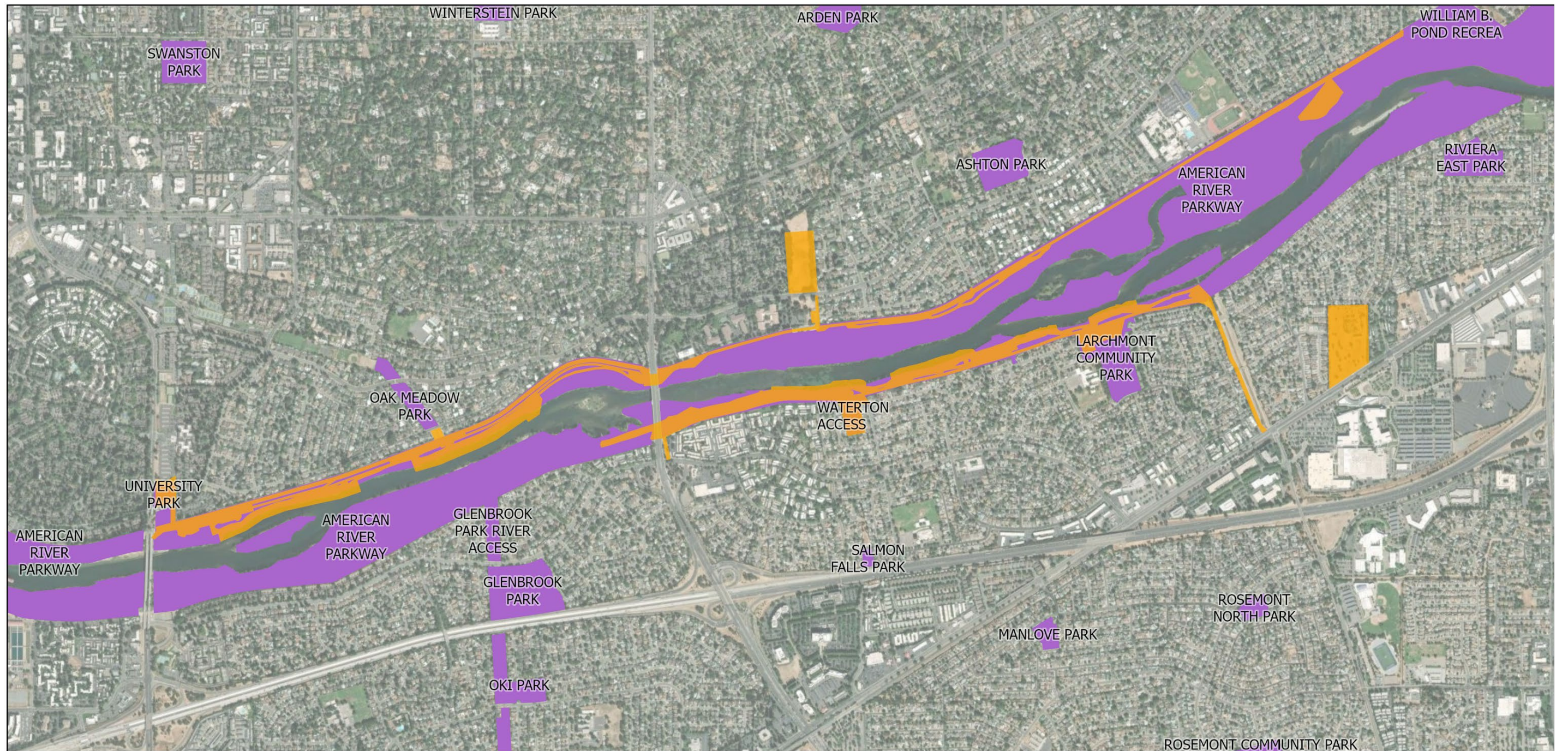
This recreational facility has parking spots and access to the American River Parkway. It is located on the right bank in the Wilhaggin neighborhood.

Harrington Way River Access

This access to the American River Parkway is located on the right bank at Harrington Way in Carmichael.

North Point Way River Access

This access to the Sacramento River is managed by the City of Sacramento. It is located in the Pocket neighborhood along North Point Way (Figure 2.2-1).



Recreational Areas Near American River Erosion Contracts 3B North and South

- Project Site
- Recreational Area

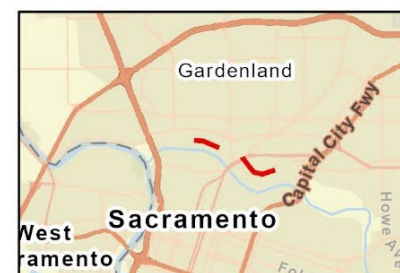
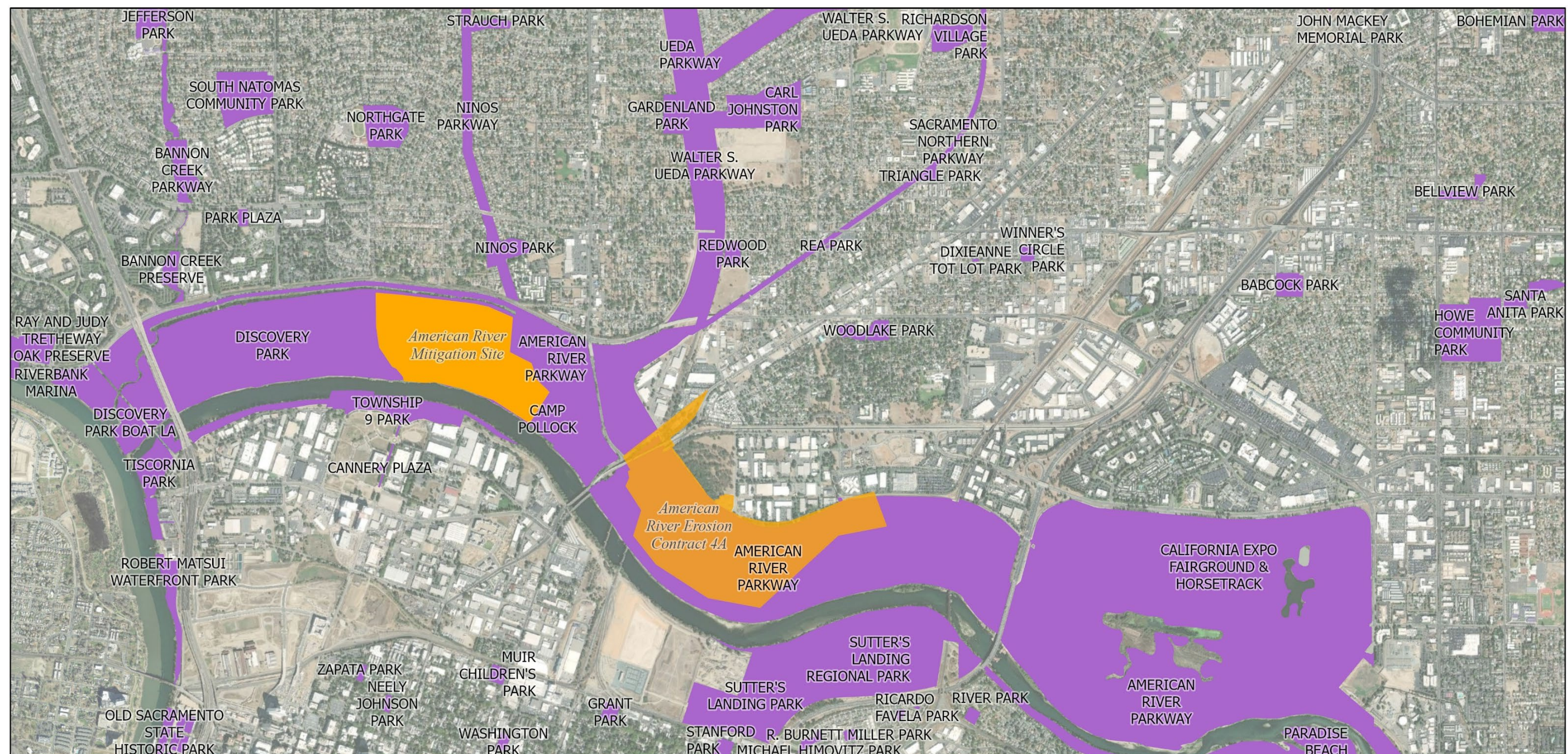
Updated 10/21/2024

0 0.5 1 Miles



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Figure 2.2-1. Recreational areas near American River Erosion Contracts 3B North and South



Recreational Areas Near American River Erosion Contract 4A and American River Mitigation Site

- Project Site
- Recreational Area

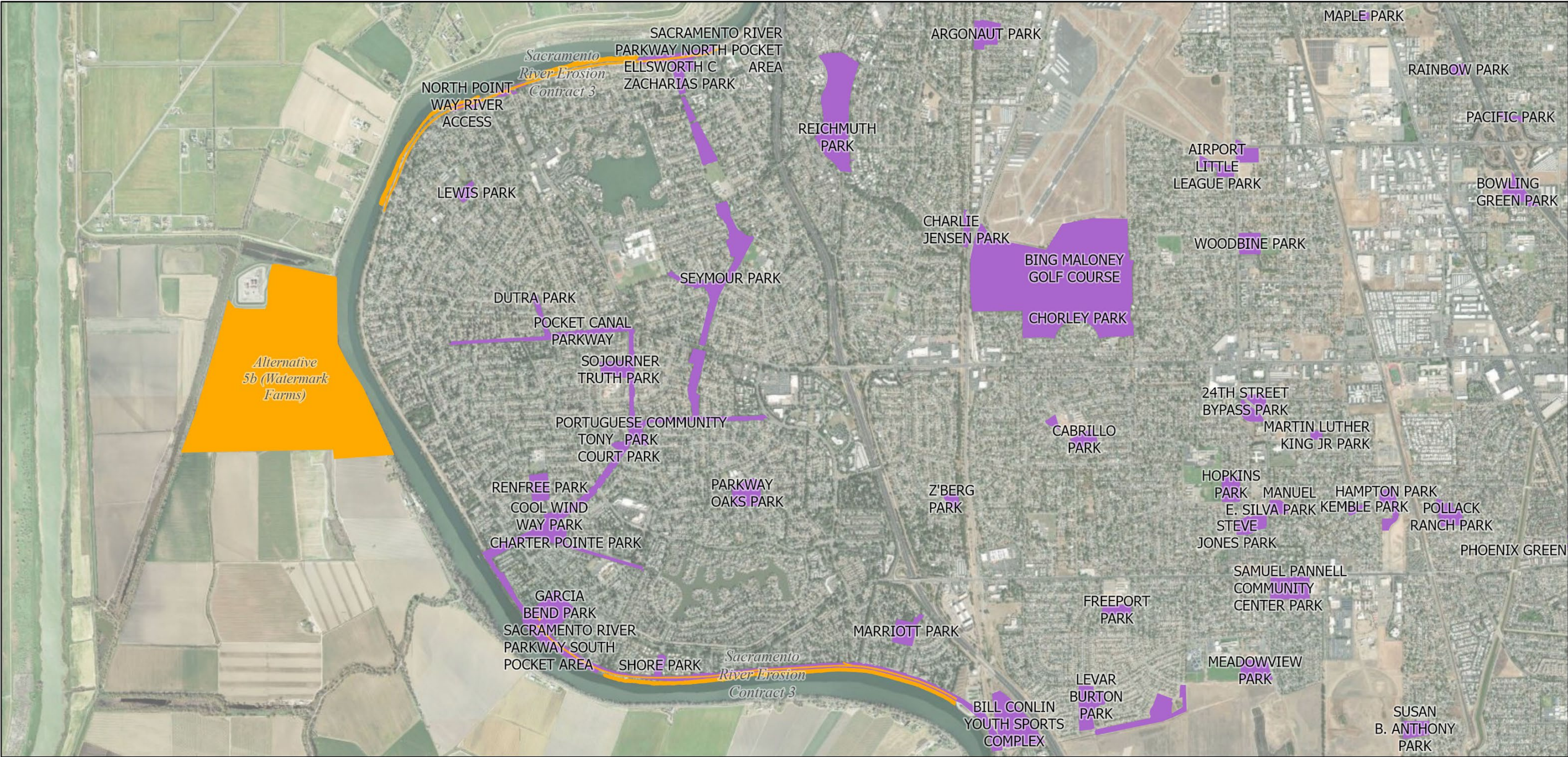
Updated 7/11/2023

0 0.75 1.5 Miles



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Figure 2.2-2. Recreational areas near American River Erosion Contract 4A and the ARMS



Recreational Areas Near Sacramento River Erosion Contract 3 and Alternative 5b

- Project Site
- Recreational Area

Updated 6/29/2023

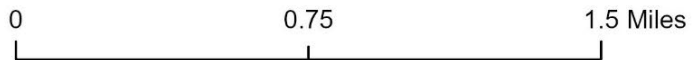
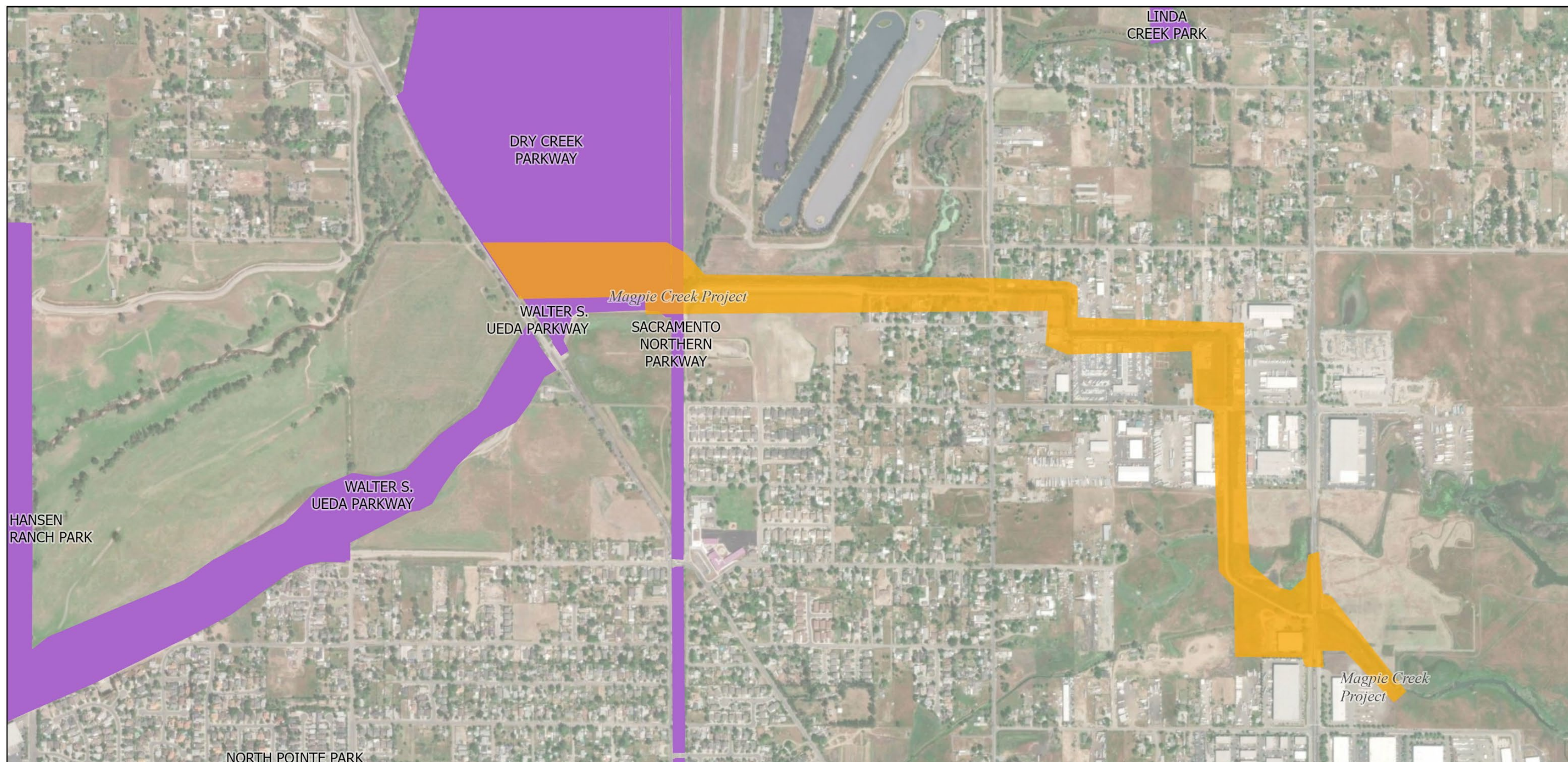


Figure 2.2-3. Recreational areas near Sacramento River Erosion Contract 3 and Alternative 5b



Recreational Areas Near the Magpie Creek Project

- Project Site
- Recreational Area

Updated 7/11/2023

0 0.25 0.5 Miles



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Figure 2.2-4. Recreational areas near MCP

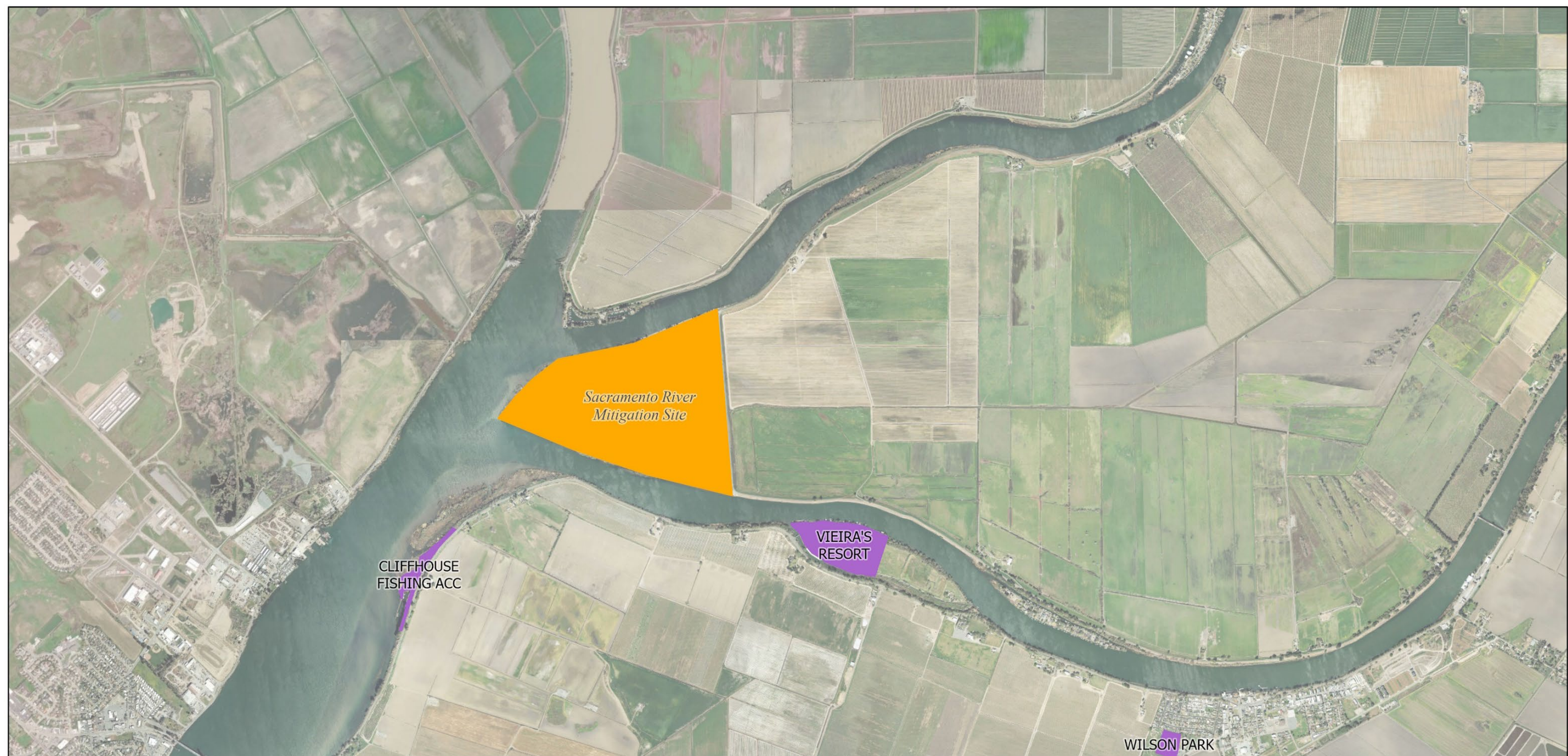


Figure 2.2-5. Recreational areas near SRMS

2.2.2 Applicable Laws, Regulations, Policies, and Plans

Federal

National Wild and Scenic Rivers Act (16 U.S.C. 1271 et. seq.)

The Wild and Scenic Rivers Act of 1968 was enacted to preserve selected rivers or sections of rivers in their free-flowing condition to protect the quality of river waters and to fulfill other national conservation purposes. The Lower American River, below Nimbus Dam, has been designated as recreational in the National Wild and Scenic Rivers System since 1981. The Lower American River was listed for having outstandingly remarkable anadromous fishery resource and recreational values. The act applies to the parts of the Proposed Action along the American River, specifically all areas disturbed by implementation of the Proposed Action within the Parkway associated with American River Erosion Contract 3B, American River Erosion Contract 4A, and the ARMS.

Sections 9 and 10 of the Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. §§ 401 and 403)

Section 9 of the River and Harbors Appropriation Act requires Congress's consent to build a ridge, causeway, dam, or dike over or in any port, roadstead, haven, harbor, canal, navigable river, or other navigable water of the United States. It also requires the Secretary of Transportation, Chief of Engineers, and Secretary of the Army to review and approve plans associated with these projects. Section 10 of the River and Harbors Appropriation Act prohibits construction of any wharf, pier, boom, weir, or other structures in any port, roadstead, haven, harbor, canal, navigable river, or other water of the United States, outside established harbor lines. The Rivers and Harbors Appropriation Act of 1899 applies to the parts of construction work within navigable waters at American River Erosion Contract 3B, ARMS, Sacramento River Erosion Contract 3, and SRMS.

State

California Wild and Scenic Rivers Act (PRC Section 5093.545h.)

The California Wild and Scenic Rivers Act of 1972 was put in place to preserve certain rivers that have extraordinary recreational, scenic, fishery or wildlife values. The Lower American River between Nimbus Dam and where the American River intersects with the Sacramento River has been designated under the California Wild and Scenic Rivers Act as a recreational river for its extraordinary anadromous fishery resource and recreational values. The act applies to the parts of the Proposed Action along the American River, specifically all areas disturbed by implementation of the Proposed Action within the Parkway associated with American River Erosion Contract 3B, American River Erosion Contract 4A, American River Erosion Contract 4B, and the ARMS.

Local

American River Parkway Plan

The American River Parkway Plan outlines how the American River Parkway should be protected, enhanced, and expanded, where appropriate. Sacramento County Department of Parks

and Recreation handles the day-to-day management from the junction of the Sacramento River and the American River upstream to Hazel Avenue. There are portions of the American River Parkway that are managed by State and Federal land managers. Sacramento County Department of Regional Parks manages some State-owned property while other Federal land-owning managers are encouraged to administer their properties in accordance with the American River Parkway Plan. The American River Parkway Plan applies to the parts of the Proposed Action in the American River Parkway, specifically all disturbed by implementation of the Proposed Action within the Parkway associated with American River Erosion Contract 3B, American River Erosion Contract 4A, and the ARMS. See Appendix B Section 2.4 “Land Use and Prime and Unique Farmland” for a discussion regarding the Proposed Action's consistency with the American River Parkway Plan, as well as policies outlined in the American River Parkway Plan that apply to the Proposed Action.

American River Parkway Natural Resources Management Plan

The American River Parkway Natural Resources Management Plan (NRMP) is to be used in conjunction with the American River Parkway Plan to manage natural resources in the American River Parkway (Sacramento County 2023a, Chapter 1). A final draft of this document was adopted on February 28, 2023 (Sacramento County 2023a). The American River Parkway Natural Resources Management Plan is applicable to the parts of the Proposed Action in the American River Parkway, specifically all disturbed by implementation of the Proposed Action within the Parkway associated with American River Erosion Contract 3B, American River Erosion Contract 4A, American River Erosion Contract 4B, and the ARMS.

The American River Parkway NRMP identifies trail mapping and habitat management actions related to the existing informal “social” trails: “Map the multiuse trail and trail spurs, equestrian/hiking trail, pedestrian trail, maintenance roads, and current social trails. After mapping is complete, determine which social trails should be actively closed and restored vs. actively monitored” and “Remediate social trail impacts and promote native vegetation growth: Manage social trails in a manner that consolidates trails and allows rehabilitation of vegetation understory.” (Sacramento County 2023a, page 8-65 and 8-71).

Sacramento City Parks and Recreation Master Plan

This policy document, updated in 2009, guides the direction for Sacramento City Parks and Recreation. In addition, it outlines how Sacramento City Parks and Recreation aligns with the City’s goals, demonstrates benefits provided by the Sacramento City Parks and Recreation, and tells the public how they can get involved (City of Sacramento 2009). The Sacramento City Parks and Recreation Master Plan applies to the parts of the Proposed Action in parks managed by the City of Sacramento, specifically all construction work and some staging for American River Erosion Contract 4A, American River Erosion Contract 4B, the ARMS, Sacramento River Erosion Contract 3, MCP, and some staging and some construction work for American River Erosion Contract 3B.

Sacramento County Bikeway Master Plan

The Sacramento County Bikeway Master Plan, developed in 2011, guides Sacramento County on bikeway policies, programs, and development standards with the intention of increasing those

who use bicycling as a mode of transportation within Sacramento County (Sacramento County 2011). The Sacramento County Bikeway Master Plan applies to the parts of the Proposed Action impacting bike trails, specifically some construction work for American River Erosion Contract 3B, American River Erosion Contract 4A, the ARMS, MCP, and Sacramento Erosion Contract 3.

City of Sacramento 2035 General Plan – Education, Recreation, and Culture

Approved on March 3, 2015, the City of Sacramento 2035 General Plan (City of Sacramento General Plan) is a comprehensive plan that directs the City of Sacramento on future land use, development, and environmental protection. Goal ERC 2 lists the policies for maintaining recreational facilities, developing recreational facilities, and developing recreational programs (City of Sacramento 2015). These policies include maintaining a complete park system, connecting recreational facilities with service goals, providing a range of experiences, and preserving the Sacramento and American River Parkways (City of Sacramento 2015). The City of Sacramento General Plan applies to the parts of the Proposed Action impacting the City of Sacramento, specifically all construction work and some staging for American River Erosion Contract 4A, the ARMS, Sacramento River Erosion Contract 3, MCP, and some staging and some construction work for American River Erosion Contract 3B.

Sacramento County General Plan of 2005 to 2030, Open Space Element and Conservation Element

Adopted November 9, 2011, the Sacramento County General Plan of 2005 to 2030 (Sacramento County General Plan) outlines the goals, objectives, and policies for future development in the unincorporated areas of Sacramento County. The Open Space element, which was updated November 26, 2017, discusses that open space is important for providing passive recreation. Policies listed to protect open space include protecting open space, maintaining open space, maintaining a regional park standard of 20 acres per 1,000 population, establishing trail connections, and establishing greenbelts. The Conservation Element, which was updated September 26, 2017, discusses protecting streams, riparian habitat, and the American River for recreational values. Policies related to recreation include prohibiting recreational uses on prime farmland, dedicating land near streams for recreation, encouraging recreational opportunities as important parts of levee stabilization, and protecting stream corridors for recreational uses. The Sacramento County General Plan applies to all areas disturbed by the Proposed Action associated with the SRMS and some construction work and staging areas associated with American River Erosion Contract 3B.

Cordova Recreation and Park District Master Plan for New Development in Incorporated Areas

The Cordova Recreation and Park District Master Plan outlines the recreation planning efforts of Rancho Cordova over a 10-year timeframe. Larchmont Community Park, a staging area under American River Erosion Contract 3B, is under the jurisdiction of Cordova Recreation and Park District, so staging at Larchmont Community Park falls under this Master Plan.

Dry Creek Parkway Recreation Master Plan

Adopted in December 2003, the Dry Creek Parkway Recreation Master Plan outlines the management and operation plans for future land use within the Dry Creek Parkway. A proposed

staging area for the MCP is located at the southernmost end of the Dry Creek Parkway. Use of this land for staging falls under this Master Plan.

Code of Ordinances- Sacramento County

To protect native oak trees, Sacramento has implemented an ordinance for tree preservation and protection. Chapter 19.12 of the Sacramento County Code of Ordinances spells out requirements for preserving and protection native trees. Section 19.12.070 (c) says “The preservation or removal of trees within parks, parkways, and public recreation easements, shall be the responsibility of the Director of Parks and Recreation.” Project Partners have included Sacramento Regional County Parks in the formal design review process, allowing Sacramento Regional County Parks to provide formal comment at the different design milestones. Coordinating with Sacramento Regional County Parks ensures compliance with this ordinance.

Code of Ordinances- City of Sacramento

To protect trees, the City of Sacramento has implemented an ordinance for tree protection. Chapter 12.56 of the outlines tree planting, maintenance, and conservation. Section 12.56.080 states that “A tree permit is not required for a public agency that performs any flood protection work on public property or within a public easement that may cause injury to or the removal of a city tree or private protected tree. As used in this section, "public agency" includes, but is not limited to, the U.S. Army Corps of Engineers, Sacramento Area Flood Control Agency, Reclamation District 1000, or American River Flood Control District. (Ord. 2016-0026 § 4)”. Consequently, tree removal for flood protection by Project Partners within the limits of the City of Sacramento is in compliance with this ordinance.

2.2.3 Analysis of Environmental Effects

Analysis Methodology

The evaluation of potential effects relies on the American River Parkway Plan, and the Final American River Parkway Natural Resources Plan for a description of recreational resources in the American River Parkway. The Sacramento County General Plan, City of Sacramento General Plan, and the Cordova Recreation and Park District Master Plan. were reviewed to understand recreational goals and service levels for the portions of the Proposed Action covered under each planning document. In addition, these plans, in combination with the recreation agencies’ websites, were used to understand the recreational resources available at the public parks. Google Earth™ was used to compare the locations of recreational areas within the project sites. City of Sacramento park data were downloaded from the City of Sacramento Open Data (City of Sacramento 2023c) to understand park locations and size. Sacramento County park data (Sacramento County 2023b) and park district data (Sacramento County 2023c) were downloaded from the City of Sacramento Open Data to understand which parks were associated with each park district, park locations, and sizes. Aerial photographs in ArcPro were used to estimate the acreage of the parks when the size of the parks was not easily found on the recreation agencies’ websites. In addition, park use data were collected from the American River Parkway NRMP (Sacramento County 2023a) to provide information on types of recreational use within the Parkway and inform the effects analysis.

Comments submitted during the NEPA scoping period (from October 7, 2022, to November 30, 2022) in response to the NOI were reviewed for relevance to the analysis of environmental consequences and development of mitigation measures. Two comment letters received from agencies had comments related to recreation. A letter was received during the NEPA scoping period from the Park Planning and Development Manager for the Cordova Recreation and Park District (Taylor 2022). This letter outlined concerns of the impacts on recreational resources associated with use of Larchmont Community Park as a staging area. Another letter from the County of Sacramento's Director of Regional Parks states that the American River Parkway Plan goals and policies for the Discovery Park Area (which includes the ARMS project site) call for reclaiming and restoring the site to support historical and cultural interpretive activities, hiking, picnicking, and wildlife viewing. The letter from County of Sacramento's Director of Regional Park also requests the analysis of an alternative design for the ARMS site including a pond, to would preserve interpretive and wildlife viewing values. Three comments were received from members of the public relating to recreation as well. Two comments were concerned about ARMS's impact to the American River Parkway. The third comment was focused on bird habitat associated with ARMS and discussed birding census activities done at the site. These comments were considered during the analysis.

Basis of Significance

The thresholds of significance, and the impact analysis that follows, take into consideration the significance of an action in terms of: the setting of the proposed action; short- and long-term effects of the proposed action; both beneficial and adverse effects; effects of the proposed action on public health and safety; and effects that would violate Federal, State, Tribal, or local law protecting the environment, as required under NEPA (40 CFR 1508.1(g) and the State CEQA Guidelines, as amended. The alternatives under consideration were determined to result in a significant impact related to recreation if they would do any of the following:

- 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;
- b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment; or
- c) Cause substantial disruption in the use of an existing recreational resource, reduce the quality of an existing recreational resource, reduce availability of an existing recreational resource, or result in inconsistencies or non-compliance with current planning documents (such as the American River Parkway Plan).

Effects Not Discussed in Detail

Due to the scale of the Proposed Action, all project components were analyzed for impacts to recreational resources.

Effects Analysis

No Action Alternative

Since 2016, substantial portions of the authorized project have been constructed, as described in supplemental documents listed in Section 2.1.1, “Related Documents and Resources,” in the SEIS/SEIR document, and the authorized project includes implementation of all mitigation measures adopted and incorporated into the project. Only impacts from previous ARCF 2016 Projects that are directly related to the Proposed Action are summarized here. The ARCF GRR Final EIS/EIR Section 3.14 analyzed impacts to recreational resources that are relevant to the project site. The ARCF GRR Final EIS/EIR concluded that the detours and disruptions caused by closure of portions of the Jedediah Smith Memorial Trail and the top of levees along the American River during project construction would conflict with the requirements of the Federal Wild and Scenic Rivers Act, having a significant direct impact on the tranquility of river areas within the project site, and cause a significant unavoidable impact to recreational resources. Mitigation measures listed in section 3.14.6 of the ARCF GRR Final EIS/EIR would be implemented to minimize the impacts as much as feasible, although there would still be short-term significant unavoidable impacts to recreational resources. In addition, construction vehicles would cause significant unavoidable impacts to recreational resources kept open due to increases in traffic, noise, visual effects, odors, and air emissions. University Park would be closed during work for American River Erosion Contract 2, reducing the recreational experiences of the park. Garcia Bend Park and Miller Park would be used for staging for Sacramento East Levee Seepage, Stability and Overtopping Contract 2, Sacramento East Levee Seepage, Stability and Overtopping Contract 4, Sacramento River Erosion Contract 2, and Sacramento River Erosion Contract 4.

Closures of the levee crown along the Sacramento River would have direct short-term impacts to recreation since there are areas where the recreational trail is along the top of the levee. Walking trails and the bike path may be rerouted during work. Paved parking areas of Miller Park and Garcia Bend Park would be used for staging; however, the boat ramps would still be accessible to the public. Overall, there would be direct short term significant impacts to recreation along the Sacramento River.

Construction of the east side tributaries, including the MCP, under the No Action Alternative, would have a less than significant impact on recreational facilities. The only recreational facility in the area is the Sacramento Northern Bike Trail and it would not be negatively impacted by construction activities under the No Action Alternative.

The short-term significant unavoidable impact related to recreational resources would not be reduced to a less-than-significant level with implementation of mitigation measures listed in section 3.14.6 of the ARCF GRR Final EIS/EIR. Disturbance associated with construction work and hauling is necessary for work to be done and consequentially the significant impact on recreation cannot be avoided.

Proposed Action Alternative

2.2-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.

CEQA Significance Conclusion: Less than Significant

NEPA Significance Conclusion: Short-term to Medium-Term and Moderate to Major effects that are Less than Significant

American River Mitigation Site, Sacramento River Mitigation Site, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): No Impact

NEPA Impact Conclusion (Design Refinements): No Impact

There would be no complete closures of local parks or other recreational areas associated with the SRMS site, ARMS, and the Piezometer Network. Even though the ARMS is within the American River Parkway, the land was originally private and closing the area would not impact nearby parks. Because both the SRMS, Piezometer Network, and ARMS do not involve closures of recreational areas, there would not be increased usage of nearby recreational areas due to the Proposed Action nor would the recreational areas degrade at an accelerated pace. The Proposed Action would have no impact on use or deterioration of other recreational areas under both CEQA and NEPA.

American River Erosion Contracts 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant.

NEPA Impact Conclusion (Design Refinements): Short-term to Medium-Term and Moderate to Major effects that are Less than Significant

Portions of the American River Parkway would be closed for American River Erosion Contract 3B North, 3B South, 4A, and 4B. Several local parks near the American River Erosion Contract 3B North and South sites and American River Erosion Contract 4B would be closed during construction. Larchmont Community Park and University Park would have partial closures during construction (Figure 2.2-1). Approximately 3 acres of University Park would be closed (the dog park would remain open), and 7.5 acres of Larchmont Community Park would be closed (Figure 2.2-1).

Three recreational areas would be directly impacted by Sacramento Erosion Contract 3: the Sacramento River Parkway, the North Point Way River Access, and the Garcia Bend Park. All three of these parks are managed by the City of Sacramento. Approximately 54 acres of the Sacramento River Parkway and 5 acres of the North Point Way River Access would be closed (Figure 2.2-3) for approximately 8 weeks during tree clearing that is anticipated to occur from

fall 2025 to winter 2026. During construction a small portion of Garcia Bend Park (approximately 0.1 acre) and a small portion (approximately 5.5 acres) of where the Sacramento River Parkway and the project site overlap would be closed (Figure 2.2-3).

The MCP would directly impact three recreational areas. A small portion (approximately 11.6 acres) of the Dry Creek Parkway would be directly impacted by staging and the work associated with the culvert replacement under the Sacramento Northern Bike Trail (Figure 2.2-4). Additionally, a small part (close to 1.3 acres) of the Sacramento Northern Bike Trail would be directly impacted by access and installation of the culvert under the trail (Figure 2.2-4). Finally, a small portion (approximately 3.5 acres) of land in the Walter S Ueda Parkway would be directly impacted by staging (Figure 2.2-4). The Northern Sacramento Bike Trail and the Walter S Ueda Parkway are managed by the City of Sacramento. The Dry Creek Parkway is managed by Sacramento County.

Due to closures and disruptions, recreationalists on the American River Parkway would likely instead access the Parkway farther upstream or downstream of the project sites, specifically at the Howe River Access, Campus Commons River Access, Kansas Way River Access, and River Walk Way River Access. During construction of American River Erosion Contract 3B North and South and American River Erosion Contract 4B, these access points could experience an increase in use since it is anticipated that recreationalists who typically utilize the access points impacted by these components would use the next closest access point instead. Both the Howe River Access and Glenbrook Park could see an increase in use during construction of American River Erosion Contract 3B South and American River Erosion Contract 4B since it is anticipated that recreationalists who typically utilize the impacted parks would use the next closest park.

During Sacramento River Erosion Contract 3 tree clearing, Zacharias Park and Richard Marriott Park would likely see an increase of use by recreationalists since it is anticipated that recreationalists who typically utilize the parks impacted by Sacramento River Erosion Contract 3 would use the next closest park. The increase in use would occur over an anticipated 2- to 3-year timeframe around American River Erosion Contract 3B and approximately 8 months for Sacramento River Erosion Contract 3. Recreationalists at Dry Creek Parkway and Walter S. Ueda Parkway would likely use different areas of the parkways.

Several local governments have developed parkland to population service ratios to ensure adequate parklands are incorporated into development. Sacramento County has a service goal of 20 acres of parkland per 1,000 population (Sacramento County 2017). The City of Sacramento has a service goal of 5 acres of parks per 1,000 population and one park within 0.5 mile of all residences (City of Sacramento 2015). The Cordova Recreation and Park District has a service goal of 5 acres of parks per 1,000 population (Cordova Recreation and Park District 2014).

Table 2.2-1. Temporary Park Service Ratio Impacts

| Department or District | Acres of Parks Managed | Acres Impacted by Proposed Action | Percent of Managed Parks Impacted | Population | Service Ratio Goal | Service Ratio without Proposed Action | Service Ratio with Proposed Action |
|--|------------------------|-----------------------------------|-----------------------------------|------------------------|--------------------|---------------------------------------|------------------------------------|
| City of Sacramento Department of Parks and Recreation | 4,255.5 ¹ | 70.4 | 1.65% | 525,041 ² | 5 ³ | 8.11 | 7.97 |
| Cordova Recreation and Park District | 600 ⁴ | 7.5 | 1.25% | 115,000 ⁵ | 5 ⁶ | 5.22 | 5.15 |
| Sacramento County Department of Regional Parks | 15,000 ⁶ | 331.6 | 2.21% | 1,585,055 ² | 20 ⁷ | 9.46 | 9.25 |

Compiled by USACE in 2023.

¹ City of Sacramento. 2023a. *Parks Directory*. Available: <https://www.cityofsacramento.org/ParksandRec/Parks/Park-Directory>. Accessed February 12, 2023.

² US Census. 2022. *Quick Facts*. Available: <https://www.census.gov/quickfacts>. Accessed February 16, 2023.

³ City of Sacramento. 2015. *2035 General Plan*. Available: <http://www.cityofsacramento.org/Community-Development/Resources/Online-Library/2035--General-Plan>. Accessed January 25, 2023.

⁴ Taylor, L.L. 2022. Letter from Cordova Recreation and Park District regarding: American River Common Features Project Notice of Intent to Prepare a Draft Supplemental Environmental Impact Statement in addition to a Draft Subsequent Environmental Impact Report XIV regarding the Lower American River Erosion Contracts 3B and 4A Public Scoping Comment Period October 31 to December 31, 2022.

⁵ Cordova Recreation and Park District. 2014. *Master Plan for New Development in Incorporated Areas*. Available: https://crpd.com/wp-content/uploads/CRPD-Master-Plan_Chapter-1-3-1.pdf. Accessed February 16, 2023

⁶ Sacramento County. 2023e. *Regional Parks-About Us*. Available: <https://regionalparks.saccounty.gov/Pages/AboutUs.aspx>. Accessed February 16, 2023.

⁷ Sacramento County. 2017. *Sacramento County General Plan of 2005 to 2030, Open Space Element*. Available: <https://planning.saccounty.net/LandUseRegulationDocuments/Documents/General-Plan/Open%20Space%20Element%20-%20Amended%2009-26-17.pdf>. Accessed January 25, 2023.

Though service ratios would temporarily decrease due to the park closures, the decreases in the service ratios would be minimal (Table 2.2-1). Because these service ratios are not significantly changed and because the park closures are only temporary, the Proposed Action is not anticipated to cause substantial degradation to other parks and impacts would be less than significant on other local parks under both CEQA and NEPA.

2.2-b Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

CEQA Significance Conclusion: Short-term Significant and Unavoidable impact, Long-term Less than Significant.

NEPA Significance Conclusion: Short-term Significant and Unavoidable impact and Long-Term and Negligible Effects that are Less than Significant.

MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, American River Mitigation, Sacramento River Mitigation, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): No Impact

NEPA Impact Conclusion (Design Refinements): No Impact

There would be no recreational facility constructed or expanded by the MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, ARMS, SRMS, and the Piezometer Network. There would be no impact.

American River Erosion Contract 4A

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable impact, Long-term Less than Significant.

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable impact and Long-Term and Negligible effects that are Less than Significant.

A permanently rerouted alignment for the Jedediah Smith Memorial Trail would be constructed as part of American River Erosion Contract 4A (Figure 3.5.3-4, Map with Proposed Action). This path would generally follow an existing off-road bike trail. Construction of this trail would involve some grading, tree trimming, and removal of trees blocking the bike path route, and the physical environmental impacts from constructing this new trail segment are addressed comprehensively in each of the topic section appendices of this SEIS/SEIR. During construction, creation of the rerouted trail would contribute to the would short-term significant and unavoidable direct impacts identified throughout the SEIS/SEIR. In the long term, the environmental effects of the reroute of the Jedediah Smith Memorial Trail would be less than significant because it would offer similar recreational value to the facility it would be replacing, and maintenance requirements for the new alignment would be similar to the existing trail.

2.2-c Cause substantial disruption in the use of an existing recreational resource, reduce the quality of an existing recreational resource, reduce availability of an existing recreational resource, or result in inconsistencies or non-compliance with current planning documents (such as the American River Parkway Plan).

CEQA Significance Conclusion: Short-term Significant and Unavoidable, Long-term Less than Significant with Mitigation Incorporated.

NEPA Significance Conclusion: Short-term Significant and Unavoidable, Long-term Negligible Effects that are Less than Significant with Mitigation Incorporated

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable, Long-term No Impact with Mitigation Incorporated

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable, Long-term No Impact with Mitigation Incorporated

The ARCF GRR Final EIS/EIR determined that construction activities would not directly impact the Sacramento Northern Bike Trail; however, the design refinements include changes that would affect this trail. The design refinements include replacing culverts in Robla Creek and closing the Sacramento Northern Bike Trail during culvert replacement. The closure is anticipated to occur over a 3- to 5-month period starting in spring 2027. There would be a detour onto side streets to enable bicycle and pedestrian traffic to go around the construction work. The Sacramento Northern Bike Trail is the only paved bike trail in the area and provides a major bike connection for the area to central Sacramento. The bike trail would likely be closed between 3-5 months starting in spring 2028, and because putting bicyclists on streets would disrupt the natural views and sounds there would be a short-term significant direct impact on recreation due to the detour and temporary disruption of the natural views and sounds. The following mitigation measure has been identified to address this impact.

Mitigation Measure REC-1: Implement Bicycle and Pedestrian Detours, Provide Construction Period Information on Facility Closures, and Repair Project-related Damage to Recreational Areas

Project Partners will implement the following measures to reduce temporary, short-term construction effects on recreational facilities in the project site:

- Identify all times and locations where recreation access will be prohibited or limited prior to construction each construction season and consult with Sacramento County Department of Regional Parks and City of Sacramento Department of Parks and Recreation to implement planned closures. Provide 14 days advance notice to recreation users using signs posted at entrances to recreation facilities informing recreation users of anticipated construction activities, facility closures (areas and durations), and maps of detours. Closures of paved trails will be noticed at least 14 days in advance using posted signs at the detour locations. When work in the American River Parkway affects the Jedidiah Smith Memorial Trail, a Bike Detour Plan and a Sign Plan will be submitted to the Sacramento County Department of Regional Parks for input on the plans prior to any construction work associated with the closure.

- Post signs at entry points for parks and recreation facilities clearly indicating closures and estimated duration of closures at least 14 days prior to closures. Information signs will notify the public of alternate parks and recreation sites, including boat launch ramps, and provide a contact number to call for questions or concerns. Where feasible, avoid placing construction signage in the bike lanes themselves.
- Provide flaggers and post warning signs and signs restricting access before and during construction to ensure public safety.
- Provide marked detours for all bike trails and on-street bicycle routes that will be temporarily closed during construction. Detours could be modified based on consultation with the Sacramento County Department of Regional Parks, City of Sacramento Department of Parks and Recreation and Sacramento County Department of Transportation, or City of Sacramento Transportation Division at least 14 days before the start of construction activities, as applicable. Signs that clearly indicate closure routes at least 14 days prior to closures will be posted at major entry points for bicycle trails, information signs will be posted to notify motorists to share the road with bicyclists where necessary, and a contact number will be provided to call for questions or concerns. Fences will be erected to prevent access to the project site.
- Provide traffic control in conformance with California Manual for Uniform Traffic Control Devices in areas where recreational traffic will intersect with construction vehicles.
- If any access point or boat launch ramp needs to be closed during construction, post notices at least 14 days prior to closure and providing alternative access routes and facilities.
- Upon completion of levee improvements, coordinate with the City of Sacramento, Sacramento County, and/or Cordova Recreation and Parks District to restore access and repair any construction-related damage to recreational facilities to pre-project conditions.
- Consult with the Sacramento County Department of Regional Parks related to events that are scheduled on the American River Parkway, and schedule construction at particular locations to avoid and/or minimize impacts to these events to the extent feasible.

Timing: Before, during, and after construction

Responsibility: Project Partners

Implementing Mitigation Measure REC-1, which was previously adopted by the 2016 ARCF Project and is the only feasible mitigation available, would minimize the negative recreational impacts by requiring notifications in advance of closures and posted detours, but this impact would remain significant and unavoidable. After completion of construction activities, the existing bike and pedestrian trails would be reopened for use and there would be no direct or indirect impact in the long term.

A staging location is proposed within the Dry Creek Parkway. In addition, construction vehicles would access the site through both the Dry Creek Parkway and Walter S. Ueda Park for two construction seasons. The staging area and access areas are within land that is generally fenced off to the public. There is part of a trail on the levee in the western portion of the project within the Walter S. Ueda Parkway that would be used for access. This trail is on the outskirts of the Walter S. Ueda Parkway and only 0.25 mile of the total 12.5 miles of trails available in the parkway would be impacted by the Proposed Action. Though visible by recreationalists, the staging area is generally fenced off, so there would not be recreational activities disrupted by the staging areas. Those who use the area for wildlife and bird viewing would likely see less wildlife and birds during construction as construction equipment would likely scare away most wildlife and birds. Staging and site access would have a less-than-significant direct impact to recreation since the area uses a small portion of the Walter S. Ueda Parkway and the Dry Creek Parkway is generally fenced off.

American River Erosion Contract 3B North and South, American River Erosion Contract 4B

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable, Long-term Less than Significant

American River Erosion Contract 3B North and South and American River Erosion Contract 4B would affect portions of the American River Parkway and several local parks during construction. The American River Parkway is used for walking, cycling, running, hiking, bird watching, wildlife viewing, horse riding, rafting, kayaking, paddleboarding, and fishing. The intermittent construction, tree clearing, and site replanting over the 2-3 years of site preparation, active construction, and site restoration would both restrict access to locations where construction is taking place, and would reduce the quality of these recreational experiences in the American River Parkway, causing a significant direct impact. In addition, until vegetation is reestablished, wildlife and bird watching would be reduced as habitat would be temporarily impacted.

Parts of the American River Parkway would have to be closed during construction (Figure 2.2-1). In addition, haul trucks would disrupt access and use of parks, boat launches, bicycle trails, hiking trails, and equestrian trails.

In particular, the Jedediah Smith Memorial Trail, which is a heavily used multiuse trail, would be directly and indirectly negatively impacted by the construction. Though the Project Partners intend to retain bike access on the Jedediah Smith Memorial Trail during construction when feasible, in some areas the Jedediah Smith Memorial Trail would need to be detoured to other locations on the levee, streets, or require stops and flaggers. The Project Partners would modify the proposed detours based on consultation with the Sacramento County Department of Regional Parks on these detours. If street detours must be used, the Project Partners would also consult with the Sacramento County Department of Transportation or the City of Sacramento Transportation Division. The top of the levee and unpaved toe roads at the American River Erosion Contract 3B project site are used for recreational activities such as walking, running, hiking, biking, and horse riding. In addition, there are informal social trails throughout the site that are used for walking, hiking, biking, and river access. During the construction season, access to the levee would be substantially restricted or closed at the Contract 3B project sites. Most of

the levee area is proposed for use to provide haul access, construction, or staging, and in some areas there would not be a feasible way to detour these hiking, biking, and equestrian uses within the parkway. During construction, these trails would be closed to public use for safety.

USACE would implement detours for designated trails as described in Chapter 3, “Description of Project Alternatives.” These detours may be modified in consultation with the Sacramento County Department of Regional Parks. Where it is unsafe to provide detours within the American River Parkway, detours would be posted along American River Drive. Areas near construction sites that remain accessible for recreation would be indirectly impacted by the work as noise and dust would disturb the recreational experience, including along the Jedediah Smith Memorial Trail. The American River Parkway hosts events like the Great American Triathlon, and these events could be disrupted by the construction work and haul traffic. Project Partners would consult with event organizers and Sacramento County on an annual basis on possible closures related to the ARCF 2016 Project to minimize possible disruptions to these events.

The disruption to use of the recreational resources in the American River Parkway over a multiyear timeframe (in conjunction with the work at American River Erosion Contract 4A) and additional disruption for the future work associated with the ARMS would cause direct significant and unavoidable impacts on recreation in the area.

Several staging areas for American River Erosion Contract 3B North and South and American River Erosion Contract 4B are public parks or recreational areas. In addition to staging areas within the American River Parkway, University Park and Larchmont Community Park would be used for staging. Some minor tree trimming, or removal may be required for use of these parks as staging areas and for general access (tree removal associated with staging area use would fall within the approximately five percent additional trees that could be removed as a result of conditions at the time of construction which was identified in Chapter 3, “Description of Project Alternatives,”). As part of the real estate process to obtain access to use parks for the Proposed Action, consultation would occur with the City of Sacramento, Sacramento County, or Cordova Recreation and Park District prior to removal of any tree.

Two of the four soccer fields at Larchmont Community Park would be closed during construction to provide staging for the Contract 3B South erosion protection installation. Larchmont Community Park is used for youth soccer leagues and the loss of these fields would result in limited availability for games and practice.

Because American River Erosion Contract 3B erosion protection installation is anticipated to occur from early Spring or Summer 2026 to late 2027, these staging areas could be needed over multiple years. If construction of the American River Erosion Contract 4B occurs after the American River Erosion Contract 3B work, there could be an additional year of disturbance in the area as well. Some staging access would be needed for tree clearing (likely occurring fall of 2025 to spring 2026 and fall 2026 to spring of 2027) and site revegetation (likely occurring 2027 and 2028), though it is likely that only small portions of the staging areas would be needed for this work and only minor haul traffic needed for tree clearing and site revegetation. Active haul routes would also be closed to recreational use during active construction activities. In addition, several access points would be closed during active construction activities, include the Estates

Drive River Access, Harrington Way River Access, Kadema River Access, and the Watt Avenue Access on both sides of the river.

The recreational experience of these parks and recreational areas would be directly and indirectly significantly degraded over a multiple year timeframe since some of these parks would need to be closed or partially closed for safety reasons. Haul trucks would access the project site through parks at many locations (Figures 3.5.2-3 and 3.5.2-4 of the SEIS/SEIR). This means that those parks that only have a partial closure would be subject to loud noises, air quality impacts, visual effects, and odor during construction hours; even if parks remain partially open, the recreation experience at these parks would still be indirectly significantly degraded during construction. The following mitigation measures have been identified to address this impact.

Mitigation Measure REC-1: Implement Bicycle and Pedestrian Detours, Provide Construction Period Information on Facility Closures, and Repair Damage to Recreational Areas

Please refer to Impact 2.2-c; MCP for full text of this mitigation measure.

Timing: Before, during, and after construction

Responsibility: Project Partners

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site

Final project designs will be refined to reduce impacts on vegetation and wildlife to the extent feasible. Refinements implemented to reduce riparian habitat losses will include reducing the impact footprint, constructing bank protection rather than launchable rock trench whenever feasible, and designing and constructing planting benches. Where practicable, trees will be retained in locations where the bank protection and planting benches are constructed. Trees will be protected in place along the natural channel during rock placement. Additional plantings will be installed on the newly constructed benches to provide habitat for fish and avian species. The planting benches will be used where feasible to minimize impacts on fish and wildlife species. Where feasible, soil-filled revetment will be used to allow plantings and erosion protection features like launchable trench to be buried to allow plantings. The on-site habitat will be created in accordance with the ARCF GRR Habitat Mitigation, Monitoring, and Adaptive Management Plan, which includes conceptual mitigation proposals, performance standards, and adaptive management tasks.

All areas to be avoided during construction activities will be fenced and/or flagged as close to construction limits as feasible. Where possible, protective fencing or flagging shall be installed 5 feet beyond the tree canopy dripline boundary of each tree or tree group, referred to as the protected tree zone. Contractors and subcontractors shall avoid heavy equipment operation, grading, and excavation in the protected tree zones, to the greatest extent practicable. Heavy equipment operation, grading, and excavation activities in the protected tree zone shall be overseen by a qualified arborist/ecologist. The contractor shall maintain the fencing or flagging to always keep it identifiable. Fencing and flagging shall be removed only after all construction activities are complete.

An annual pre-construction meeting shall be held between all contractors and subcontractors (e.g., grading, tree removal/pruning, and builders) and a qualified arborist/biologist. The meeting shall focus on instructing the contractors and subcontractors on tree protection practices and answering any questions. All equipment operators and spotters, assistants, or those directing operators from the ground, shall provide written acknowledgement of receiving tree protection training. This training shall include information on the location and marking of protected tree zones, the necessity of preventing damage, and the discussion of work practices that shall accomplish these tasks.

Contractors and subcontractors shall take care when moving construction equipment or supplies near protected trees, paying special attention to overhead vegetation. Contractors and subcontractors shall ensure that damage to the trees shall be avoided when transporting or moving construction materials and working around the tree (even outside of the fenced protected zone). Contractors and subcontractors shall flag aboveground tree parts with potential for damage (e.g., low limbs, scaffold branches, and trunks) with high-visibility flagging, such as fluorescent red or orange. If contact with the tree crown is unavoidable, conflicting branches may be pruned under supervision of a qualified arborist/ecologist. The contractor or subcontractor shall not prune protected trees until all construction is completed unless standard pruning will reduce conflict between canopy and equipment. All pruning shall be conducted under supervision of a qualified arborist, or their representative.

A qualified arborist/ecologist shall inspect the preserved protected trees adjacent to grading and construction activity prior to initiation of construction activities, during construction activities within tree protection zones, and prior to removal of tree protection zone fencing/flagging at the end of construction. A report summarizing site conditions, observations, tree health, and recommendations for minimizing tree damage shall be submitted to the Project Partners by the qualified arborist/ecologist following each inspection.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measure REC-1, which was previously adopted by the 2016 ARCF Project would minimize the negative recreational impacts by requiring notifications in advance of closures and posted detours. Mitigation Measure VEG-2 would be implemented to restore riparian vegetation on-site immediately following construction. While vegetation communities would be altered compared to pre-project conditions, the plantings would provide aesthetically positive recreational areas as the native plant communities establish, providing wildlife habitat, and restoring activities such as wildlife viewing, hiking, and engagement with nature. Please refer also to Appendix B, Section 3.1, “Aesthetics and Visual Resources,” for a more detailed discussion of visual changes to the Contract 3B project site that might affect recreational values in the short- and long-term.

Implementing Mitigation Measure REC-1 would reduce some of the direct and indirect impacts by providing notice of closures. However, because construction activities require access in and adjacent to recreational facilities, limiting public access is required for safety reasons. Further, the staging and laydown areas, including the soccer fields and parks, were chosen based on the best locations available to reduce truck haul trips and reduce the severity or intensity of impacts related to lengthier haul trips. Therefore, although all feasible and available mitigation measures would be implemented, there would still be short-term significant and unavoidable indirect and direct impacts on the recreational resources at the parks.

After construction activities are completed, the recreational facilities that had been closed during construction would be re-opened to the public. The proposed improvements would remove some areas of riparian forest, including mature forest. After the immediate construction impacts on recreation have ceased, the Lower American River Contract 3B North and South project sites would retain substantial areas of riparian forest, both along the low-flow shoreline and farther up the bank toward the toe of the levee. See Appendix B Section 4.1 for information on Mitigation Measure VEG-1 and VEG-2. Improvement sites would generally be replanted with native trees, shrubs, and forbs, with a limited area of exposed revetment near or below the summer water surface elevation. As required by mitigation, any trees or vegetation that would be removed from the parks would be replanted in consultation with City of Sacramento Department of Parks and Recreation Sacramento County Department of Regional Parks, or Cordova Recreation and Park District. The general characteristics and recreational possibilities of this reach of the river (scattered areas of riparian forest, interspersed with grassy areas and areas of low vegetation, with informal trails, maintenance roads, and the Jedediah Smith Trail, would be similar to existing conditions, although some wooded areas and some specific shoreline features would be removed or changed by the improvements (these areas of change are illustrated in Figures 3.5.2-5, 3.5.2-7, and 3.5.2-9). The Contract 3B South area includes shoreline that is generally accessible via informal trails between the Watt Avenue Boat Ramp river access and the upstream extent of the proposed improvements near Larchmont Park. The Contract 3B project sites would be restored after work is complete and river access points upstream and downstream from the Contract 3B South sites would continue to be accessible even during construction. There are substantial areas within the Contract 3B South sites where erosion protection would not be placed along the river's edge (Figure 3.5.2-9). In most improvement areas, slopes would be regraded following construction, softening slopes, and where planting benches would be constructed, the project would create flat areas adjacent to the shoreline. Although these changes may provide easier access than the existing condition in many places, access would not be encouraged, both due to the presence of habitat mitigation plantings and because of the objectives listed in the American River Parkway NRMP (described above in Section 2.2.2, "Applicable Laws, Regulations, Policies, and Plans").

There is a large and popular informal river access area near the most upstream portion of the American River Erosion Contract 3B area (extending eastward from Larchmont Park) where the project would substantially change the character at the shoreline compared to existing conditions. The existing wading area with smooth river rocks would be replaced with launchable toe rock covered in choke stone and instream woody material (IWM), which is not conducive for wading. However, this site represents only 200 feet of the total 6,550 feet of erosion protection at the Contract 3B South sites, and two similar informal locations within approximately 1 mile of the Contract 3B South sites offer similar opportunities for informal river access at a sandy or flat

“beach” location. These areas are located near the Glenbrook River Access, just upstream of the Mayhew Drain, and at the Grist Mill access.

Erosion protection features along the riverbank and levee embankment that include revetment are designed to be soil filled, topped with a soil lift above the soil-filled revetment and planted to allow vegetation to establish. The only locations where revetment would be visible and not covered with soil include tie-back features within the planting benches, the waterward face of the planting benches and stormwater outfalls, a total of approximately 2,250 linear feet. Cobble had been initially designed on top of the planting benches, but was replaced with coir fabric after Sacramento Department of Regional Parks review and engagement where Regional Parks indicated that they have seen reductions in plant growth at mitigation sites with cobble on the American River.

Based on a requirement from the NMFS Biological Opinion, the launchable toes at the waterward face of the planting benches are designed to be choked (smaller angular rocks would be placed around the revetment to minimize the gaps). This requirement decreases the risk of fish predation, provides a more walkable surface, and provides a more visually pleasing shoreline. Smoother or rounded cobble had been considered as the material for choke fill, but USACE determined that smoother/rounded rock choke stone material would be more prone to downstream transport during higher river conditions, and angular choking material was chosen as a result.

IWM would be placed on the planting benches and native willows would be planted, and areas disturbed by constructing the proposed improvements would be revegetated, generally with native woody vegetation for onsite mitigation. Access through the restored areas would be discouraged to promote healthy growth of habitat mitigation. However, because the revetment would not be visible or would be choked, and because slopes would be more gradual than existing conditions, the erosion features themselves would not physically prevent access to the river. More likely the onsite mitigation vegetation would prevent easy access to the river at improvement sites. As already discussed, remediating social trail impacts, promoting native vegetation growth, and managing social trails in a manner that consolidates trails and allows rehabilitation of vegetation understory is a management action for the American River Parkway NRMP in the Contract 3B South area.

In the long term, after the completion of construction and the 8 to 10-year initial growth of on-site replanting, a similar range of recreational opportunities would be available along the Contract 3B North and South areas. Some informal trails and river access points would remain, others would be changed, and the scenic character of the area would include a different mix of wooded and open areas compared to existing conditions. Long-term impacts on recreation would therefore be less than significant.

Implementation of all feasible mitigation measures available would not decrease short-term impacts to less than significant. Recreational area closures are necessary to construct the improvements and maintain a safe working environment for workers and recreationalists, alike, as the location of many of the flood risk reduction measures must occur within several recreational areas or the flood system integrity would be substantially compromised. This impact would remain significant and unavoidable in the short term. Long-term impacts would be less

than significant with mitigation incorporated as Mitigation Measure REC-1 is fully implemented and the rehabilitated vegetation understory grows.

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable with Mitigation Incorporated, Long-term No Impact

The ARCF GRR Final EIS/EIR previously determined that for the ARCF 2016 Project, the intermittent construction over the timeframe of the work would reduce the quality of recreational experiences in the American River Parkway (such as walking, cycling, running, hiking, bird watching, wildlife viewing, horse riding, rafting, kayaking, paddleboarding, and fishing), causing a significant direct and indirect impacts that cannot be mitigated to a less-than-significant level. Mitigation measures (listed above as REC-1) would be implemented to minimize the negative impacts to recreation as much as possible, but there would still be a significant unavoidable impact. In addition, since riparian habitat would be impacted, wildlife and bird viewing would be impacted until vegetation establishes. Portions of the American River Parkway would be closed during the duration of the construction. A consistency determination would be coordinated with the NPS to ensure the closure and general American River Parkway impacts are do not permanently impede the recreational qualities of the parkway under the Wild and Scenic Rivers Act of 1968. In addition, the ARCF GRR Final EIS/EIR emphasized the haul trucks would disrupt access and use of parks, boat launches, bicycle trails, hiking trails, and equestrian trails. In particular, the Jedediah Smith Memorial Trail, which is a heavily used bike trail, would be negatively impacted by the construction. The direct and indirect significant impacts to recreation and the measures listed in Mitigation Measure REC-1 still apply to the design refinements. Since the ARCF GRR Final EIS/EIR generally analyzed the impacts to the American River Parkway as a whole, and since the construction methods of the new erosion protection work would have the same general impacts to recreation that were analyzed in the ARCF GRR Final EIS/EIR, there would be no new significant impacts for recreational activities within the American River Parkway.

The design refinements are anticipated to directly impact the Watt Avenue boat launch and could directly impact events along the American River Parkway. These impacts are not any different than discussed in the ARCF GRR Final EIS/EIR, so there would be no new direct or indirect impacts associated with events in the Parkway or Watt Avenue boat launch.

There are many additional recreational facilities that would be directly impacted by the design refinements that were not addressed in the ARCF GRR Final EIS/EIR. The ARCF GRR Final EIS/EIR discussed that equestrian and hiking trails could be detoured. For American River Erosion Contract 3B North and South, both hiking and equestrian trails go through the project site. Because the analysis in the ARCF GRR Final EIS/EIR did not consider closure, the discussion on hiking and equestrian closures above under the CEQA Impact Conclusion is applicable for NEPA as well. Even with detours placed when feasible, there would be a short-term significant unavoidable direct impact to recreational use of these trails.

The ARCF GRR Final EIS/EIR did not discuss the Pony Express National Historic Trail. The Pony Express National Historic Trail intersects the project area of Lower American River Erosion Contracts 3B and 4B. This historic trail is congressionally designated and is administered by the NPS. The Pony Express National Historic Trail is less of a formal trail than

it is a memorial to a significant period in history in which a formal trail existed to connect people on the East and West coasts of the United States during a turbulent period of robust change and growth. In the Sacramento region, the Western Terminus of the Pony Express Trail was located on J Street at the B. F. Hastings Building located adjacent to the Sacramento River, within what is now referred to as The Old Sacramento Waterfront. The trail then travelled east along J Street to connect to a heavily travelled path to the City of Folsom that has since been developed into a road that is now known as Folsom Boulevard. A portion of the trail passed through a segment of the Project area, intersecting the Lower American River Erosion Contract 3B South (LAR C3B South) Area of Potential Effects (APE). Although this portion of the trail was very actively used for a period of 18 months between April 1860 and October 1861, very little physical trace of the trail exists within Sacramento today. Folsom Boulevard is now heavily developed with businesses and city infrastructure encompassing the entire alignment of the historic trail. The portion of the trail's general alignment that intersects the LAR C3B South APE would have run through the portion of land that was later developed into the American River South Levee and the adjacent housing and business developments. There are no physical remnants of the Pony Express Trail for recreational users to interact with or experience in this location. Impacts discussed for recreational users in the Parkway on the levee road would also apply to recreationalists wanting to follow Pony Express National Historic Trail. Even with detours placed when feasible, there would be a short-term significant unavoidable direct impact to recreational use of the trails on the levee.

Additionally, the ARCF GRR Final EIS/EIR did not analyze the effects of specific staging areas or access roads. In general, the ARCF GRR Final EIS/EIR mentioned that staging would likely be done in the American River Parkway. In addition, the Supplemental EIS/EIR for American River Erosion Contract 2 analyzed use of University Park as a staging area. Because the use of parks for staging is part of the design refinements, the discussion above under the CEQA Impact Conclusion is applicable for NEPA as well. In addition, some of these recreational areas may have rental space available to the public. There would likely be a decrease in revenue to the recreational agencies as parks may be closed or less enticing to rent with construction equipment around. In addition, temporary loss of soccer fields at Larchmont Park could mean loss of revenue to the soccer leagues due to a decrease in available soccer fields during construction, which is being analyzed under NEPA only. Under the typical real estate processes completed by Project Partners to acquire access to sites for work, possible financial impacts would be worked out prior to gaining access rights to the property. Overall, there would be significant direct and indirect impacts to recreation in the area because of the closure of some parks and because the recreational experience of parks kept open would be degraded due to the loud noises, air quality, visual effects, and smells during construction hours. Mitigation measures previously listed in REC-1 would reduce some of the impacts, but there would still be short-term significant unavoidable impacts to the recreational resources at the parks. After all construction activities are completed and sites are re-opened to the public, long-term direct and indirect impacts would be less than significant.

American River Erosion Contract 4A

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable, Long-term Less than Significant

There are many recreational areas involved with American River Erosion Contract 4A. One major recreational area within the American River Erosion Contract 4A footprint is the American River Parkway. The discussion of recreational effects associated with the American River Parkway listed above for American River Erosion Contract 3B are applicable to American River Erosion Contract 4A as well. The disruption to the use of the recreational resources in the American River Parkway for American River Erosion Contract 4A is estimated to occur in 2027, conjunction with American River Erosion Contract 3B North and South work, and work at ARMS estimated to occur in 2026 to 2029. These ongoing construction efforts limiting recreational access in the American River Parkway would cause significant and unavoidable impacts to recreation in the area.

In addition, the Proposed Action includes permanently rerouting the Jedediah Smith Memorial Trail closer to the river and providing a larger buffer between the bike trail and the businesses just north of the levee. This route would be approximately 0.3 mile longer than the current route. Currently the Jedediah Smith Memorial Trail travels along the levee toe. Though slightly longer, the new route would provide a larger buffer from the urban areas than the current bike route, providing a beneficial impact on recreation.

The NRMP shows that the route of the paved bike path reroute is already listed as an un-paved bike trail (Sacramento County 2023a, page 8-37), so the general use of the path for biking would be consistent with the planning documents associated with the American River Parkway. The NRMP also shows an equestrian trail in the same general area as parts of the bike trail (Jedediah Smith Memorial Trail) reroute path. Project Partners would consult with Sacramento County Department of Regional Parks and adjust the proposed trail design if necessary to ensure that the bike trail reroute does not cause safety issues for equestrian use.

There would be a short-term significant impact to recreation during construction of American River Erosion Contract 4A due to temporary closures of recreational facilities. The following mitigation measure has been identified to address significant impacts.

Mitigation Measure REC-1: Implement Bicycle and Pedestrian Detours, Provide Construction Period Information on Facility Closures, and Repair Project-related Damage to Recreational Areas

Please refer to Impact 2.2-c; MCP for full text of this mitigation measure.

Timing: Before, during, and after construction

Responsibility: Project Partners

Implementing Mitigation Measure REC-1 would not decrease short-term impacts to less than significant. Recreational area closures are necessary to construct the improvements and maintain a safe working environment for workers and recreationalists, alike, as the location of many of the flood risk reduction measures must occur within several recreational areas or the flood system integrity would be substantially compromised. This impact would remain significant and unavoidable in the short term. Long-term impacts would be less than significant as Mitigation Measure REC-1 is fully implemented, and the rehabilitated vegetation understory grows.

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable, Long-term and Negligible effects that are Less than Significant.

The ARCF GRR Final EIS/EIR previously determined that the intermittent construction over the timeframe of the work would reduce the quality of recreational experiences in the American River Parkway, causing a significant impact that cannot be mitigated to a less than significant level, though mitigation measures (listed above as REC-1) would be implemented to minimize the negative impacts on recreation as much as possible. Parts of the American River Parkway would have to close due to construction. A consistency determination with the Wild and Scenic Rivers Act would be coordinated with the NPS to ensure that closures are in compliance with the Wild and Scenic Rivers Act.

In addition, the ARCF GRR Final EIS/EIR emphasized the haul trucks would disrupt access and use of the American River Parkway, bicycle trails, hiking trails, and equestrian trails. The American River Parkway is used for The Jedediah Smith Memorial Trail, which is a heavily used bike trail, would be negatively impacted by the construction. The significant direct and indirect impacts to recreation still apply to the design refinements. If bike trail detours cannot be done safely in the American River Parkway, street detours may be needed (Figure 3.5.3-2 of the SEIS/SEIR). The area around American River Erosion Contract 4A outside the American River Parkway generally does not have infrastructure in place for bicycle use. Improvements such as regrading, paving, signs and barriers may be needed to make street detours safe. Since the ARCF GRR Final EIS/EIR generally analyzed the impacts on the American River Parkway as a whole, and since the construction methods of the new erosion protection work would have the same impacts that were analyzed in the ARCF GRR Final EIS/EIR, there would be no new significant impacts on general recreational resources within the American River Parkway.

Because the ARCF GRR Final EIS/EIR did not talk about closures of hiking and equestrian trails, the discussion on hiking and equestrian closures under American River Erosion Contract 3B and above under the CEQA Impact Conclusion for American River Erosion Contract 4A is applicable here as well. Even though the Sacramento County Department of Regional Parks would be consulted to ensure detours are put where it is safe to do so, these possible closures would create a short-term significant and unavoidable direct and indirect impact. After all construction activities are completed and sites are re-opened to the public, long-term direct and indirect impacts would be negligible.

Design refinements associated with recreational facilities at the American River Erosion Contract 4A site include rerouting the Jedediah Smith Memorial Trail. The discussion above under the CEQA Impact Conclusion is applicable for NEPA as well for these design refinements. Project Partners would consult with Sacramento County Department of Regional Parks to ensure that the Jedediah Smith Memorial Trail reroute is designed in a manner that does not cause safety issues for equestrian use. Though slightly longer, the new route for the Jedediah Smith Memorial Trail would provide a larger buffer from the urban areas than the current bike route, providing a direct beneficial impact on recreation.

Sacramento River Erosion Contract 3

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

Several recreational facilities would be impacted by work on the Sacramento River Erosion Contract 3 sites. Access to the top of levee would be closed during construction, including portions of the Sacramento River Trail between Garcia Bend Park and the Freeport water treatment facility. A small portion of Garcia Bend Park would be used for staging (Figure 2.2-3). Both Miller Park and Garcia Bend Park would be used to provide river access for construction staff. Because the use of Miller Park and Garcia Bend Park for construction activities would be limited and would not prevent park user access to substantial areas of the parks or recreational use of the parks, there would be a less-than-significant impact for recreational users of these facilities.

Access to the levee at Sacramento River Erosion Contract 3 work sites could occasionally be restricted during construction for safety. These closures could affect the Sacramento River Parkway, which includes a paved bike trail between Garcia Bend Park and the Freeport water treatment facility. In addition, there is riparian habitat along the Sacramento River Parkway that is used for bird and wildlife watching. The levee and bike trail for the Sacramento River Parkway in the area would also be closed for approximately 8 weeks November to February prior to the 2026 and 2027 construction years during tree clearing activities, as would the North Point Way River Access. This would be a significant impact.

Additionally, the Sacramento River itself is used by boaters and fishermen as a recreational resource. Since materials would be brought to the site from barges and most construction would occur from the barges in the river, there would be an increase in barge traffic and the addition of new construction work within the Sacramento River. The presence of barges in the river would disrupt the tranquility and increase congestion in the Sacramento River. Those wanting to jet ski in the area would need to be cautious around the barges and those wanting to fish in the area would be subjected to loud construction noises. The Sacramento River would remain open and available for boaters during construction. However, the construction work could have a significant impact on those using the Sacramento River for water recreation near the construction sites. This impact would be significant.

The following mitigation measures have been identified to address these impacts.

Mitigation Measure REC-1: Implement Bicycle and Pedestrian Detours, Provide Construction Period Information on Facility Closures, and Repair Project-related Damage to Recreational Areas

Please refer to Impact 2.2-c; MCP for full text of this mitigation measure.

| | |
|------------------------|--|
| Timing: | Before, during, and after construction |
| Responsibility: | Project Partners |

Mitigation Measure REC-2: Implement Measures to Notify Boaters

The Project Partners will implement the following measures to reduce temporary, short-term construction effects on recreational facilities and users at the project site:

- Post signs 14 days prior to construction activities at the Sacramento Marina, Garcia Bend Park, Hidden Harbor Marina, Rio Vista Public Boat Launch, and/or Snug Harbor Marina, to clearly indicate the estimated duration of in-water work windows and construction duration.
- Place buoys at the upstream and downstream ends of the construction site at the beginning of construction through the end of construction to warn boaters of the ongoing in-water work.
- Notify the Coast Guard, in accordance with the Rivers and Harbors Act, of in-water work from barges moored in the river. Notification will include in-water work windows and construction duration.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures REC-1 and REC-2 would reduce the short-term impact to a less-than-significant level by providing notices of closures and allowing boaters the option of choosing a different boat launch and different area along the Sacramento River to use for recreation to avoid the construction work. In addition, placing buoys near the construction area will ensure that those boaters who decide to use the area for recreation are aware that there is ongoing work in the area and to avoid the specific construction site.

NEPA Impact Conclusion (Design Refinements): Short-term and Moderate effects that are Less than Significant with Mitigation Incorporated

There are a few recreational facilities involved in Sacramento River Erosion Contract 3. The ARCF GRR Final EIS/EIR previously discussed that the top of levee would be closed to those wanting to use the top of levee for recreation and that Miller Park and Garcia Park would be used for staging. Overall, the ARCF GRR Final EIS/EIR determined that there would be short-term significant impacts to recreation along the Sacramento River. Though the erosion protection methods have changed for Sacramento River Erosion Contract 3, the general construction methods would be similar enough that these direct and indirect impacts to the recreational resources would not change. Consequently, there would be no new impacts on recreation due to the closure of levee access, use of Miller Park for river access, and use of Garcia Bend Park for staging and river access.

The ARCF GRR Final EIS/EIR did not include recreational facilities and uses that would be impacted by the ARCF 2016 Project. Specifically, the use of the river itself for recreation and impacts to the Sacramento River Parkway were not discussed. The discussion above on use of the Sacramento River for recreation and impacts to the Sacramento River Parkway under the CEQA Impact Conclusion is applicable for NEPA as well. Mitigation Measure REC-2 would be

implemented to reduce the direct and indirect impacts on water recreation to less than significant. Also, because closure of the bike trail on the Sacramento River Parkway is only for a short time, and because there is only a small strip of land being closed during erosion protection construction, the direct and indirect impacts of the project to the Sacramento River Parkway are less than significant.

The ARCF GRR Final EIS/EIR did not discuss the recreational impacts to the property owners who have private docks along the levee at the project site. A majority of the dock owners received the encroachment permits and USACE Regulatory Program permits with the condition that the docks may need to be removed in the future for flood damage reduction activities. All dock owners in the project area would be required to remove docks, stairs, and associated infrastructure within the project site, in accordance with their USACE permits and encroachment permits with the Central Valley Flood Protection Board (CVFPB). Owners would have the option to remove dock pilings or leave them in place. If left in place, the contractors would try to work around them; however, the depth of the erosion protection placed in some areas may decrease the water clearance near the pilings when boat docks are reinstalled by their owners. If owners choose to remove dock pilings due to a decrease in water clearance, the owners would need to acquire new encroachment permits with the CVFPB and complete associated environmental permitting. If the water clearance after construction is sufficient for proper use of the dock pilings, the owner may choose to replace the infrastructure after construction is complete. Consequently, there would be both a short-term direct impact to recreational use of these boat docks during construction and the possibility of long-term indirect impacts on recreational use if owners need to submit new encroachment permits. Any currently unpermitted structures that were removed in advance of the project, would need to seek a set of permits from the CVFPB and USACE to be replaced.

American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable, Long-term Less than Significant

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable, Long-term and Negligible effects that are Less than Significant.

The ARMS is within the American River Parkway (Sacramento County 2008). The LAR adjacent to ARMS is considered an outstandingly remarkable and extraordinary recreational river under the Federal and State Wild and Scenic Rivers Acts, respectively. The ARMS could contribute to the recreational and anadromous fishery values for which the LAR was included in the Federal and State Wild and Scenic Rivers Act. Prior to purchasing the land for mitigation use, the property was private and was not generally available for recreational use. Since the existing condition does not include public access to the ARMS site, there would be no anticipated impacts to recreational activities on the property itself. Recreation activities such as wildlife and bird watching that currently occur from adjacent portions of the American River Parkway would be indirectly impacted, as construction would likely scare away most birds and wildlife and the area would be disturbed until construction ends and vegetation establishes. The ARMS site is not currently enclosed and is adjacent to the Jedediah Smith Memorial Trail, so even though it is not encouraged, the area is used for recreation such as birdwatching. There is a

known bald eagle's (*Haliaeetus leucocephalus*) nest on the site that is viewed by birdwatchers as well.

Implementing the Proposed Action would convert the existing pond to a backwater channel that connects to the main channel of the LAR via a single inlet located at the southeast limits of the site. Habitat benches along the channel would be incorporated into the design to provide shallow water salmonid habitat at various water surface elevations. The benches would be continuous with gradual slopes and a positive gradient toward the main river channel to reduce stranding risks as water levels drop. This conversion would restore and enhance onsite habitat functions and values to as close to pre-mining habitat conditions as possible. The goal is to improve conditions for 35 special-status species that may rely upon these habitats for all or part of their life cycle, while still achieving the mitigation needs for salmonids, YBCU, and VELB on the LAR. The overall increase in a more natural habitat supporting a more diverse list of potential birds to see, would provide a long-term indirect benefit to wildlife viewing and birdwatching in the area.

Even though it is anticipated that the primary construction access for the ARMS mitigation construction would be through maintenance roads under the powerlines, some construction vehicles and equipment could access the site through Camp Pollock or Discovery Park to access the construction area from Northgate Boulevard between SR 160 and the Garden Highway. Haul trucks would increase noise, air pollution, traffic, and odors, and temporarily affect visual resources for those wanting to recreate at Camp Pollock and Discovery Park. Dust from the trucks could directly impact the plants at the native plant nursery at Camp Pollock. For NEPA purposes only, this would have a direct and indirect economic impact on the Sacramento Valley Conservancy because the Conservancy does not receive any dedicated funding to manage Camp Pollock and relies on donations and rental fees to upkeep the property (Sacramento Valley Conservancy 2023). Under the typical real estate processes completed by Project Partners to acquire access to sites for work, possible financial impacts would be determined prior to gaining access rights to the property. If Camp Pollock is required as an access point for construction, Project Partners would consult with the Sacramento County Department of Regional Parks and the Sacramento Valley Conservancy prior to construction to attempt to minimize these direct and indirect impacts on recreational resources, but there would still be a short-term significant and unavoidable impact.

Sacramento River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Short-term and Negligible effects that are Less than Significant.

The SRMS is a Federally owned site currently used for dredge material placement. There are no major roads leading to the site or through the site that could encourage the public to use the site for recreation and there are "no trespassing" signs posted at the borders of the site. In addition, no recreational uses are planned for the site under the Proposed Action. Temporary disturbance of the banks during site construction may look displeasing for those boating or fishing on the Sacramento River or using the Hidden Harbor Marina. However, this is only a small area where

boaters along the Sacramento River would be affected, and effects would only last until vegetation establishes. Because the effects would be aesthetic only, localized, and short term, direct and indirect impacts would be less than significant. There would be no long-term impacts to recreation.

Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Short-term and Minor effects that are Less than Significant.

Staging areas would consist of some parks and recreational areas (see section 3.5.7.2.1 of the SEIS/SEIR for the list of staging areas anticipated to be used). Long-term storage would be limited on recreational areas as much as feasible but up to 0.3 acre of a recreational area could be used for up to 4 months. As designs are developed, if a staging location is selected that is not listed in Section 3.5.7.2.1 of the SEIS/SEIR, biological and cultural surveys would be conducted to ensure the area does not have sensitive resources. In addition, other environmental compliance might be necessary to use additional areas for staging. As part of the real estate access process, Project Partners would work with the entity managing the recreational facility to identify locations within the recreational areas that would minimize direct recreational impacts. No full park closures would be needed for the staging areas associated with the Piezometer Network. In addition, it is anticipated that the staging areas would be used solely for equipment and drum storage. Vehicles would only need to access the staging to collect or store equipment so it is expected that there would not be consistent vehicle and equipment traffic and noises at the staging areas. Because no full park closures are expected and constructing activities at staging areas would be short term, direct and indirect impacts to recreational areas would be less than significant.

Some Piezometers would be installed on top of the levee or on the land side of the levee in the American River and Sacramento River Parkways. For equipment access to install some of the piezometers, some of the bike trails may need to be used. When access is needed from the bike trails, it is anticipated that only one lane of the bike trails would need to be closed. Signs would be placed to alert bicyclists, and flaggers would be present to safely direct bike traffic around equipment. Some of the piezometers would also be installed along maintenance roads that are used for walking or bicycling along the American and Sacramento Rivers. The piezometers would require small antennas or features for communication and would be capped with a small (approximately 12-inch) utility cover would be placed in a manner that would not conflict with the maintenance roads on top of the levee. Solar panels may also be needed to provide power to the piezometers. Telemetry infrastructure would be installed above ground and contained in a utility storage box. Any solar panel and the infrastructure associated with telemetry would be installed in a location that does not conflict with recreational resources. Installing solar panels in areas where large groupings (5-15) of piezometers would occur could distract from the recreational views; however, this would not directly impact the ability to recreate in the area. Because all permanent infrastructure associated with the piezometers would be installed in locations that do not conflict with recreation and because the piezometers and associated

infrastructure are generally small, direct and indirect impacts to recreation would be less than significant.

Alternatives Comparison

Alternative 3a

Alternative 3a includes an alternative design for improvements to the American River Erosion Contract 4A project component. All other project components (MCP, American River Erosion Contract 3B, SRMS, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. There would be a landside berm built instead of a waterside berm at the American River Erosion Contract 4A project site.

Table 2.2-2. Alternative 3a Effects on Recreation

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusions | NEPA Effects Determination |
|--|------------------------------------|--|--------------------|-------------------------------|----------------------------|
| 2.2-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. | American River Erosion Contract 4A | Similar to the Proposed Action, recreational closures would be temporary and no substantial change to service levels. Alternative 3a is not anticipated to cause nearby recreational areas to degrade quickly or require the need of new recreational areas. There would be a less-than-significant indirect impact to uses of nearby parks. | N/A | Less than Significant | Short-term and Minor |
| 2.2-b Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. | American River Erosion Contract 4A | The berm would be constructed on the landside of the levee and there would be no construction or expansion of additional recreational features. | N/A | No Impact | No Impact |
| 2.2-c Cause substantial long-term disruption in the use of an existing recreational resource, reduce the quality of an existing recreational resource, reduce availability of an existing recreational resource, or result in inconsistencies or non-compliance with planning documents (such as the American River Parkway Plan). | American River Erosion Contract 4A | The berm would be constructed on the landside of the levee. There would not be construction affecting the Jedediah Smith Memorial Trail or associated detours. This alternative would have an indirect, less-than-significant impact on recreation in the area since the bike trail would not be affected and most of the views of construction work would be blocked. This impact would be lesser than the impact of the Proposed Action. | N/A | Less than Significant | Short-term and Moderate |

Alternative 3b

Alternative 3b includes an alternative design for improvements to the American River Erosion Contract 4A project component. All other project components (MCP, American River Erosion Contract 3B, Sacramento River Erosion Contract 3, SRMS, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. Overall, the new bike trail (Jedediah Smith Memorial Trail) reroute at American River Erosion Contract 4A would parallel the UPRR tracks and head north instead of going under the UPRR tracks (Figure 3.5.3-4 of the SEIS/SEIR).

Table 2.2-3. Alternative 3b Effects

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------------------|---|---------------------------|-------------------------------------|---|
| 2.2-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. | American River Erosion Contract 4A | Similar to the Proposed Action, recreational closures would be temporary and there would be no substantial effect on service levels. Alternative 3b would not cause nearby recreational areas to degrade quickly or require the need of new recreational areas. Alternative 3b would have a less-than-significant indirect impact to nearby parks. | N/A | Less than Significant | Short-term to Medium-term (more than one construction season) and Moderate to Major |
| 2.2-b Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. | American River Erosion Contract 4A | Unlike the Proposed Action, Alternative 3b would reroute the existing bike trail partially through riparian forest. Part of this reroute would not follow existing trails and would require additional trees to be removed and a wetland area to be filled. Once work is complete, the recreation trail would be useable again, creating a long-term less than significant impact. Overall, Alternative 3b would result in a direct short-term significant and unavoidable impact from rerouting of the bike trail and a long-term less than significant impact after construction is complete, falling under 2.2-c below, but would not result in an impact by constructing any new recreational features. | N/A | No impact | No impact |

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------------------|--|--------------------|---|---|
| 2.2-c Cause substantial long-term disruption in the use of an existing recreational resource, reduce the quality of an existing recreational resource, reduce availability of an existing recreational resource or result in inconsistencies or non-compliance with planning documents (such as the American River Parkway Plan). | American River Erosion Contract 4A | <p>Like the Proposed Action a berm would be built that would block the current bike trail. The berm would disturb recreation in the area causing direct and indirect short-term significant unavoidable impacts while construction occurs. Mitigation measure REC-1 would be implemented to minimize the impacts as much as possible, but there would still be direct and indirect short-term significant and unavoidable impacts to recreation, but a long-term less than significant impact once the trail is reopened.</p> <p>Like the Proposed Action, this bike detour would generally follow existing trails listed in the 2023 Final American River Parkway Natural Resources Plan as an off-road bike trail (Sacramento County 2023a). Unlike the Proposed Action, the route would leave existing trails near the UPRR bridge and follow the UPRR bridge through riparian habitat and a wetland. Since the route does not completely follow the land plans outlined in the 2023 Final American River Parkway Natural Resources Plan, there is a direct significant and unavoidable impact on consistency between the Alternative 3b and the Final American River Parkway Natural Resources Plan. This impact would be greater compared to the impact of the Proposed Action.</p> | REC-1 | Short-term Significant Unavoidable, Long-term Less than Significant | Short-term Significant Unavoidable, and Long-Term and Negligible with Mitigation Incorporated |

Alternative 3c

Alternative 3c includes an alternative design for improvements to the American River Erosion Contract 4A Project Component. All other project components (MCP, American River Erosion Contract 3B, Sacramento River Erosion Contract 3, SRMS, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. The bike trail (Jedediah Smith Memorial Trail) route would be a short reroute into the wetlands instead of lower on the levee (Figure 3.5.3-4 of the SEIS/SEIR).

Table 2.2-4. Alternative 3c Effects

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|------------------------------------|---|---------------------------|-------------------------------------|-----------------------------------|
| 2.2-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 | American River Erosion Contract 4A | Similar to the Proposed Action, recreational closures would be temporary and there would be no substantial change in service levels. Alternative 3c is not anticipated to cause nearby recreational areas to degrade quickly or require the need of new recreational areas. There would be a less-than-significant indirect impact to uses of nearby parks. | N/A | Less than Significant | Less than Significant |
| 2.2-b Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. | American River Erosion Contract 4A | Alternative 3c would include a trail realignment instead of a new recreational facility. There would be no impact due to a new or expanded recreational facility. | N/A | No impact | No impact |

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------------------|---|--------------------|--|--|
| 2.2-c Cause substantial long-term disruption in the use of an existing recreational resource, reduce the quality of an existing recreational resource, reduce availability of an existing recreational resource or result in inconsistencies or non-compliance with planning documents (such as the American River Parkway Plan). | American River Erosion Contract 4A | Instead of rerouting the bike trail lower on the levee, the bike trail would be rerouted around the berm. Additional wetland and riparian habitat would need to be disturbed in the area to build the bike trail around the berm. During construction the bike trail would need to be closed in the area. A detour somewhere else in the American River Parkway or along the streets would be required. Mitigation measures listed in REC-1 would be implemented to try to minimize these impacts as much as possible, but there would still be direct and indirect significant unavoidable impacts to recreation. In addition, building the berm could cause ground disturbance to the construction area. This would disrupt the natural feel of the area and impact the recreational value of the area until grasses or other vegetation replanted establishes. Consequently, like the Proposed Action there would be a direct short-term unavoidable significant impact to recreational resources in the area with a long-term less than significant impact once the trail is open and the vegetation matures. | REC-1 | Short-term Significant, unavoidable, Long-term Less than Significant | Short-term Significant, unavoidable, Long-term and Negligible with Mitigation Incorporated |

Alternative 3d

Alternative 3d includes an alternative design for improvements to the American River Erosion Contract 4A Project Component. All other project components (MCP, American River Erosion Contract 3B, Sacramento River Erosion Contract 3, SRMS, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. The bike detour would go closer to the river bank and follow the railroad to the existing location of the bike trail (Jedediah Smith Memorial Trail) instead of going under the railroad (Figure 3.5.3-4 of the SEIS/SEIR).

Table 2.2-5. Alternative 3d Effects

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------------------|---|---------------------------|--|--|
| 2.2-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. | American River Erosion Contract 4A | Similar to the Proposed Action recreational closures would be temporary and there would be no substantial change in service levels. Alternative 3d is not anticipated to cause nearby recreational areas to degrade quickly or require the need of new recreational areas. Alternative 3d would have an indirect less-than-significant impact to nearby parks. | N/A | Less than Significant | Short-term and Moderate |
| 2.2-b Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. | American River Erosion Contract 4A | Unlike the Proposed Action, Alternative 3d would reroute the bike trail partially through riparian forest. Part of this reroute would not follow existing trails and require additional trees to be removed and wetland area to be filled. Once work is complete, the recreation trail would be useable again, creating a long-term less than significant impact. Overall, Alternative 3d would result in a direct and indirect short-term significant and unavoidable impact from rerouting of the bike trail and a long-term less than significant impact after construction is complete. However, this is not the result of the construction of a new recreational facility, but the replacement of the facility impacted. | N/A | Short-term Significant, Unavoidable, Long-term Less than Significant | Short-term Significant, Unavoidable, Long-term and Minor |

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|------------------------------------|--|--------------------|--|---|
| 2.2-c Cause substantial long-term disruption in the use of an existing recreational resource, reduce the quality of an existing recreational resource, reduce availability of an existing recreational resource, or result in inconsistencies or non-compliance with planning documents (such as the American River Parkway Plan). | American River Erosion Contract 4A | <p>Like the Proposed Action, a berm would be built that would block the current bike trail. The berm would disturb recreation in the area causing a short-term significant unavoidable impact while construction occurs. Mitigation measure REC-1 would be implemented to minimize the impacts as much as possible, but there would still be direct and indirect short-term significant and unavoidable impacts to recreation with a long-term less than significant impact once the trail is open and the vegetation matures.</p> <p>Like the Proposed Action, this bike detour would generally follow existing trails listed in the 2023 Final American River Parkway Natural Resources Plan as an off-road bike trail (Sacramento County 2023a). Unlike the Proposed Action, the route would leave existing trails near the UPRR bridge and follow the UPRR bridge through riparian habitat and a wetland. Since the route does not completely follow the land plans outlined in the 2023 Final American River Parkway Natural Resources Plan, there is a direct significant and unavoidable impact on consistency between the Alternative 3d and the Final American River Parkway Natural Resources Plan. Unlike the Proposed Action, this reroute would be closer to the river bank and would have an even bigger buffer from the urbanized areas on the landside of the levee. Consequently, there would be a recreational benefit to putting the bike path in this area. However, placing the bike path in the area would add 0.5 miles to the bike trail, which is longer than both the No Action Alternative and the Proposed Action.</p> | REC-1 | Short-term Significant, Unavoidable, Long-term Less than Significant | Short-term Significant, Unavoidable, Long-term and Minor with Mitigation Incorporated |

Alternatives 4a and 4b (CEQA-Only)

Alternative 4a for the ARMS would retain an approximately 30-acre portion of the existing pond, and Alternative 4b would retain an approximately 20-acre portion of the pond. All other project components (American River Erosion Contract 3B, Sacramento River Erosion Contract 3, MCP, SRM, and ARMS) would have the same effects as the Proposed Action.

Under Alternatives 4a and 4b, a berm with a top width of 30 feet would be constructed to retain the western or southern portion of the existing pond, and floodplain habitat (generally at elevations 2 to 10 feet) would be constructed on the eastern portion of the site, including a portion of the existing pond. The remnant pond would be approximately 30 acres in Alternative 4a, and this alternative would include approximately 54 acres of floodplain habitat below elevation 21. In Alternative 4b, the pond would be approximately 20 acres and approximately 47 acres of salmonid habitat, 29 acres of western yellow-billed cuckoo (*Coccyzus americanus*) stopover habitat, and 22 acres of valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) habitat.

Table 2.2-6. Alternative 4a, 4b Effects

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Effects Determination |
|---|----------|---|---|--|
| 2.2-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. | ARMS | Similar to the Proposed Action, recreational closures would be temporary during construction and there would be no substantial change in service levels. | N/A | Short-term: Less than Significant Long-term: No impact |
| 2.2-b Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. | ARMS | These alternatives would have no impact, like the Proposed Action | N/A | Short- and Long-term: No Impact |
| 2.2-c Cause substantial long-term disruption in the use of an existing recreational resource, reduce the quality of an existing recreational resource, reduce availability of an existing recreational resource or result in inconsistencies or non-compliance with planning documents (such as the American River Parkway Plan). | ARMS | Like the Proposed Action, there would be occasional disruption of the Jedediah Smith Memorial Trail or other recreational facilities during construction. This impact would be significant. Long-term impacts would be less than significant as the bike trail would remain open and impacts to the recreational experience along the bike trail would be reduced as the rehabilitated vegetation matures. There would be no change in impact significance compared to the Proposed Action. | REC-1 Mitigation Measure REC-1 will be implemented to minimize the impacts as much as possible, but there will still be a short-term significant and unavoidable impact to recreation | Short-term: Significant and Unavoidable with all feasible mitigation Long-term: Less than significant with Mitigation |

Alternative 5a (Conservation bank credits)

Alternative 5a includes an alternative financial solution as opposed to constructing the SRMS. Conservation Bank Credits would be used for mitigation in lieu of the construction of SRMS. All other project components (MCP, American River Erosion Contract 3B, Sacramento River Erosion Contract 3, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. Conservation Bank Credits would be used for mitigation. There would be no new construction or disturbance associated with Alternative 5a, as existing mitigation banks would be used. Consequently, there would be no new additional impacts to recreational resources.

Alternative 5b (Watermark Farms)

Alternative 5b includes an alternative design for improvements to the SRMS project component. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. Watermark Farm, located on the right bank of the Sacramento River between RM 50.5 and 51.25 would be used as the mitigation site for Sacramento River work (Figure 3.7.2-1 of the SEIS/SEIR).

Table 2.2-7. Alternative 5b Effects

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|-----------------|--|---------------------------|-------------------------------------|-----------------------------------|
| 2.2-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. | SRMS | There would be no park closure associated with Alternative 5b so there would be no impact on nearby parks. | N/A | No Impact | No Impact |
| 2.2-b Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. | SRMS | There would be no new recreational construction associated with Alternative 5b and there would be no impact. | N/A | No Impact | No Impact |

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|----------|--|--------------------|---------------------------------------|---|
| 2.2-c Cause substantial long-term disruption in the use of an existing recreational resource, reduce the quality of an existing recreational resource, reduce availability of an existing recreational resource or result in inconsistencies or non-compliance with planning documents (such as the American River Parkway Plan). | SRMS | Similar to the Proposed Action, the project footprint itself is not used for recreation, but recreationalists on the Sacramento River could have tranquility disrupted and views disturbed by construction and possible barges in the river. Mitigation Measures REC-1 and REC-2 would be implemented to minimize this indirect impact to less than significant. Alternative 5b would be under half a mile away from Dave's Pumpkin Patch. This is far enough that it is not anticipated that noise or views would disrupt those recreating at Dave's Pumpkin Patch. However, haul traffic may make it slower for those driving to the area. Because this would not prevent people from recreating at Dave's Pumpkin Patch, this would be an indirect less than significant impact. Unlike the Proposed Action, Alternative 5b would be across the river from the Pocket Neighborhood. People use the top of levee in the area recreate. The views and tranquility would be impacted along this part of the river until vegetation reestablishes along the river. However, vegetation would only be impacted along a short stretch of the river and overtime would reestablish to the existing condition. There would be an indirect less than significant impact on recreation since the only impacts to those recreating on the levee would be views and noises to those recreating. | REC-1, REC-2 | Less than Significant with Mitigation | Short-term and Minor with Mitigation Incorporated |

Alternative 5c (Sunset Pumps)

Alternative 5c combines three approaches to complete the Sacramento River Mitigation requirements including 1) Purchasing Delta smelt credits from an approved conservation bank 2) Funding a NMFS recovery plan project (Sunset Pumps) to remove a weir, allowing fish passage to benefit chinook steelhead and green sturgeon and 3) Funding the improvements at Sunset Pumps would increase water availability, which would then be directed to two local wildlife refuges, benefiting the Western Yellow Billed Cuckoo. The Sunset Pumps project is listed as high priority BOR, DWR, and USFWS, and is subject to separate NEPA/CEQA analysis prior to implementation. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. All activities related to 5c involve funding other project, therefore no additional impacts to recreation would result from this alternative.

2.3 Public Utilities and Services

Public utilities are defined as those systems which supply essential services to the public within a political subdivision.

2.3.1 Existing Conditions/Affected Environment

Water Supply

Since the ARCF 2016 Project was completed in December of 2015, and subsequently revised in May of 2016, there have been some changes with respect to water supply and use context for the region. The ARCF 2016 Project area occurs entirely within Sacramento County, where there are 27 individual water districts that provide municipal water supply services to approximately 200,000 customers within the county (County of Sacramento 2023). Water supply sources include groundwater, surface water diversions, and recycled water, depending on the geographical location of the user and the purpose of the water (DWR 2019). The Regional Water Authority (RWA) is a joint powers authority created by water purveyors in the Sacramento region to establish and maintain a unified approach to regional water issues (RWA 2018). The RWA provides members and associates significant regional coordination, including drought management, to enhance water management practices (RWA 2018). In addition, the Water Forum, a voluntary coalition of businesses, agricultural representatives, citizen groups, environmentalists, water managers, and local governments, work to advance the co-equal goals of water supply and preservation of the fishery, wildlife, recreational, and aesthetic values of the lower American River (Water Forum 2015).

Magpie Creek Project

The Magpie Creek Project (MCP) site is located within the Rio Linda Elverta Community Water District (County of Sacramento 2021). The Rio Linda Elverta Community Water District provides water to its constituents via locally drilled wells (Rio Linda Elverta Community Water District 2014).

Sacramento River Erosion Contract 3

The Sacramento River Erosion Contract 3 is located within City of Sacramento Water District (County of Sacramento 2021). The Freeport water intake facility, operated by the East Bay Municipal Utility District and the Sacramento County Water Agency, is located adjacent to the Sacramento River Erosion Contract 3. Water supply operations by the City of Sacramento Water District are fully described in Section 3.16.1 of the ARCF GRR Final EIS/EIR.

American River Erosion Contract 3B North and South, 4A, and 4B

Water supply for American River Erosion Contract 3B North and South, and 4B is split between four providers including Sacramento Suburban Water District, Sacramento County Water Agency, City of Sacramento Water and California American Water (County of Sacramento 2021).

Water supply operations by the City of Sacramento Water District and Sacramento County Water Agency are fully described in Section 3.16.1 of the ARCF GRR Final EIS/EIR.

The Sacramento Suburban Water District currently has 70 operational groundwater production wells, contractual rights to 26,064 acre-feet from the City of Sacramento water entitlement, and a contract to purchase up to 29,000 acre-feet of surface water per year from Placer County Water Agency (Sacramento Suburban Water District 2023).

California American Water is a subsidiary of American Water (California American Water 2023). California American Water is a publicly traded water and wastewater utility company (California American Water 2023). Water sources provided by California American Water include groundwater, surface water, wholesale, and retail sources (California American Water 2023).

The water supply intake for the Fairbairn Water Treatment Plant Pumpstation is located less than a half-mile from the American River Erosion Contract 3B North and South, and 4B.

The water supply service provider for the American River Erosion Contract 4A is the City of Sacramento Water (County of Sacramento 2021).

American River Mitigation Site

The American River Mitigation Site (ARMS) site is located within the jurisdiction of City of Sacramento Water District (County of Sacramento 2021).

Sacramento River Mitigation Site

The Sacramento River Mitigation Site (SRMS) is undeveloped and does not currently have a water supply provider (County of Sacramento 2021).

Alternative 5c (Sunset Pumps)

The Sunset Pumps are a component of water supply infrastructure within the Sutter Extension Water District (SEWD) (ESA, 2022). The Sunset Pumps supplement SEWD's water supply by ensuring consistent flow from the Thermalito Afterbay via the Sutter-Butte Main Canal (ESA, 2022). The Sunset pumps supply a maximum of 65,000 acre-feet by to SEWD from the Feather River with an associated maximum diversion rate of 234 cfs (ESA, 2022).

Alternative 5b (Watermark Farms)

Water supply to Watermark farms is secured by riparian water rights to the Sacramento River (TRICCommercial Real Estate, 2023). Water is pumped to the property via a 30 hp electric lift-pump station from a slant pump installed in the river to underground pipelines that flow into field distribution canals (TRICCommercial Real Estate, 2023). Historic reasonable usage of the riparian water right has been an average of 1,380 AF/ year (TRICCommercial Real Estate, 2023). Additional appropriated rights are through a North Delta Water Agency settlement agreement from Reclamation District 999 (TRICCommercial Real Estate, 2023).

Piezometer Network

The Piezometer network would be installed within the project footprint of MCP, Sacramento River Erosion Contract 3, American River Erosion Contract 3B North and South, American

River Erosion Contract 4A, and American River Erosion Contract 4B. Accordingly, water supplies are the same as for the respective contracts.

Stormwater Drainage

Stormwater drainage was described generally in Section 3.16.1 of the ARCF GRR Final EIS/EIR. Design refinements have identified which stormwater drainage systems specifically serve the Proposed Action.

Magpie Creek Project

The MCP site is located within the jurisdiction of the Sacramento County Stormwater Utility (County of Sacramento 2019b). The ultimate receiving water for stormwater runoff for the area covered by the MCP is the Sacramento River (County of Sacramento 2013).

Sacramento River Erosion Contract 3

The Sacramento River Erosion Contract 3 is located within the City of Sacramento Stormwater Utility District (County of Sacramento 2019b). The ultimate receiving water for stormwater runoff for the area covered by Sacramento River Erosion Contract 3 is the Sacramento River (County of Sacramento 2013).

American River Erosion Contract 3B North and South, 4A, and 4B

Stormwater service for American River Erosion Contract 3B North and South, and 4A, 4B are split between the City of Sacramento Stormwater Utility District and the Sacramento County Stormwater Utility (County of Sacramento 2019b). The staging area for American River Erosion Contract 3B overlaps a drainage basin and several outfalls occur in the proposed work area. Immediately adjacent to American River Erosion Contract 4A is a wetland that accepts stormwater runoff from Sump 151. The ultimate receiving water for stormwater runoff in the areas covered by the American River Erosion Contracts 3B North and South, 4A and 4B is the American River (County of Sacramento 2013).

American River Mitigation

The ARMS is located within the jurisdiction of City of Sacramento Stormwater Utility District (County of Sacramento 2019b). The ultimate receiving water for stormwater runoff in the ARMS is the Sacramento River (County of Sacramento 2013).

Sacramento River Mitigation

The SRMS does not have stormwater drainage infrastructure (County of Sacramento 2019b). The ultimate receiving water for stormwater runoff in the SRMS is the Sacramento River (County of Sacramento 2013).

Alternative 5c (Sunset Pumps)

The Sunset Pumps are located on the waterside of the levee of the Feather River. There is no additional stormwater drainage infrastructure.

Alternative 5b (Watermark Farms)

Agricultural drains terminate at a freshwater marsh at the southern end of Watermark Farms to drain the property as needed. Watermark Farms falls within the Reclamation District (RD) 765 and RD 999 drainage districts (TRICCommercial Real Estate, 2023).

Piezometer Network

The Piezometer network would be installed within the project footprint of MCP, Sacramento River Erosion Contract 3, American River Erosion Contract 3B North and South, American River Erosion Contract 4A, and American River Erosion Contract 4B. The Piezometer network would not require stormwater drainage infrastructure.

Wastewater

Wastewater service was described in Section 3.16.1 of the ARCF GRR Final EIS/EIR and is incorporated here by reference. Since the publication of the ARCF GRR Final EIS/EIR, the Sacramento Regional County Sanitation District, Regional San, completed construction on the EchoWater project, which aims to purify wastewater to the extent that it can be returned to its intended beneficial uses (Regional San 2017).

Wastewater service for American River Erosion Contract 4A is also provided by Regional San. There are no wastewater facilities associated with SRMS or Sunset Pumps.

Alternative 5b (Watermark Farms)

There is no wastewater service to Watermark Farms; however, sewer lines serving Regional San underlie the property to provide service to the Regional San facility to the southwest of the property.

Piezometer Network

The Piezometer network would be installed within the project footprint of MCP, Sacramento River Erosion Contract 3, American River Erosion Contract 3B North and South, American River Erosion Contract 4A, and American River Erosion Contract 4B. The Piezometer network would not require wastewater service.

Solid Waste

Solid waste service was described in Section 3.16.1 of the ARCF GRR Final EIS/EIR and is incorporated here by reference. Solid Waste service for American River Erosion Contract 4A is also provided by Sacramento County. The ARCF GRR Final EIS/EIR estimated that solid waste may be hauled up to 30 miles from the Proposed Action for recycling or disposal. Some soil material spoils may be hauled and stockpiled for use by the Natomas Basin Project or used for fill on the ARMS.

Alternative 5c (Sunset Pumps)

Solid waste service in the region of the Sunset Pumps is provided by Yuba-Sutter Recology.

Alternative 5b (Watermark Farms)

Solid waste service in the region of Watermark Farms is provided by WM (formerly known as Waste Management).

Piezometer Network

The Piezometer network would be installed within the project footprint of MCP, Sacramento River Erosion Contract 3, American River Erosion Contract 3B North and South, American River Erosion Contract 4A, and American River Erosion Contract 4B. Accordingly, solid waste service is the same as described for the other project components.

Electrical & Natural Gas Services

Electrical and natural gas services were described in Section 3.16.1 of the ARCF GRR Final EIS/EIR and is incorporated here by reference. No changes to electrical service providers have occurred since the release of the ARCF GRR Final EIS/EIR. The electric Service Provider American River Erosion Contract 4A is the Sacramento Municipal Utilities District, and natural gas service in the region is also provided by Pacific Gas and Electric (PG&E).

Alternative 5c (Sunset Pumps)

Electric and natural gas service in the region of the Sunset Pumps is provided by PG&E.

Alternative 5 b (Watermark Farms)

Electric and natural gas service in the region of the Watermark Farms is provided by PG&E.

Piezometer Network

The Piezometer network would be installed within the project footprint of MCP, Sacramento River Erosion Contract 3, American River Erosion Contract 3B North and South, American River Erosion Contract 4A, and American River Erosion Contract 4B. Accordingly, electrical and natural gas service would be provided by the same purveyors as for the respective contracts.

Telephone and Cable Services

Telephone and cable services were described in Section 3.16.1 of the ARCF GRR Final EIS/EIR and are incorporated here by reference. No changes to telephone and cable providers have occurred since the release of the ARCF GRR Final EIS/EIR. Telephone and cable service for American River Erosion Contract 4A is the same as listed in Section 3.16.1 of the ARCF GRR Final EIS/EIR.

Alternative 5c (Sunset Pumps)

Telephone and cable service in the region of the Sunset Pumps is provided by a number of private companies including T-Mobile Home Internet, Xfinity Internet from Comcast, AT&T and Earthlink.

Alternative 5b (Watermark Farms)

Telephone and cable service in the region of the Watermark Farms is provided by a number of private companies including T-Mobile Home Internet, Spectrum Cable Internet, Xfinity Internet from Comcast, AT&T, Earthlink, and HughesNet.

Piezometer Network

The Piezometer network would be installed within the project footprint of MCP, Sacramento River Erosion Contract 3, American River Erosion Contract 3B North and South, American River Erosion Contract 4A, and American River Erosion Contract 4B. The Piezometer network would not require telephone and cable service.

Public Safety

Public safety services are described in Section 3.16.1 of the ARCF GRR Final EIS/EIR and are incorporated here by reference. Public Safety services for American River Erosion Contract 4A are the same as listed in Section 3.16.1 of the ARCF GRR Final EIS/EIR.

Alternative 5c (Sunset Pumps)

Public Safety services in the region of the Sunset Pumps are provided Sutter County Sheriff.

Alternative 5b (Watermark Farms)

Public Safety services in the region of the Sunset Pumps are provided Yolo County Sheriff.

Piezometer Network

The Piezometer network would be installed within the project footprint of MCP, Sacramento River Erosion Contract 3, American River Erosion Contract 3B North and South, American River Erosion Contract 4A, and American River Erosion Contract 4B. Accordingly, public safety services would be provided by the same purveyors as for the respective contracts.

Fire Protection

Fire Protection services were described in Section 3.16.1 of the ARCF GRR Final EIS/EIR and are incorporated here by reference. Fire Protection services for American River Erosion Contract 4A are the same as listed in Section 3.16.1 of the ARCF GRR Final EIS/EIR.

Alternative 5c (Sunset Pumps)

Fire Protection services in the region of the Sunset Pumps is provided Sutter County Fire Department.

Alternative 5b (Watermark Farms)

Fire Protection services in the region of the Watermark Farms is provided Yolo County Service Area #9.

Piezometer Network

The Piezometer network would be installed within the project footprint of MCP, Sacramento River Erosion Contract 3, American River Erosion Contract 3B North and South, American River Erosion Contract 4A, and American River Erosion Contract 4B. Accordingly, fire protection service would be provided by the same purveyors as for the respective contracts.

School Facilities

There are several schools within a one-mile radius of the Proposed Action. Specific schools are listed below by project component.

Magpie Creek

The MCP site is located within the jurisdiction of the Twin Rivers Unified School District and Robla Elementary School District. There are three schools within about a one-mile radius of the MCP: Main Avenue START Elementary School, Bell Avenue Elementary School, and Futures High School.

Sacramento River Erosion Contract 3

The Sacramento River Erosion Contract 3 is located within the Sacramento City Unified School District. There are three schools within about a one-mile radius of the Proposed Action: Matsuyama Elementary School, Caroline Wenzel Elementary School, and John Cabrillo Elementary School.

American River Erosion Contract 3B North and South, 4B and 4A

The American River Erosion Contract 3B North and South, 4B and Contract 4A includes areas under the jurisdiction of three districts; Twin Rivers Unified School District, San Juan Unified School District, and Sacramento City Unified School District. There are 10 schools within about a one-mile radius of the Proposed Action. Sacramento Country Day School, Sierra Oaks, River Valley School, Sacramento City Elementary Unified School, Isador Cohen Elementary, Bancroft Elementary, O.W. Erlewine Elementary School and California State University Sacramento are within about one mile of Contract 3B. Courtyard Private School is within about one mile of Contract 4A.

American River Mitigation

The ARMS site is located within the Twin Rivers Unified School District. American Lakes Elementary School is within about a one-mile radius of the ARMS.

Sacramento River Mitigation

Both the SRMS site and the Watermark Farms site are located within the River Delta Unified School District. There are no schools located within a one-mile radius of either site.

Alternative 5c (Sunset Pumps)

There are no school facilities within a one-mile radius of Sunset Pumps.

Alternative 5 b (Watermark Farms)

There are no school facilities within a one-mile radius of Watermark Farms.

Piezometer Network

The Piezometer network would be installed within the project footprint of MCP, Sacramento River Erosion Contract 3, American River Erosion Contract 3B North and South, American River Erosion Contract 4A, and American River Erosion Contract 4B. The Piezometer network would not require school facilities.

Emergency Services

Emergency Services were described in Section 3.16.1 of the ARCF GRR Final EIS/EIR and are incorporated here by reference. Emergency services for American River Erosion Contract 4A are the same as listed in Section 3.16.1 of the ARCF GRR Final EIS/EIR.

Alternative 5c (Sunset Pumps)

Emergency services in the region of the Sunset Pumps is provided Sutter County Fire Department.

Alternative 5b (Watermark Farms)

Emergency services in the region of the Watermark Farms is provided Yolo Emergency Medical Services Agency.

Piezometer Network

The Piezometer network would be installed within the project footprint of MCP, Sacramento River Erosion Contract 3, American River Erosion Contract 3B North and South, American River Erosion Contract 4A, and American River Erosion Contract 4B. Accordingly, emergency response services would be provided by the same purveyors as for the respective contracts.

2.3.2 Applicable Laws, Regulations, Policies, and Plans

Federal

There are no applicable Federal laws, regulations, policies, or plans relevant to Public Utilities and Service Systems.

State

California Water Plan

The California Water Plan is the state of California's strategic plan for managing and developing water resources. The plan is updated every five years with a goal of equitable and sustainable management of existing and potential future water sources. The plan does not mandate actions or authorize spending, rather it provides information on current trends and future projections; and establishes a forum for stakeholders to outline priorities (DWR 2023).

California Integrated Waste Management Act

The California Integrated Waste Management Act of 1989 regulates the disposal, management, and recycling of solid waste. The act requires a city, county, or city and county, or regional agency formed under the act, to develop a source reduction and recycling element of an integrated waste management plan containing specified components. The act requires those jurisdictions to divert 50% of the solid waste subject to the element, except as specified, through source reduction, recycling, and composting activities (AB 939, Sher, Chapter 1095, Statutes of 1989 as amended [IWMA]). Since the publication of the ARCF GRR Final EIS/EIR, the California Integrated Waste Management Act (AB 939) has been updated and now requires that 75% of the waste stream be recycled (CalRecycle 2023).

Local

Relevant policies from the local planning documents are included in this section. Policies that would not apply to the Proposed Action, and policies that the Proposed Action could not have an effect on were not included.

City of Sacramento 2035 General Plan – Utilities and Public Health and Safety

U 1.1.1 Provision of Adequate Utilities. The City shall continue to provide and maintain adequate water, wastewater, and stormwater drainage utility services to areas in the city, and shall provide and maintain adequate water, wastewater, and stormwater drainage utility services to areas in the city that do not currently receive these City services upon funding and construction of necessary infrastructure.

U 1.1.2 Citywide Level of Service Standards. The City shall establish and maintain service standards [Levels of Service (LOS)] for water, wastewater, stormwater drainage, and solid waste services.

U 1.1.8 Joint-Use Facilities. The City shall support the development of joint-use water, drainage, and other utility facilities as appropriate in conjunction with schools, parks, golf courses, and other suitable uses to achieve economy and efficiency in the provision of services and facilities.

U 1.1.10 Safe, Attractive, and Compatible Utility Design. The City shall ensure that public utility facilities are designed to be safe, aesthetically pleasing, and compatible with adjacent uses.

U 1.1.12 Impacts to Environmentally Sensitive Lands. The City shall locate and design utilities to avoid or minimize impacts to environmentally-sensitive areas and habitats.

U 2.1.8 Emergency Water Conservation. The City shall reduce water use during periods of water shortages and emergencies.

U 2.1.12 Water Conservation Enforcement. The City shall continue to enforce City ordinances that prohibit the waste or runoff of water, establish limits on outdoor water use, and specify applicable penalties.

U 2.1.13 Recycled Water. The City shall continue to investigate the feasibility of utilizing recycled water where appropriate, cost effective, safe, and environmentally sustainable.

U 2.1.16 River-Friendly Landscaping. The City shall promote “River Friendly Landscaping” techniques which include the use of native and climate appropriate plants; sustainable design and maintenance; underground (water efficient) irrigation; and yard waste reduction practices.

U 5.1.1 Zero Waste. The City shall achieve zero waste to landfills by 2040 through reusing, reducing, and recycling solid waste; and using conversion technology if appropriate. In the interim, the City shall achieve a waste reduction goal of 75 percent diversion from the waste stream over 2005 levels by 2020 and 90 percent diversion over 2005 levels by 2030 and shall support the Solid Waste Authority in increasing commercial solid waste diversion rates to 30 percent.

U 5.1.8 Diversion of Waste. The City shall encourage recycling, composting, and waste separation to reduce the volume and toxicity of solid wastes sent to landfill facilities.

U 5.1.15 Recycling and Reuse of Construction Wastes. The City shall require recycling and reuse of construction wastes, including recycling materials generated by the demolition and remodeling of buildings, with the objective of diverting 85 percent to a certified recycling processor.

P.H.S 1.1.2 Response Time Standards. The City shall strive to achieve and maintain optimal response times for all call priority levels to provide adequate police services for the safety of all city residents and visitors.

P.H.S. 2.1.2 Response Time Standards. The City shall strive to maintain emergency response times that provide optimal fire protection and emergency medical services to the community.

P.H.S. 2.2.8 Wildland Hazards on Private Properties. The City shall continue to require private property owners to remove excessive/overgrown vegetation (e.g., trees, shrubs, weeds) and rubbish to the satisfaction of the Fire Department to prevent and minimize fire risks to surrounding properties.

Sacramento County General Plan of 2005 to 2030, Public Facilities and Safety Elements

PF-59 Alternative methods of fire protection and access must be instituted if access is reduced to emergency vehicles.

Implementation Measure: Provide for review of all projects by fire districts having jurisdiction and maintain fire district representation on the Subdivision Review Committee.

PF- 130 Encourage local park districts to collaborate and coordinate with other districts, agencies, and organizations.

Implementation Measure: Work in a coordinated fashion with local park districts, County Regional Parks, State and Federal agencies, and non-profit entities to acquire sufficient acreage of park lands and funding for recreation facilities improvements to meet the long-range needs of the residents of Sacramento County.

SA-6 The County will coordinate with the City of Sacramento, the Army Corps of Engineers, the Sacramento Area Flood Control Agency, and other Federal, State, and local governments and agencies to develop a plan to finance, develop and construct flood control project improvements to reduce flooding potential in Sacramento County. The construction of flood control projects along the Sacramento and American Rivers and the immediate connection of local streams to these rivers shall be included in these projects. Such projects should provide 200-year flood protection.

SA-11 The County shall implement the improvement of natural drainage channels and certain floodplains for urbanized or urbanizing portions of the County to reduce local flooding. Such improvements shall comply with the General Plan policies contained in the Conservation Element, Urban Streams, and Channel Modification Section.

SA-18a Provide unobstructed access to levees on county-owned lands, whenever practicable, for maintenance and emergencies. Require setbacks and easements to provide access to levees from private property.

SA-20 Levees for the purpose of floodplain reclamation for development shall be strongly discouraged. Floodplain restoration shall be encouraged to provide flood protection and enhancement and protection of a riparian ecosystem.

SA-21 If levee construction is approved to reclaim floodplain for new development, 200-year flood protection is required.

Implementation Measures: Amend the Flood Combining Zone to further limit development within the 100-year floodplain. This zone should enhance flood protection and provide opportunities for reclamation of riparian habitats and recreation.

The County shall implement the improvement of natural drainage channels in urbanized or urbanizing portions of the County to reduce local flooding.

2.3.3 Analysis of Environmental Effects

Analysis Methodology

Effects to the human environment as a result of effects to public utilities and service systems from Proposed Action were assessed by comparing existing service capacity and facilities to the potential service capacity and capability during and after implementation of the Proposed Action. Evaluations of potential utility and service systems impacts consider the duration and extent to which such services would be affected as well as the ability of a service provider to continue to provide a level of service that could continue to meet the needs of affected communities.

Basis of Significance

The thresholds, and the impact analysis that follows, take into consideration the significance of an action in terms of: the setting of the proposed action; short- and long-term effects of the proposed action; both beneficial and adverse effects; effects of the proposed action on public health and safety; and effects that would violate Federal, State, Tribal, or local law protecting the environment, as required under NEPA (40 CFR 1508.1(g)). The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. The alternatives under consideration were determined to result in a significant impact related to public utilities and services if they would do any of the following:

- 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, park, other public facilities;
- b. exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- c. 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;
- d. have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years;
- e. 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;
- f. 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;
- g. not comply with or result in non-compliance with Federal, State, and local management and reduction statutes and regulations related to solid waste.

Effects Not Discussed in Detail

Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (2.3-b) —While the Proposed Action would not create wastewater in the sense of wastewater treated at a sewer treatment plant, the SWRCB maintains that wastewater can be generated by construction sites. Nevertheless, wastewater in this context is regulated under the Section 402 of the Clean Water Act, National Pollution Discharge Elimination System (NPDES), under the state issued Construction Stormwater General Permits, and these effects are described in detail in Appendix B 3.4.

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 (2.3-e)—This Proposed Action would not construct any facilities that would require wastewater connections. Temporary sanitary facilities would be provided for the use of workers at the Proposed Action. However, these facilities would be self-contained and would not connect to existing wastewater service facilities, nor require the construction of new wastewater service facilities. Therefore, this issue is not addressed further in the SEIS/SEIR.

Effects Analysis

No Action Alternative

Under the No Action Alternative, the Proposed Action from the ARCF GRR Final EIS/EIR would be implemented. Since 2016, substantial portions of the authorized project have been constructed, as described in the supplemental documents listed in Section 2.1.1, “Related Documents and Resources,” in the SEIS/SEIR document, and the authorized project includes implementation of all mitigation measures adopted and incorporated into the project. Construction of the No Action Alternative would have potential effects to utility systems in the project area. There is the potential for construction-related damage to infrastructure and disruption of service during construction activities. If constructed as described in the ARCF GRR Final EIS/EIR, effects to the human environment from effects to public utilities and service systems would be less than significant with the implementation of mitigation measures discussed in Section 3.16.3 of the ARCF GRR Final EIS/EIR.

Proposed Action Alternative

2.3-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, park, other public facilities

CEQA Significance Conclusion: Less than Significant

NEPA Significance Conclusion: Short-Term and Minor effects that are Less than Significant

Magpie Creek Project, American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Contract 3, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): No Impact

The Proposed Action consists of levee improvements and associated mitigation and would not result in new development, or intensification of uses that would require new or alteration of existing governmental or public facilities. Further, there would be no need to construct additional law enforcement, fire protection, emergency medical service facilities, parks, or schools and, therefore, there would be no environmental impacts. Impacts to existing parks and recreational facilities are addressed in Appendix B, Section 2.2, "Recreation."

The effects described in the ARCF GRR Final EIS/EIR for impacts to governmental facilities and public service systems adequately describe the context and intensity of impacts that would occur if the Proposed Action were constructed. Since impact conclusions for a supplemental analysis under NEPA compare the Proposed Action described in the original document and there are no new impacts, and no intensification of impacts previously described, there is no impact under NEPA.

American River Mitigation, Sacramento River Mitigation

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Short-Term and Minor effects that are Less than Significant

Construction of the mitigation sites at ARMS and SRMS would occur in undeveloped areas. The proposed ARMS is located within the American River Parkway, a county park facility. No new permanent utility services to the ARMS site are planned at the time of writing of this document, and services such as law enforcement are already provided in the American River Parkway and demand is expected to be similar to existing conditions. The ARMS site is surrounded by other areas of the American River Parkway. Developed facilities are available nearby at Discovery Park, and existing use of the Jedediah Smith Memorial Bike Trail already brings substantial numbers of people to the immediate vicinity of the ARMS site.

There are no existing public facilities or public utility systems at the proposed SRMS site. There are no plans to make the site publicly accessible and therefore there would be no need for the provision of new governmental services or public utility systems. The intensity of use of the site by people would not increase and therefore existing fire and police services would be sufficient to prevent the site from becoming a public nuisance or threat to safety.

2.3-c 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.

CEQA Significance Conclusion: Less than Significant with Mitigation Incorporated

NEPA Significance Conclusion: Less than Significant with Mitigation Incorporated

Magpie Creek Project

CEQA Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

NEPA Conclusion (Design Refinements): Short-term and Minor effects that are Less than Significant with Mitigation Incorporated

The MCP includes water lines, sewer lines, overhead power lines, and telecommunications lines. In general, these utilities are aligned parallel to roadways within the MCP disturbance area, within the transportation right of way. However, because the MCP occurs within an area with development on both sides in some areas, some utilities, including a sewer line, pass perpendicular to and through the levee. The current sewer line is constructed from clay and would need to be temporarily rerouted to prevent damage from nearby earthwork. Upon completion of construction, the sewer line would be replaced with a new pipe meeting engineering standards for sewer conveyance. Power poles would need to be relocated to align with new features, and storm water conveyance culverts would be re-sized to accommodate anticipated increases in flows. Taken together, there would likely be temporary service interruptions if the MCP is implemented. This would be a significant impact. The following previously adopted mitigation measure has been identified to address this impact.

Mitigation Measure UTL-1: Verify Utility Locations, Coordinate with Affected Utility Owners/Providers, Prepare and Implement a Response Plan, and Conduct Worker Training with Respect to Accidental Utility Damage

The Project Partners will implement the measures listed below before construction begins to avoid and minimize potential damage to utilities, infrastructure, and service disruptions during construction.

- Coordinate with applicable utility and service providers to implement the orderly relocation of utilities that need to be removed or relocated.
- Provide notification one week prior to any potential interruptions in service to the appropriate agencies and affected landowners.
- Verify through field surveys and the use of the Underground Service Alert services the locations of buried utilities at the Proposed Action's construction sites, including natural gas, petroleum, and sewer pipelines. Any buried utility lines will be clearly marked at the construction sites (e.g., in the field) and on the construction specifications in advance of any earthmoving activities.
- Prepare and implement a response plan that addresses potential accidental damage to a utility line. The plan will identify chain-of-command rules for notification of authorities and appropriate actions and responsibilities regarding the safety of the public and workers. A component of the response plan will include worker education training in response to such situations.
- Stage utility relocations during construction to minimize interruptions in service.

- Communicate construction activities with first responders to avoid response delays due to construction detours.

Timing: Before construction

Responsibility: Project Partners

Implementing Mitigation Measure UTL-1, which was previously adopted for the ARCF 2016 Project, would reduce the length of the interruptions to the extent possible, and by providing notice of the interruption, enable affected parties to make preparations to minimize disturbance. After implementation of Mitigation Measure UTL-1, this impact would be less than significant.

American River Erosion Contract 3B North and South, American River Erosion Contract 4B

CEQA Conclusion (Entire Proposed Action): Less than Significant

NEPA Conclusion (Design Refinements): Short-Term and Minor effects that are Less than Significant

Stormwater outfalls are located within the American River Erosion Contract 3B North and South and American River Erosion Contract 4B project sites. Staging areas for American River Erosion Contract 3B North and South would occur in existing stormwater drainage basins. Water lines are also located within the American River Erosion Contract 3B project site, and there is one known near Watt Avenue Bridge at Site 3-1 that needs to be relocated to maintain water to water fountain . American River Erosion Contract 3B North and South was designed to avoid the stormwater outfalls and stormwater conveyance pipelines would be provided through the erosion protection features. Since work would not occur during flood conditions, use of the drainage basins for stormwater retention or detention would continue as under current conditions. It is anticipated that equipment would be moved from the drainage basins prior to inundation such that capacity would not be reduced. Therefore, Proposed Action impacts on stormwater and municipal water supply systems would be short-term, minor, and less than significant.

The effects described in the ARCF GRR Final EIS/EIR for impacts to utilities and public service systems due to relocations adequately describe the context and intensity of impacts that would occur if the Proposed Action were constructed for this project component. Since impact conclusions for a supplemental analysis under NEPA compare the Proposed Action described in the original document and there are no new impacts, and no intensification of impacts previously described, there is no new impact under NEPA.

American River Erosion Contract 4A

CEQA Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

NEPA Conclusion (Design Refinements): Short-term and Minor effects that are Less than Significant with Mitigation Incorporated

There are two known telecommunications lines and one water line within the project footprint of American River Erosion Contract 4A. Construction could temporarily interrupt service to these facilities as depth of the utility lines is currently unknown. This impact would be potentially significant.

The following previously adopted mitigation measure has been identified to address this impact.

Mitigation Measure UTL-1: Verify Utility Locations, Coordinate with Affected Utility Owners/Providers, Prepare and Implement a Response Plan, and Conduct Worker Training with Respect to Accidental Utility Damage

Please refer to Impact 2.3-c, MCP above for full text of this mitigation measure.

Timing: Before construction

Responsibility: Project Partners

Implementing Mitigation Measure UTL-1, which was previously adopted for the ARCF 2016 Project, would reduce this impact to a less-than-significant level because surveys would be conducted to determine the precise location of the utilities prior to construction, and service providers would be notified of any disruptions. Since there are no known electrical lines, the piezometer network would likely be solar powered. Mitigation Measure UTL-1 would require communication with utility owners and affected users prior to work and any potential service interruptions. If required, utilities would be relocated to an alternate compatible location within the project disturbance footprint to ensure that there are no additional environmental effects due to the relocation of the service lines. Construction could result in service interruptions due to relocations; however, with the implementation of UTL-1, these effects would be less than significant.

Sacramento River Erosion Contract 3

CEQA Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

NEPA Conclusion (Design Refinements): No Impact

The Sacramento River Erosion Contract 3 project site encompasses numerous public utility structures including stormwater pipes and outfalls, sump lines, and electrical lines. In addition, the site is immediately adjacent to the Freeport Regional Water Facility. Construction of the site could result in damage to any of the above listed utilities resulting in a service interruption. This would be a potentially significant impact. The following previously adopted mitigation measure has been identified to address this impact.

Mitigation Measure UTL-1: Verify Utility Locations, Coordinate with Affected Utility Owners/Providers, Prepare and Implement a Response Plan, and Conduct Worker Training with Respect to Accidental Utility Damage

Please refer to Impact 2.3-c, MCP above for full text of this mitigation measure.

Timing: Before construction

Responsibility: Project Partners

Implementing Mitigation Measure UTL-1, which was previously adopted for the ARCF 2016 Project, would require communication with utility owners and affected users prior to work and any potential service interruptions. If required, utilities would be relocated to an alternate compatible location within the project disturbance footprint to ensure that there are no additional environmental effects from the relocation of the service lines. Construction of the site could result in service interruptions due to relocations; however, with the implementation of UTL-1, these effects would be less than significant.

The effects described in the ARCF GRR Final EIS/EIR for impacts to utilities and public service systems due to relocations adequately describe the context and intensity of impacts that would occur if the Proposed Action were constructed for this project component. Since impact conclusions for a supplemental analysis under NEPA compare the Proposed Action described in the original document and there are no new impacts, and no intensification of impacts previously described, there is no impact under NEPA.

American River Mitigation Site

CEQA Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

NEPA Conclusion (Design Refinements): Short-term and Minor effects that are Less than Significant with Mitigation Incorporated

There are high voltage overhead lines present within the ARMS boundary. There may be other utilities present that could be found during the survey process. Due to the risk of working near, and the expense of moving a high voltage line, high voltage lines would be avoided in place. Construction of the site could result in damage to existing utilities resulting in a service interruption. This would be a potentially significant impact. The following previously adopted mitigation measure has been identified to address this impact.

Mitigation Measure UTL-1: Verify Utility Locations, Coordinate with Affected Utility Owners/Providers, Prepare and Implement a Response Plan, and Conduct Worker Training with Respect to Accidental Utility Damage

Please refer to Impact 2.3-c, MCP above for full text of this mitigation measure.

Timing: Before construction

Responsibility: Project Partners

If other utilities were identified within the ARMS site, implementation of UTL-1, which was previously adopted for the ARCF 2016 Project, would ensure that impacts to utilities from any necessary relocations would be less than significant.

Sacramento River Mitigation Site

CEQA Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

NEPA Conclusion (Design Refinements): Short-term and Minor effects that are Less than Significant with Mitigation Incorporated

There are no known utilities within the SRMS. However, utility surveys of the SRMS site have not been conducted. The possible disruption of utilities would be a potentially significant impact. The following previously adopted mitigation measure has been identified to address this impact.

Mitigation Measure UTL-1: Verify Utility Locations, Coordinate with Affected Utility Owners/Providers, Prepare and Implement a Response Plan, and Conduct Worker Training with Respect to Accidental Utility Damage

Please refer to Impact 2.3-c, MCP above for full text of this mitigation measure.

Timing: Before construction

Responsibility: USACE

Implementing Mitigation Measure UTL-1, which was previously adopted for the ARCF 2016 Project, would require communication with utility owners and affected users prior to work and any potential service interruptions. If required, utilities would be relocated to an alternate compatible location within the project disturbance footprint to ensure that there are no additional environmental effects due to the relocation of the service lines. Construction of the site could result in service interruptions due to relocations; however, with the incorporation of UTL-1, these effects would be less than significant.

Piezometer Network

CEQA Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

NEPA Conclusion (Design Refinements): No Impact

A piezometer network would be installed along the existing levees. In areas with no known electric utilities, the network would be solar powered. In areas with existing electric utilities, the piezometers may be connected to the electrical grid. Installation of the piezometer network would occur after primary levee improvements, but would require the same survey procedures to identify existing utilities. The impact related to disruption of utility service would be potentially significant. The following previously adopted mitigation measure has been identified to address this impact.

Mitigation Measure UTL-1: Verify Utility Locations, Coordinate with Affected Utility Owners/Providers, Prepare and Implement a Response Plan, and Conduct Worker Training with Respect to Accidental Utility Damage

Please refer to Impact 2.3-c, MCP above for full text of this mitigation measure.

Timing: Before construction

Responsibility: USACE

Implementing Mitigation Measure UTL-1, which was previously adopted for the ARCF 2016 Project, would require communication with utility owners and affected users prior to work and any potential service interruptions, and would reduce this impact to a less-than-significant level.

The effects described in the ARCF GRR Final EIS/EIR for impacts to utilities and public service systems due to relocations adequately describe the context and intensity of impacts that would occur if the Proposed Action were constructed for this project component. Since impact conclusions for a supplemental analysis under NEPA compare the Proposed Action described in the original document and there are no new impacts, and no intensification of impacts previously described, there is no impact under NEPA.

2.3-d Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

CEQA Significance: Less than Significant

NEPA Significance: Short-term to Medium-Term and Minor effects that are Less than Significant.

American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, Magpie Creek Project, American River Mitigation, Sacramento River Mitigation, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Short-term to Medium-Term and Minor effects that are Less than Significant.

All the components of the Proposed Action would require temporary water supplies during construction. Water would be needed for fugitive dust mitigation, compaction of soil, blading of roads, irrigation of hydroseed and/or plantings, and other construction related tasks. Water supplies to complete construction could be sourced from municipal supplies at fair market value for the duration of the construction directly from nearby water lines or transported via water truck. Irrigation required for plant establishment period (usually 3-5 years following construction) preferentially uses river water, or existing or newly drilled groundwater wells; however, municipal water would be an alternative water supply. Permits for river water usage may be required depending upon pump size and intake. Permits for well installation would be coordinated at the City or County level depending upon project component. DWR estimates that

between 7,000-15,000 new wells are drilled in California each year; therefore, permits and approvals for several wells are not expected to delay the project (DWR, 2020). Regardless of specific water supply type, there would be no on-going commitment of water resources to the levee improvement or proposed mitigation sites following the completion of construction and plant establishment.

Drought status would likely only affect the price the contractor would pay for needed water, as the project components would not be competing with municipal water users. In very dry years, particularly if those years occurred during the plant establishment period, the cost of acquiring municipal irrigation water could increase substantially if emergency water reduction measures are enacted by local or State governments. Mitigation plantings are selected for drought-adapted and tolerant native plants that have high survival rates even with low water regimes. The installation of several new groundwater wells to support plant growth would not substantially decrease groundwater levels or impact neighboring domestic wells. This is because young plants require less water and because groundwater is more available in the floodway and away from municipal wells.. During drought years, continuous groundwater monitoring would assess negative vertical displacement to prevent aquifer depletion and ongoing regional subsidence. See Section 3.3.3.4, in Appendix 3.3 Hydraulics and Hydrology for additional groundwater impact analysis. Since the use of municipal water supplies would be temporary, and water would be purchased at fair market value, as available, impacts to water supplies from implementation of the Proposed Action would be short-to-medium term with minor effects (NEPA) that are less than significant (CEQA). The ARCF GRR Final EIS/EIR did not consider effects to water supply due to implementation of the Proposed Action as it pertains to the use of water supplies in normal and dry years. Therefore, the NEPA and CEQA conclusions would be similar.

2.3-f 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.

Magpie Creek Project, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, American River Mitigation Site, Sacramento River Mitigation Site, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): No Impact

Construction of these project components would generate waste consisting of vegetation, soil, concrete, asphalt, and other construction-related trash. State regulations require that at least 75 percent of municipal waste be diverted through recycling, composting, or reuse. Topsoil and soils containing high volumes of organic matter could either be reused at mitigation sites or turned in for reuse or composting at county recovery stations. Rubble and concrete aggregates are also accepted at recovery stations. Tables 2.3-1 and 2.3-2 present the estimated waste generated by Contracts 3B and 4A, respectively, and the potential diversion by material. Except for small volumes of asphalt, all of the construction waste generated by these project components would be diverted and, therefore, exceed the State-mandated 75 percent diversion rate.

Quantities of material that may need to be disposed of have not been calculated for the MCP, Sacramento River Erosion Contract 3, ARMS, American River Erosion Contract 4B, or Piezometer Network project components. However, it is likely that these project components would have a similar diversion rate to the American River Erosion Contract 3B North and South, American River Erosion Contract 4A, and the SRMS. Therefore, this impact would be less than significant.

Table 2.3-1. Waste Diversion, American River Contract 3B

| Waste Type | Amount | Able to Divert? | Total Percentage |
|---------------------------------|------------|---|------------------|
| Vegetation (green waste) | 13,295 CY | Yes. Compostable county wide. | 6% |
| Earth/soil | 192,405 CY | Yes. Some facilities accept soil/earth for recycling. | 92% |
| Concrete | 0 | Yes. Concrete can be crushed into new aggregates. | 0 |
| Asphalt | 3,215 CY | No. Dispose of as waste. | 2% |
| Total Percentage able to divert | | | 98% |

Source: USACE 2023

Table 2.3-2. Waste Diversion, American River Contract 4A

| Waste Type | Amount | Able to Divert? | Total Percentage |
|---------------------------------|---------|---|------------------|
| Vegetation (green waste) | 4227 CY | Yes. Compostable county wide. | 83% |
| Earth/soil | 0 | Yes. Some facilities accept soil/earth for recycling. | 0% |
| Concrete | 0 | Yes. Concrete can be crushed into new aggregates. | 0% |
| Asphalt | 75 CY | No. Dispose of as waste. | 1% |
| Cast Iron | 800 CY | Yes. Recycle. | 16% |
| Total Percentage able to divert | | | 99% |

Source: USACE 2023

The effects described in the ARCF GRR Final EIS/EIR for impacts to utilities and public service systems due to generation of solid waste sufficiently characterize the context and intensity of impacts that would occur if the Proposed Action were constructed. Since impact conclusions for a supplemental analysis under NEPA compare the Proposed Action described in the original document and there are no new impacts, and no intensification of impacts previously described, there is no impact under NEPA.

2.3-g Comply with Federal, State, and local management and reduction statutes and regulations related to solid waste.

CEQA Significance: No Impact

NEPA Significance: No Impact

American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, Magpie Creek Project, American River Mitigation Site, Sacramento River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): No Impact

NEPA Impact Conclusion (Design Refinements): No Impact

All actions and activities under the Proposed Action would comply with all Federal, State, and local management and reduction statutes and regulations related to solid waste. The Project would not seek any waivers or exemptions to codified laws or regulations. Since all actions would be compliant, there would be no impact under CEQA.

The effects described in the ARCF GRR Final EIS/EIR for impacts to utilities and public service systems based on compliance with Federal, State, and local statutes and regulations pertaining to solid waste adequately assess the context and intensity of impacts that would occur if the Proposed Action were constructed. Since impact conclusions for a supplemental analysis under NEPA compare the Project described in the original document and there are no new impacts, and no intensification of impacts previously described, there is no impact under NEPA.

Alternatives Comparison

Alternatives 3a through 3d

Alternative 3a through 3d include alternative designs for improvements to the American River Erosion Contract 4A Project component. In Alternative 3a, a landside berm would be constructed instead of a waterside berm. In Alternative 3b, the bike detour would follow parallel to the railroad to the existing location of the bike trail instead of going under the railroad. In Alternative 3c, the bike route would be rerouted a short distance through an existing wetland. In Alternative 3d, the bike detour would go closer to the riverbank and follow the railroad to the existing location of the bike trail. None of these alternatives include changes that would affect the demand for public utilities or services relative to the Proposed Action. All other Project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, MCP, SRMS, and ARMS) would have the same effects as the Proposed Action.

Table 2.3-3. Alternative 3a through 3d Effects

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--------------------------------|------------------------------------|--|---------------------------|-------------------------------------|-----------------------------------|
| 2.3-a | American River Erosion Contract 4A | Consistent with the Proposed Action. The alternative designs would not have any more or less impact on public services than the Proposed Action. | N/A | Less than significant | No Impact |

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|-------------------------|------------------------------------|---|--------------------|---------------------------------------|---|
| 2.3-c | American River Erosion Contract 4A | Consistent with the Proposed Action. The alternative design would not have any more or less impact related to disruption of utility service than the Proposed Action. | UTL-1 | Less than significant with mitigation | Short-term and minor effects that are Less than significant with mitigation |
| 2.3-d | American River Erosion Contract 4A | Consistent with the Proposed Action. The alternative design would not have any more or less impact related to water supply than the Proposed Action. | N/A | Less than significant | Short-term to medium-term and minor effects that are Less than significant |
| 2.3-f | American River Erosion Contract 4A | Consistent with the Proposed Action. The alternative design would not have any more or less impact related to waste disposal than the Proposed Action. | N/A | Less than significant | No impact |
| 2.3-g | American River Erosion Contract 4A | Consistent with the Proposed Action. The alternative design would not have any more or less impact related to compliance with waste disposal requirements than the Proposed Action. | N/A | No Impact | No Impact |

Alternatives 4a and 4b

Alternatives 4a and 4b are alternative designs for the ARMS. Alternative 4a would retain a 30-acre portion of the existing pond, and alternative 4b would retain a 20-acre pond. Channels and habitat would be constructed on the remaining eastern portion of the site. Neither of these alternatives include changes that would affect the demand for public utilities or services relative to the Proposed Action. All other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, MCP, and SRMS) would have the same effects as the Proposed Action.

Table 2.3-4. Alternative 4a and 4b Effects

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion |
|-------------------------|----------|---|--------------------|---------------------------------------|
| 2.3-a | ARMS | Consistent with the Proposed Action. The alternative designs would not have any more or less impact on public services than the Proposed Action. | N/A | Less than significant |
| 2.3-c | ARMS | Consistent with the Proposed Action. The alternative design would not have any more or less impact related to disruption of utility service than the Proposed Action. | UTL-1 | Less than significant with mitigation |
| 2.3-d | ARMS | Consistent with the Proposed Action. The alternative design would not have any more or less impact related to water supply than the Proposed Action. | N/A | Less than significant |

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion |
|-------------------------|----------|--|--------------------|------------------------------|
| 2.3-f | ARMS | Consistent with the Proposed Action. The alternative design would not have any more or less impact related to waste disposal than the Proposed Action. Clean graded material on mitigation sites would be redistributed onsite to the maximum extent feasible. Other bulky waste such as concrete debris and metals would be hauled offsite for disposal or recycling as those cannot be immediately reused. | N/A | Less than significant |
| 2.3-g | ARMS | Consistent with the Proposed Action. The alternative design would not have any more or less impact related to compliance with waste disposal requirements than the Proposed Action. | N/A | No Impact |

Alternative 5a (Conservation bank credits)

Alternative 5a would utilize mitigation bank credit purchases to compensate for unavoidable resource impacts to sensitive and protected resources in lieu of constructing a mitigation site on the Sacramento River. All other Project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, MCP, and ARMS) would have the same effects as the Proposed Action. Purchases of bank credits do not have any effect on public utilities or service systems, so there would be no utilities impacts if this Alternative is implemented.

Table 2.3-5. Alternative 5a Effects

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|-------------------------|----------|--|--------------------|------------------------------|----------------------------|
| 2.3-a | SRMS | Less than the Proposed Action. This alternative would include no construction of this project element and no public services impact. | N/A | No Impact | No Impact |
| 2.3-c | SRMS | Less than the Proposed Action. This alternative would include no construction of this project element and no public services impact. | N/A | No Impact | No Impact |
| 2.3-d | SRMS | Less than the Proposed Action. This alternative would include no construction of this project element and no public services impact. | N/A | No Impact | No Impact |
| 2.3-f | SRMS | Less than the Proposed Action. This alternative would include no construction of this project element and no public services impact. | N/A | No Impact | No Impact |

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|-------------------------|----------|--|--------------------|------------------------------|----------------------------|
| 2.3-g | SRMS | Less than the Proposed Action. This alternative would include no construction of this project element and no public services impact. | N/A | No Impact | No Impact |

Alternative 5b (Watermark Farms)

Alternative 5b proposes to construct a mitigation site on the Sacramento River at Watermark Farms in lieu of the Proposed Action. All other Project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, MCP, and ARMS) would have the same effects as the Proposed Action. Consistent with other mitigation construction projects, any potentially affected utilities would be temporarily re-routed to accommodate project features. There would be temporary interruptions to utility service and some utilities could be permanently relocated. However, these effects to public services would be short-term, and through the implementation of UTL-1, effects would be less than significant.

Table 2.3-6. Alternative 5b Effects

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|-------------------------|----------|---|--------------------|------------------------------|---|
| 2.3-a | ARMS | Consistent with the Proposed Action. The alternative location would not have any more or less impact on public services than the Proposed Action. Watermark Farms is currently served by Yolo County resources for public safety, fire, and emergency services. The area is currently rural and conversion to a mitigation site would not change the rural character of the area such that these services would need to be upgraded to dedicated services. If mitigation designs result in changing the orientation or length of South River Road, response times to properties immediately south of Watermark Farms could be delayed. However, travel would still be possible along Jefferson Blvd, therefore the effect would be muted. There are no school facilities within one-mile of the site, and no residences would be built or removed that would create a shift in local populations that could affect schools. | N/A | Less than Significant | Short-term and minor effects that are Less than Significant |

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|-------------------------|----------|--|--------------------|---------------------------------------|---|
| 2.3-c | ARMS | Consistent with the Proposed Action. The alternative location would not have any more or less impact related to disruption of utility service than the Proposed Action. | UTL-1 | Less than Significant with mitigation | Short-term and minor effects that are Less than Significant with mitigation |
| 2.3-d | ARMS | Consistent with the Proposed Action. The alternative location would not have any more or less impact related to water supply than the Proposed Action. The Watermark Farms side channel diversion would flow back into the Sacramento River; therefore, water supply effects are anticipated to be negligible. Acquisition of the property would include water rights and exercising those rights would not interfere with other existing rights in the system. Watermark Farms includes both riparian and appropriated rights. Riparian rights are limited only to "reasonable historic use", it is unlikely that water needs for construction and plant establishment would exceed the historic water used to support agriculture on the parcel. Following plant establishment, irrigation to the parcel would cease, and water rights would no longer be exercised on the parcel. However, riparian rights are not extinguished if they are not used, rather, they go dormant. Appropriated rights are subject to the terms of the contract holding the right. Therefore, there would be no long-term change to water rights or supply in the area. | N/A | Less than Significant | Long-term and negligible effects that are Less than Significant |
| 2.3-f | ARMS | Consistent with the Proposed Action. The alternative location would not have any more or less impact related to waste disposal than the Proposed Action. Graded material on mitigation sites would be redistributed onsite to the maximum extent feasible. Other bulky waste such as concrete debris and metals are anticipated to be limited, but would be hauled offsite for disposal or recycling as those cannot be immediately reused. | N/A | Less than Significant | Short-term and negligible effects that are Less than Significant |
| 2.3-g | ARMS | Consistent with the Proposed Action. The alternative location would not have any more or less impact related to compliance with waste disposal requirements than the Proposed Action. | N/A | No Impact | No Impact |

Alternative 5c (Sunset Pumps)

Alternative 5c combines three approaches to complete the Sacramento River Mitigation requirements including 1) Purchasing Delta smelt credits from an approved conservation bank 2) Funding a NMFS recovery plan project (Sunset Pumps) to remove a weir, allowing fish passage to benefit chinook steelhead and green sturgeon and 3) Funding the improvements at Sunset Pumps will increase water availability, which will then be directed to two local wildlife refuges, benefiting the Western Yellow Billed Cuckoo. The Sunset Pumps project is listed as high priority BOR, DWR, and USFWS, and is subject to separate NEPA/CEQA analysis prior to implementation. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. All activities related to 5c involve funding another project, therefore no additional impacts to public utilities and services would result from this alternative.

Table 2.3-7. Alternative 5c Effects

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--------------------------------|-----------------|--|---------------------------|-------------------------------------|-----------------------------------|
| 2.3-a | SRMS | Less than the Proposed Action. This alternative would include no construction of this project element and no public services impact. | N/A | No Impact | No Impact |
| 2.3-c | SRMS | Less than the Proposed Action. This alternative would include no construction of this project element and no public services impact. | N/A | No Impact | No Impact |
| 2.3-d | SRMS | Less than the Proposed Action. This alternative would include no construction of this project element and no public services impact. | N/A | No Impact | No Impact |
| 2.3-f | SRMS | Less than the Proposed Action. This alternative would include no construction of this project element and no public services impact. | N/A | No Impact | No Impact |
| 2.3-g | SRMS | Less than the Proposed Action. This alternative would include no construction of this project element and no public services impact. | N/A | No Impact | No Impact |

2.4 Land Use, Farmland, and Forestland

2.4.1 Existing Conditions/Affected Environment

Land Use

Magpie Creek

The Magpie Creek Project (MCP) is located in North Sacramento adjacent to the former McClellan Air Force Base, due north of Interstate 80 (I-80) and bisected by Raley Boulevard (Figure 3.5.1-3 of the SEIS/SEIR). The project is estimated to be approximately 8,600 feet long, including the haul road connecting bike bridge to canal work. The project will take place within the City of Sacramento near the Sacramento County unincorporated communities of North Highlands and Rio Linda (Figure 2.4-1). The Magpie Creek Diversionary Canal (MCDC) transports treated wastewater from the McClellan Business Park's water treatment plant to the MCDC termination point at Robla Creek and receives seasonal flows from rain runoff. Robla Creek flows into the Natomas East Main Drain Canal (NEMDC). The NEMDC is a tributary of the American River North Basin, one of the subbasins of the American River Watershed. The American River Watershed is part of the overall Sacramento Basin and feeds into the Sacramento River. The existing land use in the area surrounding the project site consists of warehouses, industrial buildings, low-density residential areas, and parks. The project site includes areas designated as Employment Center Low Rise, Suburban Neighborhood Low Density, Parks and Recreation, and Open Space in the City of Sacramento 2023 General Plan (City of Sacramento General Plan) (Figure 2.4-2 [City of Sacramento 2022]).

American River Erosion Contract 3B and 4B

The American River Erosion Contract 3B is made up of three sites on both the left and right banks of the American River (Figure 3.5.2-3 of the SEIS/SEIR). Site 3-1 is located between the Howe Avenue Bridge and the Watt Avenue Bridge on the right bank of the LAR between LAR River Mile (RM) 3.8 and 8.8 (~ 4,600 linear feet). Site 4-1 is located upstream of Watt Avenue on the left bank of the LAR between LAR RM 9.1 and 10.5 (~6,100 linear feet). Site 4-2 is located on the right bank of the LAR between LAR RM 9.8 and 10.0 (~1,100 linear feet) near the Estates Drive River Access. American River Erosion Contract 4B is near RM 8.6 on the right bank and RM 9.8 on the left bank. This area is currently a mix of residential and recreational use, and partially under the jurisdiction of Sacramento County and partially under the jurisdiction of the City of Sacramento. The portion of the project site in the City of Sacramento is designated in the City of Sacramento General Plan for Parks and Recreation (Figure 2.4-4 [City of Sacramento 2022]). Sacramento County General Plan of 2005 to 2030 (Sacramento County General Plan) (County of Sacramento 2022) designates the portion of the project site in the incorporated County for Natural Preserve, Recreation, Low Density Residential, and Transit Oriented Development (Figure 2.4-5).

American River Erosion Contract 4A

LAR Contract 4A is located on the right bank of the American River at RM 2.0 near the State Route (SR) 160 bridges and the Union Pacific Railroad (UPRR) Bridge, see Figure 2.4-1 below. Existing land use in this area is a mix of warehouse, industrial, parkway, and roadway. There is land within the project site that is designated as Farmland of Local Importance by the California

Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) (DOC 2016); however, the property is owned by the County of Sacramento, is considered part of the Lower American River Parkway, and has been designated park space for recreation since the 1980s. Figure 2.4- 10 illustrates this area. A trailer park is located in the vicinity, but is separated from the project by the levee and SR 160. The City of Sacramento General Plan (City of Sacramento 2022) designates the project site and nearby areas for Parks and Recreation, Employment Center Low Rise, and Suburban Center (Figure 2.4-6).

Sacramento River Erosion Contract 3

Sacramento River Erosion Contract 3 includes three segments totaling 2.8 miles between river miles 47 and 53 in the City of Sacramento's Pocket neighborhood (Figure 2.4-1). The landside area surrounding the project area is privately owned land made up of neighborhoods known as the Pocket and the Little Pocket, both of which lie between the Sacramento River and I-5. The levee top on the project site is used for a public bike trail in some locations and is closed to public access at other locations. The City of Sacramento General Plan (County of Sacramento 2022) designates land uses in the project site vicinity as Parks and Recreation, Low-Density Residential and Public/Quasi-Public (Figures 2.4-7 and 2.4- 8).

Sacramento River Mitigation Site

The Sacramento River Mitigation Site (SRMS), (Figure 2.4-1) is in the legal Delta, at the confluence of the Sacramento River, Cache Slough and Steamboat Slough. Until approximately 1980, a portion of the site was used as a Class III solid waste landfill. The current land use is a decommissioned landfill, open space and approximately 20 acres for disposal of dredge material. The site itself is not designated as Prime Farmland, but Prime Farmland is present in the immediate vicinity (DOC 2016) (Figure 2.4-10). The Sacramento County General Plan (County of Sacramento 2022) designates lands in the vicinity of the site for Natural Preserve and Recreation (Figure 2.4- 9).

American River Mitigation Site

The American River Mitigation Site (ARMS) is located on the right bank of the American River, at approximately RM 1.3, between Discovery Park and Camp Pollock, in the American River Parkway. The existing land use at the ARMS includes a pond that was created by historic gravel and sand mining, and undeveloped or underutilized land that was historically used for mining, farming and construction debris removal. Phase I and II ESAs were conducted in 2022 and 2023 and showed elevated levels of soil contaminants including naphthalene, TPH-d, chromium, and lead in various portions of the site. See Appendix B Section 3.8 "Hazards and Hazardous Materials" for a detailed discussion. The land adjacent to the pond is designated as Farmland of Local Importance (DOC 2016) (Figure 2.4- 10). The City of Sacramento General Plan (City of Sacramento 2022) designates the ARMS for Parks and Recreation (Figure 2.4-6).

Alternative 5a (Bank Credits)

Alternative 5a would consist of purchasing credits from Service approved conservation banks. The locations would already have been identified, with their own separate NEPA and CEQA compliance completed. The sole purpose of the property would be to provide habitat for special

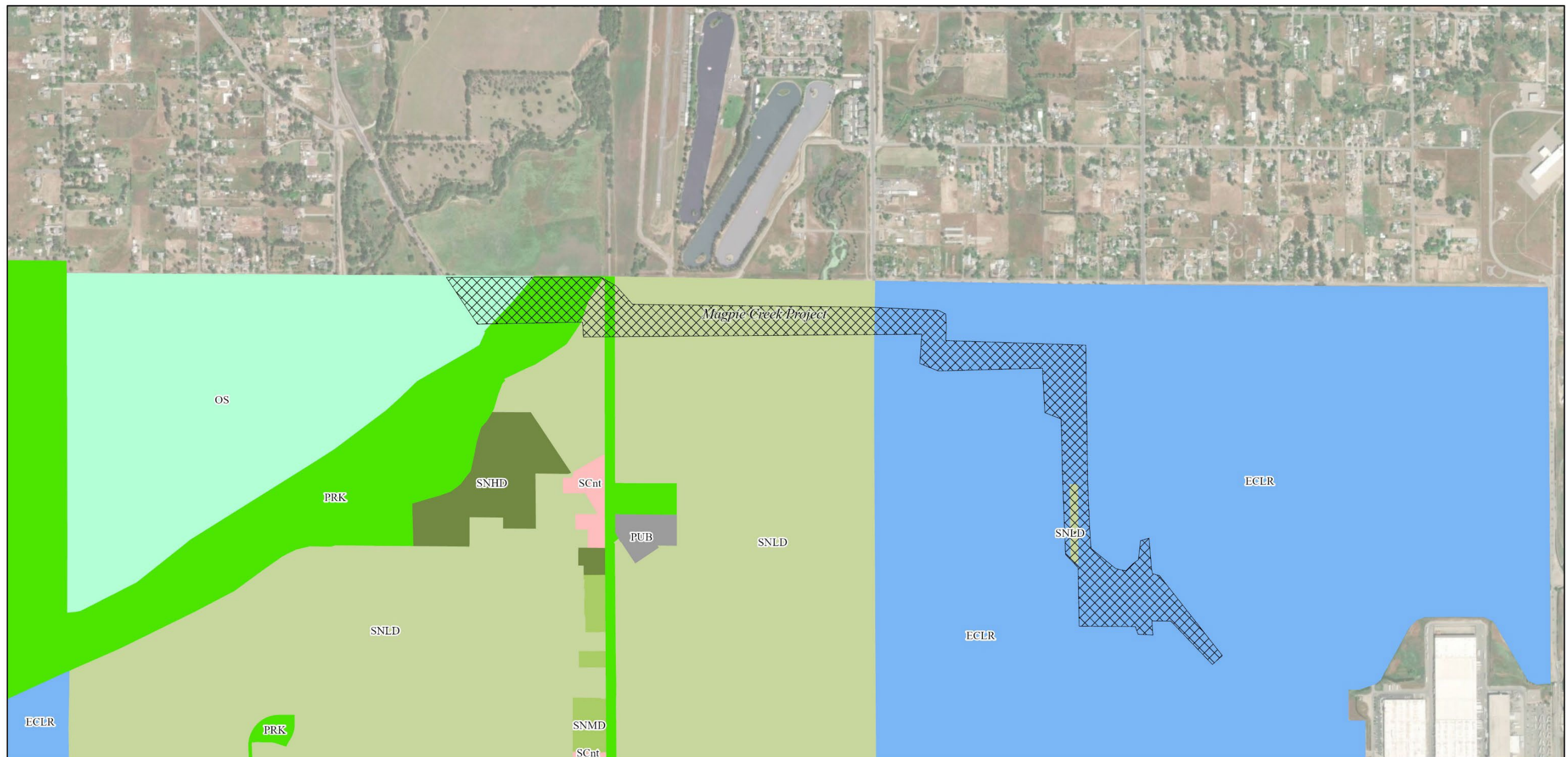
status species and therefore would not be designated prime farmland and would be within the existing, approved land use.

Alternative 5b (Watermark Farms)

Alternative 5b, located on the right bank of the Sacramento River between RM 50.5 and 51.25 would be used as the mitigation site for Sacramento River-related habitat impacts. The Watermark Farms site includes areas designated as Prime Farmland.

Alternative 5c (Sunset Pumps)

Alternative 5c is located below the ordinary high water mark of the Feather River in Sutter and Yuba Counties and does not include any prime farmlands.



(City of Sacramento 2022)

City of Sacramento 2035 General Plan Land Use Near the Magpie Creek Project

Project Site

General Plan Land Use

SNLD- Suburban Neighborhood Low Density

SNMD- Suburban Neighborhood Medium Density

Updated 9/19/2023

SNHD- Suburban Neighborhood High Density

SCnt- Suburban Center

ECLR- Employment Center Low Rise

PUB- Public/Quasi-Public

OS- Open Space

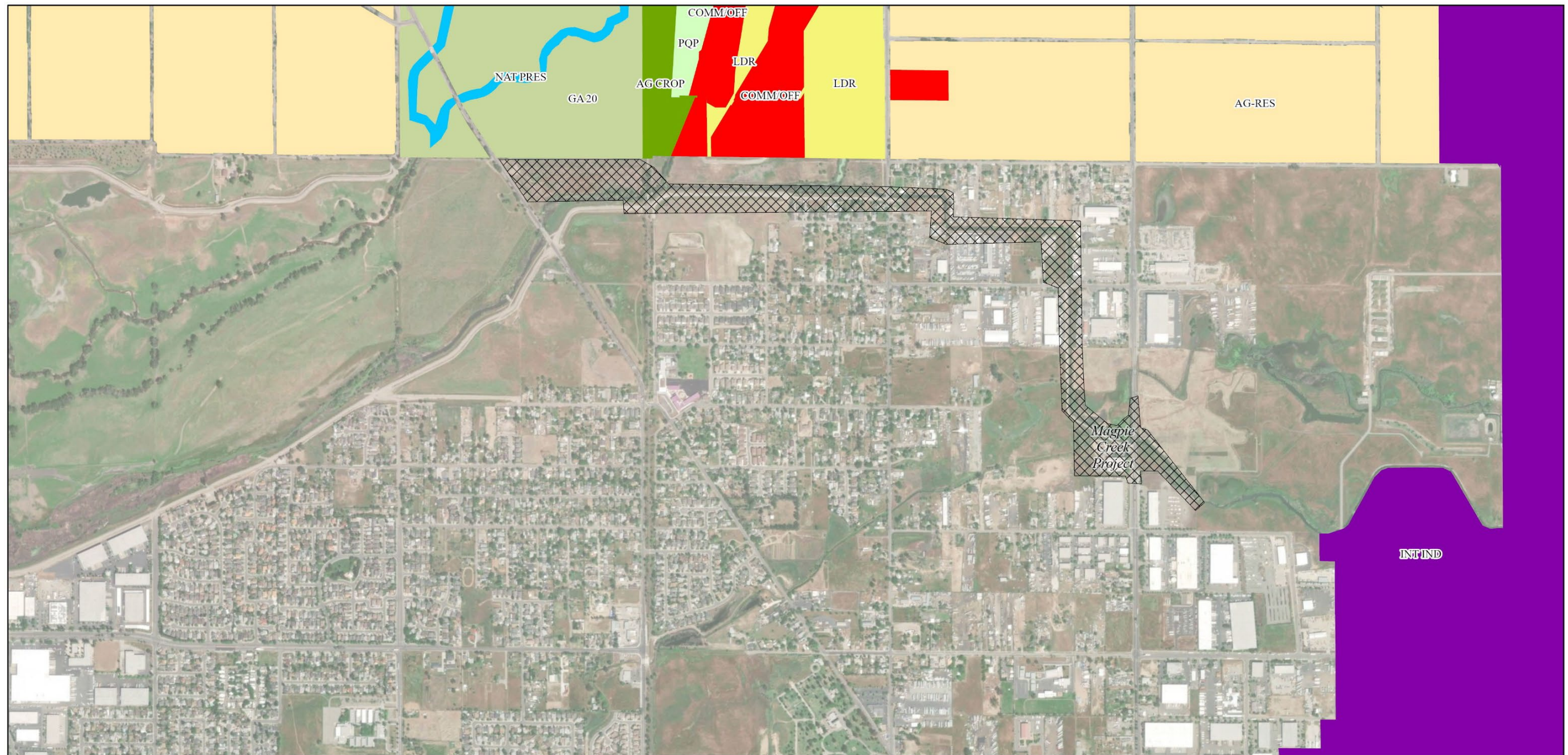
PRK- Parks and Recreation

0 0.25 0.5 Miles



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Figure 2.4-1. City of Sacramento General Plan Land Use Near Magpie Creek.



(County of Sacramento 2022)

Sacramento County General Plan of 2005 to 2030 Land Use Near Magpie Creek Project

Project Site

Land Use

AG-RES- Agricultural-Residential

LDR- Low Density Residential

Updated 09/19/2023

COMM/OFF- Commercial and Offices

INT IND- Intensive Industrial

PQP- Cemetery Public, and Quasi-Public

NAT PRES- Natural Preserve

AG CROP- Agricultural Cropland

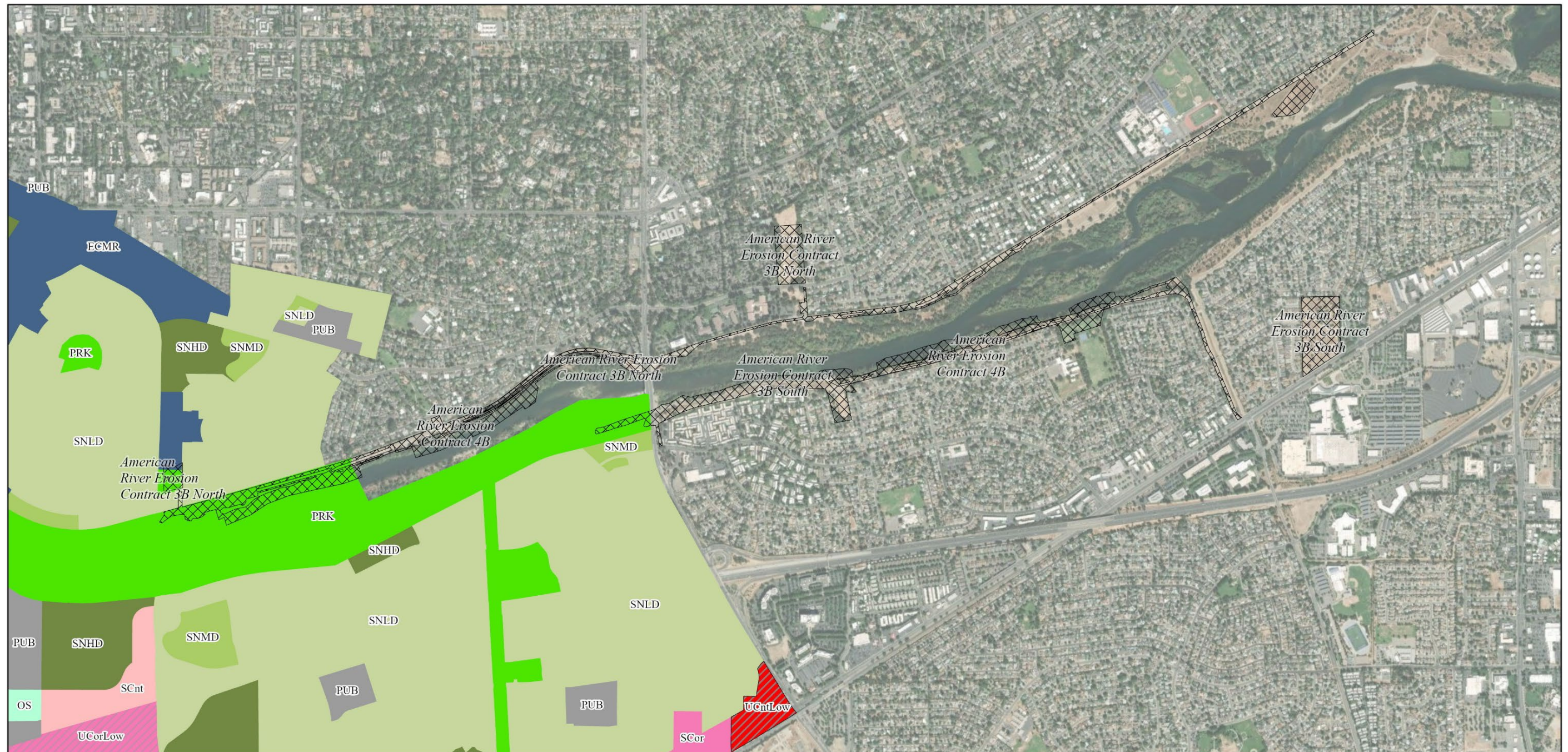
GA 20- General Agriculture (20 ac)

0 0.25 0.5 Miles



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Figure 2.4-2. Sacramento County General Plan Land Use Near Magpie Creek Project.



(City of Sacramento 2022)

City of Sacramento 2035 General Plan Land Use Near American River Erosion Contracts 3B North, 3B South and 4B.

- | | |
|--|--|
| <p>Project Site</p> <p>General Plan Land Use</p> <ul style="list-style-type: none"> SNLD- Suburban Neighborhood Low Density SNMD- Suburban Neighborhood Medium Density SNHD- Suburban Neighborhood High Density SCnt- Suburban Center UCntLow- Urban Center Low | <ul style="list-style-type: none"> SCor- Suburban Corridor UCorLow- Urban Corridor Low ECMR- Employment Center Mid Rise PUB- Public/Quasi-Public |
|--|--|

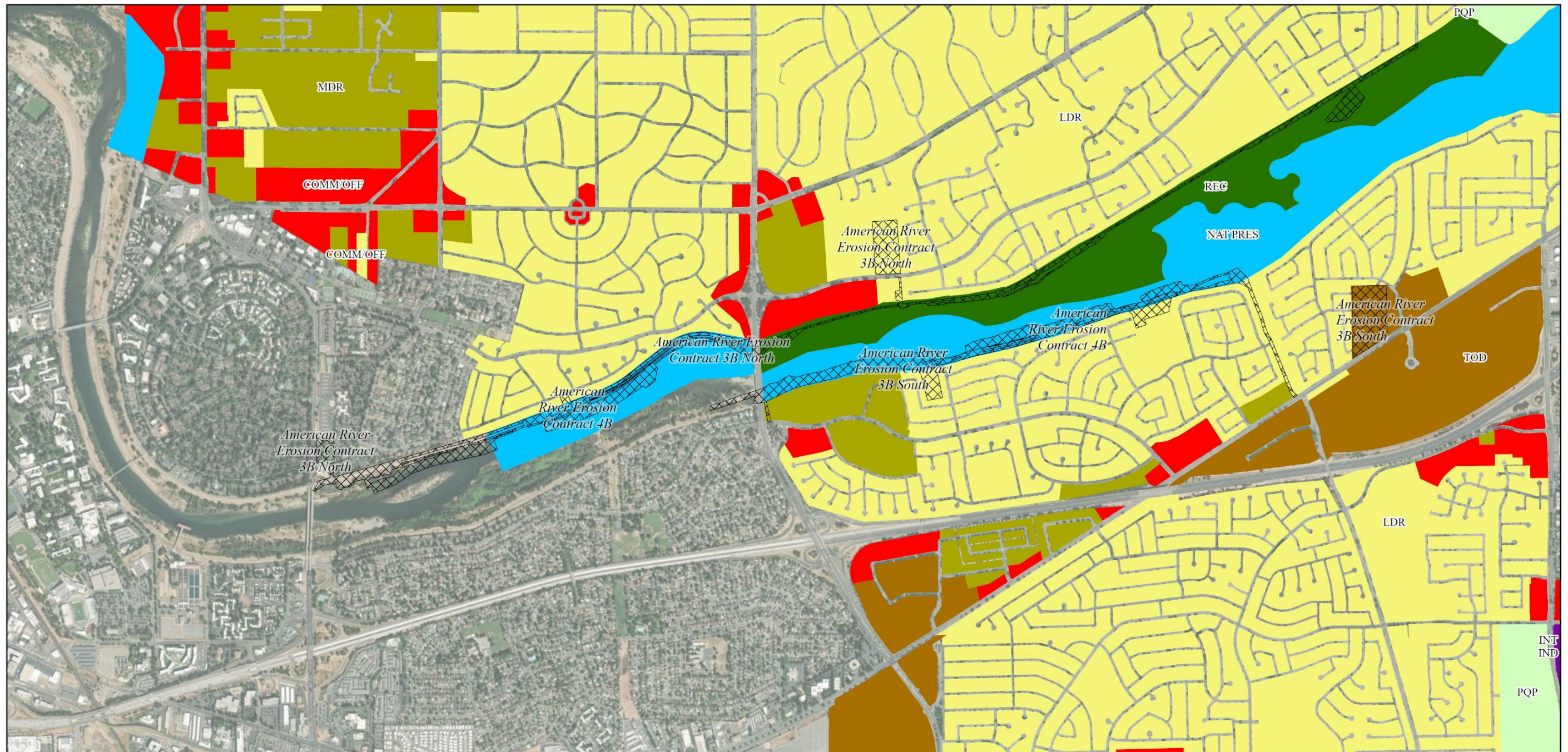
Updated 10/21/2024

- OS- Open Space
 - PRK- Parks and Recreation
- 0 0.25 0.5 Miles



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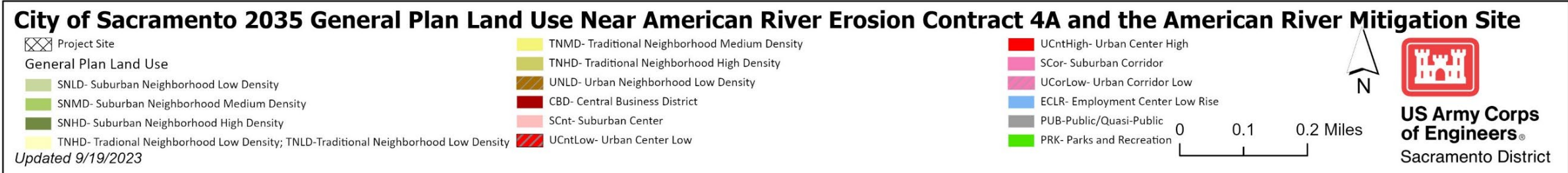
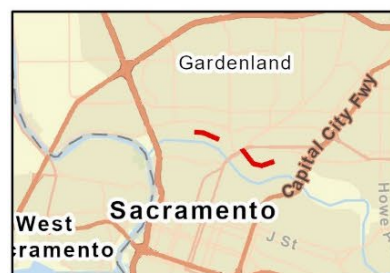
Figure 2.4-3. City of Sacramento General Plan Land Use Near American River Erosion Contracts 3B North, 3B South, and 4B.



(County of Sacramento 2023)

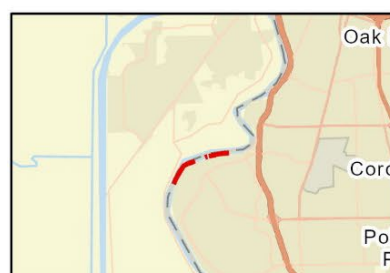


Figure 2.4-4. Sacramento County General Plan Land Use Near American River Contracts 3B North, 3B South and 4B



(City of Sacramento, 2022)

Figure 2.4-5. City of Sacramento General Plan Land Use Near American River Contracts 4A and American River Mitigation Site



City of Sacramento 2035 General Plan Land Use Near Sacramento River Erosion Contract 3 (North)

Project Site

General Plan Land Use

SNLD- Suburban Neighborhood Low Density

Updated 9/19/2023

SNMD- Suburban Neighborhood Medium Density

SNHD- Suburban Neighborhood High Density

SCnt- Suburban Center

PUB- Public/Quasi-Public

PRK- Parks and Recreation

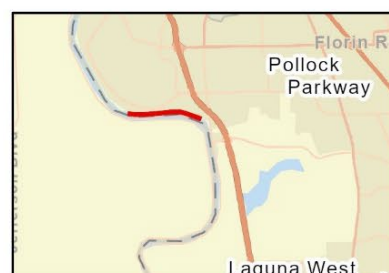
0 0.15 0.3 Miles



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(City of Sacramento 2022)

Figure 2.4-6. City of Sacramento General Plan Land Use Near Sacramento River Erosion Contract 3 (North).



(City of Sacramento 2022)

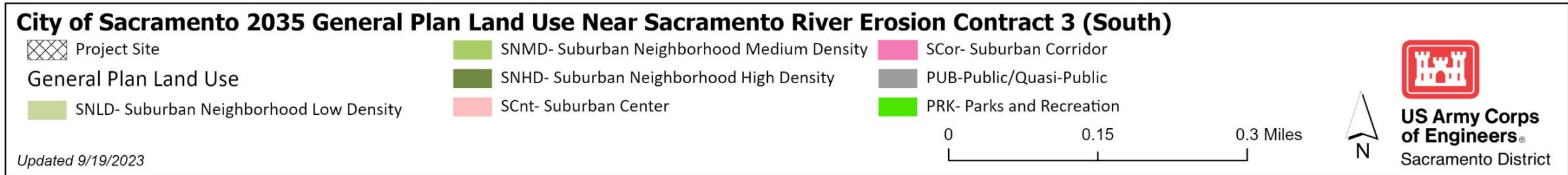


Figure 2.4-7. City of Sacramento General Plan Land Use Near Sacramento River Erosion Contract 3 (South).



(County of Sacramento 2022)

Sacramento County General Plan of 2005 to 2030 Land Use Near the Sacramento River Mitigation Site

| | | |
|----------------------------------|-------------------------------|--------------------------------|
| Project Site | INT IND- Intensive Industrial | AG CROP- Agricultural Cropland |
| Land Use | REC-Recreation | |
| AG-RES- Agricultural-Residential | NAT PRES- Natural Preserve | |

Updated 9/19/2023

0 0.5 1 Miles



Figure 2.4-8. Sacramento County General Plan Land Use Near Sacramento River Mitigation Site.

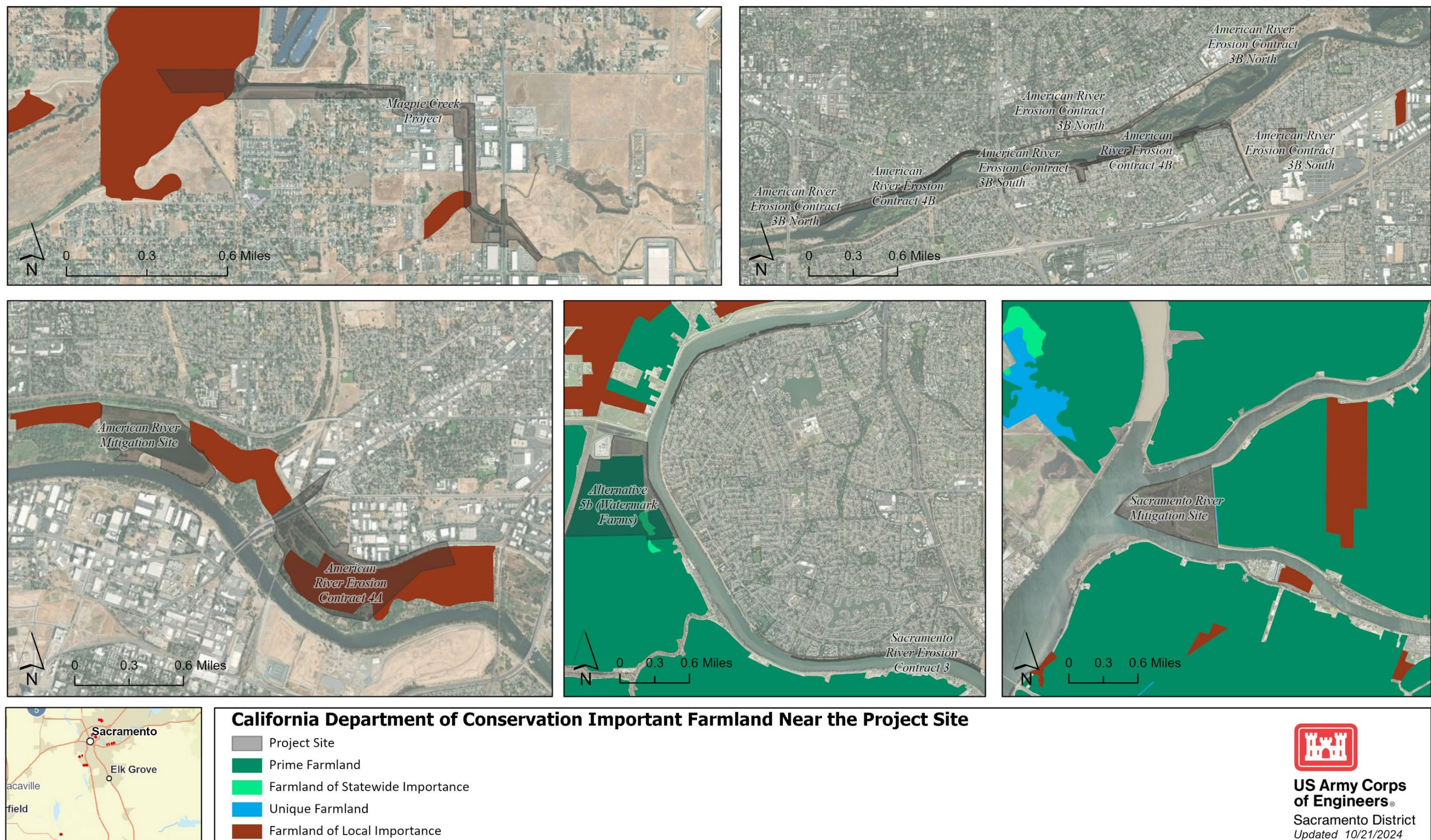
Important Farmland

California Department of Conservation

None of the components of the Proposed Action are located on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance based on a review of California Department of Conservation (DOC) Important Farmland data (DOC 2023) and Farmland of Local Importance (DOC 2023). Watermark Farms, the project mitigation site considered in Alternative 5b, includes areas of Prime Farmland (DOC 2023). There are also several areas designated as Farmland of Local Importance; three such locations are associated with the sites for American River Erosion Contract 4A and the ARMS. Four additional areas of Farmland of Local Importance are a part of the construction footprint and staging area for the MCP (See Figure 2.4-10) (DOC 2023). The SRMS is located near Prime Farmland but is designated as Urban and Built-Up Land by the FMMP (Figure 2.4- 10) (DOC 2023).

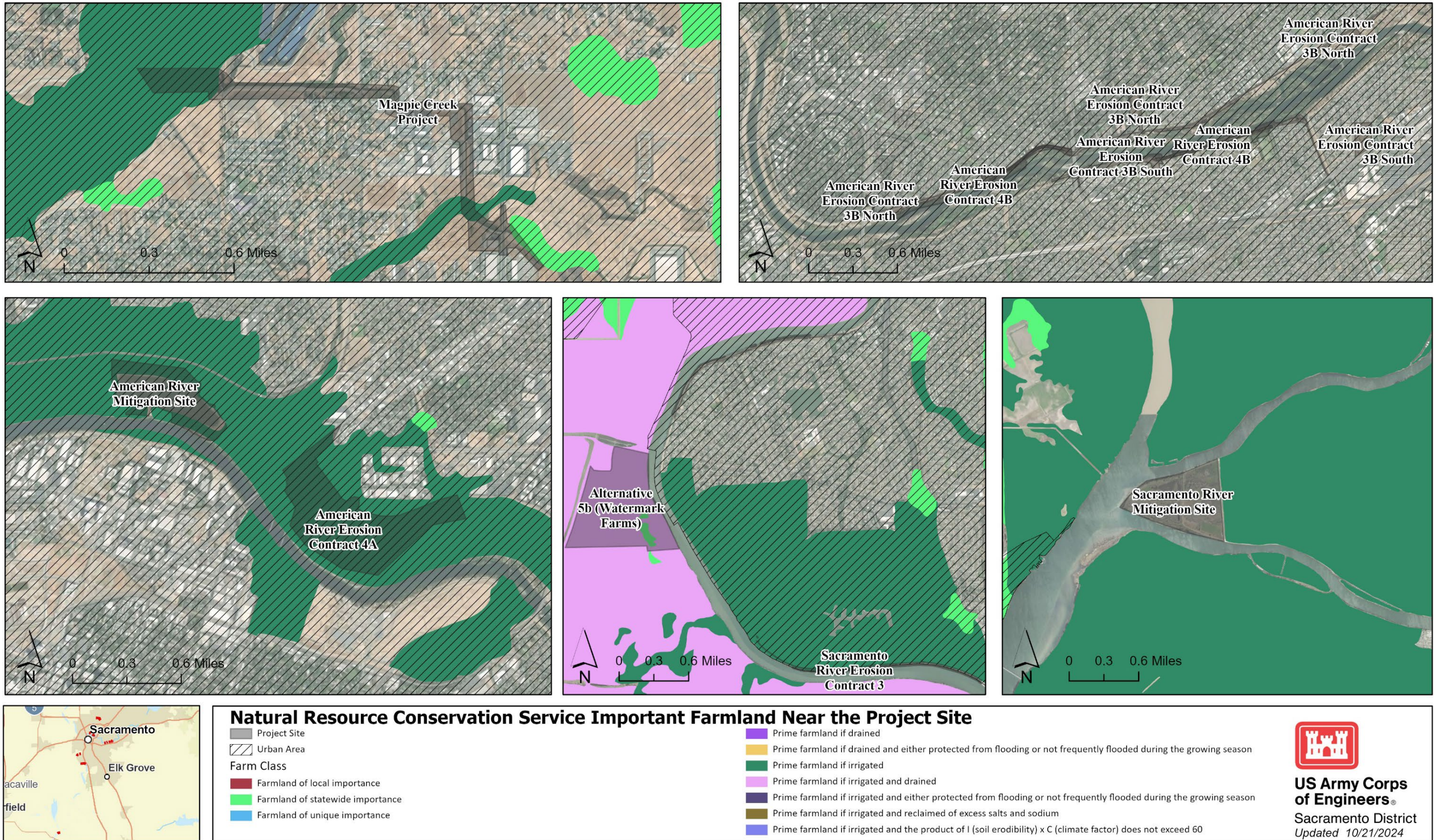
U.S. Department of Agriculture, Natural Resources Conservation Service

American River Erosion Contract 4A, ARMS, Sacramento River Erosion Contract 3, MCP, and Watermark Farms (Alternative 5b), all contain land considered as Prime Farmland by U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) (Figure 2.4-11) (NRCS 2023). There are also several areas designated as Prime Farmland if irrigated by NRCS; three such locations are associated with the sites for American River Erosion Contract 4A and the ARMS. Four additional areas of Prime Farmland, if irrigated, are a part of the construction footprint and staging area for the MCP (Figure 2.4-11) (NRCS 2023). One location is also listed as Prime Farmland, if irrigated, in the southern portion of the Sacramento River Erosion Contract 3 area (NRCS 2023). All Prime Farmland located at the American River Erosion Contract 4a site, the ARMS, MCP, and the Sacramento River Erosion Contract 3 area are designated at urbanized areas by the U.S. Census Bureau (Figure 2.4-11) and are not considered Farmland under the Farmland Protection Policy Act (FPPA) (NRCS 2023). The SRMS is located near Prime Farmland, but is designated as Urban and Built-Up Land by the FMMP (Figure 2.4- 11) (DOC 2023).



(DOC 2016)

Figure 2.4-9. California Important Farmland



(NRCS 2023, US Census Bureau 2020)

Figure 2.4-10. U.S. Department of Agriculture, Natural Resources Conservation Service Important Farmland

2.4.2 Applicable Laws, Regulations, Policies, and Plans

Federal

Farmland Protection Policy Act (FPPA)

The FPPA was passed by Congress in 1981 (7 USC 4201 and 7 CFR ch.VI part 658). The law was established to minimize the permanent conversion of farmland to nonagricultural uses by Federal programs. This act requires Federal agencies to examine the impact of their programs before they approve any activity that would convert farmland. The NRCS is charged with oversight of the FPPA.

State

Delta Plan

The Sacramento-San Joaquin Delta Reform Act of 2009 established the Delta Stewardship Council to create a comprehensive, long-term, legally enforceable plan to guide how multiple Federal, State, and local agencies manage the Delta's water and environmental resources. The Delta Stewardship Council prepared the Delta Plan in consultation with, and to be carried out by, all agencies within the service region of the Delta. Any public agency proposing to undertake a Covered Action, as defined in Water Code Section 85057.5 is encouraged to consult with the council at the earliest possible opportunity, before submittal of the consistency analysis for certification to the council pursuant to Water Code Section 85225. The council's staff will meet with the agency's staff to review the consistency of the proposed action and to make recommendations, as appropriate. A Consistency Certification will be prepared and provided to the Delta Stewardship Council for the components of the Proposed Action that are located in the Delta.

Williamson Act

The Williamson Act empowers local governments to establish "agricultural preserves" consisting of lands devoted to agricultural uses and other compatible uses. Upon establishment of such preserves, the locality may offer to owners of included agricultural land the opportunity to enter annually renewable contracts that restrict the land to agricultural use for at least 10 years (i.e., the contract continues to run for 10 years following the first date upon which the contract is not renewed). In return, the landowner is guaranteed a relatively stable tax rate, based on the value of the land for agricultural/open space use only and unaffected by its development potential. There are no Williamson Act-designated parcels within the Proposed Action.

Local and Regional

American River Parkway Plan

The American River Parkway Plan is the City and County of Sacramento's management plan for the Lower American River and was adopted by the City and County of Sacramento, and by the State Legislature through the Urban American River Parkway Preservation Act, Public Resources Code Section 5840. The American River Parkway Plan is a policy document that provides guidance for land use decisions affecting the American River Parkway and identifies how the American River Parkway should be protected, enhanced, and expanded, where

appropriate. The Parkway Plan also acts as the management plan for the Federal and State Wild and Scenic Rivers Acts. Sacramento County Department of Regional Parks (Regional Parks) handles the day-to-day management from the confluence of the Sacramento River and the American River upstream to Hazel Avenue. There are portions of the American River Parkway that are managed by State and Federal land managers. Regional Parks manages some State-owned property while other Federal land-owning managers are encouraged to administer their properties in accordance with the American River Parkway Plan. The American River Parkway Plan applies to the parts of the Proposed Action in the American River Parkway, specifically all construction work and some staging associated with American River Erosion Contract 3B, American River Erosion Contract 4A, and the ARMS. Some policies within the American River Parkway Plan related to American River Erosion Contract 3B, American River Erosion Contract 4A, and ARMS include:

- 3.1 Any development of facilities within the Parkway, including but not limited to buildings, roads, turfed areas, trails, bridges, tunnels, pipelines, overhead electrical lines, levees and parking areas, shall be designed and located such that any impact upon native vegetation is minimized and appropriate mitigation measures are incorporated into the project. (Sacramento County 2008, Page 16)
- 3.3 The Parkway shall be managed to create habitat connectivity and wildlife travel corridors that provide for the habitat needs of the endangered Valley Elderberry Longhorn Beetle (VELB) and other important native wildlife species, without compromising the integrity of flood control facilities, the flood conveyance capacity of the Parkway, or other Parkway management goals. (Sacramento County 2008, Page 17).
- 3.6 Excavation of aggregate/soil material should not be permitted except as a part of a flood control, environmental restoration or recreation improvement project approved in accordance with the provisions of this Plan. Objectives of the project will:
 - result in a net improvement to the health of the Parkway ecosystems
 - not cause ‘harm’ to the Parkway
 - utilize material within the Parkway, where feasible, prior to being transferred out of the Parkway (Sacramento County 2008, Page 17)
- 3.7 The Parkway shall be managed to preserve, protect and/or restore riparian and in-channel habitat necessary for spawning and rearing of fish species, including native Chinook salmon (fall-run), steelhead, and Sacramento splittail, and recreational non-native striped bass and American shad. Priority shall be on providing diversity and complexity of habitat, consistent with recreational safety needs” (Sacramento County 2008, Page 18). “3.10 In-stream woody material shall be managed to provide fish habitat in the lower American River consistent with recreational safety needs (Sacramento County 2008, Page 18).
- 4.4 Water quality in the lower American River shall be maintained to provide for beneficial uses of the river, including: municipal and domestic water supply; industrial service water supply; irrigation; water contact and non-contact recreation; freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development of fish; and wildlife habitat (Sacramento County 2008, Page 20).

- 4.10 Flood control projects, including levee protection projects and vegetation removal for flood control purposes, shall be designed to avoid or minimize adverse impacts on the Parkway, including impacts to wildlife and wildlife corridors. To the extent that adverse impacts are unavoidable, appropriate feasible compensatory mitigation shall be part of the project. Such mitigation should be close to the site of the adverse impact, unless such mitigation creates other undesirable impacts (Sacramento County 2008, Page 20).
- 4.12 Vegetation in the Parkway should be appropriately managed to maintain the structural integrity and conveyance capacity of the flood control system, consistent with the need to provide a high level of flood protection to the heavily urbanized floodplain along the lower American River and in a manner that preserves the environmental, aesthetic, and recreational quality of the Parkway (Sacramento County 2008, Page 21).
- 4.13 Flood control berms, levees and other facilities should be, to the extent consistent with proper operation and maintenance of these facilities, open to the public for approved uses, such as hiking, biking, and other recreational activities (Sacramento County 2008, Page 21).
- 4.16 Bank scour and erosion shall be proactively managed to protect public levees and infrastructure, such as bridges, piers, power lines, habitat, and recreational resources. These erosion control projects, which may include efforts to anchor berms and banks with rock revetment, shall be designed to minimize damage to riparian vegetation and wildlife habitat, and should include a revegetation program that screens the project from public view, provides for a naturalistic appearance to the site, and restores affected habitat values (Sacramento County 2008, Page 21).
- 7.17 Habitat restoration, local drainage, public utilities, and public flood control facilities, as determined to be appropriate, to and permitted within, a Wild and Scenic Rivers corridor, are permitted in all land use categories (Sacramento County 2008, Page 30).
- 10.5 Acquire the Gardenland Sand and Gravel Mine (ARMS) (Sacramento County 2008, Page 38)
- 10.6 Following acquisition, reclaim and restore the ARMS to enhance its fish and wildlife habitat value, accommodate historical and cultural interpretive activities, with related minor interpretive facilities in Limited and Developed Recreation areas, including demonstrations of California Native American culture, and support picnicking, hiking, and wildlife viewing. (Sacramento County 2008, Page 39)
- 10.6.1 Create a trailhead with an unsurfaced parking area, restrooms, and directional signage onsite. Trails may be realigned to reduce user conflict at the access road. (Sacramento County 2009, Page 39)
- 10.6.2 Create an unsurfaced parking area at the eastern end of the site, accessible from Northgate Boulevard. (Sacramento County 2009, Page 39)
- 10.6.3 Permit non-motorized boating in the pond for interpretive purposes only and in a manner consistent with the protection of restored habitat and wildlife use. Non-motorized boats shall only be allowed by permit at the discretion of the Parkway Manager. (Sacramento County 2009, Page 39)

- 10.6.4 Fishing in the pond shall only be allowed by permit for interpretive purposes at the discretion of the Parkway Manager. (Sacramento County 2009, Page 39)

American River Parkway Natural Resources Management Plan

The American River Parkway Natural Resources Management Plan is to be used in conjunction with the American River Parkway Plan to manage natural resources in the American River Parkway (County of Sacramento 2023a, Chapter 1). A final draft of this document was adopted on February 28, 2023 (County of Sacramento 2023a). The American River Parkway Natural Resources Plan is applicable to the parts of the Proposed Action in the American River Parkway, specifically all construction work and some staging associated with American River Erosion Contract 3B, American River Erosion Contract 4A, and the ARMS. The NRMP sets out the following policies and actions relevant to the ARMS:

- 1.4 Naturalize¹ habitats that have been altered by human activity (County of Sacramento 2023a, Page 2-12)
- 1.6 Expand corridors that connect disparate native vegetation communities and wildlife habitat (County of Sacramento 2023a, Page 2-12)
- 1.7 Reduce the prevalence of invasive, non-native species (County of Sacramento 2023a, Page 2-12)
- 3.1 Protect archaeological and historical resources (County of Sacramento 2023a, Page 2-13)
- 5.2 Reduce wildfire fuel and hazards in the Parkway (County of Sacramento 2023a, Page 2-15)
- Site-Specific Potential Resource Management Action 2: Purchase and naturalize Urrutia (ARMS) property: Develop a Conceptual Naturalization Plan for the Urrutia Property if it is brought into public ownership. This should include the removal of rubble and restoration of the bank line in consideration of current and future conditions. Refer to the Parkway Plan. (County of Sacramento 2023a, Page 8-28).
- Site-Specific Potential Resource Management Action 4: Establish native riparian species/remove non-natives: Improve and expand riparian forest habitat along Bannon Slough and Steelhead Creek, including managing for growth and retention of tall overstory trees. Actions may include removal of nonnative invasive species, managing the density of wild grape, expanding the riparian corridor along the southern edge of Bannon Slough where conditions allow, and enhancing the understory with appropriate native species. Particular attention should be given to the point where Steelhead Creek enters the Parkway at El Camino Avenue; encampments and associated degradation are hampering wildlife connectivity to the stream corridors and associated wildlife habitat to the north. (County of Sacramento 2023a, Page 8-29).

¹ The NRMP defines naturalization as: modifying areas that were substantially altered in past in order to improve existing natural resource conditions or otherwise modified to meet the management objectives of the Parkway Plan, NRMP, and Wild and Scenic Rivers policies. This applies to areas previously altered and outcomes that are generally native habitat types that would typically be expected to occur in the Parkway.

The NRMP also identifies General Area Plan Potential Resource Management Actions for the Watt Avenue Area, which includes the American River Erosion Contract 3B North and South project sites (Sacramento 2023a, Page 8-65). Two of these actions include:

- Trail mapping and habitat management: Map the multi-use trail and trail spurs, equestrian/hiking trail, pedestrian trail, maintenance roads, and current social trails. After mapping is complete, determine which social trails should be actively closed and restored vs. actively monitored.
- Remediate social trail impacts and promote native vegetation growth: Manage social trails in a manner that consolidates trails and allows rehabilitation of vegetation understory.

City of Sacramento 2035 General Plan

The General Plan is a document that is adopted in compliance with the State of California's Government Code Section 65300 et seq. The 2035 General plan was adopted in 2015 to replace the previous 2030 General Plan.

Conservation:

Goal LU 2.2: City of Rivers. Preserve and enhance Sacramento's riverfronts as signature features and destinations within the city and maximize riverfront access from adjoining neighborhoods to facilitate public enjoyment of this unique open space resource.

Policy LU 2.2.2: Waterway Conservation. The city shall encourage the conservation and restoration of rivers and creeks within the urbanized area as multi-functional open space corridors that complement adjoining development and connect the city's parks and recreation system to the Sacramento and American Rivers.

Education, Recreation, and Culture:

Goal ERC 2.4: Rivers, Creeks, and Natural Resource Areas. Provide positive recreational experiences and enjoyment of nature through the development, maintenance, patrol, and preservation of the rivers, creeks, and natural resource areas, while maximizing the use of these areas through partnerships with other agencies.

Policy ERC 2.4.3: Connections to Other Trails. The City shall maintain existing and pursue new connections to local, regional, and state trails.

Environmental Resources:

Goal ER 2.1: Natural and Open Space Protection. Protect and enhance open space, natural areas, and significant wildlife and vegetation in the city as integral parts of a sustainable environment within a larger regional ecosystem.

Policy ER 2.1.4: Retain Habitat Areas. The City shall retain plant and wildlife habitat areas where there are known sensitive resources (e.g., sensitive habitats, special-status, threatened, endangered, candidate species, and species of concern). Particular attention shall be focused on

retaining habitat areas that are contiguous with other existing natural areas and/or wildlife movement corridors.

Goal ER 7.1: Visual Resource Preservation. Maintain and protect significant visual resources and that define Sacramento.

Goal ER 4.2: Growth and Agriculture. Support preservation and protection of agricultural lands and operations outside of the city for their value for open space, habitat, flood protection, aesthetics, and food security by working with surrounding jurisdictions.

- **Policy ER 4.2.2: Permanent Preservation.** The City shall work with the County, Natomas Basin Conservancy, and other entities to protect and permanently preserve a 1-mile buffer outside of the current city limits as of adoption of the General Plan to preserve viable agricultural activities and as a community separator between Sutter and Sacramento Counties and along the Sacramento River.
- **Policy ER 4.2.3: Coordinate to Protect Farmland.** The City shall continue to work with County and other adjacent jurisdictions to implement existing conservation plans to preserve prime farmland and inside and outside the city.

Sacramento County General Plan of 2005 to 2030, Land Use Element and Agricultural Element

The Sacramento County General Plan (County of Sacramento 2022) contains several objectives and policies related to the analysis of agricultural resources.

Objective: Encroachment by Natural Resource Preserves. Prime farmland, farmland of statewide importance, unique farmland and farmland of local importance, and farmlands with intensive agricultural investments are to be protected from encroachment by natural resource preserves without compromising biological diversity and habitat values.

Policy AG-10. The County shall balance the protection of prime, statewide importance, unique and local importance farmlands and farmlands with intensive agricultural investments with the preservation of natural habitat so that the protection of farmland can also serve to protect habitat.

Policy AG-12. The County will cooperate with landowners of agriculturally zoned properties to promote the placing of natural resource preserve/mitigation amenities on land, such as trees and other biota enhancing improvement, by making sure amenities are assets to both the natural preserve/mitigation areas and agricultural practices.

Objective: Encroachment by Recreational Facilities. Farmlands are to be protected from encroachments by recreational facilities and unlawful activities associated with the use of recreational facilities.

Policy AG-19. Recreational trails shall be designed in cooperation with adjacent property owners to minimize adverse impacts on farming practices.

County of Yolo 2030 Countywide General Plan, Agricultural and Economic Development Element

The County of Yolo 2030 Countywide General Plan (Yolo General Plan) (County of Yolo 2009) includes several policies related to Alternative 5a:

Policy AG-1.5 Strongly discourage the conversion of agricultural land for other uses. No lands shall be considered for redesignation from Agricultural or Open Space to another land use designation unless all of the following findings can be made:

- a. There is a public need or net community benefit derived from the conversion of the land that outweighs the need to protect the land for long-term agricultural use.
- b. There are no feasible alternative locations for the proposed project that are either designated for non-agricultural land uses or are less productive agricultural lands.
- c. The use would not have a significant adverse effect on existing or potential agricultural activities on surrounding lands designated Agriculture.

Policy AG-2.8 Facilitate partnerships between agricultural operations and habitat conservation efforts to create mutually beneficial outcomes.

Policy AG-2.10 Encourage habitat protection and management that does not preclude or unreasonably restrict on-site agricultural production.

Zoning Codes

The City and County of Sacramento zoning designations for the Proposed Action were obtained using the City and County Open Data website platforms (City of Sacramento 2022, County of Sacramento 2023b). Yolo County's GIS viewer (County of Yolo 2023) was used to determine zoning of Alternative 5b. Yolo County's Agricultural Conservation and Mitigation Program (County of Yolo 2022, 8-2.404) identifies requirements for mitigation when converting farmland for development purposes.

2.4.2 Analysis of Environmental Effects

Analysis Methodology

The Proposed Action was evaluated in the context of adopted land use plans and policies. State, regional, and local land use plans and policies contained in adopted planning documents pertaining to the ARCF project sites were reviewed, including the Sacramento County General Plan (County of Sacramento 2022) and zoning code, City of Sacramento General Plan (City of Sacramento 2022), American River Parkway Plan (County of Sacramento 2008), American River Parkway Natural Resources Management Plan (County of Sacramento 2023a), and field review and consultation with appropriate agencies. Land use data associated with the City of Sacramento General Plan and Sacramento County General Plan was downloaded from the City of Sacramento Open Data website and Parkway Plan from Sacramento County GIS Open Data Site. This spatial data was compared to the project site spatial data. In addition, the most up to date California Department of Conservation Important Farmland data downloaded from the California State Geoportal was used to identify Important Farmland in and near the project sites.

Scoping Comments

Regional Parks submitted comments during the public scoping period on December 30, 2022. The letter advises USACE that public use of the ARMS property is governed by the goals and policies of the American River Parkway Plan, which calls for acquiring and restoring the property to enhance fish and wildlife habitat, providing historical and cultural interpretive activities, and supporting recreational benefits. The letter further provides support for a habitat enhancement alternative at the ARMS that maintains a portion of the man-made pond on site to ensure consistency with the American River Parkway Plan policies. By retaining a portion of the 30-acre pond, Regional Parks advises this alternative would preserve most of the wildlife habitat, interpretive and wildlife viewing values associated with this feature of the American Parkway and align more closely with the policies of the American River Parkway Plan that are applicable to the ARMS. The letter further explains the benefits of this alternative from a reduction of the fill material volumes needed, which would lessen impacts related to noise, transportation, and air quality.

Basis of Significance

The significance thresholds, and the impact analysis that follows, take into consideration the significance of an action in terms of: the setting of the proposed action; short- and long-term effects of the proposed action; both beneficial and adverse effects; effects of the proposed action on public health and safety; and effects that would violate Federal, State, Tribal, or local law protecting the environment, as required under NEPA (40 CFR 1508.1(g)). The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. The alternatives under consideration were determined to result in a significant impact related to land use and prime and unique farmland if they would do any of the following:

- a. Divide an established community.
- 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.
- c. 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. result in inadequate emergency service.
- d. Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- e. 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)).
- f. Result in the loss of forest land or conversion of forest land to non-forest use; or
- g. 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.

Effects Not Discussed in Detail

2.4-e Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))- The Proposed Action does not include areas zoned for forest land, timberland, or Timberland Production and there would be no impact.

2.4-f Result in the loss of forest land or conversion of forest land to non-forest use- Appendices B 2.2, 3.1 and 4.1 provide detailed analysis of possible impacts associated with tree removal. There is no designated forest land in the Proposed Action area and there would be no impact.

2.4-g 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- Other than what is already discussed under 2.4 c, d, e, and f, the Proposed Action does not include changes that would cause conversion of farmland or forest land to different uses and there would be no impact.

Effects Analysis

No Action Alternative

The ARCF GRR Final EIS/EIR concluded that the authorized project would have a less-than-significant impact on Land Use and Farmland after implementing mitigation measures including restoring the impacted construction footprint and establishing habitat mitigation, restoring recreational facilities within the American River Parkway to pre-project conditions, and providing compensation to landowners under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1960. Although some land would be acquired and converted to flood risk reduction use as a part of the No Action Alternative, the ARCF GRR Final EIS/EIR determined that these parcels would be acquired and negotiated at a fair market price. USACE and the Project Partners would identify lands to be used for project purposes, in order to prevent land use impacts such as dividing established communities, removing Prime or Unique Farmland from production, or converting Forest lands.

Proposed Action Alternative

2.4-a Divide an established community.

CEQA Significance Conclusion: Less than Significant

NEPA Significance Conclusion: Short-term and Moderate effects that are Less than Significant.

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Short-term and Moderate effects that are Less than Significant.

While portions of several parcels would need to be purchased and converted to flood system use as a part of the MCP improvements, none of the private parcels would lose home living space already in existence on the private parcel. Several outbuildings (some that may have utilities) and concrete block walls would need to be removed because of the required slope flattening along the canal from Vinci Avenue to Dry Creek Road. The residential neighborhood would remain intact as the canal was present prior to any of the homes and business that makeup the neighborhood in question were built.

Neither staging area location would block access to other locations or create a need to repair the site to return it to its original function. While staging area near the bike path is considered an agricultural parcel it has not been farmed in years and is being held for potential future development by Non-Federal sponsors. When finished the site would be returned to its current state. Because staging areas and haul routes would be in use only temporarily during construction, there would be a less than significant impact on community connectivity.

Sacramento River Erosion Contract 3, American River Erosion Contract 3B North and South, American River Erosion Contract 4B

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

Work for Sacramento River Erosion Contract 3, American River Erosion Contract 3B, and American River Erosion Contract 4B would all occur on existing levee systems. These levee systems are already in place, and the proposed alterations would not create new barriers for established communities. Because the work is occurring on existing levee systems, there would be a less than significant impact.

All staging areas associated with Sacramento River Erosion Contract 3, American River Erosion Contract 3B, and American River Erosion Contract 4B would be temporary and would be returned to their original state after work. In addition, use of haul routes for American River Erosion Contract 3B and American River Erosion Contract 4B would be temporary. Because staging areas and haul routes would be temporary, there would be a less than significant impact on community connectivity.

NEPA Impact Conclusion (Design Refinements): Short-term and Moderate effects that are Less than Significant.

The ARCF GRR Final EIS/EIR programmatically analyzed land use impacts for erosion work for the American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and Sacramento River Erosion Contract 3 work. The ARCF GRR Final EIS/EIR previously determined that erosion protection work in these general locations would not divide an established community. The locations and new erosion protection methods are in the same general area to the No Action Alternative, which was concluded to not result in a divide of an established community in the ARCF GRR Final EIS/EIR. The Proposed Action would have no new impact on community connectivity.

All staging areas associated with Sacramento River Erosion Contract 3 and American River Erosion Contract 3B would be temporary and would be returned to their original state after work. In addition, haul routes for American River Erosion Contract 3B and American River Erosion Contract 4B would be temporarily. Because staging areas and haul routes would be temporary, there would be a less than significant impact on community connectivity.

American River Erosion Contract 4A

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Short-Term and Negligible effects that are Less than Significant.

Work for American River Erosion Contract 4A would all occur on existing levee systems. These levee systems are already in place and the proposed alterations would not create new barriers for established communities. Because the work is occurring on existing levee systems, there would be a less than significant impact.

The discussion on staging areas and haul routes under Sacramento River Erosion Contract 3 and American River Erosion Contract 3B are applicable for American River Erosion Contract 4A as well. Because staging areas and haul routes would be temporary, there would be a less than significant impact on community connectivity.

Sacramento River Mitigation Site, American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): No Impact

NEPA Impact Conclusion (Design Refinements): No Impact

The SRMS is an existing dredge disposal site located at the edge of Grand Island, surrounded by agricultural land with no adjacent existing communities. Therefore, this project component would not create any division of an established community.

The ARMS is a former gravel and sand mining site, surrounded by the American River Parkway, with existing community areas present only outside the Parkway on the north side of Garden Highway. Implementing the ARMS would therefore not divide an established community.

Because neither mitigation site is located in an established community, there would be no impact.

Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): No Impact

NEPA Impact Conclusion (Design Refinements): No Impact

Generally, the Piezometer Network consists of small infrastructure within the Proposed Action footprint. Both because of the small size of the piezometers and their locations along existing

flood control infrastructure, installing the piezometers would not divide any communities and there would be no impact.

2.4-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.

CEQA Significance Conclusion: Less than Significant with Mitigation Incorporated

NEPA Significance Conclusion: Short-term and Moderate with Mitigation Incorporated, Medium-Term to Long-term and Minor effects that are Less than Significant.

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): No Impact

NEPA Impact Conclusion (Design Refinements): No Impact

The MCP site is designated for Employment Mixed Use. The MCP would improve water conveyance in the MCDP improving flood risk protection allowing for businesses, schools, and residents to continue the normal activities of the area. Because the area is designated Employment Mixed Use under the City of Sacramento General Plan, there would not be an impact on a parcel designated for mitigation or avoidance.

American River Erosion Contract 3B North and South, American River Erosion Contract 4B

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

NEPA Impact Conclusion (Design Refinements): Short-term and Moderate effects that are less than significant with Mitigation Incorporated.

The American River Parkway Plan lists several policies to minimize impacts from flood risk reduction projects on the American River Parkway. Specific policies are listed in section 2.4.2. American River Parkway Plan policy 3.6 allows for excavation of flood risk reduction projects. To address American River Parkway Plan policies 3.1, 3.3, 4.10, 4.12, and 4.16 American River Erosion Contract 3B and American River Erosion Contract 4B has been designed to minimize impacts to vegetation as much as possible to reduce impacts to native vegetation and wildlife corridors. Trees that can be saved would be saved where feasible to maintain as much onsite vegetation as possible. In addition, there would be onsite revegetation on most of the site to reestablish native vegetation and maintain wildlife corridors. To address American River Parkway Plan policy 3.7 planting benches and instream woody material have been included in the designs to provide habitat for fish.

The American River Parkway Natural Resources Management Plan identifies existing mitigation sites in the American River Parkway and categorizes mitigation areas as conservation areas under the document's management categories. There are some areas within the American River Erosion Contract 3B site that are identified as conservation areas in the American River Parkway

Natural Resources Management Plan (County of Sacramento 2023a, pages 8-61, 8-67, and 8-73). These areas would be temporarily impacted during construction of the erosion protection improvements. This impact would be significant. The following previously adopted mitigation measure has been identified to address this impact.

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Prior to the start of earthmoving activities, the Project Partners will obtain coverage under the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) stormwater permit for general construction activity (Order 2022-0057-DWQ), including preparing and submitting a project-specific SWPPP at the time the Notice of Intent to discharge is filed. The SWPPP shall identify and specify the following:

- the use of an effective combination of robust erosion and sediment control BMPs and construction techniques that shall reduce the potential for runoff and the release, mobilization, and exposure of pollutants, including legacy sources of mercury from project-related construction sites. These may include but would not be limited to temporary erosion control and soil stabilization measures, sedimentation ponds, inlet protection, perforated riser pipes, check dams, and silt fences;
- the implementation of approved local plans, non-stormwater management controls, permanent post-construction BMPs, and inspection and maintenance responsibilities;
- the pollutants that are likely to be used during construction that could be present in stormwater drainage and non-stormwater discharges, including fuels, lubricants, and other types of materials used for equipment operation;
- the means of waste disposal;
- spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills;
- personnel training requirements and procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP; and
- the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP.

Where applicable, BMPs identified in the SWPPP will be in place throughout all site work, construction/demolition activities, and will be used in all subsequent site development activities. BMPs may include, but are not limited to, such measures as those listed below:

- work window- conduct earthwork during low-flow periods;

- to the extent possible, stage construction equipment and materials on the landside of the levee in areas that have already been disturbed;
- minimize ground and vegetation disturbance during project construction by establishing designated equipment staging areas, ingress and egress corridors, spoils disposal and soil stockpile areas, and equipment exclusion zones prior to the commencement of any grading operations;
- stockpile soil on the landside of the levee reaches, and install sediment barriers (e.g., silt fences, fiber rolls, and straw bales) around the base of stockpiles to intercept runoff and sediment during storm events. If stockpiling soil on the landside of the levee is not feasible, a waterside soil stockpiling location above the OHWM will be coordinated with the appropriate agencies, such as NMFS, CVRWQCB, and USFWS (if applicable). If necessary, cover stockpiles with geotextile fabric to provide further protection against wind and water erosion;
- install sediment barriers on graded or otherwise disturbed slopes as needed to prevent sediment from leaving the project site and entering nearby surface waters;
- install plant materials to stabilize cut and fill slopes and other disturbed areas once construction is complete. Plant materials will include an erosion control native seed mixture or shrub and tree container stock. Temporary structural BMPs, such as sediment barriers, erosion control blankets, mulch, and mulch tackifier, will be installed as needed to stabilize disturbed areas until vegetation becomes established;
- conduct water quality tests to measure increases in turbidity and sedimentation caused by construction activities. Specifically, where natural turbidity is between 0 and 5 NTUs, increases shall not exceed 1 NTU; where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20%; where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs; and where natural turbidity is greater than 100 NTUs, increases shall not exceed 10%. If turbidity is found to exceed these standards, cease construction activities until filtration or construction BMPs can be demonstrated to effectively prevent sediment discharge above standards; and
- a copy of the approved SWPPP shall be maintained and available at all times on the construction site.

Project Partners will also prepare and implement a Spill Prevention, Control, and Countermeasure Plan (SPCCP). A SPCCP is intended to prevent any discharge of oil into navigable water or adjoining shorelines. The contractor will develop and implement a SPCCP to minimize the potential for adverse effects from spills of hazardous, toxic, or petroleum substances during construction and operation activities. The SPCCP will be completed before any construction activities begin. Implementation of this measure will comply with state and Federal water quality regulations. The SPCCP will describe spill sources and spill pathways in addition to the actions that will be taken in the event of a spill (e.g., an oil spill from engine refueling will be immediately cleaned up with oil absorbents). The SPCCP will outline descriptions of containments facilities and practices such as doubled-walled tanks, containment berms, emergency shut-offs, drip pans,

fueling procedures, and spill response kits. It will also describe how and when employees are trained in proper handling procedures and spill prevention and response procedures.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure WQ-1: Obtain Appropriate Discharge and Dewatering Permit and Implement Provisions for Dewatering

Before discharging any dewatered effluent to surface water, USACE and its Partners will obtain a Limited Threat General Order (LTGO) from the CVRWQCB. The LTGO will include water quality monitoring to adhere to the effluent and receiving water quality criteria outlined in the permit, which is typically based on the CVRWQCB Basin Plan. As part of the permit, the permittee will design and implement measures as necessary to meet the discharge limits identified in the relevant permit. For example, if dewatering is needed during the construction of a cutoff wall, the dewatering permit would require treatment or proper disposal of the water prior to discharge if it is contaminated. These measures will represent the best available technology that is economically achievable to achieve maximum sediment removal.

Measures could include retaining dewatering effluent until particulate matter has settled before it is discharged, use of infiltration areas, and other BMPs. Final selection of water quality control measures will be subject to approval by the CVRWQCB. USACE will verify that coverage under the appropriate NPDES permit has been obtained before allowing dewatering activities to begin. USACE or its authorized agent will perform routine inspections of the construction area to verify that the water quality control measures are properly implemented and maintained. USACE will notify its contractors and Project Partners immediately if there is a non-compliance issue and compliance will be required and met.

Timing: Before and during construction.

Responsibility: Project Partners

Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal.

No net loss of riparian habitats will be achieved through impact avoidance, minimization, and compensatory mitigation. Impacts on sensitive natural communities that result in the removal of vegetation shall be mitigated at a minimum 2:1 ratio. Mitigation can include onsite restoration, offsite habitat creation, in-lieu fee payment, and/or purchase of mitigation credits from a resource agency approved mitigation bank. Mitigation as required in accordance with the 2015 ARCF GRR Fish and Wildlife Coordination Act Report or the Endangered Species Act consultation with USFWS and NMFS, depending on the type of habitat, may be applied to satisfy the no net loss of riparian habitat performance standard.

Timing: Before and during construction

Responsibility:

Project Partners

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Final project designs will be refined to reduce impacts on vegetation and wildlife to the extent feasible. Refinements implemented to reduce riparian habitat losses will include reducing the impact footprint, constructing bank protection rather than launchable rock trench whenever feasible, and designing and constructing planting benches. Where practicable, trees will be retained in locations where the bank protection and planting benches are constructed. Trees will be protected in place along the natural channel during rock placement. Additional plantings will be installed on the newly constructed benches to provide habitat for fish and avian species. The planting benches will be used where feasible to minimize impacts on fish and wildlife species. Where feasible, soil-filled revetment will be used to allow plantings and erosion protection features like launchable trench to be buried to allow plantings. The on-site habitat will be created in accordance with the ARCF GRR Habitat Mitigation, Monitoring, and Adaptive Management Plan, which includes conceptual mitigation proposals, performance standards, and adaptive management tasks.

All areas to be avoided during construction activities will be fenced and/or flagged as close to construction limits as feasible. Where possible, protective fencing or flagging shall be installed 5 feet beyond the tree canopy dripline boundary of each tree or tree group, referred to as the protected tree zone. Contractors and subcontractors shall avoid heavy equipment operation, grading, and excavation in the protected tree zones, to the greatest extent practicable. Heavy equipment operation, grading, and excavation activities in the protected tree zone shall be overseen by a qualified arborist/ecologist. The contractor shall maintain the fencing or flagging to always keep it identifiable. Fencing and flagging shall be removed only after all construction activities are complete.

An annual pre-construction meeting shall be held between all contractors and subcontractors (e.g., grading, tree removal/pruning, and builders) and a qualified arborist/biologist. The meeting shall focus on instructing the contractors and subcontractors on tree protection practices and answering any questions. All equipment operators and spotters, assistants, or those directing operators from the ground, shall provide written acknowledgement of receiving tree protection training. This training shall include information on the location and marking of protected tree zones, the necessity of preventing damage, and the discussion of work practices that shall accomplish these tasks.

Contractors and subcontractors shall take care when moving construction equipment or supplies near protected trees, paying special attention to overhead vegetation. Contractors and subcontractors shall ensure that damage to the trees shall be avoided when transporting or moving construction materials and working around the tree (even outside of the fenced protected zone). Contractors and subcontractors shall flag aboveground tree parts with potential for damage (e.g., low limbs, scaffold branches, and trunks) with high-visibility flagging, such as fluorescent red or orange. If contact with the tree crown is unavoidable, conflicting branches may be pruned under supervision of a qualified

arborist/ecologist. The contractor or subcontractor shall not prune protected trees until all construction is completed unless standard pruning will reduce conflict between canopy and equipment. All pruning shall be conducted under supervision of a qualified arborist, or their representative.

A qualified arborist/ecologist shall inspect the preserved protected trees adjacent to grading and construction activity prior to initiation of construction activities, during construction activities within tree protection zones, and prior to removal of tree protection zone fencing/flagging at the end of construction. A report summarizing site conditions, observations, tree health, and recommendations for minimizing tree damage shall be submitted to the Project Partners by the qualified arborist/ecologist following each inspection.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures GEO-1 (listed in Appendix B, Section 3.2 “Geologic Resources”), and WQ-1 (Appendix B, Section 3.4 “Water Quality”) would comply with American River Parkway Plan policy 4.4. Formal trails managed by Regional Parks and within the Proposed Action project site have been considered and incorporated into the designs to address American River Parkway Plan policy 4.13. Implementing Mitigation Measures VEG-1 and VEG-2, which were previously adopted for the 2016 ARCF Project, would replant the conservation areas following the completion of project construction. After construction is completed, the sites would be managed consistent with the requirements to categories in the American River Parkway Natural Resources Management Plan. Because most habitat within conservation areas being impacted by the Proposed Action would be mitigated once work is complete, there would be a less-than-significant impact on these conservation areas.

American River Erosion Contract 4A

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation

NEPA Impact Conclusion (Design Refinements): Medium-Term to Long-term and Minor effects that are Less than Significant with Mitigation Incorporated.

The American River Parkway Plan lists several policies to minimize impacts from flood risk reduction projects on the American River Parkway. Like American River Erosion Contract 3B policies 3.1, 3.3, 4.10, 4.12, and 4.16 are applicable to American River Erosion Contract 4A since the design was created to minimize impacts to vegetation as much as feasible. However, unlike American River Erosion Contract 3B, onsite revegetation of anything other than grasses or herbaceous plants may not be possible given the site’s distance from the wetted shore of the American River. Offsite mitigation within the American River Parkway would be implemented to address the native vegetation lost. In addition, the area dedicated for erosion protection within the project footprint is small and therefore, is not expected to block wildlife corridors. The bike trail reroute is along existing dirt roads, so even though the Jedediah Smith Memorial Trail reroute would add a paved surface to the area, the existing condition consists of dirt roads that

prevent habitat from growing in the area. Because the existing area is dirt roads that prevent habitat from growing, the work is also not anticipated to change the wildlife corridors in the area. However, this impact would still be significant. The following previously adopted mitigation measure has been identified to address this impact.

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Please refer to Impact 2.4-b above for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure WQ-1: Obtain Appropriate Discharge and Dewatering Permit and Implement Provisions for Dewatering

Please refer to Impact 2.4-b above for the full text of this mitigation measure.

Timing: Before and during construction.

Responsibility: Project Partners

Implementing Mitigation Measures GEO-1 (listed in Appendix B, Section 3.2 “Geologic Resources”), and WQ-1 (Appendix B, Section 3.4 “Water Quality”) would reduce impacts to water quality and comply with American River Parkway Plan policy 4.4. Overall, the Proposed Action designs, construction actions, and mitigation actions would comply with policies of the American River Parkway Plan adopted for the purpose of avoiding or mitigating an environmental effect.

The American River Parkway Natural Resources Management Plan identifies existing mitigation sites in the American River Parkway with natural resource management categories (i.e., preservation, conservation, and naturalizations). The American River Erosion Contract 4A project site is not identified as a conservation area in the American River Parkway Natural Resources Management Plan. This impact would be less than significant.

Sacramento River Erosion Contract 3, Sacramento River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): No Impact

The Sacramento River Erosion Contract 3 project component and the SRMS project component are flood control projects located in the legal Delta and are therefore Covered Actions subject to the Delta Plan. The Delta Plan identifies several requirements for on- and off-site mitigation, related to elevation, climate adaptation, and adaptive management, all of which have been considered in the design of the on- and off-site mitigation. The Proposed Action would include

filing a consistency certification documenting in detail compliance with the Delta Plan's Policies and Recommendations. This impact would be less than significant.

American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

NEPA Impact Conclusion (Design Refinements): No Impact

The American River Parkway Plan lists several policies to minimize impacts from flood risk reduction projects on the American River Parkway. Specific policies are listed in section 2.4.2. American River Parkway policy 3.6 allows for excavation as part of restoration projects. To address American River Parkway Plan policies 3.1, 3.3, 4.10, 4.12, and 4.16, the Proposed Action for the ARMS project component has been designed to minimize impacts on vegetation as much as possible to reduce impacts on native vegetation and wildlife corridors. Additional policies specific to the ARMS (10.5 and 10.6) include acquiring the ARMS, enhancing fish and wildlife habitat, accommodating historical and cultural interpretive activities, establishing an unsurfaced trailhead and parking area, and allowing non-motorized boating as well as fishing in the pond for interpretive purposes at the discretion of the Park Manager. The alignment between the Proposed Action and these policies is presented in Table 2.4-1.

Table 2.4-1. Parkway Plan Policy Alignment

| Parkway Plan Policy | Alignment |
|---|--|
| 10.5. Acquire the Gardenland Sand and Gravel Mine (ARMS). | SAFCA closed on the property in May 2023. |
| 10.6. Following acquisition, reclaim and restore the ARMS to enhance its fish and wildlife habitat value, accommodate historical and cultural interpretive activities, with related minor interpretive facilities in Limited and Developed Recreation areas, including demonstrations of California Native American culture, and support picnicking, hiking, and wildlife viewing. | The overarching goal of the project is to restore and reclaim the ARMS to enhance fish and wildlife habitat value. The USACE authorization limits the development of recreational and interpretive facilities in association with the project; however, access, staging, and laydown areas would be sited and constructed in a manner to facilitate future development of these facilities for incorporation into the LAR Parkway. |
| 10.6.1. Create a trailhead with an unsurfaced parking area, restrooms, and directional signage onsite. Trails may be realigned to reduce user conflict at the access road. | The USACE authorization limits the development of recreational and interpretive facilities in association with the project; however, access, staging, and laydown areas would be sited and constructed in a manner to facilitate future development of these facilities for incorporation into the LAR Parkway. |
| 10.6.2. Create an unsurfaced parking area at the eastern end of the site, accessible from Northgate Boulevard. | The USACE authorization limits the development of recreational and interpretive facilities in association with the project; however, access, staging, and laydown areas would be sited and constructed in a manner to facilitate future development of these facilities for incorporation into the LAR Parkway. |
| 10.6.3. Permit non-motorized boating in the pond for interpretive purposes only and in a manner consistent with the protection of restored habitat and wildlife use. Non-motorized boats shall only be allowed by permit at the discretion of the Parkway Manager. | The habitat zones from open water/wetland transition, through upper riparian, would inundate to a depth and acreage sufficient to allow non-motorized boat access to the site, post-project, should the Parkway Manager approve. |
| 10.6.4. Fishing in the pond shall only be allowed by permit for interpretive purposes at the discretion of the Parkway Manager. | The habitat zones from open water/wetland transition, through upper riparian, would inundate to a depth and acreage sufficient to allow fishing onsite, post-project, should the Parkway Manager approve. |

The ARMS is a former gravel and sand mining location and includes a manmade pond. The USACE authorization limits the development of recreational and interpretive facilities in association with the project; however, access, staging, and laydown areas would be sited and constructed in a manner to facilitate future development of these facilities for incorporation into the LAR Parkway. In addition, the habitat zones from open water/wetland transition, through upper riparian, would inundate to a depth and acreage sufficient to allow non-motorized boat access to the site and allow fishing onsite, post-project, should the Parkway Manager approve. Lastly, American River Parkway policy states that restoration projects can occur in all land use categories. However, this impact would still be significant. The following previously adopted mitigation measures has been identified to address this impact.

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Please refer to Impact 2.4-b above for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure WQ-1: Obtain Appropriate Discharge and Dewatering Permit and Implement Provisions for Dewatering

Please refer to Impact 2.4-b above for the full text of this mitigation measure.

Timing: Before and during construction.

Responsibility: Project Partners

Implementing Mitigation Measures GEO-1 and WQ-1, which were previously adopted for the 2016 ARCF Project, would reduce impacts to water quality. Overall, the Proposed Action designs, construction actions, and mitigation actions would comply with policies of the American River Parkway Plan adopted for the purpose of avoiding or mitigating an environmental effect.

The American River Parkway Natural Resources Management Plan identifies existing mitigation sites in the American River Parkway and includes mitigation sites under the “conservation” resource management category, which is the land use category with the lowest level of management intensity. The American River Parkway Natural Resources Management Plan identifies the ARMS and its immediately surrounding area under the “naturalization” resource management category. (Sacramento County 2023b, page 8-31). The naturalization category includes areas that were substantially altered in the past and should be modified in order to improve existing natural resource conditions. Examples of management actions that may be required in “naturalization” areas include “Substantial earthwork to restore or create more natural hydrology and site features, Material removal (e.g., cobble and dredge tailings), replacement/amendment/modification of substrate, Removal of material (e.g., channel bed and bank), Addition of material (e.g., gravel)” (County of Sacramento 2023b, page 8-23). Activities that would be implemented under the Proposed Action, including regrading the area around ARMS, bringing in new fill, and replanting the site, are consistent with the management actions for “naturalization” areas in the American River Parkway Natural Resources Management Plan. Policies in the American River Parkway Natural Resources Management Plan that pertain to the ARMS are presented in Table 2.4-2, along with an assessment of how the Proposed Action would align with those policies.

As described in the preceding paragraphs, the Proposed Action would be consistent with policies of American River Parkway Plan that were adopted to avoid or mitigate environmental effects. In addition, constructing habitat mitigation in the area and removing the ARMS from private ownership would align with the long-term goal of protecting the American River Parkway from degradation from development. Because the activities associated with the ARMS are in compliance with local planning documents (such as the American River Parkway Natural Resources Management Plan and the American River Parkway Plan), there is a less than significant impact to local planning documents. The proposed use of the ARMS site for habitat mitigation is consistent with the expectations for restoring sites to open space in the American River Parkway Plan.

Table 2.4-2. American River Parkway Natural Resources Management Plan Alignment

| NRMP Potential Resource Management Actions | Alignment |
|---|---|
| <p>Establish low-growing native vegetation under powerlines: Develop a formal vegetation management agreement with electrical utilities for transmission line Right of Ways, including establishment of appropriate and compatible forbs, grasses and shrubs to maximize potential habitat for wildlife (including pollinators).</p> | <p>Coordination with the appropriate utilities would be completed prior to project implementation.</p> |
| <p>Purchase and naturalize ARMS property: Develop a conceptual naturalization plan for the ARMS Property if it is brought into public ownership.</p> | <p>The proposed project would develop a habitat enhancement and restoration plan in the next design phase that would fulfill these requirements.</p> |
| <p>Establish native riparian species/remove non-natives: Improve and expand riparian forest habitat along Steelhead Creek, including managing for growth and retention of tall overstory trees. Actions may include removal of non-native invasive species, managing the density of wild grape, expanding the riparian corridor along the southern edge of Steelhead Creek where conditions allow, and enhancing the understory with appropriate native species. Particular attention should be given to the point where Steelhead Creek enters the Parkway, east of Northgate Boulevard; encampments and associated degradation are hampering wildlife connectivity to the substantial stream corridors and associated wildlife habitat to the north.</p> | <p>Steelhead Creek is not within the property boundaries; therefore, this policy is not applicable to the proposed project.</p> |
| <p>Develop conceptual restoration plans for burned areas and prioritize implementation: Develop a wildfire rehabilitation strategy for vulnerable mature vegetation to ensure a timely response for minimizing undesirable wildfire impacts.</p> | <p>The habitat enhancement and restoration plan would include management strategies for wildlife response and rehabilitation.</p> |
| <p>Invasive Plant Management Plan Update: Update the 2000 Invasive Plant Management Plan (IPMP), including the invasive non-native plant inventory, management strategies, and target species for priority removals. The update should incorporate the success of Phase I and Phase II IPMP removals, changes to the Parkway plant communities, and new technologies for eradication and control measures.</p> | <p>Updates to the IPMP are the responsibility of Regional Parks; however, spatial and quantitative data on invasive plant populations onsite would be available to Regional Parks, as needed. In addition, the habitat enhancement and restoration plan would be developed in manner to provide consistency in management strategies with the broader LAR Parkway IPMP.</p> |

| NRMP Potential Resource Management Actions | Alignment |
|--|---|
| <p>Manage invasive vegetation: High priority weeds in the Discovery Area should include efforts to continue to remove red sesbania and giant reed, as well as other noxious weeds prioritized in the upcoming IPMP update. Treated areas should be planted with native species, if necessary, to prevent re-invasion of noxious weeds.</p> | <p>The habitat enhancement and restoration plan would include management strategies for invasive vegetation management.</p> |
| <p>Trail mapping and habitat management: Map the multiuse trail and trail spurs, equestrian/hiking trail, pedestrian trail, maintenance roads, and current social trails. After mapping is complete, determine which social trails should be actively closed and restored vs. actively monitored.</p> | <p>The USACE authorization limits the development of recreational and interpretive facilities in association with the project; however, access, staging, and laydown areas would be sited and constructed in a manner to facilitate future development of these facilities for incorporation into the LAR Parkway. Spatial data on these project features would be available to the appropriate natural resource agencies upon request.</p> |
| <p>Remediate social trail impacts and promote native vegetation growth: Manage social trails in a manner that consolidates trails and allows rehabilitation of vegetation understory.</p> | <p>The USACE authorization limits the development of recreational and interpretive facilities in association with the project; however, access, staging, and laydown areas would be sited and constructed in a manner to facilitate future development of these facilities for incorporation into the LAR Parkway. Therefore, development and management of social trails would be the responsibility of the long-term managing entity.</p> |
| <p>Hydraulic impact modeling: Determine the scope and design of desirable vegetation and habitat improvements on floodplain surfaces by using 2-D hydraulic modeling for x-sectional roughness values needed to maintain acceptable levee freeboard.</p> | <p>All required hydraulic modeling and coordination with Central Valley Flood Protection Board (CVFPB) would be completed as required prior to project implementation.</p> |
| <p>Rehabilitate homeless encampment impacts: In accordance with and in support of regional and countywide efforts to reduce homelessness, as appropriate remove encampments in the Parkway and rehabilitate those areas where the understory has been damaged. Rehabilitation should include clean-up, soil preparation and planting of appropriate native species.</p> | <p>The habitat enhancement and restoration plan would include management and rehabilitation strategies for homeless encampments.</p> |
| <p>Suppress fire in mature vegetation stands: Develop a wildfire prevention, response, and rehabilitation strategy for vulnerable mature vegetation to ensure a timely response for minimizing wildfire impacts. This includes evaluating the effectiveness of existing firebreaks and if necessary, designating new and/or improved firebreaks.</p> | <p>The habitat enhancement and restoration plan would include wildfire prevention, response, and rehabilitation strategies.</p> |

| NRMP Potential Resource Management Actions | Alignment |
|--|--|
| <p>Recreational facilities management and habitat: Identify opportunities to manage recreation improvement areas to protect or enhance wildlife habitat. This may include specifying types of vegetation and/or timing of maintenance activities.</p> | <p>The USACE authorization limits the development of recreational and interpretive facilities in association with the project; however, access, staging, and laydown areas would be sited and constructed in a manner to facilitate future development of these facilities for incorporation into the LAR Parkway.</p> |
| <p>Maintain tall tree over-story in parking and picnic area for nesting birds: To maintain tall trees a phased approach should be taken to plant native trees that can mature prior to the decline the existing mature trees.</p> | <p>The proposed project would expand treed riparian and woodland habitats by over 40 acres and include a range of habitat structure from early to late successional.</p> |

Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Long-term and Negligible effects that are Less than Significant.

The Piezometer Network consists of small infrastructure scattered throughout the project area. Because the infrastructure is small, it would not impact the function or use of any mitigation or avoidance area but would require the installation of permanent measurement equipment that would not detract from the visual and functional resources in the project area. There would be a less-than-significant impact on any existing land use plan, policy or regulation established for mitigation or avoidance from installing and operating the piezometer network.

2.4-c 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.

CEQA Significance Conclusion: *No Impact*

NEPA Significance Conclusion: *No Impact*

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): No Impact

The MCP does not affect Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) designated by the California Department of Conservation (DOC). Although there are several large gardens that run along the MCDC, and portions of these gardens would be acquired and used for the construction of the expanded MCDC channel, none of these parcels qualify as designated Farmland.

Some of the staging areas and access routes for the site are designated as Farmland of Local Importance by the DOC (Figure 2.4-10). However, these areas would be used only temporarily and returned to their pre-construction condition once completed. The location where the culvert would be installed under the Northern Sacramento Bike Trail is also considered Farmland of Local Importance by the DOC. The area surrounding the culvert is not currently in agricultural use (most of the area is fenced to provide a barrier between the bike trail, the nearby creek, and neighboring parcels), and would be returned to its pre-construction condition following construction. Finally, a small portion of the area where the levee would be extended and widened is listed as Farmland of Local Importance (Figure 2.4-10; Farmland of Local Importance is not included in the CEQA definition of Farmland). This area is already an existing levee with a maintenance road and could not be used for agricultural purposes. There could be a small area (less than 3 acres) of the Farmland of Local Importance used for the levee expansion or widening. Because none of the MCP project site includes Farmland as defined in CEQA, there would be no impact.

NEPA Impact Conclusion (Design Refinements): No Impact

Prime Farmland near the MCDC was not discussed in the ARCF GRR Final EIS/EIR. NRCS has designated Prime Farmland, if irrigated (Figure 2.4-11), in areas where there are access routes and staging areas. Similarly, to what was discussed under CEQA, these areas would be restored to their pre-project condition once construction is completed. The culvert under the bike trail and a portion of the area where the levee would be extended and widened are on land considered Prime Farmland, if irrigated, by NRCS. As described in the previous paragraph under CEQA, these areas generally could not currently be used for agriculture due to the closeness to the creek and levee system. This area is considered an urbanized area by the U.S. Census Bureau (Figure 2.4-11), so the area is not considered farmland under the FPPA. Overall, the impact on Prime Farmland would be short-term and moderate. The project would not result in any irreversible or irretrievable effects to Prime Farmland.

American River Erosion Contract 4A

CEQA Impact Conclusion (Entire Proposed Action): No Impact

There is an area within the American River Erosion Contract 4A footprint that is listed as Farmland of Local Importance by DOC (Figure-2.4-10; Farmland of Local Importance is not included in the CEQA definition of Farmland). Specifically, the location of the bike trail reroute is listed as Farmland of Local Importance. There is an existing bike trail (Jedediah Smith Memorial Trail) in this area along the maintenance road. Also, this land is managed by Regional Parks under the American River Parkway Plan and associated American River Parkway Natural Resources Management Plan. The American River Parkway Natural Resources Management Plan lists the land as a former agricultural area and under the “naturalization” natural resources management category (County of Sacramento 2023b). The American River Parkway Natural Resources Management Plan does not include agricultural activities as management actions within the naturalization category (County of Sacramento 2023b). Even though the area is listed as Farmland of Local Importance, management activities indicate that there is no plan to use the area for farmland. There would be no impact.

NEPA Impact Conclusion (Design Refinements): No Impact

The Jedediah Smith Memorial Trail reroute was not considered under the ARCF GRR Final EIS/EIR. NRCS has also designated the American River Erosion Contract 4A project area as Prime Farmland if irrigated (Figure 2.4-11). The description in the CEQA impact analysis above applies here as well. In addition, the area is listed as an urbanized area by the U.S. Census Bureau, and thus not considered Prime Farmland under FPPA, so there is no impact to Prime Farmland.

American River Erosion Contract 3B North and South, American River Erosion Contract 4B Sacramento River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): No Impact

NEPA Impact Conclusion (Design Refinements): No Impact

The project sites for these project components (American River Erosion Contract 3B, American River Erosion Contract 4B, and SRMS) do not include areas designated by DOC or NRCS as Prime Farmland, Unique Farmland or Farmland of Statewide Importance. There would be no impact.

American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): No Impact

An area of the ARMS project site has been designated as Farmland of Local Importance (Figure 2.4-10); Farmland of Local Importance is not included in the CEQA definition of Farmland by DOC. There has not been farming in the area recently. Although the ARMS site has historically been in private ownership, it is included in the American River Parkway Plan and American River Parkway Natural Resources Plan. Neither plan identifies agricultural activities for the area. There would be no impact.

NEPA Impact Conclusion (Design Refinements): No Impact

An area of the project sites for ARMS has been designated as Prime Farmland if irrigated (Figure 2.4-11) by NRCS. As discussed under CEQA neither the American River Parkway Plan nor the American River Parkway Natural Resources Plan includes agricultural activities for the area. In addition, the area is listed as an urbanized area by the U.S. Census Bureau, so it is not considered farmland under the FPPA. Because the area has not been farmed and is in an urbanized area and has no Federal farmland designation, there would be no impact.

Sacramento River Erosion Contract 3

CEQA Impact Conclusion (Entire Proposed Action): No Impact

The project sites for Sacramento River Erosion Contract 3 do not include areas designated as Prime Farmland, Unique Farmland or Farmland of Statewide Importance by DOC and there would be no impact.

NEPA Impact Conclusion (Design Refinements): No Impact

The project sites for Sacramento River Erosion Contract 3 includes land designated as Prime Farmland if irrigated by NRCS (Figure 2.4-11). Those areas are currently a developed neighborhood and could not be used for agricultural purposes. The area is also designated as an urbanized area by the U.S. Census Bureau so the area is not considered farmland under the FPPA. There would be no impact.

Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): No Impact

The Piezometer Network consists of small, permanent instrumentation infrastructure. Because the infrastructure is small, it would not impede the function or use of any location for agriculture. There would be no impact.

NEPA Impact Conclusion (Design Refinements): No Impact

The Piezometer Network consists of small infrastructure. Because the infrastructure is small, it would not impact the function or use of any location for agriculture. There would be no impact.

2.4-d Conflict with existing zoning for agricultural use, or a Williamson Act contract.

CEQA Significance: Less than Significant

NEPA Significance: Short-term and Moderate effects that are Less than Significant.

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Short-term and Moderate effects that are Less than Significant.

The MCP would not be constructed on land zoned for agricultural purposes or for land within a Williamson Act contract (County of Sacramento 2023b). However, some of the staging areas are zoned as Agricultural by the City of Sacramento and Agricultural-80 by Sacramento County. After the temporary use of these parcels for staging during construction, the land would be returned to its original condition; therefore, there would be a less-than-significant impact on agricultural uses specified by zoning. Two staging areas have land that was once in Williamson Act contract 77-AP-023. This Williamson Act contract has since been canceled, so there would be no impact on Williamson Act contracts.

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B Sacramento River Erosion Contract 3, American River Mitigation, Sacramento River Mitigation, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): No Impact

NEPA Impact Conclusion (Design Refinements): No Impact

The project sites associated with American River Erosion Contract 3B North and South, American River Erosion Contract 4A and 4B, Sacramento River Erosion Contract 3, ARMS, SRMS, and the Piezometer Network are not zoned for agricultural use or under a Williamson Act Contract (County of Sacramento 2023c). The parcel adjacent to the SRMS is under Williamson Act Contract 73-AP-057 (County of Sacramento 2023c); however, this area would not be impacted by the work associated with Grand the SRMS. There would be no impact.

Alternatives Comparison***Alternatives 3a, 3b, 3c, and 3d***

Alternatives 3a, 3b, 3c, and 3d include an alternative design for improvements to the American River 4A Project Component. In Alternative 3a, a landside berm would be constructed instead of

a waterside berm. In Alternative 3b, the bike detour would follow parallel to the railroad to the existing location of the bike trail (Jedediah Smith Memorial Trail) instead of going under the railroad. In Alternative 3c, the bike route would be rerouted a short distance through an existing wetland. In Alternative 3d, the bike detour would go closer to the riverbank and follow the railroad to the existing location of the bike trail. All other project components (American River Erosion Contract 3B North and South, Sacramento River Erosion Contract 3, MCP, SRMS, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action in these Alternatives.

Table 2.4-3. Alternative 3a, 3b, 3c, and 3d Effects

| Impact Number | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---------------|-------------------|--|--------------------|------------------------------|---|
| 2.4 a | American River 4A | Consistent with the proposed action. The alternative design would not have any more or less impact on land use than the Proposed Action. | N/A | Less than Significant | Short-term and negligible effects that are Less than Significant |
| 2.4-b | American River 4A | Consistent with the proposed action. The alternative design would not have any more or less impact on land use than the Proposed Action. | N/A | Less than Significant | Medium-Term to Long-term and Minor effects that are Less than Significant |
| 2.4-c | American River 4A | Consistent with the proposed action. The alternative design would not have any more or less impact on land use than the Proposed Action. | N/A | No Impact | No Effect |
| 2.4-d | American River 4A | Consistent with the proposed action. The alternative design would not have any more or less impact on land use than the Proposed Action. | N/A | No Impact | No Effect |

Alternatives 4a and 4b (CEQA-Only)

Alternatives 4a and 4b include designs for the ARMS area that retain a 30-acre and a 20-acre portion of the existing pond, respectively, while channels would be constructed on 54 acres of floodplain on the eastern portion of the site. Because these alternatives retain a portion of the existing pond, they would be consistent with the American River Parkway Plan without requiring interpretation or approval by the County Board of Supervisors. All other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, MCP, and SRMS) would have the same effects as the Proposed Action.

Table 2.4-4. Alternative 4a and 4b Effects (CEQA-Only)

| Impact Number | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion |
|---------------|----------|---|--------------------|--|
| 2.4 a | ARMS | Consistent with the Proposed Action. The project site is outside an established community. | N/A | No Impact |
| 2.4-b | ARMS | Lesser than the Proposed Action. Although the Proposed Action is in alignment with policies of the ARPP and NRMP that would reduce or avoid environmental effects, Alternatives 4a and 4b both include retention of a portion of the existing manmade pond, enabling these alternatives to more closely align with the future conditions for the Discovery Park Area identified in these plans. Like the Proposed Action, the impact would be less than significant with mitigation incorporated. | GEO-1, WQ-1 | Less than Significant with Mitigation Incorporated |
| 2.4-c | ARMS | Consistent with the Proposed Action. The project site is not designated as Farmland. | N/A | No Impact |
| 2.4-d | ARMS | Consistent with the Proposed Action. The project site is zoned for agricultural use or under a Williamson Act contract. | N/A | No Impact |

Alternative 5a (Conservation Bank Credits)

Alternative 5a includes an alternative financial solution as opposed to constructing the SRMS. Alternative 5A for all the other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, MCP, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. Conservation Bank Credits would be used for mitigation instead of finding onsite options. Impacts from the construction of the mitigation's sites would have already been considered under their own environmental documentation and would need to be considered under this SEIS/SEIR.

There would be no new construction or disturbances associated with Alternative 5a, as the existing mitigation banks that are to be used have already had their impacts considered. Consequently, there would be no impacts to land use and related areas of concern in the significance thresholds.

Table 2.4-5. Alternative 5a Effects

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|-------------------------|----------|---|--------------------|------------------------------|----------------------------|
| 2.4 a -g | SRMS | Alternative 5a would include purchase of mitigation credits and so there would be no land use impacts associated with the SRMS. | VEG-1, VEG-2 | No Impact | No Impact |

Alternative 5b (Watermark Farms)

Alternative 5b includes an alternative design for improvements to the SRMS project component. All other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4A and 4B, Sacramento River Erosion Contract 3, MCP, ARMS and the Piezometer Network) would have the same effects as the Proposed Action. Watermark Farms, located on the right bank of the Sacramento River between RM 50.5 and 51.25 would be used as the mitigation site for Sacramento River-related habitat impacts.

The Watermark Farms site includes areas designated as Prime Farmland, and use of this site would convert Farmland to non-agricultural use. Alternative 5b would have a significant impact related to the conversion of agricultural land to non-agricultural use. The following mitigation measure has been identified to address this impact.

Mitigation Measure AG-1: Purchase Conservation Easements to Offset Conversion of Prime Farmland

USACE will require purchase or establishment of property interests in agricultural land (i.e., conservation easements) requiring the preservation and/or enhancement of other land of similar agricultural quality and acreage, either directly or indirectly, to offset conversion of prime farmland to construct project facilities. These easements may include but are not limited to establishing agricultural conservation easements, paying in-lieu fees toward agricultural conservation easements, supporting agricultural land trusts, and participating in habitat conservation plans or natural community conservation plans that include conservation of agricultural lands. Conservation easements will be purchased at a 1:1 ratio. Where feasible, the agricultural conservation easements should be acquired in the county in which the conversion will take place, Yolo County. If there is not a sufficient supply of similar prime farmland where the conversions will occur, the agricultural conservation easements may be obtained in a different county. Where conservation easements are established by USACE, they may be held by land trusts, local governments, or other appropriate agencies that are responsible for ensuring that these lands will be maintained in agricultural use. Where easements are considered for other resources such as terrestrial biological resources, purchase of easements will be coordinated where possible so that agricultural resources are also addressed.

Timing: Prior to Construction

Responsibility: Project Partners

Implementing Mitigation Measure AG-1 will reduce the impact by protecting a similar area of prime farmland in perpetuity. However, implementing Alternative 5b will nevertheless remove 340.3 acres of Important Farmland from agricultural use and the impact will remain significant and unavoidable as there are no other feasible mitigation measures available.

Table 2.4-6. Alternative 5b Effects on Land Use and Prime and Unique Farmlands

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--------------------------------|-----------------|--|---------------------------|---------------------------------------|---|
| 2.4 a | SRMS | Existing homes would be removed to implement Alternative 5b. However, there is already an existing levee system and the movement of the levee would only cut off the homes that would already need to be removed for the work. Consequently, there would not be a new division in a community from Alternative 5b. There would be a less than significant impact on communities from Alternative 5b. | N/A | Less than Significant | Long-term and negligible effects that are Less than Significant |
| 2.4 b | SRMS | The Yolo General Plan lists to incorporate agricultural activities and habitat protection (County of Yolo 2009, page AG-25). Because the levee would be moved around the land, agricultural activities would have to be cut off from the area, so these policies could not be met. In addition, the Yolo General Plan discourages conversion of agricultural land unless there is a benefit that outweighs the agricultural loss, there is no feasible alternative, and there would not be an impact on agricultural activities on surrounding properties (County of Yolo 2009, page AG-22). Other mitigation options are listed under the Proposed Action, Alternative 5a and Alternative 5c. Since there are other options for mitigation, this act, Alternative 5a would not meet this policy. Mitigation measure AG-1 would be implemented to reduce the impact of not meeting these policies to less than significant. Project partners would comply with Yolo County Ordinance Section 8-2.404 (County of Yolo 2022) to meet requirements associated with changing agricultural land into non-agricultural purposes. | AG-1 | Less than Significant with Mitigation | Long-Term and Major effects that are Less than Significant |
| 2.4 c | SRMS | Alternative 5b includes land that is considered by both NRCS and the California Department of Conservation as Prime Farmland and land that is considered Farmland of Statewide Significance (NRCS 2023, DOC 2016). Completion of Alternative 5b would convert the land from agricultural use to a natural riparian forest mitigation site. The Farmland Protection Policy Act would be followed. | AG-1 | No Impact | No Effect |

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|-------------------------|----------|--|--------------------|------------------------------|---|
| 2.4 d | SRMS | Alternative 5b includes land that is zoned as Agricultural Intensive by Yolo County. Under Yolo County Code Title 8 Section 8-2.304, habitat mitigation projects over 40 acres mitigating for projects outside Yolo County are allowed in areas zoned as Agricultural Intensive but require a Major Use Permit. Project Partners would work with Yolo County to get a Major Use Permit and would comply with the zoning code. Consequently, there would be a less than significant impact on the uses specified in the zoning code. Land associated with Alternative 5b is not under a Williamson Act contract. The parcels just south of the property are under contract 72-013 (Yolo County 2023), but these properties would not be impacted by the Alternative 5b. | N/A | Less than Significant | Short-term and minor effects that are Less than Significant |
| 2.4 e | SRMS | Similar to the Proposed Action, this area is not zoned for forest land or timberland, so there would be no impact on areas zoned for forestland or timberland. | N/A | No Impact | No Impact |
| 2.4 f | SRMS | This area would be considered forest. However, since the area would be replanted for mitigation, there would not be a significant impact on forests. | N/A | Less than Significant | Short-term and minor effects that are Less than Significant |
| 2.4 g | SRMS | Similar to the Proposed Action, other than what is already discussed under 2.4 c, d, e, and f there are no anticipated actions that would cause conversion of farmland or forest land to different uses. There would be no impact on conversion of agriculture and forest land use other than what has been described under effect 2.4 c-f.. | N/A | No Impact | No Impact |

Alternative 5c (Sunset Pumps)

Alternative 5c combines three approaches to complete the Sacramento River Mitigation requirements including 1) Purchasing Delta smelt credits from an approved conservation bank 2) Funding a NMFS recovery plan project (Sunset Pumps) to remove a weir, allowing fish passage to benefit chinook steelhead and green sturgeon and 3) Funding the improvements at Sunset Pumps would increase water availability, which would then be directed to two local wildlife refuges, benefiting the Western Yellow Billed Cuckoo.

The Sunset Pumps project is listed as high priority BOR, DWR, and USFWS, and is subject to separate NEPA/CEQA analysis prior to implementation. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, Sacramento River

Erosion Contract 3, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. All activities related to 5c involve funding another project, therefore no additional impacts to land use would result from this alternative, as shown in Table 2.4-7.

Table 2.4-7. Alternative 5c Effects on Land Use and Prime and Unique Farmlands

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--------------------------------|-------------------------------------|---|---------------------------|-------------------------------------|-----------------------------------|
| 2.4 a -g | SRMS (bank credits or Sunset Pumps) | Alternative 5c would include purchase of mitigation credits and financial support of other projects subject to separate NEPA and CEQA review. There would be no land use impacts associated with the SRMS under Alternative 5c. | N/A | No Impact | No Impact |

2.5 Social Impacts to At-Risk Communities

Section 2.5 has been removed according to Executive Order 14148 of January 20, 2025, Initial Recissions of Harmful Executive Orders and Action (90 FR 8243). Relevant analysis has been relocated to Appendix 2.6 Socioeconomics to fully analyze effects to the human environment, which is required by Section 101 of NEPA of 1969, as amended, (b)(2) assure for all Americans safe, healthful, productive, and esthetically and cultural pleasing surroundings, and Section 101 (b)(3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences. Impacts to socioeconomic and environmental resources are required by USACE policy Procedures for Implementing NEPA Engineering Regulation (ER) 200-2-2 (33 CFR Part 230), and Appendix C Environmental Evaluation and Compliance of ER 1105-2-100, Planning Guidance Notebook.

2.6 Socioeconomic Conditions

This section describes the regulatory and environmental setting for socioeconomic conditions within the project footprint. Each project component varies in its impact to population, housing, and employment due to location within Sacramento County and the diversity of surrounding land uses and local economies. This section also encompasses analysis from Section 2.5 Social Impacts to At-Risk Communities through demographic analysis, assessment of impacts, and public outreach.

Socioeconomic analyses are required under NEPA, but CEQA does not require an analysis of socioeconomic conditions unless there are resulting effects to the physical environment, which there are not with respect to the Proposed Project and alternatives. However, CEQA requires an analysis of population and housing, which has been included within this broader socioeconomic analysis required under NEPA.

2.6.1 Existing Conditions/Affected Environment

The environmental setting described in Section 3.18.1 of the 2016 American River Common Features, General Reevaluation Report, Final Environmental Impact Statement/Environmental Impact Report (ARCF GRR Final EIS/EIR) covering socioeconomic resources is generally applicable to the current conditions of population, housing, and local economy. This section describes that while the Sacramento County population continues to grow, the project footprint itself is located in areas that are generally built out and, therefore, growth would occur outside the project area where vacant land is available for development.

Socioeconomic conditions for each project component have been summarized below. The Council for Environmental Quality's (CEQ) Federal mapping tool uses census tract data to identify communities that meet thresholds for at least one of the tool's categories of socioeconomic or environmental burdens, or if they are on land within the boundaries of Federally Recognized Tribes (see Table 2.6-1). A census tract that is surrounded by at-risk communities and is at or above the 50th percentile for low income is also considered. Information regarding usage of this tool is available upon request.

Table 2.6-1 Categories of burden used in the Social Impacts Analysis

| Category of Burden | Communities are identified if they are in census tracts that: |
|--------------------------|---|
| Longitudinal Air Quality | ARE at or above the 90th percentile for expected agricultural loss rate OR expected building loss rate OR expected population loss rate OR projected flood risk OR projected wildfire risk AND are at or above the 65th percentile for low income |
| Energy | ARE at or above the 90th percentile for energy cost OR inhalable particulate matter 2.5 or smaller micrometer diameter AND are at or above the 65th percentile for low income |
| Health | ARE at or above the 90th percentile for asthma OR diabetes OR heart disease OR low life expectancy AND are at or above the 65th percentile for low income |
| Housing | Experienced historic underinvestment OR are at or above the 90th percentile for housing cost OR lack of green space OR lack of indoor plumbing OR lead paint AND are at or above the 65th percentile for low income |

| Category of Burden | Communities are identified if they are in census tracts that: |
|------------------------------|--|
| Legacy Pollution | Have at least one abandoned mine land OR Formerly Used Defense Sites OR at or above the 90th percentile for proximity to hazardous waste facilities OR proximity to Superfund sites OR proximity to Risk Management Plan facilities AND are at or above the 65th percentile for low income |
| Transportation | ARE at or above the 90th percentile for diesel particulate matter exposure OR transportation barriers OR traffic proximity and volume AND are at or above the 65th percentile for low income |
| Water and Wastewater | ARE at or above the 90th percentile for underground storage tanks and releases OR wastewater discharge AND are at or above the 65th percentile for low income |
| Workforce Development | ARE at or above the 90th percentile for linguistic isolation OR low median income OR poverty OR unemployment AND more than 10% of people ages 25 or older do not have a high school education (i.e., graduated with a high school diploma) |

Magpie Creek Project

The majority of Magpie Creek Project is located within the City of Sacramento (City) limits, included within the North Sacramento Community Planning Area (CPA), and the remainder is included within the Rio Linda census-designated place (CDP) within the unincorporated portion of Sacramento County. The MCP is generally within a low-income area where people are susceptible to displacement.

The MCP is located in the Robla and Raley Industrial Park neighborhood of North Sacramento, on levees between Dry Creek Road, Vinci Avenue, and Raley Boulevard. The MCP also includes improvements to the Sacramento Northern Bike Trail crossing of the MCP in the Robla neighborhood. The levees are primarily located in a light industrial area bordered by residential areas. Construction and Piezometer Network installation would occur primarily on the levee, within the existing channel and levee road. Haul routes would follow Elkhorn Boulevard or I-80 to Raley Boulevard. From Raley Boulevard, haul trucks would travel along Vinci Avenue, Main Avenue, and Bell Avenue to reach Rio Linda Boulevard, Rose Street, and Maryville Boulevard.

CEQ's Federal mapping tool shows that no communities within MCP are considered at-risk. During routine site visits; however, USACE has observed a well-established community of unhoused individuals living along Vinci Avenue. Similarly, haul routes for the MCP would cross into these communities and would disrupt local traffic, primarily bus routes to schools, which are located within the vicinity (Figure 2.6-1).

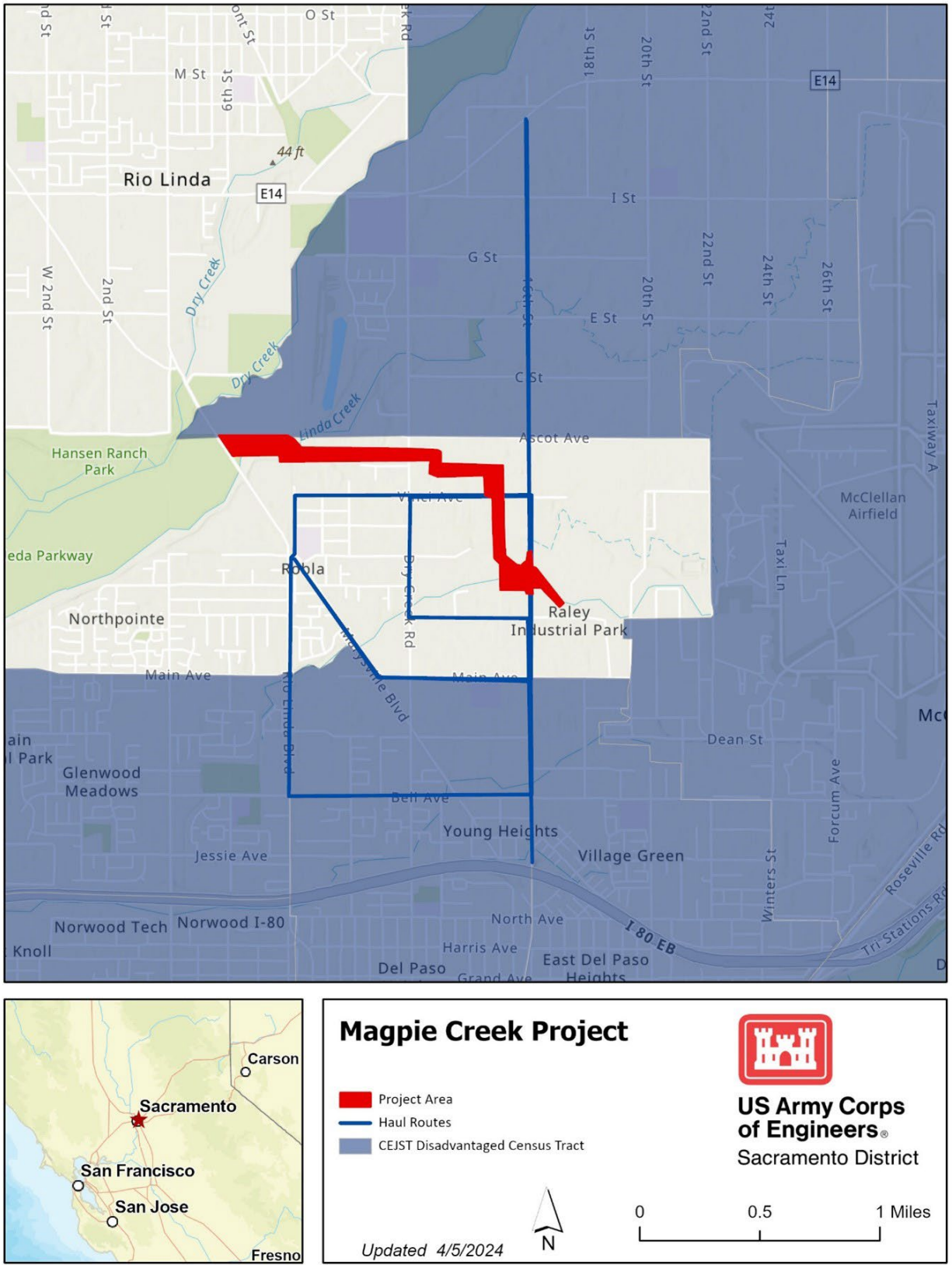


Figure 2.6-1. Census Tracts of At-Risk Communities near Magpie Creek Project

Sacramento River Erosion Contract 3

Sacramento River Erosion Contract 3 is located within City limits in the Pocket CPA along the east bank of the Sacramento River. The Sacramento River Erosion Contract 3 project is generally located adjacent to a stable moderate/mixed income with a risk of the community becoming exclusive through the process of gentrification.

Most of the work would occur on the waterside of the levee with landside staging areas, resulting in minimal impacts to the surrounding community. CEQ's Federal mapping tool shows that no communities within the site are considered at-risk (Figure 2.6-2). USACE pedestrian surveys have supported this determination; however, based upon receipt of public comments on the Draft SEIS/SEIR, there is some concern about localized increases of people experiencing homelessness in the general area of Sacramento River Erosion Contract 3. For these reasons, this contract is considered in the analysis for the Final SEIS/SEIR.

American River Erosion Contract 3B North and South, 4A, and 4B

American River Erosion Contract 3B North is located with City limits within the Arden Arcade Study CDP. Contract 3B North is located adjacent to a stable moderate/mixed income community that is at risk of becoming exclusive through gentrification. The western segments of Contract 3B South and Contract 4B are located within City limits of East Sacramento CPA, and the eastern portions are in the Unincorporated area of the County called La Riviera CDP. American River Erosion Contract 4A is located within City limits in the South Natomas and North Sacramento CPA. American River Erosion Contract 3B South, Contract 4A, and the majority of Contract 4B are located near low-income communities, where people are susceptible to displacement.

The area is densely populated with residential, public, and commercial districts distributed near the project site. CEQ's Federal mapping tool shows that no communities adjacent to the project site are considered at-risk. During routine site visits; however, USACE has observed a well-established community of unhoused individuals living along portions of the south bank of American River Erosion Contract 3B and American River Erosion Contract 4B.

Construction and piezometer installation would occur primarily on the levee, including levee roads, and isolated areas of the American River bike trail. Staging areas would be located near the levee within public parks, existing river access routes, and on private property (Figure 2.6-3). All real estate acquisition would be conducted by the Project Partners prior to the start of construction. Haul routes for American River Erosion Contract 3B and American River Erosion Contract 4B would link I-80 and U.S. 50 with the project site and staging areas via several local roads. Sections of I-80, U.S. 50 and Arden Way, Howe Avenue, Watt Avenue, La Rivera Drive, Folsom Boulevard, and Bradshaw Road, which would be haul routes, pass through at-risk, including at-risk communities, although these roadways already accommodate heavy traffic volumes.

USACE and the Non-Federal sponsor are developing a comprehensive outreach plan to inform the community of upcoming work. A full analysis of impacts and proposed mitigation measures is presented in appendices 2.1 "Traffic," 2.2 "Recreation," and in this section, 2.6 "Socioeconomic Conditions."

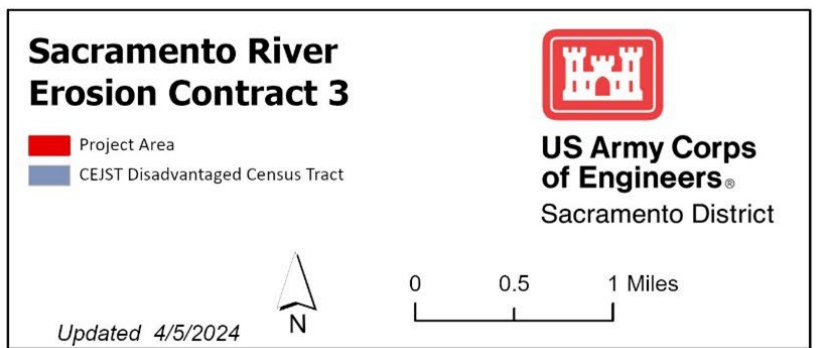
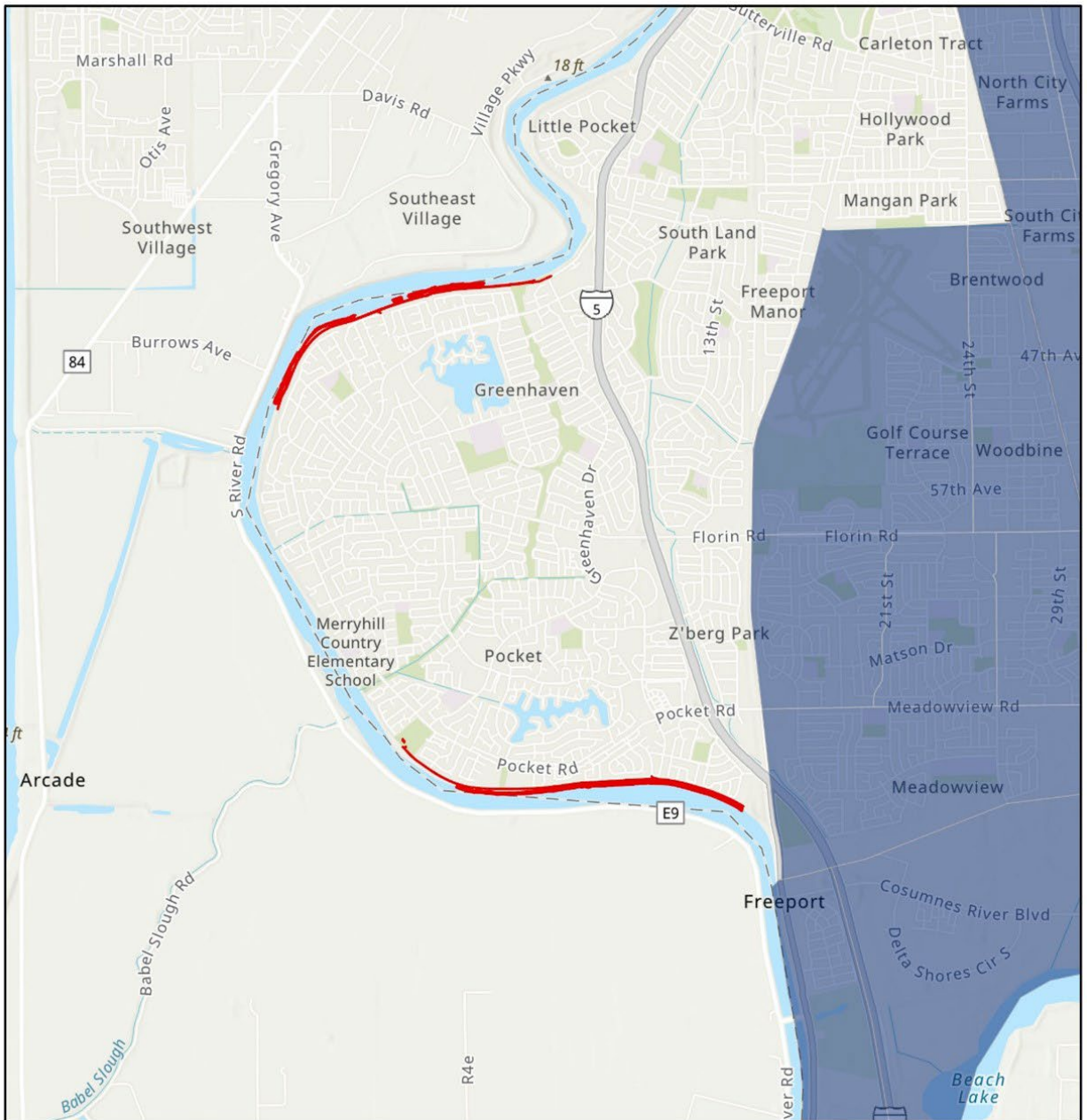
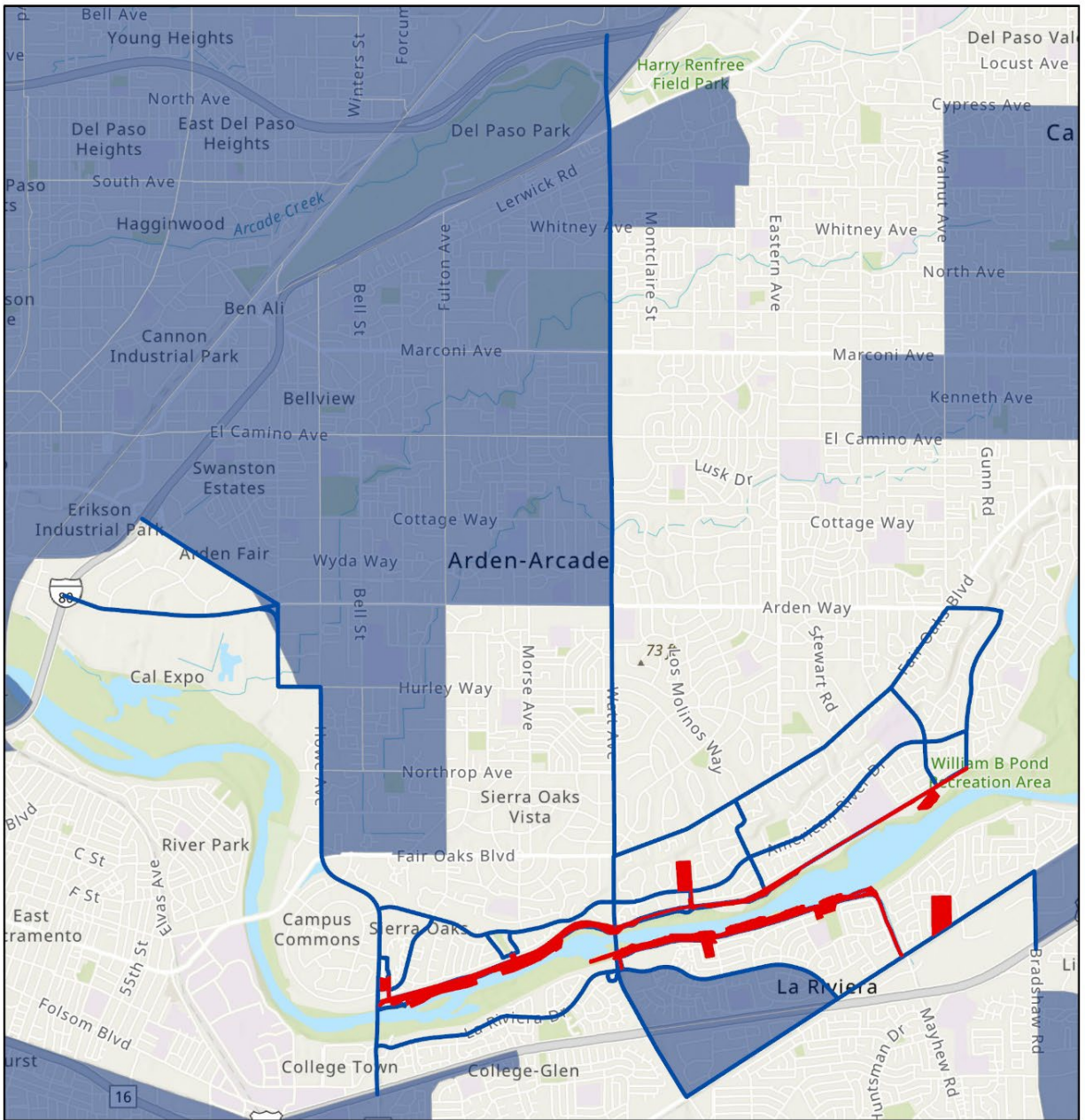


Figure 2.6-2. Census Tracts of At-Risk Communities near Sacramento River Erosion Contract 3



American River Erosion Contract 3B and 4B

- Project Area
- Haul Route
- CEJST Disadvantaged Census Tract



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Sacramento District



0 0.5 1 Miles

Updated 10/21/2024

Figure 2.6-3. Census Tracts of At-Risk Communities near American River Erosion Contract 3B and American River Erosion Contract 4B

The American River Erosion Contract 4A project site is located near the State Route (SR) 160 overpass and the American River Parkway in a transportation corridor that includes the state highway, the American River Bike Trail, and the Union Pacific Railroad. Construction and Piezometer Network installation would occur primarily on the levee and levee road. Staging for American River Erosion Contract 4A would occur at Alpha Brother's Towing (796 Del Paso Boulevard), a vacant parcel on Lathrop Way, within the American River Parkway near Costco, and adjacent to the railroad (Figure 2.6-4).

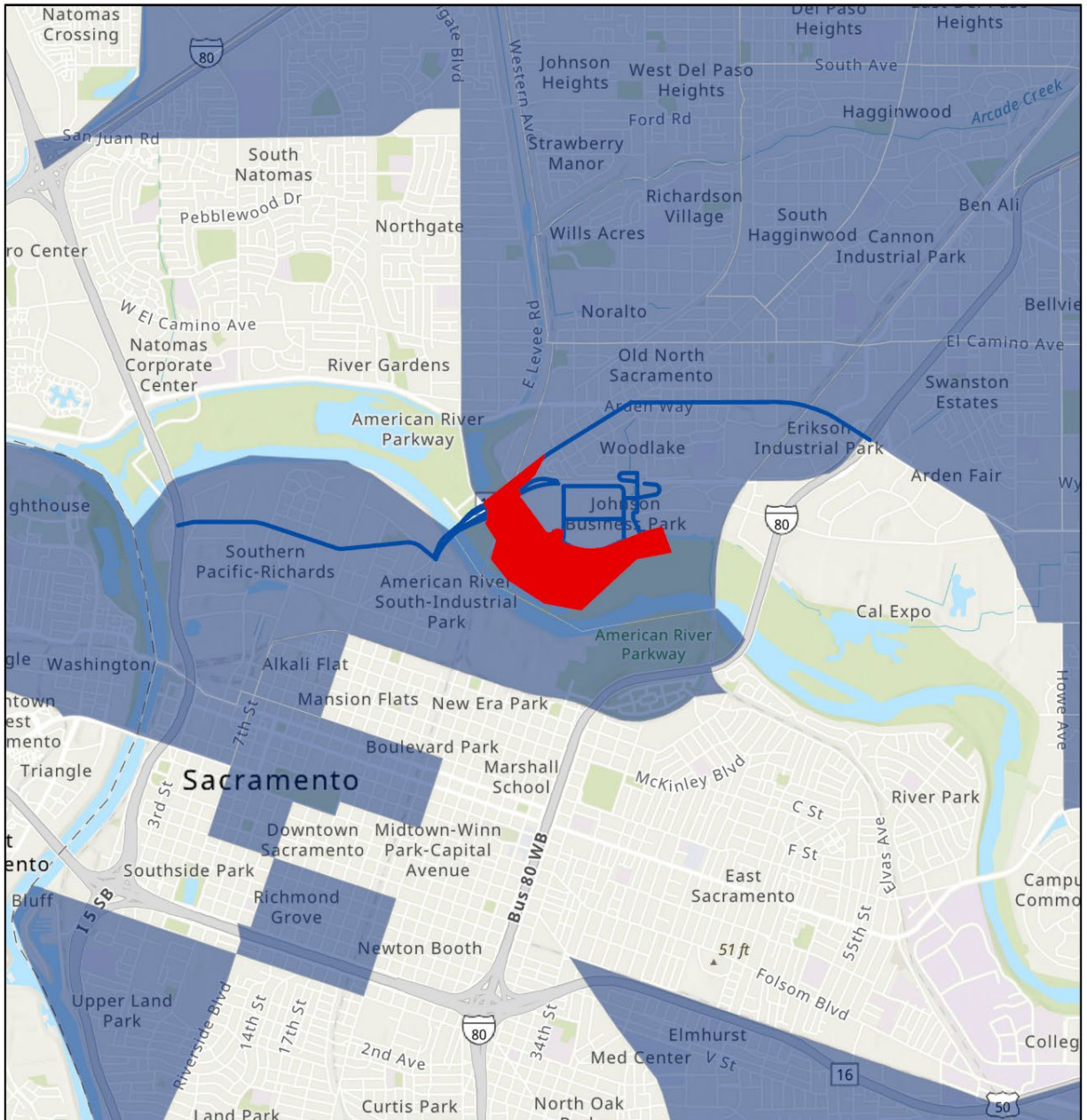
Transportation infrastructure and greenways create barriers between the site and surrounding residential and commercial areas. The CEQ's Federal mapping tool shows that the site is located within a census tract that, meets more than 1 burden threshold and the associated socioeconomic threshold. During routine site visits, USACE also observed a well-established community of unhoused individuals living along and beneath the SR 160 overpass. There are no legal residences within the project footprint.

Haul routes for this project component cross into additional census tracts identified. Haul traffic would proceed from SR 160, Interstate 80 (I-80) Business, and I-5 to the project site via local roads including Del Paso Boulevard, Arden Way, Richards Boulevard, Expo Parkway, Leisure Lane, Commerce Circle, and Lathrop Way. The main access points to the levee would be at Lathrop Way and Expo Parkway. A road closure at Del Paso Boulevard may be needed during reconstruction of the bike path. A full analysis of impacts and proposed mitigation measures are presented in Appendices 2.1 "Traffic" and 2.2 "Recreation."

American River Mitigation Site

American River Mitigation Site (ARMS) is located with City limits of the South Natomas CPA, a generally low-income community with risk of resident displacement. ARMS, near the north bank of the American River and east of Discovery Park, is separated from the River Gardens neighborhood by portions of the American River Parkway and Garden Highway. Proposed activities at the ARMS would include construction of naturally occurring riparian habitation to mitigate for habitat impacts of other ARCF 2016 Project improvements along the American River. Construction would consist of adding fill to the existing pond, creating side channels, and breaching the existing levee to inundate portions of the restoration area. Staging areas would be located within the ARMS, or adjacent undeveloped areas of the American River Parkway. CEQ's Federal mapping tool shows that the adjacent community to the north of the ARMS is not considered at-risk. During routine site visits; however, USACE has observed a well-established community of unhoused individuals living in the vicinity of the project site, particularly to the north of the project site (Figure 2.6-5).

Haul routes for the ARMS would follow SR-160, I-5, I-80 Business, Garden Highway, and Northgate Boulevard as well as existing local service roads. Sections of these roadways traverse or border at-risk, including low-income and minority communities; however, these are large roadways that already accommodate heavy traffic. Local roads to the ARMS would include existing service roads through Discovery Park or the Riverdale Mobile Home Park access. The Riverdale Mobile Home Park has not been in operation for several years. A full analysis of impacts and proposed mitigation measures are presented in Appendices 2.1 "Traffic" and 2.2 "Recreation."



American River Erosion Contract 4A

- CEJST Disadvantaged Census Tract
- Haul Routes
- Project Area



**US Army Corps
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Sacramento District

Updated 4/5/2024



0 0.5 1 Miles

Figure 2.6-4. Census Tracts of At-Risk Communities near American River Erosion Contract 4A

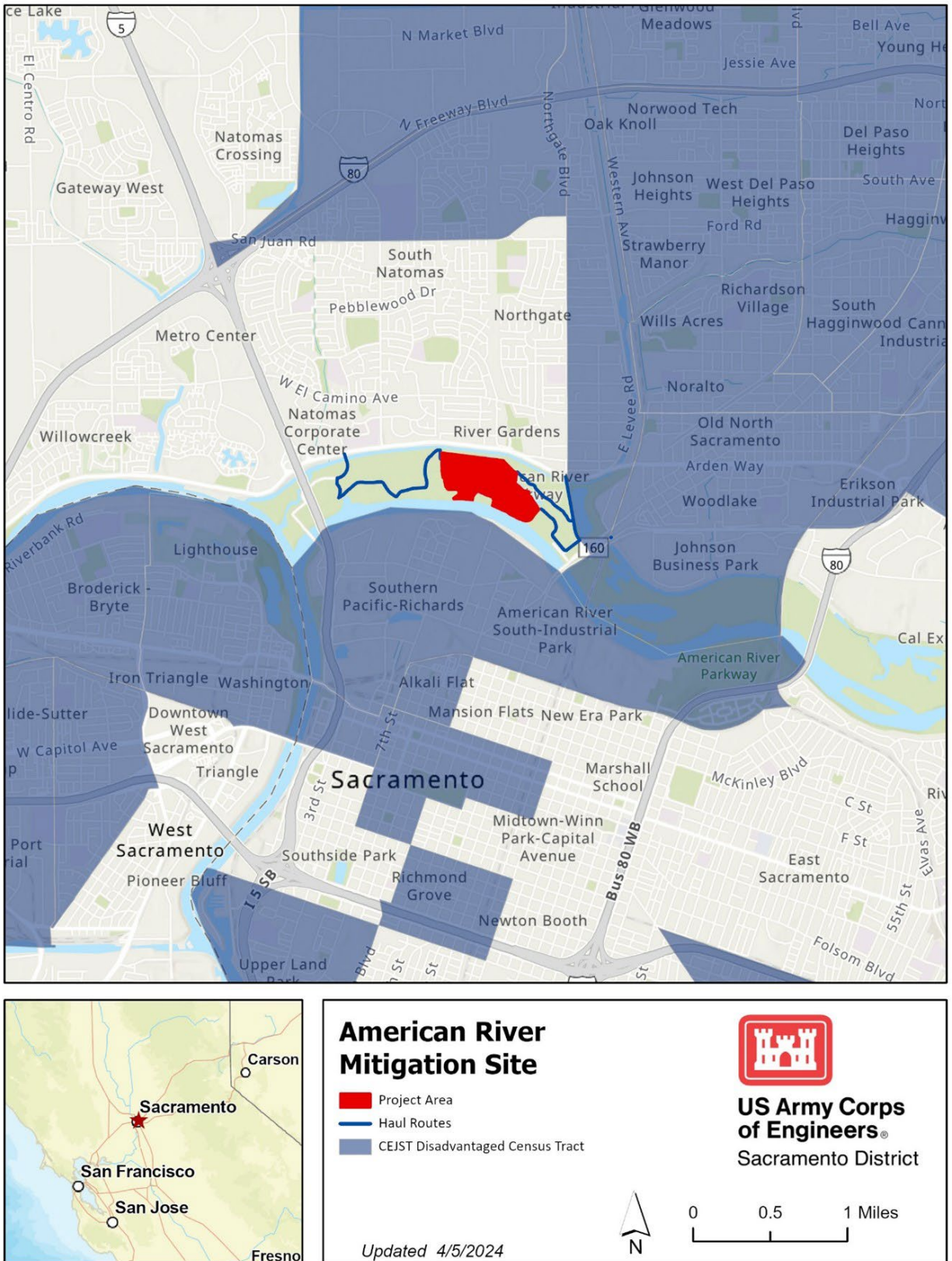


Figure 2.6-5. Census Tracts of At-Risk Communities near American River Mitigation Site

Sacramento River Mitigation Site

The Sacramento River Mitigation Site (SRMS) is entirely outside Sacramento City limits. SRMS is located with unincorporated Sacramento County in the Walnut Grove CDP, near the City of Isleton and City of Rio Vista. The Walnut Grove CPA is considered low-income with risk of resident displacement.

The SRMS is located north of Grand Island Road at the tip of the island along the Sacramento River near Cache Slough. The surrounding area is primarily agricultural. CEQ's Federal mapping tool shows that the area is considered a community with at-risk status, meeting more than 1 burden threshold and the associated socioeconomic threshold (Figure 2.6-6). Although the mapping tool shows several burdens, the census tract used for analysis encompasses a much larger area and is not representative of the project site. The project site contains a decommissioned landfill, a Federal levee, and a dredge material disposal site. No residences or public areas are present within a 0.25-mile radius on the landside.

Piezometer Network

To better evaluate the performance of flood control projects and provide real time data to system managers for the ARCF 2016 Project, USACE is proposing to install Piezometers along the existing levees within the authorized footprint of the 2016 GRR FEIS/EIR. The purpose of this action is to construct the Piezometer Network that would provide telemetric data gathering on water levels throughout the Proposed Action Area. The Piezometer Network will be located with City limits and unincorporated Sacramento County, generally along the construction footprints of the project components and their associated socioeconomic conditions.

The installation of Piezometers would not require haul routes or staging areas outside of existing Proposed Action Area. Given the nature of the Piezometer Network installation, impacts on at-risk communities from the Piezometers are considered as part of the project components listed above (e.g. American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, MCP, Sacramento River Erosion Contract 3, ARMS, and SRMS).

Alternative 5a (Purchase Credits)

Alternative 5a would consist of purchasing credits from Service approved conservation banks. The locations would already have been identified, with their own separate NEPA and CEQA compliance completed. The sole purpose of the property would be to provide habitat for special status species and therefore would not affect or worsen the condition of any at-risk, including low-income or minority communities.

Alternative 5b (Watermark Farms)

Watermark Farms is located within the Unincorporated Yolo County adjacent to the Sacramento River, just south of the City of West Sacramento boundary and north of the community area of Clarksburg. Yolo County is primarily rural, with most of the County land designated as rural and open space, as described in the Land Use and Housing section of the Yolo County 2030 Countywide General Plan Environmental Impact Report (Yolo County, 2009).

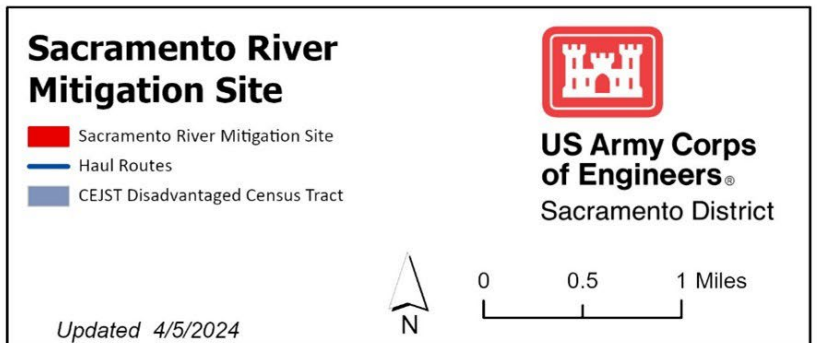
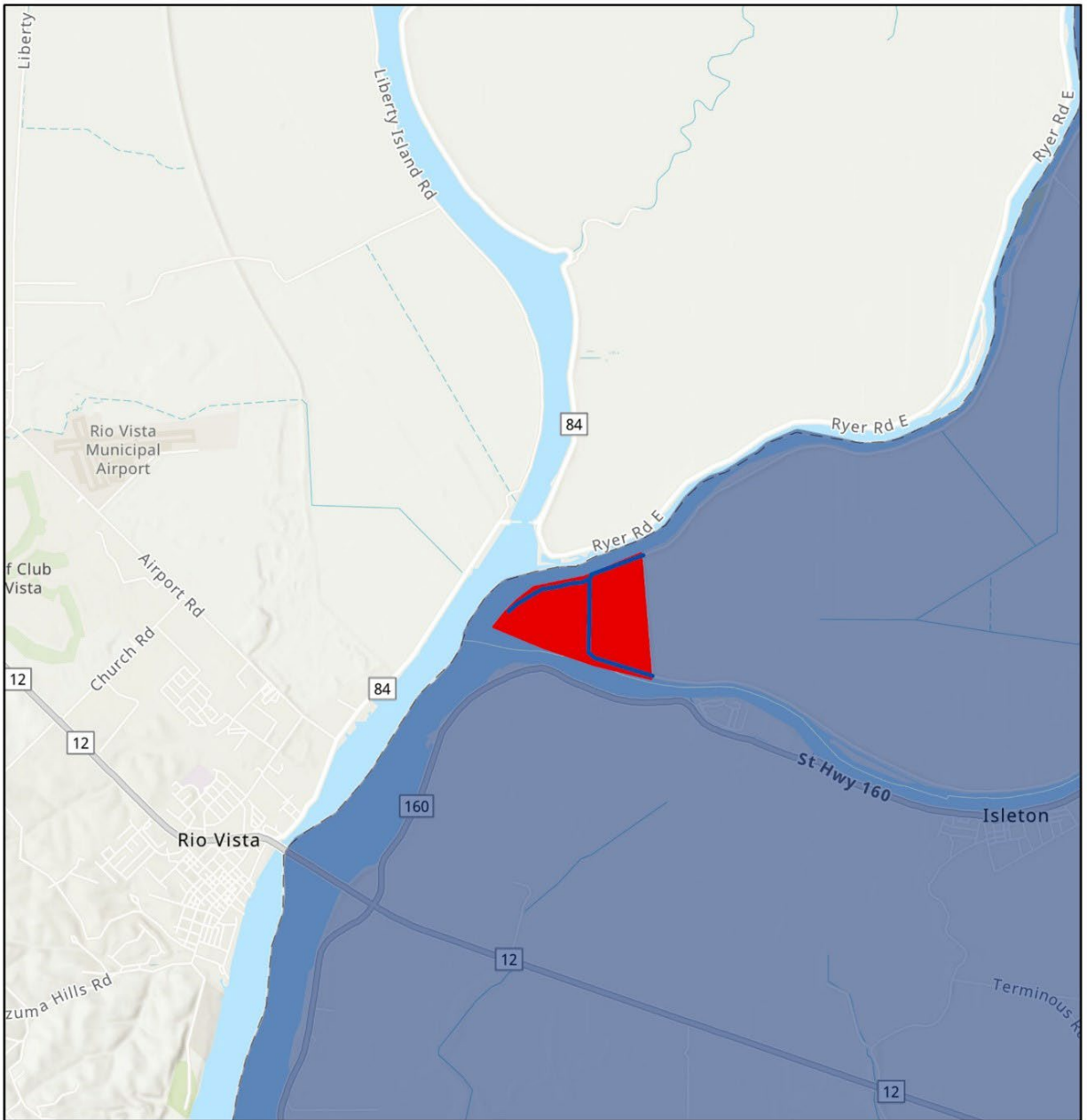


Figure 2.6-6. Census Tracts with At-Risk Communities near Sacramento River Mitigation Site

The socioeconomic conditions for the nearest location with census data is West Sacramento: population of 56,000, median annual income is \$87,000, and percentage of people of color (non-white) is 45.1% (U.S. Census Bureau, 2023).

Alternative 5b would consist of converting existing open agricultural fields and some wetland areas into species habitat. The site itself is not within an at-risk neighborhood of Yolo County, however the access and haul routes may go through these neighborhoods. The construction of this site in its current condition does not provide, food, shelter, or income to the surrounding areas.

Alternative 5c (Sunset Pumps)

The Sunset Weir is located on the Feather River within Sutter County, just 2 miles southeast of Live Oak CDP. The most recent, 2011, Land Use Element of the General Plan for Sutter County characterizes the county as having “extensive agricultural areas, significant natural and recreational resources, and relatively low population and employment”. The socioeconomic conditions of Live Oak CDP include a population of 17,000 from the 2020 Census, a median annual income of \$99,500, and percentage of people of color (non-white) is 31.2% (U.S. Census Bureau, 2023).

Alternative 5c is located below the ordinary high-water mark of the Feather River in Sutter and Yuba Counties. The weir is currently used to back up the flow of the river so that the water can enter into the pumping station and be used for irrigation of nearby farmland. The completion of the project would return the river to a free flowing, natural state which benefits fish species. It would also facilitate upgrades to the pump station and relocate the water intake. The site is not located within an at-risk community; however, the neighboring city of Live Oak is considered an at-risk community based upon the burdens identified in CEQ’s Federal mapping tool. The upgrade and relocation of the water intake and pump facility would not affect or worsen the existing condition of the surrounding neighborhood.

Sacramento County

According to the Sacramento County General Plan of 2005 to 2030 (Sacramento County General Plan), 2021-2029 Housing Element (Sacramento County, 2022), the population of Sacramento County in 2019 was 1,546,174 people. The 2020 Decennial Census reported the population at 1,585,055 (U.S. Census Bureau, 2020). The general population trend in the county is growth at a rate of 4.6% from 2010-2015, and 4.2% from 2015-2019.

Sacramento County encompasses the cities of Citrus Heights, Elk Grove, Folsom, Galt, Isleton, Rancho Cordova, and Sacramento, and the County provides municipal services to suburban portions of unincorporated Sacramento County. The cities of Rancho Cordova and Elk Grove experienced the highest percentage of growth between 2010-2019, and the City of Sacramento and unincorporated County population were the highest numerically. Most of the County is Non-Hispanic White (53 percent); however, there are significant populations of Hispanic (21 percent), Asian (11 percent) and Black (8) residents. The Cities of Sacramento and Elk Grove have the greatest racial and ethnical diversity, while Folsom and Citrus Heights have the highest proportions of Non-Hispanic White residents. The median age of the entire County is 36. The

age group with the most expected growth through 2029 is the 65 and over age group, which is anticipated to increase 29 percent from 2021-2029 (Sacramento County, 2022).

In 2021, the employment rate in Sacramento County was 58.2 percent with a median household income of \$80,063. The unemployment rate was 7.6 percent. In the same year, the State of California had a population of about 39.5 million people with an employment rate of 57.6%. The unemployment rate for the State as a whole was 8.3 percent. The median household income in California in 2021 was \$84,907 (U.S. Census Bureau, 2021).

The County does have income disparity with lowest income groups generally concentrated in and around the City of Sacramento (Figure 2.6-7). These areas include the Arden Arcade, South Sacramento, Rio Linda and North Highlands communities in unincorporated Sacramento County. Higher income groups mostly live outside incorporated cities in the more rural parts of the county. Areas along the American River, like Carmichael, Fair Oaks, Orangevale, the East Sacramento neighborhood of the City of Sacramento, the planned community of Rancho Murieta to the south, and Natomas in the northern portion of the City of Sacramento are also higher income regions.

The purpose of the Sacramento County Housing Element is to guide the development of the unincorporated areas of the County and to analyze existing and project housing needs for all income groups. Under the Sacramento County General Plan, the 2021-2029 Housing Element plans for 21,200 new housing units to meet the estimated need for housing in the County. Of this estimated need, approximately 2,200 units are needed for extremely low-income households, 2,200 for very low-income, 2,700 for low-income, and 4,200 for moderate-income households. The remaining need (10,000 units) would be above-moderate-income households (Sacramento County, 2022). All income groups are affected by the housing shortage in Sacramento County.

Rising costs of housing particularly affects renters in the Greater Sacramento region. Gentrification, or the influx of capital and higher-income residents into working class neighborhoods, is a negative outcome of rising housing costs. Gentrification can cause displacement of lower-income people. African American, Hispanic, and Native American people, large families, households with children, and families with a disabled member all experienced higher displacement rates when polled for the Analysis of Impediments to Fair Housing Choice in 2020; 28 percent of unincorporated Sacramento County reported they had been displaced from a housing situation in the Sacramento Valley in the last 5 years. Approximately 14 percent of renter households (or 33,000 households) were impacted by a COVID-related job loss in Sacramento County. Additionally, 70 percent of the impacted renter households contain at least one person of color (Sacramento County, 2022).

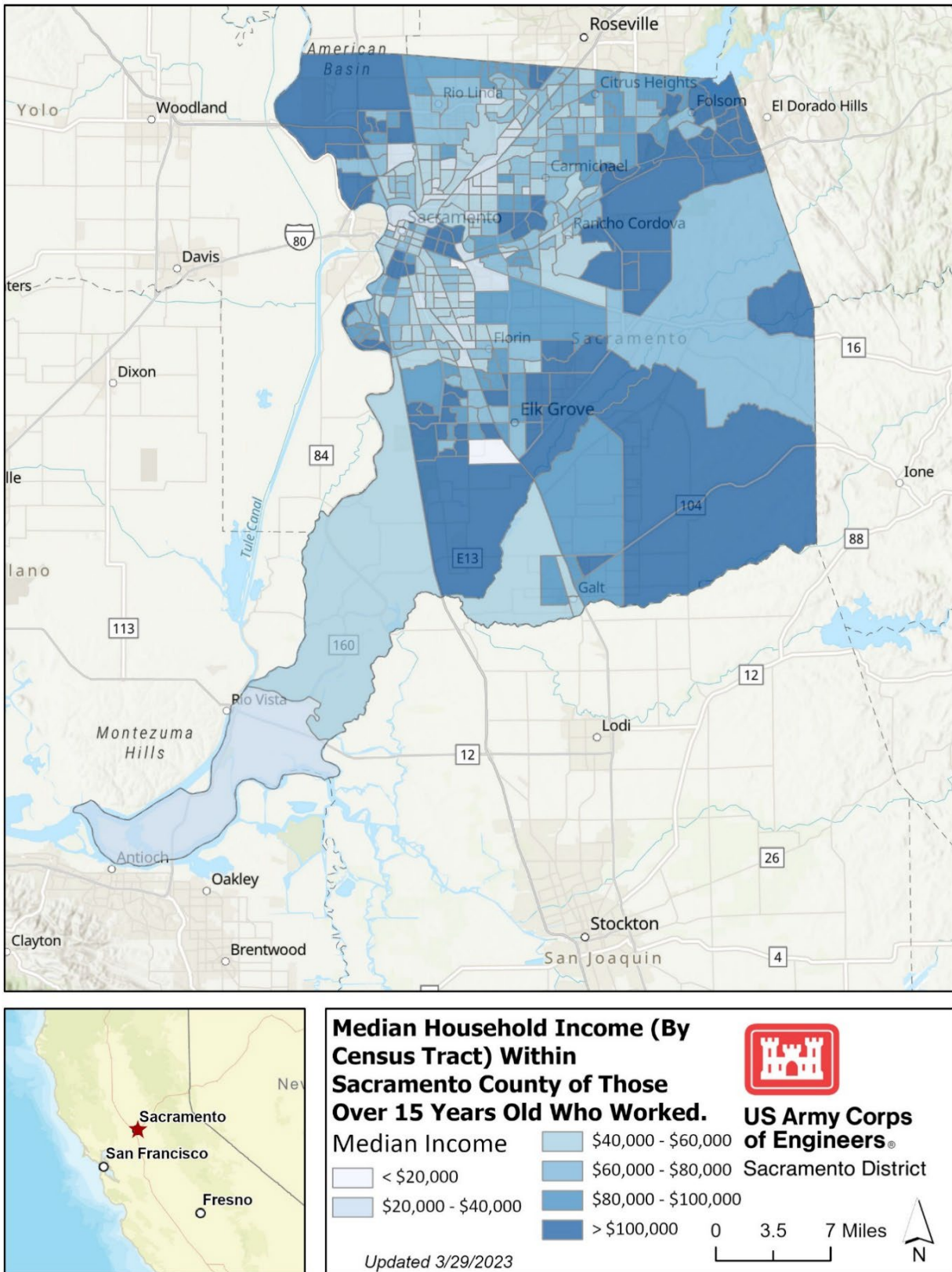


Figure 2.6-7. Median Household Income (United States Census Bureau, 2020)

There are several groups that may be discriminated against while seeking housing. These groups have been identified by the County as seniors, large households, female-headed households, people with disabilities, farmworkers, immigrants, refugees, and people experiencing homelessness (Sacramento County, 2022). These vulnerable groups are also susceptible to displacement. Susceptible census tracts are located along the Interstate-80 corridor, around the North Highlands areas, and south of the City of Sacramento (South Sacramento, Arden Arcade, Carmichael, and the Delta communities) (Figure 2.6-8) These areas generally have high concentrations of poverty and reduced access to opportunity. Poverty prevalence is shown in Figure 2.6-9.

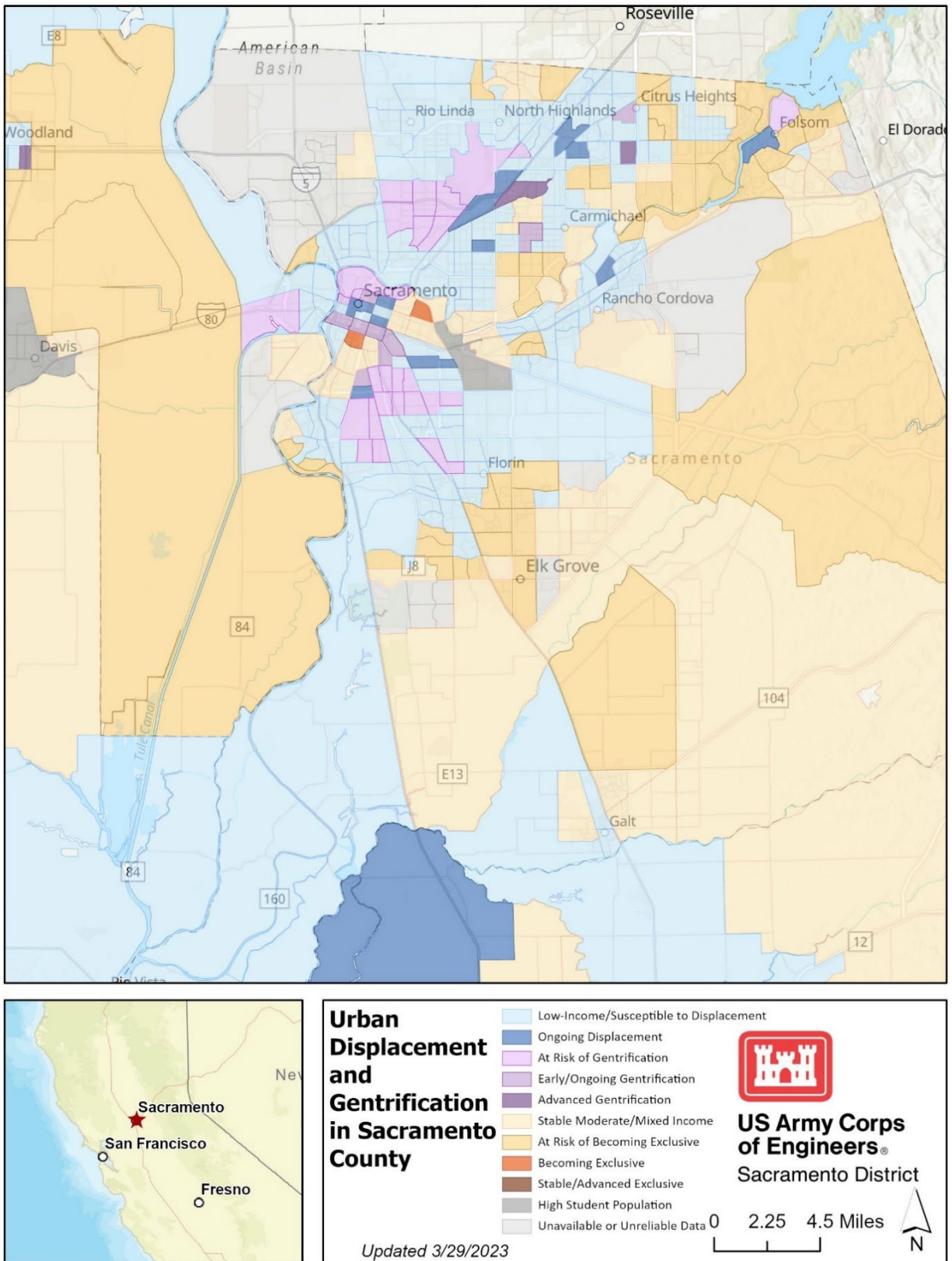
Access to opportunity includes educational opportunities, proximity to jobs, environmental health, and access to transportation. Affordable housing has been difficult to approve and disproportionately sited in minority neighborhoods with high poverty rates in the County. The lack of affordable housing in in-come diverse communities reinforces poverty levels and racial segregation, concentrating these conditions in low opportunity and resources areas. Areas in the northern unincorporated county are considered low or moderate resources areas for economic, educational, and environmental opportunities; this includes Rio Linda/Elverta, Antelope, and North Highlands communities. Areas in the southern and eastern portions of the unincorporated county have high resources and opportunities such as Elk Grove and Folsom (Sacramento County, 2022).

Every 2 years in January, Sacramento County and the incorporated cities partner with Sacramento Steps Forward (SSF) to conduct a “Point-in-Time Homeless Count,” which attempts to document every person experiencing homelessness during a 24-hour period. The 2019 Homeless Count report estimated that 5,570 individuals were homeless either staying at emergency/transitional shelters as well as those sleeping outside. The 2022 Homeless Count found that homelessness had increased 67 percent to a total of 9,278 individuals experiencing homelessness in the County. Seventy-two percent of those were unsheltered, sleeping in tents or vehicles. Fifteen percent of homeless were families with children. Black residents were 3-4 times more likely to experience homelessness and 58 percent of unsheltered adults reported at least one disability (California State University, Sacramento, 2022).

City of Sacramento

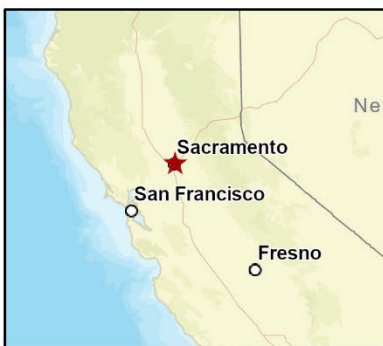
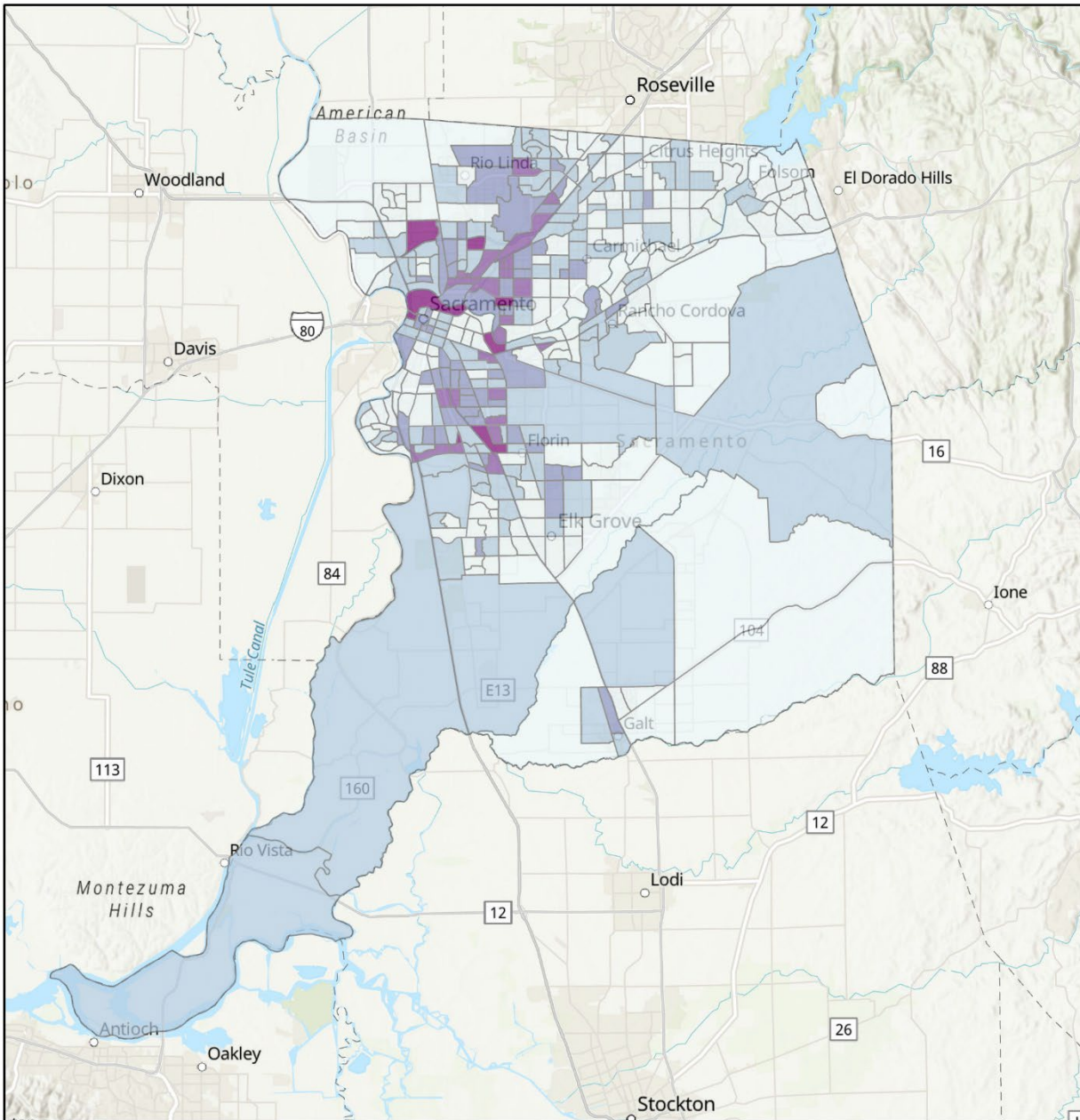
The Sacramento County General Plan Housing Element reported the City of Sacramento population in 2019 at 508,172 people, with a 3.6 percent growth from 2010-2015 and a 5.1 percent growth from 2015-2019 (Sacramento County, 2022). The 2020 Decennial Census reported the population at 524,943 (U.S. Census Bureau, 2020). According to the City of Sacramento 2035 General Plan (City of Sacramento General Plan), the population is expected to reach 640,381 people by the year 2035 (City of Sacramento, 2015).

The City of Sacramento is divided into the following Community Plan Areas (CPAs): Arden Arcade, Central City, East Sacramento, Fruitridge/Broadway, Land Park, North Natomas, North Sacramento, Pocket, South Area, and South Natomas. Arden Arcade is not within City limits and is considered a Study Area (City of Sacramento, 2021).

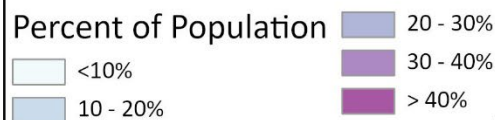


Source: (Urban Displacement Project, 2018)

Figure 2.6-8. Communities Sensitive to Displacement



Percent of Population (By Census Tract) Whose Income in the Last 12 Months Were at or Below the Poverty Level



Updated 3/29/2023



US Army Corps of Engineers®
Sacramento District

0 3.5 7 Miles



Source: (U.S. Census Bureau, 2021)

Figure 2.6-9. Percent of Population Below the Poverty Level

The City of Sacramento is racially and ethnically diverse. In 2018, people of color made up 67.5 percent of the total population, compared to 55 percent in Sacramento County. Areas within City limits with above average concentrations of people of color include Fruitridge/Broadway, North Sacramento, and North and South Natomas. Areas with lowest concentrations of people of color generally include East Sacramento, the Central City, Land Park, and the Pocket.

In 2017, there were 302,111 jobs in the City of Sacramento. The largest industry sector in which both City and County residents are employed is ‘educational services and health care and social assistance’ (22.7 percent and 22.2 percent respectively). The second largest industry sector is ‘professional, scientific, and management, and administrative and waste management services’ with the third largest sector being ‘arts, entertainment, and recreation, and accommodation and food services’ (City of Sacramento, 2021). The employment rate in the City is 58 percent with a median household income of \$75,311. The unemployment rate is 7.5 percent (U.S. Census Bureau, 2021).

There are three major colleges located within the City boundaries: California State University Sacramento (CSUS), Sacramento City College, and Consumes River College; the latter are two-year colleges. Enrollment at these three colleges was 67,500 students in the fall of 2019, which was roughly 14 percent of the City’s population. Enrollment declined about 7 percent nationwide during the COVID-19 pandemic. Enrollment for Fall 2022 at CSUS was approximately 31,000 students (Cynthia Hubert, 2022); 19,000 students were enrolled at Sacramento City College (Sacramento City College, 2023); and 12,000 at Consumes River College (Consumes River College, 2022). The University of California, Davis Medical Center is also located in the City of Sacramento with approximately 500 students.

Most components of the Proposed Action are located within the City of Sacramento jurisdiction. Table 2.6-1 depicts relevant socioeconomic conditions and indicators at projects within the City of Sacramento General Plan limits. Some of these projects extend into the Unincorporated County area, like American River Erosion Contract 3B North and South, and American River Erosion Contract 4B, and the Magpie Creek Project. The Sacramento River Mitigation Site (SRMS) is solely located in the Unincorporated County area. Table 2.6-2 depicts relevant socioeconomic conditions and indicators at projects in Unincorporated County areas.

Table -2.6-2. Socioeconomic Conditions of Proposed Action Components within the City of Sacramento Community Planning Area

| Project Area Jurisdiction | Population | Median Income ¹ | People of Color ² | Displacement And Gentrification Potential Within Project Area |
|--|------------|----------------------------|------------------------------|---|
| American River Erosion, Contract 3B North and Contract 4B | | | | |
| Arden Arcade Study CPA | 101,071 | \$53,949 | 43.1% | Stable Moderate/Mixed Income; At Risk of Becoming Exclusive |
| American River Erosion, Contract 3B South and Contract 4B | | | | |
| East Sacramento CPA | 32,659 | \$74,408 | 33.4% | Low-Income/Susceptible to Displacement |

¹ The median household income of the Sacramento Planning Area is \$54,914.

² Of the entire population of the Sacramento Planning Area, 67.4% are people of color.

| Project Area Jurisdiction | Population | Median Income ¹ | People of Color ² | Displacement And Gentrification Potential Within Project Area |
|--|------------|----------------------------|------------------------------|---|
| American River Erosion Contract 4A | | | | |
| South Natomas CPA | 46,012 | \$54,673 | 73.1% | Low-Income/Susceptible to Displacement |
| North Sacramento CPA | 60,574 | \$39,892 | 75.0% | Low-Income/Susceptible to Displacement |
| American River Mitigation Site (ARMS) | | | | |
| South Natomas CPA | 46,012 | \$54,673 | 73.1% | Low-Income/Susceptible to Displacement |
| Magpie Creek Project | | | | |
| North Sacramento CPA | 60,574 | \$39,892 | 75.0% | Low-Income/Susceptible to Displacement |
| Sacramento River Erosion Contract 3 | | | | |
| Pocket CPA | 45,706 | \$74,133 | 66.8% | Low-Income/Susceptible to Displacement; Stable Moderate/Mixed Income; At Risk of Becoming Exclusive |

Source: (City of Sacramento, 2021), (Thomas, et al., 2020)

Table 2.6-3. Socioeconomic Conditions of Proposed Action Components within Unincorporated Sacramento County

| Project Area Jurisdiction | Population | Median Income | People of Color ³ | Poverty ⁴ | Displacement And Gentrification Potential Within Project Area |
|--|------------|---------------|------------------------------|----------------------|---|
| American River Erosion, Contract 3B South and Contract 4B | | | | | |
| La Riviera CDP | 11, 252 | \$77,493 | 44.7 % ⁵ | 10.8% | Low-Income/Susceptible to Displacement |
| Magpie Creek Project | | | | | |
| Rio Linda CDP | 15,944 | \$80,364 | 36.8 % ⁶ | 15.5% | Low-Income/Susceptible to Displacement |
| Sacramento River Mitigation Site (SRMS)⁷ | | | | | |
| Walnut Grove CDP | 1,452 | \$56,833 | 54.0% ⁸ | 12.7% | Low-Income/Susceptible to Displacement |
| City of Isleton | 794 | \$42,083 | 52.8% ⁹ | 20.2% | Low-Income/Susceptible to Displacement |
| City of Rio Vista | 10,005 | \$76,423 | 32.4% ¹⁰ | 10.8% | Low-Income/Susceptible to Displacement |

Source: (U.S. Census Bureau, 2021) (Thomas, et al., 2020)

³ Calculated by subtracting the population of “White” category from the total population.

⁴ Poverty at the State level is reported at 12.3%

⁵ La Riviera CDP: 6,225 people reported “White alone”

⁶ Rio Linda CDP: 10,085 people reported “White alone”

⁷ Grand Island does not qualify to be a CDP for lack of housing and population. For comparative analysis, three neighboring jurisdictions were selected to demonstrate socioeconomic conditions of the general area (Delta).

⁸ Walnut Grove CDP: 670 people reported “White alone”

⁹ City of Isleton: 375 people reported “White alone”

¹⁰ City of Rio Vista: 6,766 people reported “White alone”

2.6.2 Applicable Laws, Regulations, Policies, and Plans

Federal

National Environmental Policy Act of 1969, as amended (42 U.S.C. § 4321, et seq.)

The National Environmental Policy Act (NEPA) requires Federal agencies to assess the environmental and related social and economic effects of their proposed actions prior to making decisions and documenting the full disclosure of the alternatives, potential mitigation, and environmental compliance procedures in a document, like an Environmental Assessment or Environmental Impact Statement. Public involvement is key to the environmental review process under NEPA; fair and meaningful involvement of all communities with the potential to be affected by a Proposed Action is required.

Water Resources Development Act (WRDA) of 2020

Section 160 of the WRDA of 2020 directed the Secretary of the Army to the maximum extent practicable, use the criteria in paragraphs (1) and (2) of section 301(a) of the Public Works and Economic Development Act of 1965 (42 U.S.C. 3161), which reference low per capita income and unemployment rate above the national average, in the development of the definition.

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (49 CFR 24)

The Uniform Relocation Act ensures the fair and equitable treatment of persons whose real property is acquired or who are displaced as a result of a Federal or Federally assisted project. The Act may provide relocation advisory services, moving costs reimbursement, replacement housing, and reimbursement for related expenses and rights of appeal.

Executive Order 11988 entitled *Floodplain Management*

The objective of Executive Order (EO) 11988 is the avoidance of long- and short-term adverse effects associated with the occupancy and modification of the base flood plain (1 percent annual event) and the avoidance of direct and indirect support of development in the flood plain wherever there is a practicable alternative. The Proposed Action is consistent with EO 11988 since there is no other practicable alternative to levee improvements.

Executive Office of the President, Office of Science and Technology Policy, Council on Environmental Quality, Guidance for Federal Departments and Agencies on Indigenous Knowledge, November 30, 2022

Indigenous knowledge includes observations, oral, and written knowledge, innovations, practices, and beliefs developed by Tribes and indigenous peoples through interaction with the environment. This guidance assists Federal agencies in understanding indigenous knowledge, building and nurturing relationships with Tribal Nations and Indigenous Peoples, and recognizing and applying indigenous knowledge in research, policy, and decision making. Under this guidance, agencies should consult and collaborate with Tribal Nations and Indigenous Peoples to recognize and apply indigenous knowledge in decision making.

Pursuant to this guidance and to the ARCF 2016 Project’s Programmatic Agreement under Section 106 of the National Historic Preservation Act, USACE would continue to consult on all ARCF design refinements and proposed project changes with interested Tribes (see Appendix B, Section 5.1).

State

California Environmental Quality Act

CEQA has been understood by the courts as not addressing socioeconomic impacts of a project, except to the extent that those socioeconomic impacts themselves have physical impacts on the environment. The Proposed Project and alternatives would not cause any such effects and therefore socioeconomic conditions are evaluated only under NEPA in this technical appendix.

State Government Code Sections 65580-65590 State Housing Element Law

California law (Government Code Section 65583) requires that every City and county adopt a Housing Element that contains the housing needs and inventory of resources and constraints, the community goals for achieving the needs, inventory of developable sites and an 8-year schedule of actions to implement the goals and objectives outlined in the Housing Element.

California Department of Housing and Community Development

California law requires each City and county to adopt a general plan to guide future growth which must include a housing element. The California Department of Housing and Community Development (HCD) administers population and housing policy laws at the state level and determines the relative share of existing and projected housing needs for each county. The Sacramento Area Council of Governments (SACOG) is responsible for developing a methodology for allocating housing units by income category to each City and county in the region, which is documented in the State’s Regional Housing Needs Allocation (RHNA).

Local

City of Sacramento 2035 General Plan

City of Sacramento 2021-2029 Housing Element

The City Housing Element (City of Sacramento 2021) contains eight goals to create equitable and inclusive neighborhoods and provide opportunities for a variety of housing at all levels of affordability.

- Goal 1: Increasing Overall Housing Production
- Goal 2: Increasing Affordable Housing and Workforce Housing Production
- Goal 3: Promote Accessory Dwelling Units
- Goal 4: Advancing Equity and Inclusion
- Goal 5: Protecting Residents from Displacement
- Goal 6: Preserving the Existing Housing Stock

- Goal 7: Housing for People Experiencing Homelessness
- Goal 8. Increasing Accessible Housing

Sacramento County General Plan of 2005 to 2030

2021-2029 Housing Element

The County Housing Action Plan (Sacramento County, 2022) has seven goals to achieve affordability, condition of, and access to housing for its general population and special needs groups. Those seven goals are:

- HE1: Adequate supply of land for housing
- HE2: Reduction of constraints to housing production
- HE3: Conservation and rehabilitation of existing housing and neighborhoods
- HE4: Improvement of housing opportunities for special needs groups
- HE5: Preservation of existing affordable housing stock and provision of affordable housing
- HE6: Promote the efficient use of energy in residences and improve the air quality of Sacramento County
- HE7: Promote and affirmatively further fair housing opportunities for County residents

Economic Development Element

The Economic Development Plan (County of Sacramento, 2019) aims to formulate a strategy to ensure a healthy local economy by focusing resources on business retention, attracting new industries, supporting the tax base, and sustaining public services for current and future residents. The strategic economic objectives are outlined as follows:

- Create a Balanced Land Use Policy Providing for Adequate Commercial, Office, Industrial, and Residential Land
- Identify New Growth Areas
- Promote and Support Commercial Corridor Redevelopment
- Attract Key Regional Sales Tax Generators
- Promote Agriculture and Agri-Tourism
- Continue Redevelopment of Mather Airfield and McClellan Park
- Support County Airport Systems
- Develop Regional and Local Partnerships and Programs
- Intensify Business Retention, Attraction, Development and Business Recruitment
- Develop International Trade

- Increase Sports, Tourism, and the Arts in the Region
- Attract Institutions of Higher Education

The Sacramento Area Council of Governments (SACOG) Regional Housing Needs Plan Cycle 6 (2021-2029)

The State's RHNA methodology is the formula by which SACOG determines the allocation of housing units by City and county. SACOG consists of the following counties: Sacramento, Yolo, Sutter, Yuba, Placer, and El Dorado. The allocation of housing (Sacramento Area Council of Governments, 2020) is determined by income category distributions:

- Very low income (less than 50 percent median family income [MFI])
- Low income (50 to 80 percent MFI)
- Moderate income (80 to 120 percent MFI)
- Above Moderate Income (above 120 percent MFI)

Table -2.6-3 RHNA Methodology Summary Table for Sacramento County

| Jurisdiction | Very Low (VL) ¹ | Low (L) ¹ | VL + L ¹ | % Total RHNA (VL+L) ¹ | Moderate ² | Above Moderate ² | Total RHNA |
|-------------------------------|----------------------------|----------------------|---------------------|----------------------------------|-----------------------|-----------------------------|------------|
| Citrus Heights | 132 | 79 | 211 | 30.3% | 144 | 342 | 697 |
| Elk Grove | 2,661 | 1,604 | 4,265 | 51.6% | 1,186 | 2,812 | 8,263 |
| Folsom | 2,226 | 1,341 | 3,567 | 56.1% | 829 | 1,967 | 6,363 |
| Galt | 404 | 243 | 647 | 33.6% | 379 | 900 | 1,926 |
| Isleton | 5 | 3 | 8 | 28.6% | 6 | 14 | 28 |
| Rancho Cordova | 2,115 | 1,274 | 3,389 | 37.4% | 1,684 | 3,994 | 9,067 |
| Sacramento | 10,463 | 6,306 | 16,769 | 36.8% | 8,545 | 20,266 | 45,580 |
| Sacramento Co. Unincorporated | 4,466 | 2,692 | 7,158 | 33.6% | 4,186 | 9,928 | 21,272 |

1. Lower Income Units

2. Higher Income Units

Objectives (§65584.D) are outlined as follows:

1. Increase Housing Supply and Mix of Housing Types
2. Promote Infill, Equity and Environment
3. Ensure Jobs Housing Balance and Fit
4. Promote Regional Income Parity
5. Affirmatively Further Fair Housing

Factors (§65584.04E) focus on improving specific local issues such as preserving prime agricultural land, improving transit and transportation, reducing high housing cost burdens and the rate of overcrowding, increasing housing for farmworkers and students, preparedness for emergencies, and State Bill (SB) 375 Greenhouse Gas Reduction Targets.

2.6.3 Analysis of Environmental Effects

Analysis Methodology

NEPA requires that social and economic effects be considered if they are related to effects on the natural, physical, or human environment. Socioeconomic conditions involve population, housing, employment, and local economy; the evaluation must also consider minority and low-income populations. Based upon the location, magnitude, and duration of activities related to temporary construction and long-term consequences of the Proposed Action, the key effects were identified and evaluated, and mitigation was proposed if significant impacts occurred. CEQA-related analyses in this section are focused exclusively on potential impacts related to population and housing, as required under CEQA.

Additional thresholds for determining the significance of impacts for this analysis are based on EPA's 2016 guidance on NEPA methodologies (Document can be provided upon request). Although no quantitative thresholds are provided, EPA suggests guidelines for two methods of analysis: "Balancing Approach" and "Impact Focus Approach." USACE has elected to follow the guidelines for an "Impact Focus Approach." This analysis is guided exclusively by Federal direction. Under CEQA, there are no requirements or procedures to evaluate potential low-income or minority impacts. Therefore, no impact analyses or conclusions are made under CEQA.

Impact Focus Approach

- a. Beneficial impacts are considered in the analysis of the distribution of adverse and beneficial impacts between the general population and minority populations and low-income populations in the affected environment.
- b. Consider (as appropriate) relevant mitigation measures (including avoidance and minimization) developed prior to the commencement of the disproportionately high and adverse impact assessment that reduce adverse impacts to minority populations and low-income populations.
- c. If an adverse impact to minority populations and low-income populations remains after accounting for the mitigation measures developed prior to the commencement of the disproportionately high and adverse impact assessment, an agency should continue to consider whether the remaining adverse impact(s) is/are disproportionately high and adverse.

Basis of Significance

The thresholds for determining the significance of impacts to population and housing for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. These thresholds, and the impact analysis that follows, also take into consideration the significance of an action while providing distinction between direct and indirect effects as required under NEPA (40 CFR 1508.1(g)). For population and housing thresholds (a and b) and for at-risk thresholds (c, d, e, and f) the alternatives under consideration were determined to result in a significant impact related to socioeconomic conditions if they would do any of the following:

- a. induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- b. displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere.
- c. Result in a substantial adverse impact to unhoused populations residing in the project area, through displacements or other means.
- d. Interfere substantially with access to schools or other public institutions providing services to low-income or minority communities.
- e. Result in substantial adverse impacts to Tribal communities. Or,
- f. Result in substantial impact to low-income or minority communities, particularly impacts related to the burdens identified within CEQ's Federal mapping tool.

Analysis conducted for at-risk populations included using CEQ's Federal mapping tool as a first step in identifying potential impacts. Additional analysis identifying real-world conditions was conducted through demographic analysis, routine site visits, and public outreach. Criteria were developed to assess the significance of the Proposed Action's impacts. The thresholds, and the impact analysis that follows, take into consideration the significance of an action in terms of: the setting of the Proposed Action; short- and long-term effects of the Proposed Action; both beneficial and adverse effects; direct and indirect effects of the Proposed Action on public health and safety; and effects that would violate Federal, State, Tribal, or local law protecting the environment, as required under NEPA (40 CFR 1508.1(g)). The CEQ has rescinded the NEPA regulations at 40 C.F.R. Parts 1500 – 1508. However, the preparation of this NEPA began and the draft EA/EIR was circulated for public review prior to the regulations being rescinded. As such, this EA/EIS has followed the 2024 NEPA regulations that were previously in effect.

Effects Not Discussed in Detail

All Project Components, except the Piezometer Network, would impact socioeconomic conditions based on the thresholds listed in Section 2.6.3.2 due to the scale of project activities including construction duration, locations with sensitive receptors, and design refinements such as haul routes and staging areas.

Sacramento River Mitigation Site

The effects of **2.6-b Displace People or Housing**, on the Sacramento River Mitigation Site SRMS need not be discussed in further detail. SRMS, a former dredge material placement site located in the Delta, consists primarily of non-native herbaceous cover with stands of riparian trees and shrubs with some seasonal wetlands, completely devoid of existing housing, permanent residents or temporary populations, such as visitors, recreationists, or tourists. There are no unhoused populations or encampments within the proposed construction limits. Therefore, construction of the Proposed Action at SRMS would have no impact on people or housing.

CEQ's Federal mapping tool shows that the SRMS project meets more than 1 burden threshold and the associated socioeconomic threshold. However, the census tract used for analysis encompasses a much greater spatial expanse and is not representative of the project site. The Proposed Action would not impact the existing burdens within the census tract and may ameliorate risks stemming from wastewater discharge and projected flood risk. Given that the SRMS component would not result in significant social impacts or benefits, the project component is not addressed further in the SEIS/SEIR for at-risk impact analysis.

Piezometer Network

A network of approximately 100 piezometers would be installed within the levee footprint of the Proposed Action following construction of levee improvements. Piezometers are geotechnical sensors that would provide levee performance data to evaluate the performance of the Proposed Action. Installation consists of drilling a monitoring well and placing the piezometer sensor near the aquifer, with above-ground, permanent telemetry technology, a solar panel, and security features. The piezometer network would have no effect on socioeconomic resources or low-income or minority populations, such as housing, surrounding population, or the local economy, and therefore, is not considered in detail.

Result in substantial adverse impacts to Tribal communities (2.6-e)—Members of tribal communities would not be disproportionately affected by the Proposed Action. There are no tribals lands (e.g., reservations or rancherias) within the Proposed Action sites. For more detail on how the proposed project may affect tribal resources (excluding communities and individuals), see Appendix B Section 5.1.

Effects Analysis

No Action Alternative

For the NEPA discussion in this Comprehensive SEIS/SEIR, the No Action Alternative is the “Recommended Plan” or Proposed Action (Authorized Project) from the ARCF GRR Final EIS/EIR. The No Action Alternative includes all the components of the authorized ARCF GRR Final EIS/EIR Proposed Action that have been constructed as well as the remaining authorized components of the Proposed Action that have not yet been constructed. Project components constructed since 2016 are described in supplemental documents listed in Section 3.5 of this Comprehensive SEIS/SEIR.

The ARCF GRR Final EIS/EIR Section 3.18 analyzed impacts to socioeconomic resources. The conclusion under the ARCF GRR Final EIS/EIR Section 3.18.5 “Recommended Plan” (Authorized Project), was that construction of the project activities would result in less than significant effects and no mitigation was proposed.

The No Action Alternative would result in temporary disruption to the community during construction. These disruptions to traffic, noise, recreation, and leisure activities were considered spatially limited and short-term impacts. Haul routes on existing roads would result in additional congestion and routes on levees adjacent to residences would result in truck engine noise and dust.

The majority of project activities would occur immediately adjacent to established communities within the City of Sacramento and, therefore, would require acquiring some private properties. These properties could contain residences and this potential displacement of people was considered a community disruption. All real estate transactions would comply with the Federal Relocation Act.

In terms of long-term consequences of the project activities, no additional housing or business development would be expected. Similarly, because the project construction would occur in urbanized areas, no population changes were expected. The project activities would reduce the risk of flooding to the existing communities and lands behind the existing levee system, so development in the flood plain would not be induced. The project would not result in resident or business displacement or divide an established community.

Several small, unhoused communities that reside along the American and Sacramento Rivers would be temporarily impacted by construction of the remaining portions of the No Action Alternative. These vulnerable communities are already at risk of being displaced from natural disasters such as flooding, earthquakes or wildfire, as well as under local ordinances that prevent critical infrastructural damage to levees by preventing camping on or within 25 feet of the levee (Sacramento City Code Chapter 8.140). While these communities would be temporarily displaced for their own safety during construction, displacement is an outcome of the ongoing regulatory requirement to ensure levee safety that would occur with and without the Project.

Under the No Action NEPA alternative known at-risk communities in the would remain at risk of damage from flooding and subsequent cleanup and restoration activities. Vulnerable communities along the river would be more susceptible to long-term impacts, especially those in low-income households and the unhoused population.

Proposed Action Alternative

2.6-a Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

CEQA Significance: Less than Significant.

NEPA Significance: Long-term and Moderate effects that are Less than Significant and Short-term and potentially beneficial effects that are Less than Significant.

Sacramento River Mitigation Site, American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): No Impact

NEPA Effects Determination (Design Refinements): No Impact

Both SRMS and the American River Mitigation Site (ARMS), are proposed Design Refinements, which means these areas were not analyzed for socioeconomic impacts in the ARCF GRR Final EIS/EIR. Due to their location and nature of the Proposed Action, there would be no substantial effects to population, housing, or the local economy. Additionally, none of the project

refinements would include construction of new houses or businesses that would induce population growth, nor would they require construction worker housing. The SRMS site is located within the Delta at the confluence of the Sacramento River, Cache Slough, and Steamboat Slough. Used as a former dredge material placement site, SRMS consists of riparian forest, riparian scrub-shrub, oak woodland, ruderal herbaceous/grassland, and wetlands. The ARMS site is located at RM 2 of the American River within the Parkway just west of Discovery Park. ARMS consists of a manmade pond with surrounding low-quality ruderal vegetation.

The SRMS does not contain existing housing or permanent residents or temporary populations, such as visitors, recreationists, or tourists. SRMS is not actively utilized. Therefore, the change in land use would not negatively impact the local economy. Construction workers would be needed for 2 years to develop the site. A short-term increase in job availability would benefit the population and economy. An influx of workers in the area would place higher demand of goods and services. Since the SRMS is rural and remote, construction workers may be temporarily housed at Rio Vista. Both Rio Vista and Isleton would provide essentials from grocery stores, restaurants, hardware shops, and gas stations.

The ARMS does have an inhabited residence and active business adjacent to the parcel being acquired for the mitigation site. The single business would be relocated to a location determined by the owner and in cooperation with the non-Federal partners. There may be short-term (2 year) and minor beneficial impacts to the economy and population during the construction season. A short-term increase in job availability would benefit the population and economy. An influx of workers in the area would place higher demand of goods and services. Because construction is short-term, no new housing would be required resulting from ARMS.

Since the mitigation sites do not provide any flood risk reduction and the land use in perpetuity would not include urban development, there would be no population growth within the project footprint resulting from the Proposed Action at SRMS and ARMS. Additionally, the construction work is short-term in its ability to stimulate local economy and therefore, would not induce long-term population growth. While maintenance roads to the mitigation sites would be constructed, they would not be publicly accessible, nor would they allow access to previously undeveloped sites. Therefore, the Proposed Action at ARMS and SRMS would not directly or indirectly induce substantial population growth.

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Effect Determination (Design Refinement): Long-term and Moderate effects that are Less than Significant

The NEPA No Action Alternative for Magpie Creek contained a culvert installation, which would have no impact on socioeconomic conditions. All other components (channel clearing and realignment, levee raise, new levee and crossing structure) of the Project are considered Design Refinements; therefore, the analysis for both CEQA and NEPA are combined.

The project site for Magpie Creek Project is in north Sacramento, generally between Raley Boulevard and Dry Creek Road, due west of the former McClellan Air Force Base now Sacramento McClellan Airport. The Magpie Creek Diversionary Canal (MCDC) transports water from McClellan Business Park's water treatment plant to Robla Creek to the southwest. Surrounding land use includes primarily industrial/employment center with scattered, low-density residential areas with vacant lots.

Magpie Creek Project is designed to prevent overtopping or failure of the existing levee. The Design Refinements would prevent hundreds of homes from flooding in the greater Robla and North Sacramento/McClellan region. Additionally, dozens of large industrial and small service businesses would no longer be at risk of flooding. The Proposed Action would have disproportionately higher beneficial impacts to a historically lower income region of Sacramento County. As shown in Figures 2.6-1 and 2.6-2, incomes in this area of Sacramento are historically lower than the County median with larger proportions of vulnerable populations in poverty and at risk of displacement. The Magpie Creek Project would reduce long-term consequences associated with irreparable damages to homes, jobs, and the local economy.

The lands south of the MCDC would be less susceptible to flooding and vacant areas may have increased potential for urban development. These lands are currently zoned as ECLR – Employment Center Low Rise and SNLD/SNMD – Suburban Neighborhood Low/Medium Density. The Proposed Action would not induce significant development by removing lands from the floodplain, beyond what is currently expected in the City of Sacramento General Plan. Therefore, any induced growth resulting from the Proposed Action is consistent with local economic development goals, and solely as a levee improvement project does not substantially induce population growth. Removing lands from the existing floodplain is an indirect effect of the Magpie Creek Project resulting in long-term moderate impacts to the region by spurring economic development and population growth.

Raley Boulevard would be closed for three months to allow for construction of the closure structure and detours would be required for local traffic. Business entrances may be temporarily re-routed although no businesses would need to close to the public during construction of the Proposed Action. The temporary socioeconomic impacts associated with construction would be minor, compared to the long-term beneficial impacts of reduced risk of flooding and property damage.

There may be short-term and minor beneficial impacts to the economy and population during the construction season. Construction workers would be needed for 2 years to complete levee and channel improvements. A short-term increase in job availability would benefit the population and economy. An influx of workers in the area place higher demand of goods and services, such as equipment rentals and construction supplies. Because construction is short-term, no new housing would be required resulting from the Magpie Creek Improvements and impacts would be less than significant.

American River Erosion Contract 3B North and South, American River Erosion Contract 4A and 4B, Sacramento River Erosion Contract 3

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

The project activities along the American and Sacramento River under the Proposed Action consist of levee improvements on existing levees. These levees are currently protecting Sacramento communities including the Pocket, Greenhaven, Little Pocket (Sacramento River Erosion), Sierra Oaks, Campus Commons, Arden Town, Arden Park Vista (American River Contract 3B North), Rosemont, La Riviera, (American River Contract 3B South) and the communities downstream towards the confluence of the American and Sacramento Rivers such as East Sacramento, Downtown Sacramento, South Sacramento (Oak Park and Land Park communities).

American River Erosion Contract 3B North and a portion of American River Erosion Contract 4B are located on the right bank of the river between Howe Avenue and Rio Americano High School. American River Erosion Contract 3B South and the remaining segment of American River Erosion Contract 4B are on the left bank of the American River between Watt Avenue and the Mayhew Drain (across from Mayhew Road). American River Contract 4A is located on the right bank of the American River upstream of Jedediah Smith Memorial Bike Trail's undercrossing of the California State Route 160 bridge. The Sacramento River Erosion Contract 3 is located between river mile 47 and 53 in the Pocket neighborhood.

These communities in the Pocket and along the American River have higher median incomes than those within the core of the City of Sacramento. However, the communities are still at risk of flooding. With the levee improvements in the Proposed Action, construction activities only include erosion protection on existing levees. Therefore, no new lands are needed for construction, except for temporary staging areas of equipment and trailers. USACE and the non-Federal partners will prioritize using lands that are not developed to reduce the likelihood of displacing residents or removing housing from the existing inventory. Fair market value for the property and any relocation benefits and compensation would be provided by the Uniform Relocation Assistance and Real Property Acquisition Act of 1970.

The levee improvements on the American and Sacramento Rivers reduce the risk of flooding in existing communities and would not provide any new protection to undeveloped areas in Sacramento County. The Proposed Action would not result in new development within the floodplain nor would it cause the need for additional housing.

There may be short-term and minor beneficial impacts to the economy and population during the construction season. Construction workers will be needed for 2 years to develop these sites. A short-term increase in job availability would benefit the population and economy. An influx of workers in the area would place higher demand on goods and services. The Proposed Action on the American and Sacramento River contracts are located in urban areas so current Sacramento residents would commute to the site daily and there would not be a need to develop new housing. Therefore, impacts would be less than significant.

NEPA Effects Determination (Design Refinements): Short-term and potentially beneficial effects that are Less than Significant

The Proposed Action as described in the ARCF GRR Final EIS/EIR lacks two components that are considered a Design Refinement in this Comprehensive SEIS/SEIR. American River Erosion Contract 4A and 4B was developed to reduce the risk that high velocity flood waters could scour

the levee around the State Route (SR)-160 bridge piers and destabilize the levee. American River Contract 4A consists of an armored berms on the water side of the levee near river mile 2.0, near Del Paso Boulevard in the American River Parkway. The surrounding land use consists of relatively undisturbed riparian habitat along the American River with oak woodlands, wetlands, and ruderal grasslands towards the levee and business parks along Commerce Circle. The Jedidiah Smith Memorial Bike Trail runs under SR-160 and intersect the proposed project footprint.

The Proposed Action at American River Erosion Contract 4A protects existing levees and does not provide flood risk reduction to areas previously unprotected from the risk of flooding. This levee improvement would not induce substantial development between the levee and the American River because this land is protected from development by the American River Parkway Plan (Sacramento County, 2008).

2.6-b Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere.

CEQA Significance Conclusion: Less than Significant.

NEPA Significance Conclusion: Long-term and Minor to Moderate effects that are Less than Significant with Mitigation and Short-term and Moderate effects that are Less than Significant with Mitigation.

American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

One residence is present on the ARMS site and would be removed prior to construction of the project improvements. The removal of a single residence does not constitute a significant impact related to displacement of people or housing under CEQA, and this impact would be less than significant.

NEPA Effects Determination (Design Refinements): Long-term and Negligible effects that are Less than Significant with Mitigation

ARMS is a proposed Design Refinement, which means the area was not analyzed for socioeconomic impacts in the 2016 GRR EIS/EIR. Therefore, NEPA and CEQA analysis is identical. Due to the location and nature of the Proposed Action, there would be no substantial effects to population, housing, or the local economy.

The land being proposed for ARMS historically has an inhabited residence and active business adjacent to the parcel being acquired for the mitigation site. The non-Federal partners are responsible for these real estate transactions. The residence would remain on County of Sacramento property; however, the resident would be relocated. The single business would be relocated to a location determined by the owner. Fair market value for the property, relocation benefits and compensation would be provided by the Uniform Relocation Assistance and Real Property Acquisition Act (Uniform Act).

While the Proposed Action at ARMS would result in the displacement of a single residence, this would not be considered a substantial displacement of people or housing. Mitigation Measure SOCIO-1 would reduce the impact to Less than Significant.

Mitigation Measure SOCIO-1: Uniform Relocation Assistance and Real Property Acquisition Act

Private properties within the footprint of the Proposed Action will be acquired for project construction in compliance with the Uniform Act and implementing regulation, 49 CFR Part 24. Relocation advisory services, moving costs reimbursement, replacement housing, and reimbursement for related expenses and rights of appeal may be provided upon the acquisition of real property.

Timing: Before construction

Responsibility: USACE and Project Partners

The potential long-term impacts associated with property acquisition needed for the project construction would be mitigated to less than significant with implementation of Mitigation Measure SOCIO-1, which was previously adopted for the ARCF 2016 Project.

Magpie Creek Improvements

CEQA Impact Conclusion (Entire Proposed Action): No Impact

There are no residences present within the MCP project site and there would be no impact related to displacement of residences or people under CEQA.

NEPA Effects Determination (Design Refinements): Long-term and Minor to Moderate effects that are Less than Significant with Mitigation

The NEPA No Action Alternative for Magpie Creek contained a culvert installation. The culvert installation would have no impact on socioeconomic conditions. All other components (channel clearing and realignment, levee raise, new levee and crossing structure) of the Improvements are proposed Design Refinements.

The Proposed Action primarily occurs along the existing MCDL. The land surrounding the MCDL is open space to the south where channel overtopping spills west to Robla Creek. Along Vinci Avenue and Dry Creek Road, the northern portion of the project, the land is developed with larger residential properties and businesses, such as wholesalers, equipment and truck rental facilities, and small firms. Some land is in agricultural production. To widen the channel and improve the levee with slope flattening, some private land would be acquired by the non-Federal partners. No residents or businesses would be displaced. However, small outbuilding and retaining wall type structures may be removed on private properties. Additionally, parking spaces and concrete may need to be removed from local businesses. Some farmlands would be converted to levee improvements. The conversions of private property to levee improvements is a moderate impact and has the potential to reduce the ability of the homeowners or business to continue to operate when compared to the No Action Alternative.

The Proposed Action would not require substantial displacement requiring construction of replacement housing or temporary business space. USACE and the non-Federal partners would prioritize using undeveloped lands to the greatest extent practicable. However, this impact would remain significant due to the removal of structures on private property and local businesses. The following mitigation measure has been identified to address this impact.

Mitigation Measure SOCIO-1: Uniform Relocation Assistance and Real Property Acquisition Act

Please refer to Impact 2.6-b above for the full text of this mitigation measure.

Timing: Before construction

Responsibility: USACE and Project Partners

Implementing Mitigation Measure SOIC-1 would require fair market value for the property and compensation would be provided by the Uniform Act with Mitigation Measure SOCIO-1, reducing the impact to Less than Significant.

American River Erosion Contract 3B, American River Erosion Contract 4A and 4B, Sacramento River Erosion Contract 3

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

The levee improvements on the American and Sacramento Rivers would reduce the risk of flooding in existing communities and would not provide any new protection to undeveloped areas in Sacramento County. As can be seen from Figure 2.6-1, these urban communities in the Pocket and along the American River have higher median incomes than within the heart of the City of Sacramento. Due to higher incomes, the residents in these communities are not considered vulnerable to displacement, Figure 2.6-8. Communities Sensitive to Displacement Source: (Urban Displacement Project, 2018)

With the levee improvements in the Proposed Action, construction activities only include erosion protection on existing levees. Therefore, no new lands are needed for construction, except for temporary staging areas of equipment and trailers. USACE and the non-Federal partners would prioritize using lands that are not developed to reduce the likelihood of displacing residents or removing housing from the existing inventory. Fair market value for the property, relocation benefits, and compensation would be provided.

During construction there may be displacement of unhoused people who may be living within the project footprint. Under local ordinance Sacramento City Code Chapter 8.140, USACE, the local, State and Federal agencies that are responsible for retaining the right of way, have authority to prohibit camping on levees and within 25 feet of levees to avoid damage to critical infrastructure and to ensure that levees can be easily inspected and maintained. The local agency requirements would be implemented under the Proposed Action. The removal of encampments within the construction footprint would prevent threats to public health, safety, and welfare of communities from increased risk of flooding due to potential damage of critical levee infrastructure. Additionally, the removal of encampments is needed to ensure the safety of the

unhoused population during active construction. Encampments within the Proposed Action footprint are subject to removal regardless of USACE action to implement the Proposed Action. These impacts would be less than significant.

NEPA Effects Conclusion (Design Refinements): Short-term and Moderate effects that are Less than Significant

The Proposed Action as described in the ARCF GRR Final EIS/EIR is generally lacking two components that are a proposed Design Refinement in this Comprehensive SEIS/SEIR, American River Erosion Contract 4A and 4B. There are populations of unhoused people seasonally in the Parkway under the SR160 bridge. During construction there may be temporary displacement of unhoused people. Services for those displaced are offered by both the City of Sacramento and Sacramento County.

2.6-c. Result in substantial impacts to unhoused populations residing in the project area, through displacement or other means

Magpie Creek Project, Sacramento River Erosion Contract 3 American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, and ARMS

CEQA Impact Conclusion (Entire Proposed Action): N/A

NEPA Impact Conclusion (Design Refinements): Short-term and Moderate effects that are Less than Significant with Mitigation Incorporated

Construction activities would potentially displace unhoused communities and individuals for the duration of construction. Although project activities could displace individuals, this displacement would also occur under local ordinances that prevent critical infrastructural damage to levees by preventing camping on or within 25 feet of the levee (Sacramento City Code Chapter 8.140). While these communities would be temporarily displaced for their own safety during construction, displacement is an outcome of the ongoing regulatory requirement to ensure levee safety that would occur with and without the Project.

Mitigation Measure SOCIO-2: Conduct Outreach with Local Advocacy Groups

Contact advocacy groups and local organizations in the Sacramento area through plain-language letters requesting input on potential mitigation measures. Additional outreach via telephone calls, meetings, and social media is anticipated. A range of solutions including early warning and relocation may be applicable to each project component.

Timing: Before and during construction

Responsibility: USACE

Mitigation Measure SOCIO-3: Prepare a Transient (Unhoused) Population Safety Plan

USACE will require its construction contractor to prepare and implement a Transient (Unhoused) Population Safety Plan as a requirement in Project specifications for American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, MCP, and ARMS. The plan will detail proposed phasing, signage, fencing, and other protective measures to provide for the safety of the public and unhoused communities.

Timing: Prepared prior to construction and implemented during construction mobilization.

Responsibility: Construction Contractor

Implementing Mitigation Measures SOCIO-2 and SOCIO-3 would reduce impacts through outreach and consultation with local advocacy groups and organizations and by requiring Transient (Unhoused) Population Safety Plans to be prepared and implemented to reduce and avoid safety hazards related to project activities conducted in proximity to unhoused communities.

2.6-d. Interfere substantially with access to schools or other public institutions providing services to at-risk communities.

Magpie Creek Project, American River Erosion Contract 3B North and South, and American River Erosion Contract 4B

CEQA Impact Conclusion (Entire Proposed Action): N/A

NEPA Impact Conclusion (Design Refinements): Short-term and Major effects that are Less than Significant with Mitigation Incorporated

Proposed activities at MCP, American River Erosion Contract 3B North and South, and American River Erosion Contract 4B would potentially cause disruptions to transportation to area schools that serve students from surrounding low-income and/or minority communities. Near the MCP, there are limited options for haul routes, therefore it is not possible to avoid impacts to area schools through detours. These access routes are situated between Bell Avenue Elementary, Main Avenue START Program (Students Today Achieving Results for Tomorrow), Robla Preschool, Dry Creek Elementary, Futures High School, Rio Linda Preparatory Academy, and Rio Linda High School. All schools but Robla Preschool are listed by the California Department of Education as receiving Title 1 funds in the 2023-2024 fiscal year (California Department of Education 2024). Title 1 schools receive financial assistance due to having high numbers or percentages of children from low-income families.

Additionally, there are four public schools within ½-mile of the American River Erosion Contract 3B North and South, and American River Erosion Contract 4B: Rio Americano High School, Sierra Oaks K-8 School, Isador Cohen Elementary School, and O.W. Erlewine

Elementary School. Construction haul traffic would occur on surface roads around these schools. Rio Americano High School and Sierra Oaks K-8 School are not within at-risk communities. However, Isador Cohen Elementary is within a low-income/minority community as defined by CEQ's Federal mapping tool. Additionally, O.W. Erlewine Elementary School and Isadora Cohen Elementary are listed receiving Title 1 funds in the 2023-2024 fiscal year (California Department of Education 2024). Although the proposed haul route does not directly pass by the schools, it may interfere with traffic access to the school, especially along La Riviera Drive. Additionally, a staging area for Contract 3B South is adjacent to O.W. Erlewine Elementary School. Project Partners have conducted a Health Risk Assessment for the Contract 3B component as the public was concerned about health impacts to students at O.W. Erlewine Elementary School. The Health Risk Assessment (HRA) indicates that there is not a risk with construction; the analysis and results of the HRA can be viewed in Appendix J. Additionally the staging area would be completely fenced off to prevent students from getting near construction equipment.

In addition to the schools, the Sacramento Food Bank and Family Services, which provides services such as neighborhood distribution, food for seniors, diapers, health and nutrition classes, immigration legal services, and more, as well as Manna Food Bank, which provides free groceries to the surrounding community, are located on or near the proposed haul route for the MCP. Sacramento Food Bank and Family Services is open daily during the week, while Manna Food Bank is open for food distribution on Friday mornings. Shelby's Way, which provides free groceries to the surrounding community, is located on the proposed haul route for American River Erosion Contract 3B South, and American River Erosion Contract 4B. Shelby's Way is open for food distribution on Friday afternoons. Though the hauls routes would pass these organizations, haul traffic is not expected to interfere with public access to any of the locations.

Mitigation Measure SOCIO-4: Consult with School Districts

Contact local school districts to request input on potential mitigation measures. Specific measures applied at each project site may vary based on feedback received from each school district, and could include early notification, scheduling construction/road closures during the summer or during timeframes when traffic to and from school is at a minimum.

Timing: Incorporate school districts into the notification list during the public review period. Measures agreed upon with the local school districts would be incorporated into the Final project design.

Responsibility: USACE

Implementing Mitigation Measure SOCIO-4, which was previously adopted for the 2016 ARCF Project, would reduce the significant impact to at-risk communities because USACE would coordinate with local school districts to minimize the impact of construction traffic on school-related traffic in the surrounding communities.

American River Erosion Contract 4A, American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): N/A

NEPA Impact Conclusion (Design Refinements): No Effect

No public schools or institutions are located within the immediate vicinity of the American River Erosion Contract 4A site or the ARMS. Therefore, no impacts to such institutions would result from construction of American River Erosion Contract 4A or ARMS.

2.6-f. Result in a substantial impact to at-risk communities, particularly impacts related to the burdens identified by CEQ's Federal mapping tool

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): N/A

NEPA Impact Conclusion (Design Refinements): Significant and Unavoidable

The project site for MCP is not located within an at-risk community. Segments of the associated haul routes; however, traverse or border such communities. Haul routes for the MCP would follow Elkhorn Boulevard or I-80 to Raley Boulevard. From Raley Boulevard, haul trucks would travel along Vinci Avenue, Main Avenue, and Bell Avenue to reach Rio Linda Boulevard, Rose Street, and Maryville Boulevard.

According to the CEQ's Federal mapping tool, all surrounding low-income and/or minority communities are burdened by airborne PM_{2.5} levels. Haul trucks carrying materials through these communities during the construction of the MCP would produce emissions adding additional PM_{2.5} into the air, but at negligible levels. Mitigation measures AIR-1 and AIR-2 would be implemented to minimize generation of PM fugitive dust. The maximum daily mitigated PM_{2.5} emissions generated during construction are estimated to be 7.14 lbs. (0.08 tons annually). Because the level of PM_{2.5} emissions is so minor, the resulting impact is less than significant.

Portions of the haul route south of Main Avenue and east of Rio Linda Boulevard also experience burdens with traffic proximity and volume. Areas north of Ascot Avenue are burdened by transportation barriers, which is determined by the average of relative cost and time spent on transportation. During construction, an average of 37 truck trips per workday is estimated (actual daily trips range from 1 to 360). Over at least 50 non-consecutive days, heavy truck traffic would exceed the 50 truck trips per day threshold established in Appendix 2.1, "Transportation". The increased heavy truck traffic through the haul routes could alter normal traffic flows, potentially slowing traffic down and making it more challenging for other drivers to navigate around. This would result in a significant impact. The following mitigation measures have been identified to address this impact.

Mitigation Measure AIR-1: Implement the Sacramento Metropolitan Air Quality Management District and Bay Area Air Quality Management District Basic Construction Emission Control Practices.

SMAQMD and BAAQMD requires that all projects, regardless of their significance, implement the following measures to minimize the generation of fugitive PM dust. The Basic Construction Emission Control Practices shall include measures to control fugitive PM dust pursuant to SMAQMD Rule 403, as well as measures to reduce construction-related exhaust emissions. USACE shall require its contractors to comply with the basic construction emission control practices listed below for all construction-related activities occurring in SMAQMD jurisdiction.

- Water all exposed surfaces two times daily or more, as needed. Exposed surfaces include but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover, or suitably wet soils and other materials on haul trucks transporting soil, sand, or other loose material on the site. Cover any haul trucks that travel along freeways or major roadways.
- Use wet power vacuum street sweepers to remove any visible track out mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speed on unpaved roads to 15 miles per hour.
- Complete pavement of all roadways, driveways, sidewalks, and parking lots to be paved as soon as possible.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (required by CCR, Title 13, Sections 2449[d][3] and 2485).
- Provide clear signage that posts this requirement for workers at the entrances to the construction sites.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. Have the equipment checked by a certified mechanic and determined to be running in proper condition before it is operated.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure AIR-2: Implement the Sacramento Metropolitan Air Quality Management District's Enhanced Fugitive PM Dust Control Practices.

SMAQMD recommends that construction projects that will exceed or contribute to the mass emissions threshold for PM₁₀ implement the Enhanced Fugitive PM Dust Control

Practices, as applicable to the project. As the construction activities for the Proposed Action will involve substantial material movement activities and will be located in proximity of residential receptors, the Project Partners shall require construction contractors to implement the Enhanced Fugitive PM Dust Control Practices listed below to help reduce potential fugitive PM dust emissions.

Soil Disturbance Areas

- Water exposed soil with adequate frequency for continued moist soil; however, do not overwater to the extent that sediment flows off the site.
- Suspend excavation, grading, and/or demolition activity when wind speeds exceed 20 miles per hour.
- Plant vegetative ground cover (fast germinating native grass seed) in disturbed areas as soon as possible and water appropriately until vegetation is established.

Unpaved Roads (Entrained Road Dust)

- Install wheel washers for all exiting trucks or wash off all trucks and equipment leaving the site.
- Treat site accesses with a 6- to 12-inch layer of wood chips, mulch, or gravel to a distance of 100 feet from the paved road to reduce generation of road dust and road dust carryout onto public roads.
- Post a publicly visible sign with the telephone number and person to contact at USACE regarding dust complaints. This person will respond and take corrective action within 48 hours. The phone number of SMAQMD also will be visible to ensure compliance.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure TRANS-1: Prepare and Implement a Traffic Control and Road Maintenance Plan.

Before the start of project-related construction activities for each project component, the Project Partners will require the contractor to prepare and implement a Traffic Control and Road Maintenance Plan. This plan will describe the timing and methods of traffic control to be used during construction. All on-street construction traffic will be required to comply with the local jurisdiction's standard construction specifications. The items listed below will be included in the plan and implemented as terms of the construction contracts:

- Follow the standard construction specifications of affected jurisdictions and obtain the appropriate encroachment permits, if required. Encroachment permit conditions, as known at the time of construction contract solicitation, will be included in the

construction contract. Encroachment permit conditions will be enforced by USACE and the local agency that issues the encroachment permit.

- Provide a site-specific access plan specifying the roadways on which construction workers are allowed travel to access the work sites and borrow areas.
- Provide adequate parking for construction trucks, equipment, and construction workers within the designated staging areas throughout the construction period. If inadequate space for parking is available at a given work site, the construction contractor will provide an off-site staging area and, as needed, coordinate the daily transport of construction vehicles, equipment, and personnel to and from the work site.
- Queue trucks only in areas and at times allowed by the appropriate local jurisdiction.
- Post warnings about the potential presence of slow-moving vehicles during construction.
- Proposed lane closures will be coordinated with the appropriate local jurisdiction and be minimized to the extent possible during the morning and evening peak traffic periods. Construction specifications will limit lane closures during commuting hours where feasible, and lane closures will be kept as short as possible. If a road must be closed, detour routes and/or temporary roads will be made to accommodate traffic flows. Signs will be provided to direct traffic through detours.
- Post signs providing advance notice of upcoming construction activities at least 1 week in advance so that motorists and cyclists can avoid traveling through affected areas during these times.
- Provide bicycle detours to allow for continued use by bicycle commuters. Always maintain safe pedestrian and bicyclist access around the construction areas. Construction areas will be secured as required by the applicable jurisdiction to prevent pedestrians and bicyclists from entering the work site, and all stationary equipment will be located as far away as possible from areas where bicyclists and pedestrians are present. Signage for street detours will be located outside of the bike lanes and up on the curb where feasible and posted at least 1 week prior to construction affecting pedestrian and bicyclist access.
- Notify (by means such as physical signage, internet postings, letters, or telephone calls) and consult with emergency service providers at least 1 week in advance to inform them of construction activities, maintain emergency access, and facilitate the passage of emergency vehicles on city streets during construction activities. Emergency vehicle access will be always be made available.
- The construction contractor will document pre- and post- construction conditions on roadways used during construction. This information will be used to assess damage to roadways used during construction. The contractor will repair all potholes, fractures, or other visual damages associated with project work.

- Comply with Caltrans requirements by submitting this Traffic Control and Road Maintenance Plan to Caltrans for review of traffic controls and points of access from the State highway system (SR-160, I-5, I-80 Business, and I-80) for haul trucks and other construction equipment.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measure TRANS-1, which was previously adopted for the 2016 ARCF Project, would include traffic control plans, signage, and notification of trips. However, there is no feasible mitigation available to reduce the total number of truck trips required to transport the required materials to the project sites. This impact would therefore remain significant and unavoidable.

American River Erosion Contract 3B North and South, and American River Erosion Contract 4B

CEQA Impact Conclusion (Entire Proposed Action): N/A

NEPA Impact Conclusion (Design Refinements): Significant and Unavoidable

American River Erosion Contract 3B North and South, and American River Erosion Contract 4B are not located within at-risk communities. However, segments of the associated haul routes traverse and border these communities. Haul routes for American River Erosion Contract 3B North and South, and American River Erosion Contract 4B would follow I-80 and U.S. 50 in addition to several local roads and parks. Sections of I-80, U.S. 50 and Arden Way, Howe Avenue, Watt Avenue, La Rivera Drive, Folsom Boulevard and Bradshaw Road pass through at-risk communities. All these major roadways already accommodate heavy traffic.

The majority of the construction work for American River Erosion Contract 3B North and South, and American River Erosion Contract 4B would occur on the levee roads and impacts to the surrounding community would not be significant. Further outreach to local community centers is being conducted by the non-Federal sponsor.

Burdens experienced by neighboring low income or minority communities that could be affected by project activities at American River Erosion Contract 3B North and South and American River Erosion Contract 4B include PM2.5 in the air and traffic proximity and volume (defined as the count of vehicles at major roads within 500 meters). Emissions from haul trucks during construction would add additional PM2.5 into the air. Mitigation measures AIR-1 and AIR-2 would be implemented to minimize generation of PM fugitive dust. The maximum mitigated daily PM2.5 emissions generated during construction of American River Erosion Contract 3B North and South, and American River Erosion Contract 4B are estimated to be 172.4 lbs. (6.78 tons annually). PM2.5 emissions at these levels would result in moderate impacts to the overall air quality to the area, and to the surrounding at-risk communities.

The area bounded by Watt Avenue, Folsom Boulevard, and La Riviera Drive is burdened by traffic proximity and volume. Each of these roadways would be used for hauling during

construction of American River Erosion Contract 3B South Site 4-1, and American River Erosion Contract 4B, which would introduce additional traffic to the area. During construction, an average of 172 truck trips per workday is estimated (actual daily trips range from 3 to 312). Most days, heavy truck traffic would exceed the 50 truck trips per day threshold established in Appendix 2.1, “Transportation.” The increased heavy truck traffic through the haul routes would alter normal traffic flows, potentially slowing traffic down and making it more challenging for other drivers to navigate around. This would be a significant impact. The following mitigation measures have been identified to address this impact.

Mitigation Measure AIR-1: Implement the Sacramento Metropolitan Air Quality Management District and Bay Area Air Quality Management District Basic Construction Emission Control Practices.

Please refer to Impact 2.6-f above for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: USACE and construction contractor(s)

Mitigation Measure AIR-2: Implement the Sacramento Metropolitan Air Quality Management District’s Enhanced Fugitive PM Dust Control Practices.

Please refer to Impact 2.6-f above for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: USACE and construction contractor(s)

Mitigation Measure TRANS-1: Prepare and Implement a Traffic Control and Road Maintenance Plan.

Please refer to Impact 2.6-f above for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measure TRANS-1, which was previously adopted for the 2016 ARCF Project, would include traffic control plans, signage, and notification of trips. However, there is no feasible mitigation available to reduce the total number of truck trips required to transport the required materials to the project sites. This impact would therefore remain significant and unavoidable. For the full analysis of impacts to transportation and proposed mitigation measures, see Appendix 2.1, “Transportation.”

American River Erosion Contract 4A

CEQA Impact Conclusion (Entire Proposed Action): N/A

NEPA Impact Conclusion (Design Refinements): Short-term and Moderate Effects that are Less than Significant with Mitigation Incorporated

The project site for American River Erosion Contract 4A and associated haul routes are located within an at-risk community. Access routes consist primarily of major roadways that already accommodate heavy traffic: SR-160, I-80 Business, or I-5. Local roads used to access the project site from these major roadways would include Del Paso Boulevard, Arden Way, Richards Boulevard, Expo Parkway, Leisure Lane, Commerce Circle, and Lathrop Way. The main access points to the levee would be at Lathrop Way, Del Paso Boulevard, and Expo Parkway. A road closure at Del Paso Boulevard may be needed during reconstruction of the bike path.

Communities surrounding the American River Erosion Contract 4A are burdened by airborne levels of PM_{2.5}, as identified by CEQ's Federal mapping tool. Construction of and hauling materials for American River Erosion Contract 4A would produce emissions adding additional PM_{2.5} into the air, but at low levels. Mitigation measures AIR-1 and AIR-2 would be implemented to minimize generation of PM fugitive dust. The maximum mitigated daily PM_{2.5} emissions generated during construction of American River Erosion Contract 4A are estimated to be 61 lbs. (0.76 tons annually). Because the level of PM_{2.5} emissions is minor, the resulting impact is less than significant.

Some portions of the proposed haul route, specifically Richards Boulevard, are burdened by traffic proximity and volume. During construction, an average of 28 truck trips per workday is estimated (actual daily trips range from 1 to 192). Over 36 non-consecutive days, heavy truck traffic would exceed the 50 truck trips per day threshold established in Appendix 2.1, "Transportation;" however, most days the number of trucks would be below this limit. The increased heavy truck traffic through the haul routes could alter normal traffic flows, potentially slowing traffic down and making it more challenging for other drivers to navigate around. This impact would be significant. The following mitigation measures have been identified to address this impact.

Mitigation Measure AIR-1: Implement the Sacramento Metropolitan Air Quality Management District and Bay Area Air Quality Management District Basic Construction Emission Control Practices.

Please refer to Impact 2.6-f above for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: USACE and construction contractor(s)

Mitigation Measure AIR-2: Implement the Sacramento Metropolitan Air Quality Management District's Enhanced Fugitive PM Dust Control Practices.

Please refer to Impact 2.6-f above for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: USACE and construction contractor(s)

Mitigation Measure TRANS-1: Prepare and Implement a Traffic Control and Road Maintenance Plan.

Please refer to Impact 2.6-f above for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures AIR-1, AIR-2, and TRANS-1 would reduce this impact to moderate and less than significant. The potential road closure at Del Paso Boulevard and bike path detour would not be considered a significant impact, since the surrounding area is not considered by the CEQ's Federal mapping tool to be burdened under the transportation category.

American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): N/A

NEPA Impact Conclusion (Design Refinements): Short-term and Minor Effects that are Less than Significant with Mitigation Incorporated

The ARMS is not located within an at-risk community. However, segments of the associated haul routes traverse or border these communities. Haul routes would follow SR-160, I-5, I-80 Business, Garden Highway and Northgate Boulevard as well as existing local service roads. Haul routes that cross into at-risk communities, are major roadways that already accommodate heavy traffic. Local roads to the project site would be existing service roads through Discovery Park or the Riverdale Mobile Home Park access. The Riverdale Mobile Home Park has not been in operation for several years.

Burdens experienced by neighboring at-risk communities that could be affected by the ARMS include energy, specifically, PM_{2.5} in the air. Emissions from haul trucks during construction would add additional PM_{2.5} into the air, but at negligible levels. Mitigation measures AIR-1 and AIR-2 would be implemented to minimize generation of PM fugitive dust. The maximum mitigated daily PM_{2.5} emissions generated during construction of the ARMS are estimated to be 8.75 lbs. (0.48 tons annually). Because the level of PM_{2.5} emissions is so minor, the resulting impact is less than significant.

Mitigation Measure AIR-1: Implement the Sacramento Metropolitan Air Quality Management District and Bay Area Air Quality Management District Basic Construction Emission Control Practices.

Please refer to Impact 2.6-f above for the full text of this mitigation measure.

Timing: Before and during construction.

Responsibility: USACE and construction contractor(s)

Mitigation Measure AIR-2: Implement the Sacramento Metropolitan Air Quality Management District's Enhanced Fugitive PM Dust Control Practices.

Please refer to Impact 2.6-f above for the full text of this mitigation measure.

Timing: Before and during construction.

Responsibility: USACE and construction contractor(s)

Alternatives Comparison

Alternative 3a through 3d

Alternative 3a through 3d include alternative designs for improvements to the American River 4A Project Component. All alternatives would be constrained within the construction buffer limits of the Proposed Action. Spatial constraints include the SR160 bridge to the northwest, the existing levee to the north and the American River to the south. All other project components (American River 3B, Sacramento River, Magpie Creek, Sacramento River Mitigation, American River Mitigation, Piezometer Network) would have the same effects as the Proposed Action.

Alternative 3a would be similar to the Proposed Action, but instead of a waterside berm, a landside berm would be built between the levee and the State Route 160 bridge piers. The material and equipment needed for this work would be substantially less than the Proposed Action because a bike trail reroute would not be required. Alternative 3a would require real estate acquisition of Union Pacific Railroad (UPRR) property.

Alternative 3b would be similar to the Proposed Action but would require a differing permanent bike trail reroute. The route following the railroad would be slightly longer than the Proposed Action and would require some vegetation trimming, clearing, regrading, and paving.

Alternative 3c would be similar to the Proposed Action but would change the permanent bike trail reroute to include building a bridge or adding fill and routing bikes through the wetland and around the berm. Installing this route would require vegetation trimming, vegetation clearing, regrading, paving and possible construction of a bridge. This alternative would require temporary closure of the bike trail and require temporary detours.

Alternative 3d would be similar to the Proposed Action, except that the permanent bike trail route would be a paved bike trail closer to the river along an existing off-road bike trail. Installing this route would require some vegetation trimming, vegetation clearing, regrading, and paving.

None of these alternatives would increase effects to socioeconomic conditions when compared to the Proposed Action. There is no existing housing in this area of the American River Parkway. While the area is heavily recreated by bicyclists, no permanent populations live in the area legally. Construction may have temporary effects on local business due to increased traffic and noise. However, when compared to the No Action Alternative, this heavily trafficked area near SR160 contains major roads like Del Paso Boulevard, Northgate Boulevard, and the Arden-Garden Connector, as well as the UPRR crossing. Therefore, construction-related impacts on socioeconomic conditions, population, and housing would be less than significant. None of these

alternatives would increase impacts to unhoused communities, Tribal communities, access to schools or other institutions providing services to low-income or minority communities, or burdens identified by CEQ's Federal mapping tool when compared to the Proposed Action. Therefore, impacts would remain the same as the Proposed Action.

Table 2.6-4. Alternative 3a through 3d Effects on Socioeconomic Conditions

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|------------------------------------|---|--------------------|------------------------------|--|
| 2.6-a Induce substantial population growth in an area | American River Erosion Contract 4A | Similar to the Proposed Action, these alternatives protect existing levees and do not provide flood risk reduction to areas previously unprotected from the risk of flooding. This levee improvement would not induce substantial development between the levee and the American River because this land is protected from development by the American River Parkway Plan | N/A | Less than Significant | Short-term and potentially beneficial effects that are Less than Significant |
| 2.6-b Displace substantial numbers of people or existing housing | American River Erosion Contract 4A | Similar to the Proposed Action, temporary displacement of unhoused people may occur due to construction. Due to regulatory requirements for levee safety, removal of encampments is a part of ongoing maintenance. Therefore, the impact to unhoused people is not significant compared to the No Project or No Action Alternative. There are no homes currently and none expected to be developed due to location within the American River Parkway. | N/A | Less than Significant | Short-term and Moderate effects that are Less than Significant |
| 2.6-c: Result in substantial impacts to unhoused populations residing in the project area, through displacement or other means | American River Erosion Contract 4A | Similar to Proposed Action with no increase of social impacts to unhoused communities, Tribal communities, access to schools or other institutions providing services to at-risk communities, or burdens identified by the CEQ's Federal mapping tool when compared to the Proposed Action. | SOCIO-2 SOCIO-3 | N/A | Short-term and Moderate Effects that are Less than Significant with Mitigation |
| 2.6-d: Interfere substantially with access to schools or other public institutions providing services to at-risk communities | American River Erosion Contract 4A | Similar to Proposed Action with no increase of social impacts to unhoused communities, Tribal communities, access to schools or other institutions providing services to at-risk communities, or burdens identified by the CEQ's Federal mapping tool when compared to the Proposed Action. | None | N/A | No Effect |

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|------------------------------------|---|--------------------|------------------------------|--|
| 2.6-f: Result in a substantial impact to at-risk communities, particularly impacts related to the burdens identified by CEQ's Federal mapping tool | American River Erosion Contract 4A | Similar to Proposed Action with no increased of social impacts to unhoused communities, Tribal communities, access to schools or other institutions providing services to at-risk communities, or burdens when compared to the Proposed Action. | TRANS-1 | N/A | Short-term and Moderate Effects that are Less than Significant with Mitigation |

Alternatives 4a and 4b (CEQA-Only)

Alternatives 4a and 4b would include an alternative design for the American River Mitigation Site (ARMS) The alternative would be constrained to the same construction buffer limits as the Proposed Action. All other project components (American River Erosion Contract 3B, American River Erosion Contract 4A and 4B, Sacramento River Erosion Contract 3, SRMS, Piezometer Network and Magpie Creek Project) would have the same effects as the Proposed Action.

Alternatives 4a and 4b would be similar to the Proposed Action except that the design would be changed to retain a portion of the existing pond, reducing the need for fill material and reducing the transportation, air quality, and GHG emissions impacts associated with filling the existing pond. A berm with a top width of 30-feet would be constructed to retain the western portion of the existing pond, and floodplain habitat would be constructed on the eastern portion of the site. The remnant pond would be approximately 30-acres in Alternative 4a, or 20-acres in Alternative 4b. Because this alternative would not provide space for the total area of mitigation required to address Project impacts, additional habitat mitigation elsewhere in the American River Parkway (likely Arden Pond) would need to be identified.

Table 2.6-5. Alternative 4a and 4b Effects on Socioeconomic Conditions

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion |
|---|----------|--|--------------------|------------------------------|
| 2.6-a Induce substantial population growth in an area | ARMS | Similar to the Proposed Action, Alternative 4a and 4b would not provide flood risk reduction benefits to the ARMS project site or other areas and would not induce population growth. | N/A | No Impact |
| 2.6-b Displace substantial numbers of people or existing housing | ARMS | Similar to the Proposed Action, Alternative 4a and 4b would require the relocation of a single residence. There would be no significant impact related to displacement of people or housing. | N/A | Less than Significant |

Alternative 5a

Alternative 5a includes an alternative financial solution as opposed to constructing the SRMS. This alternative includes the purchase of all remaining, required mitigation credits from Service Approved Conservation Banks, whose service areas cover the ARCF project impacts. There would be no additional impacts on at-risk, low-income, minority or unhoused communities. All other project components (American River Erosion Contract 3B, American River Erosion Contract 4A and 4B, Sacramento River Erosion Contract 3, ARMS, Piezometer Network and Magpie Creek Project) would have the same effects as the Proposed Action.

Table 2.6-6. Alternative 5a Effects on Socioeconomic Conditions

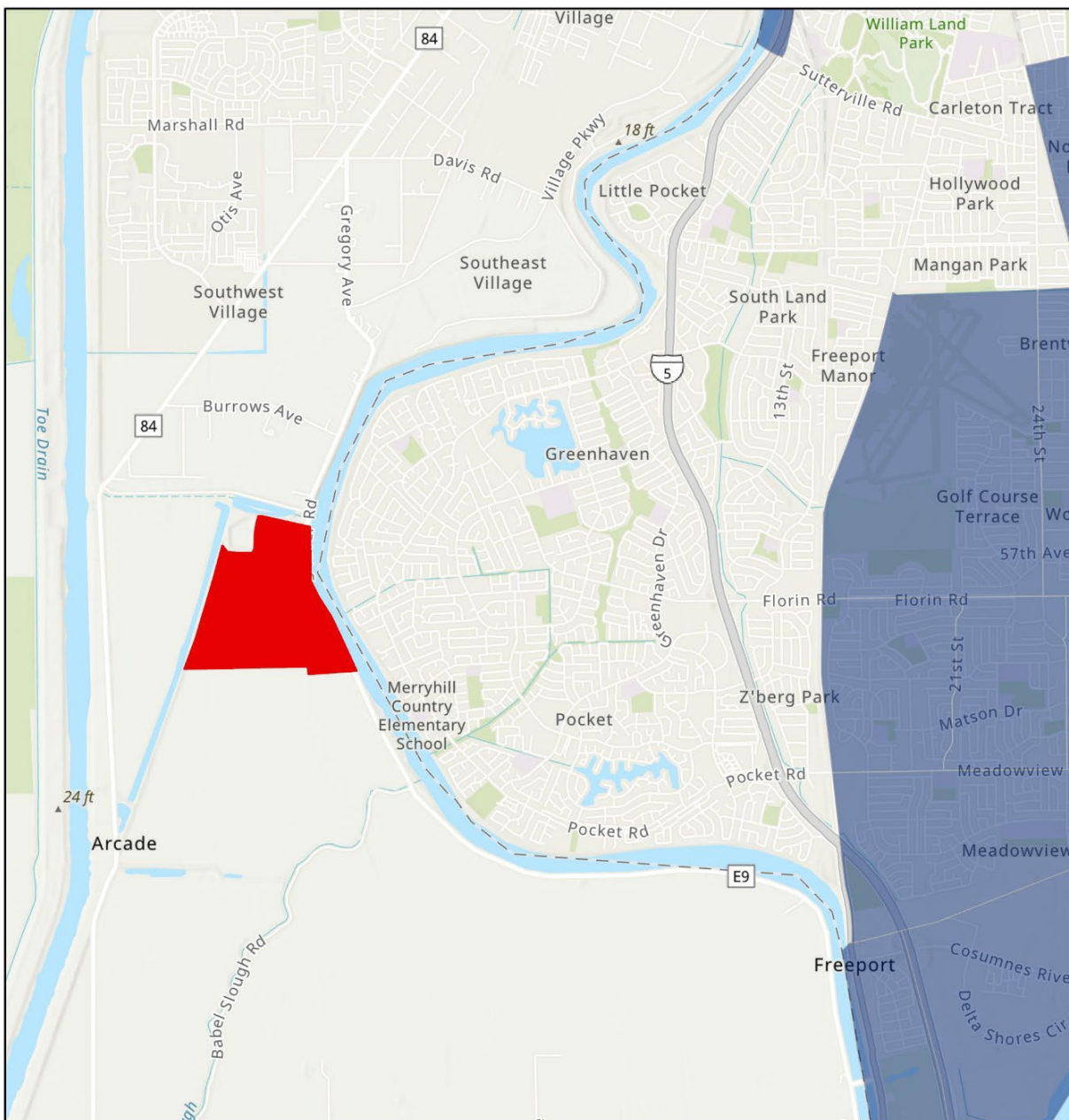
| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|-----------------------------|--|--------------------|------------------------------|----------------------------|
| 2.6-a Induce substantial population growth in an area | Approved Conservation Banks | Similar to the Proposed Action, Alternative 5a would not cause substantial population growth. Alternative 5a would have no effect on the local economy or induce any population growth. | N/A | No Impact | No Impact |
| 2.6-b Displace substantial numbers of people or existing housing | Approved Conservation Banks | Similar to the Proposed Action, Alternative 5a would have no effect on housing or population. | N/A | No Impact | No Impact |
| 2.6-c: Result in substantial impacts to unhoused populations residing in the project area, through displacement or other means. | Approved Conservation Banks | Similar to the Proposed Action with no increase of social impacts to unhoused communities, Tribal communities, access to schools or other institutions providing services to at-risk communities, or burdens identified by the CEQ's Federal mapping tool when compared to the Proposed Action. | None | N/A | No Effect |
| 2.6-d: Interfere substantially with access to schools or other public institutions providing services to at-risk communities. | Approved Conservation Banks | Similar to the Proposed Action, with no increase of social impacts to unhoused communities, Tribal communities, access to schools or other institutions providing services to at-risk communities, or burdens identified by the CEQ's Federal mapping tool when compared to the Proposed Action. | None | N/A | No Effect |

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|-----------------------------|--|--------------------|------------------------------|----------------------------|
| 2.6-f: Result in a substantial impact to at-risk communities, particularly impacts related to the burdens identified by CEQ's Federal mapping tool. | Approved Conservation Banks | Similar to the Proposed Action, with no increase of social impacts to unhoused communities, Tribal communities, access to schools or other institutions providing services to at-risk communities, or burdens identified by the CEQ's Federal mapping tool when compared to the Proposed Action. | None | N/A | No Effect |

Alternative 5b

Alternative 5b would complete the Sacramento River Mitigation needs by constructing a mitigation site at Watermark Farms. This alternative would replace the Proposed Action mitigation alternative for SRMS. All other project components (American River Erosion Contract 3B, American River Erosion Contract 4A and 4B, Sacramento River Erosion Contract 3, ARMS, Piezometer Network, and Magpie Creek Project) would have the same effects as the Proposed Action.

Watermark Farms is privately owned and located within Yolo County, from River Mile 50.5 to River Mile 51.25 and includes the waterside of the levee to landside toe, and adjacent existing farmland. Watermark Farms is on the right bank of the Sacramento River across from the Pocket neighborhood and can be accessed from South River Road. The conceptual design is to restore approximately 227 acres of riverine and floodplain habitat by breaching the existing levee and creating a new setback levee and secondary channel. This floodplain and shallow-water habitat would provide suitable habitat for salmonid species, green sturgeon and Delta smelt.



Alternative 5B (Watermark Farms)

- Project Area
- CEJST Disadvantaged Census Tract



**US Army Corps
of Engineers®**
Sacramento District



0 0.5 1 Miles

Updated 4/5/2024

Figure 2.6-10. Census Tracts with At-Risk Communities near Watermark Farms

Watermark Farms is outside of the previously established ARCF Proposed Action Area. The alternative mitigation site is not identified as an at-risk area on CEQ's Federal mapping tool. If Alternative 5b were to move beyond the conceptual stage, USACE would follow similar efforts that were carried out in other project elements to identify social concerns through site visits and outreach to local community organizations and work to mitigate any impacts, as needed.

Table 2.6-7. Alternative 5b Effects on Socioeconomic Conditions

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|------------------------|---|---------------------------|-------------------------------------|-----------------------------------|
| 2.6-a Induce substantial population growth in an area | SRMS (Watermark Farms) | Similar to the Proposed Action, Alternative 9 would not induce substantial population growth. The mitigation site would not be accessible to the public, nor make any new lands available for development. During the three-season construction window, there would be a temporary local economy boost. | N/A | No Impact | No Effect |
| 2.6-b Displace substantial numbers of people or existing housing | SRMS (Watermark Farms) | Similar to the Proposed Action, Alternative 9 would have no effect on housing or population. The land is being actively farmed and there are no existing homes or residents. | N/A | No Impact | No Effect |
| 2.6-c: Result in substantial impacts to unhoused populations residing in the project area, through displacement or other means | SRMS (Watermark Farms) | Similar to the Proposed Action, with no increase of social impacts to unhoused communities, Tribal communities, access to schools or other institutions providing services to at-risk communities, or burdens identified by the CEQ's Federal mapping tool when compared to the Proposed Action. | None | N/A | No Effect |
| 2.6-d: Interfere substantially with access to schools or other public institutions providing services to at-risk communities | SRMS (Watermark Farms) | Similar to the Proposed Action, with no increase of social impacts to unhoused communities, Tribal communities, access to schools or other institutions providing services to at-risk communities, or burdens identified by the CEQ's Federal mapping tool when compared to the Proposed Action. | None | N/A | No Effect |
| 2.6-f: Result in a substantial impact to at-risk communities, particularly impacts related to the burdens identified by the CEQ's Federal mapping tool | SRMS (Watermark Farms) | Similar to the Proposed Action, with no increase of social impacts to unhoused communities, Tribal communities, access to schools or other institutions providing services to at-risk communities, or burdens identified by the CEQ's Federal mapping tool when compared to the Proposed Action. | None | N/A | No Effect |

Alternative 5c (Sunset Pumps)

Alternative 5c combines three approaches to complete the Sacramento River Mitigation requirements including 1) Purchasing Delta smelt credits from an approved conservation bank 2) Funding a NMFS recovery plan project (Sunset Pumps) to remove a weir, allowing fish passage to benefit chinook steelhead and green sturgeon and 3) Funding the improvements at Sunset Pumps would increase water availability, which would then be directed to two local wildlife refuges, benefiting the Western Yellow Billed Cuckoo. The Sunset Pumps project is listed as high priority BOR, DWR, and USFWS, and is subject to separate NEPA/CEQA analysis prior to implementation. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. All activities related to 5c involve funding another project, therefore no additional impacts to socioeconomic conditions, or at-risk, low-income, minority, or unhoused communities would result from this alternative.

Table 2.6-8. Alternative 5c Effects

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|---|---|---------------------------|-------------------------------------|-----------------------------------|
| 2.6-a Induce substantial population growth in an area | SRMS (Approved Conservation Banks and Sunset Pumps) | Similar to the Proposed Action, Alternative 5a would not cause substantial population growth. Alternative 5a would have no effect on the local economy or induce any population growth. | N/A | No Impact | No Effect |
| 2.6-b Displace substantial numbers of people or existing housing | SRMS (Approved Conservation Banks and Sunset Pumps) | Similar to the Proposed Action, Alternative 5a would have no effect on housing or population. | N/A | No Impact | No Effect |
| 2.6-c: Result in substantial impacts to unhoused populations residing in the project area, through displacement or other means. | SRMS (Approved Conservation Banks and Sunset Pumps) | Similar to Proposed Action with no increase of social impacts to unhoused communities, Tribal communities, access to schools or other institutions providing services to at-risk communities, or burdens identified by the CEQ's Federal mapping tool when compared to the Proposed Action. | None | N/A | No Effect |
| 2.6-d: Interfere substantially with access to schools or other public institutions providing services to at-risk communities. | SRMS (Approved Conservation Banks and Sunset Pumps) | Similar to Proposed Action with no increase of social impacts to unhoused communities, Tribal communities, access to schools or other institutions providing services to at-risk communities, or burdens identified by the CEQ's Federal mapping tool when compared to the Proposed Action. | None | N/A | No Effect |

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|---|---|---------------------------|-------------------------------------|-----------------------------------|
| 2.6-f: Result in a substantial impact to at-risk communities, particularly impacts related to the burdens identified by the CEQ's Federal mapping tool | SRMS (Approved Conservation Banks and Sunset Pumps) | Similar to Proposed Action with no increase of social impacts to unhoused communities, Tribal communities, access to schools or other institutions providing services to at-risk communities, or burdens identified by the CEQ's Federal mapping tool when compared to the Proposed Action. | None | N/A | No Effect |

3.1 Aesthetics and Visual Resources

3.1.1 Existing Conditions/Affected Environment

Visual Character

The environmental setting described in Section 3.15.1 of the ARCF GRR Final EIS/EIR covering visual resources is generally applicable to the visual character of the project site. Generally, the ARCF GRR Final EIS/EIR describes the American River area as a highly valued, natural riparian woodland setting with a feeling of serenity amid a developed urban area. The ARCF GRR Final EIS/EIR describes the Sacramento River area as a narrow riparian corridor. The ARCF GRR Final EIS/EIR describes Magpie Creek as open space with some small ranchettes and light industrial uses.

Since the publication of the ARCF GRR Final EIS/EIR, the following local community parks have been added to the project site for staging areas and general access: Larchmont Community Park, University Park, Garcia Bend Park, Miller Regional Park, Camp Pollock, the Dry Creek Parkway, and Walter S Ueda Parkway. The visual character of these parks is generally high. Overall, these parks have many trees and grassy fields that bring a green and lush view compared to the surrounding urban and suburban development. These parks provide a contrast to the urbanized and suburban views that are more typical in the region. University Park is under large powerlines, which detract from the natural setting.

The American River Mitigation Site (ARMS) is in the American River Parkway and generally includes elements of visual character described in the ARCF GRR Final EIS/EIR for the American River. The American River area is a highly valued, natural riparian woodland setting with a feeling of serenity in the midst of a developed urban area. However, the project site for the ARMS includes a former sand and gravel mine pond surrounded by grassy areas, which was not described in the ARCF GRR Final EIS/EIR. The ARMS site includes a single-family house and industrial elements such as shipping containers, heavy trucks, and equipment. The visual character of the western portion of the ARMS is not consistent with the natural character present elsewhere on the American River Parkway.

The Sacramento River Mitigation Site (SRMS), which was not included in the ARCF GRR Final EIS/EIR, consists of a mix of riparian forest, open grassy areas with disbursed shrubs, dispersed early successional vegetation areas, interior sandy flats, and sandy beaches.

Viewer Sensitivity

The environmental setting described in Section 3.15.1 of the ARCF GRR Final EIS/EIR covering visual resources is generally applicable to the viewer sensitivity of the proposed action. The ARCF GRR Final EIS/EIR describes the main viewer groups in the American River area as residents living near the levee, travelers crossing bridges over the American River, recreational users in the American River Parkway, and boaters on the American River. Some residences at certain elevations have views of the American River and adjacent riparian land. Those recreating in the American River Parkway or on the American River see riparian forests and general open space lands. Overall, the ARMS, which was not described in the ARCF GRR Final EIS/EIR, has a slightly different viewer sensitivity than the rest of the American River Parkway. The ARMS is

privately owned, so recreational viewers are currently limited to those along the Jedediah Smith Memorial Trail, those recreating at Camp Pollock, those recreating at Discovery Park, or on other adjacent public areas of the American River Parkway.

The main viewer groups described in the ARCF GRR Final EIS/EIR for the Sacramento River include residents living near the levee, travelers crossing bridges over the Sacramento River, recreational users on existing bike paths, and boaters on the Sacramento River. Much of the Sacramento River levee access has been closed off by private gates and fences across the levees, preventing access by recreationalists, so most of the viewers of this area have been residents and boaters, although the City of Sacramento has expanded the portions of the levee that are open to recreational use with the extension of the Sacramento River Parkway.

Finally, the ARCF GRR Final EIS/EIR described the main viewer group at the Magpie Creek Project (MCP) site as local residents. The levee structure is low relative to the landscape and hard to define from the viewer's perspective.

As discussed previously, some local parks were added to the project site during design refinements and were not discussed in the ARCF GRR Final EIS/EIR. The main viewer groups of these parks are those living in the nearby neighborhoods. In addition, residences nearby the parks will have natural views of the parks. Some parks have features that may additionally draw recreationalists from outside nearby neighborhoods. Discovery Park hosts big events such as concerts, which draw in people from far distances. Camp Pollock hosts smaller events such as weddings which could also draw people from far distances. Larchmont Community Park and Garcia Bend Park have soccer fields and host soccer leagues that draw people from around Sacramento County. In addition, Garcia Bend Park, Miller Park, and Watt Avenue Boat Launch are popular boat launches that draw people from all over Sacramento County.

The SRMS, which was not included in the ARCF GRR Final EIS/EIR, will be viewed by boaters, those driving on State Route (SR) 160 and SR 84, those bicycling along SR 84 and those recreating at the Hidden Harbor Marina. Most of the views along both SR 160 and 84 are blocked by vegetation along the roads, but drivers can see the water side of the levee of the SRMS and associated riparian forest and sandy beaches on the shore of the SRMS, through gaps in the vegetation. Those using the Hidden Harbor Marina have a view of the northern shore of the SRMS, including associated riparian forest and sandy beaches. Boaters will have a view of both the northern and southern shores of the SRMS.

Scenic Vistas, Byways, and Highways

For this SEIS/SEIR, scenic vistas are considered areas designated as having important scenic views needing protection. Scenic byways are roads recognized by the Federal Highway Administration as having archeological, cultural, historic, natural, recreational, or scenic qualities (FHWA 2023a). Scenic highways in California, which are managed by the California Department of Transportation (Caltrans), are highways designated as scenic to add to the pleasure of residents and to encourage growth of recreation and tourism industries (California Department of Transportation 2023). California scenic highways are protected through local governing bodies through a corridor protection program. The corridor protection programs are set up by the local governing bodies and protect the views of the scenic highways through “regulation of land use and density of development (i.e., density classifications and types of

allowable land uses); detailed land and site planning (i.e., permit or design review authority and regulations for the review of proposed developments), control of outdoor advertising (i.e., prohibition of off-premise advertising signs³ and control of on-premise advertising signs), careful attention to and control of earthmoving and landscaping (i.e., grading ordinances, grading permit requirements, design review authority, landscaping and vegetation requirements), and the design and appearance of structures and equipment (i.e., design review authority and regulations for the placement of utility structures, microwave receptors, wireless communication towers, etc.)” (Caltrans 2008 pages 5-6).

SR 160 is listed as a State scenic highway from the Contra Costa County boundary to the City of Sacramento boundary (California State & Highway Code § 263.7). SR 160 is designated as a State scenic highway starting approximately 0.4 mile downstream of the southern portion of the Sacramento River Erosion Contract 3, and work at the Sacramento River Erosion Contract 3 site will not be visible from SR 160. SR 160 follows the Sacramento River downstream and is still designated as a Scenic Highway when it is on the opposite bank of the SRMS. The SRMS will be visible from SR 160. There are no National scenic byways near the project site (FHWA 2023b). The City of Sacramento considers the views of the American River and the Sacramento River to be scenic views that need to be protected (City of Sacramento 2015). There are no Caltrans-designated scenic vista points near the project site (Caltrans 2022).

Existing Visual Resources

Overall, the American River has natural views with grassy areas, dense riparian forests, and in some areas, large heritage oaks as shown in photos on Figures 3.1-1, 3.1-2, 3.1-3, 3.1-4, and 3.1-5. The Sacramento River similarly has natural views of riparian forest and grassy areas with some scattered infrastructure for river access as shown in photos on Figures 3.1-6, Figure 3.1-15. The SRMS has natural views with a mix of grassy areas, sandy areas, and riparian forest as shown in photos on Figures 3.1-7 and 3.1-8. The MCP area is mostly grassy areas with industrial scenery scattered throughout the natural views (Figure 3.1-9). Local parks within the project site generally have maintained grassy fields and scattered trees as shown in photos on Figures 3.1-10, 3.1-11, 3.1-12, 3.1-13, and 3.1-15. The exception is Camp Pollock, which has views of dense riparian forest, large heritage trees, and a rustic building (Figure 3.1-14).



Source: PSOMAS 2020

Figure 3.1-1. View of Jedediah Smith Memorial Trail from the American River Erosion Contract 3B North Site 3-1



Source: Bailey Hunter 2021

Figure 3.1-2. American River View from the American River Erosion Contract 3B South Site 4-1



Source: Bailey Hunter 2022

Figure 3.1-3. View of Jedediah Smith Memorial Trail from the American River Erosion Contract 3B North Site 4-2



Source: Bailey Hunter 2022

Figure 3.1-4. View under the SR 160 Bridges from the American River Erosion Contract 4A Site



Source: Kevin Fellows 2023

Figure 3.1-5. View of American River Mitigation Site



Source: Melissa Dyer 2022

Figure 3.1-6. View of Sacramento Contract 3 Site



Source: Nicky Schleeter 2022

Figure 3.1-7. View from Grand Island Facing Steamboat Slough



Source: Nicky Schleeter 2022

Figure 3.1-8. View of Grand Island Facing Inland



Source: Blake Prawl 2023

Figure 3.1-9. View of Magpie Creek



Source: Bailey Hunter 2023

Figure 3.1-10. View of University Park



Source: Trevor Kough 2022

Figure 3.1-11. View of Larchmont Community Park



Source: Bailey Hunter 2023

Figure 3.1-12. View of Garcia Bend Park



Source: Bailey Hunter 2023

Figure 3.1-13. View of Miller Park



Source: Bailey Hunter 2023

Figure 3.1-14. View of Camp Pollock



Source: Bailey Hunter 2023

Figure 3.1-15. View of the Sacramento River Parkway

3.1.2 Applicable Laws, Regulations, Policies, and Plans

Federal

Wild and Scenic Rivers Act (16 U.S.C. 1271 et. seq.)

This act was enacted to preserve selected rivers or sections of rivers in their free-flowing condition to protect the quality of river waters and to fulfill other national conservation purposes. The Lower American River, below Nimbus Dam, has been included in the National Wild and Scenic Rivers System since 1981. The Lower American River was listed for having outstandingly remarkable values for anadromous fishery resources and recreation. Visual impacts that adversely affect the recreational values for which the Lower American River was included in the National System will likely not comply with the Wild and Scenic Rivers Act. The Wild and Scenic Rivers Act applies to the components of the Proposed Action along the Lower American River, specifically all construction work and some staging associated with American River Erosion Contracts 3B and 4B, American River Erosion Contract 4A, and the ARMS.

State

California Wild and Scenic Rivers Act (PRC Section 5093.545h.)

This act was put in place to preserve certain rivers that have extraordinary recreational, scenic, fishery, or wildlife values. The Lower American River between Nimbus Dam and where the American River intersects with the Sacramento River has been designated under the California Wild and Scenic Rivers Act for extraordinary anadromous fishery resource and recreational values. Projects with visual impacts that adversely affect the recreational values for which the

Lower American River was included in the California Wild and Scenic Rivers System will likely not comply with the California Wild and Scenic Rivers Act. The California Wild and Scenic Rivers Act applies to the parts of the Proposed Action along the American River, specifically all construction work and some staging associated with American River Erosion Contract 3B and 4B, American River Erosion Contract 4A, and the ARMS.

Local

City of Sacramento 2035 General Plan – Environmental Resources

Approved on March 3, 2015, the City of Sacramento 2035 General Plan is a comprehensive plan that directs the City of Sacramento on future land use, development, and environmental protection. Part Two of the General Plan lists the environmental resources that are to be protected. Goal ER 7 outlines the policies put in place to protect visual resources (City of Sacramento 2015). These policies include protecting scenic views, developing complementing natural settings, minimizing unnecessary lighting, and directing lighting downward (City of Sacramento 2015).

Planning and Development Code of the City of Sacramento

Made effective September 30, 2013, Chapter 17 of the City of Sacramento Ordinance Code, titled Planning and Development Code, implements the policies of the City of Sacramento 2035 General Plan (City of Sacramento 2013, 17.100.010). The Flood (F) zone requires special developments within areas with the F zone to enhance the appearance of the river (City of Sacramento 2013, 17.200.310). The Sacramento River Erosion Contract 3 and a small portion of American River Erosion Contract 3B North are within the F zone. All other zones (Light Industrial [M-1], Standard Single Family [R-1], Single Family Alternative [R-1A], Agricultural [A], American River Parkway [ARP-F] and Transportation Center [TC]), within the project sites do not specify visual requirements.

Sacramento County General Plan of 2005 to 2030, Open Space Element

Adopted November 9, 2011, the Sacramento County General Plan of 2005 to 2030 outlines the goals, objectives, and policies for future development in the unincorporated areas of Sacramento County. The Open Space element, which was updated November 26, 2017, discusses that open space is important for providing a visual relief from urban sprawl. Policies listed to protect open space include maintaining open space, promoting education programs for natural resources and agriculture, following the Open Space Vision Diagram to prioritize open space acquisition, maintaining a regional park standard of 20 acres per 1,000 population, establishing trail connections, establishing greenbelts, and permitting development clustering in a manner that protects scenic areas (Sacramento County 2017).

Sacramento County Zoning Code

Made effective on September 25, 2015, and amended January 13, 2023, the Sacramento County zoning code implements the policies of the Sacramento County General Plan of 2005 to 2030. The Parkway Corridor (PC) zoning district was established to limit visual impacts to the American River Parkway (Sacramento County 2023, page 2-6). The PC zoning district limits how close structures can get to the levees and the height of buildings by levees to minimize

impacts on the American River Parkway (Sacramento County 2023 page 4-25). Part of American River Erosion Contract 3B North falls under the PC zoning district. In addition, the Sacramento River along the SRMS falls under Scenic Areas (DW-S). In addition, the Recreation (O) zoning district was established to protect the scenic areas of Sacramento County. Some staging and access sites of American River Erosion Contract 3B North and South will be in the O zoning district. In addition, SRMS is in the O zoning district. No other zoning districts in the project site (Multiple Family Residential [RD-20], and Residential [RD-5]) list visual requirements. The Sacramento County Zoning code also defines a scenic corridor as a strip of land on each side of a stream or roadway which is generally visible to the public (Sacramento County 2023, page 4-47). The Sacramento County Zoning code defines the scenic corridor for a scenic highway as 500 feet from each side of the center line (Sacramento County 2023, page 4-47).

Code of Ordinances- Sacramento County

In order to protect native oak trees, Sacramento has implemented an ordinance for tree preservation and protection. Chapter 19.12 of the Sacramento County Code of Ordinances spells out requirements for preserving and protection native trees. Section 19.12.070 (c) says “The preservation or removal of trees within parks, parkways, and public recreation easements, shall be the responsibility of the Director of Parks and Recreation.” Project Partners have incorporated Sacramento Regional County Parks into the design review process. Coordinating with Sacramento Regional County Parks ensures compliance with this ordinance.

Code of Ordinances- City of Sacramento

In order to protect trees, the City of Sacramento has implemented an ordinance for tree protection. Chapter 12.56 of the outlines tree planting, maintenance, and conservation. Section 12.56.080 states that “A tree permit is not required for a public agency that performs any flood protection work on public property or within a public easement that may cause injury to or the removal of a city tree or private protected tree. As used in this section, "public agency" includes, but is not limited to, the U.S. Army Corps of Engineers, Sacramento Area Flood Control Agency, Reclamation District 1000, or American River Flood Control District. (Ord. 2016-0026 § 4)”. Consequently, tree removal for flood protection by Project Partners within the limits of the City of Sacramento is in compliance with this ordinance.

3.1.3 Analysis of Environmental Effects

Analysis Methodology

The evaluation of potential impacts relied on location descriptions of scenic highway locations from the California Streets and Highways Code § 263.7, spatial data of locations of scenic vistas from the California Department of Transportation (Caltrans 2022), information from the City of Sacramento 2035 General Plan and the Sacramento County General Plan of 2008 to 2030, the Planning and Development Code of the City of Sacramento, knowledge of the site, site photos, and Google Earth imagery.

The Federal Highway Administration provides guidelines on how to assess visual impacts of highway projects (FHWA 2015). Per the guidelines, a visual analysis must include the visual compatibility, viewer sensitivity, and visual quality. These factors were considered when analyzing the visual impacts of the Proposed Action and alternatives.

Scoping Comments

Comments submitted in response to the Notice of Intent (NOI) were reviewed for relevance to the analysis of environmental consequences and development of mitigation measures. A letter was received during the Scoping period from the Park Planning and Development Manager for the Cordova Recreation and Park District (Taylor 2022). This letter outlined concerns of visual effects associated with use of Larchmont Community Park as a staging area and impacts on the levee, which is viewable from Larchmont Community Park. These comments were considered during the analysis.

Basis of Significance

The significance thresholds, and the impact analysis that follows, take into consideration the significance of an action in terms of: the setting of the proposed action; short- and long-term effects of the proposed action; both beneficial and adverse effects; direct and indirect effects of the proposed action on public health and safety; the context and intensity of impacts; and effects that will violate Federal, State, Tribal, or local law protecting the environment, as required under NEPA (40 CFR 1508.1(g) and State CEQA Guidelines, as amended. The alternatives under consideration were determined to result in a significant impact related to aesthetics/visual resources if they would do any of the following:

- a. have a substantial adverse effect on a scenic vista;
- b. substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway;
- c. result in substantial degradation to the existing visual character or quality of public views of the site and its surroundings in nonurbanized areas (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;
- d. create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Effects Analysis

No Action Alternative

Work done under the No Action Alternative would involve tree removal, ground disturbance, and the use of construction equipment. Construction activities would result in short-term significant direct impacts on the visual tranquility of the American River Parkway due to construction equipment regularly in the American River Parkway over 10 years. Loss of vegetation along the American River, due to tree removal and construction of levee improvements, would result in significant and unavoidable short-term effects on visual resources of the mature vegetation, but a minor long-term impact on visual resources because trees would be left onsite and augmented by the addition of onsite mitigation plantings and monitored to ensure successful maturation of planting. Similarly, there would be a short-term significant direct impact on visual resources along the Sacramento River due to construction equipment on the

levees over several years that would be visible to residents and boaters. In addition, there would be a short-term significant impact on visual resources due to vegetation removal along the Sacramento River. Since proposed work for the MCP would only be one season, and since the MCP is not located in an area used for recreation or where viewer sensitivity is high, the flood risk reduction work on the MCP would create short-term, less-than-significant impacts on visual resources.

The short-term significant impacts along the American and Sacramento Rivers would be significant and unavoidable as there are no feasible mitigation measures available to reduce visual impacts during construction activities. The long-term significant impacts on visual resources along the American and Sacramento Rivers would be reduced to less-than-significant impacts with implementation of mitigation measures listed in Section 3.15.6 of the ARCF GRR Final EIS/EIR, which would enhance vegetation regrowth and create a more natural view.

Proposed Action

3.1-a Have a substantial adverse effect on a scenic vista

CEQA Significance Conclusion: Short- and Long-term Significant and Unavoidable.

NEPA Significance Conclusion: Short- and Long-term Significant and Unavoidable.

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): No Impact

NEPA Impact Conclusion (Design Refinements): No Impact

The area around the MCP is not considered a scenic vista. The Proposed Action would consequently not impact scenic vistas at the MCP site.

American River Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Mitigation Site, American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable; Long-term Less than Significant with Mitigation Incorporated.

The City of Sacramento General Plan describes the American and Sacramento Rivers as having important scenic views that need to be protected (City of Sacramento 2015). All projects along the American and Sacramento Rivers within the ARCF 2016 Project would result in disturbance to river views at various levels from construction equipment, ground-disturbing activities, and tree removal during construction. Appendix B 4.1 provides more details on vegetation removal. The collective disturbance associated with construction and tree removal would significantly change the scenic views along the American and Sacramento Rivers. Work cannot be completed without ground disturbance and tree removal, so this effect is unavoidable. Short-term impacts would be significant. The following mitigation measure has been identified to address this impact.

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Final project designs will be refined to reduce impacts on vegetation and wildlife to the extent feasible. Refinements implemented to reduce riparian habitat losses will include reducing the impact footprint, constructing bank protection rather than launchable rock trench whenever feasible, and designing and constructing planting benches. Where practicable, trees will be retained in locations where the bank protection and planting benches are constructed. Trees will be protected in place along the natural channel during rock placement. Additional plantings will be installed on the newly constructed benches to provide habitat for fish and avian species. The planting benches will be used where feasible to minimize impacts on fish and wildlife species. Where feasible, soil-filled revetment will be used to allow plantings and erosion protection features like launchable trench to be buried to allow plantings. The on-site habitat will be created in accordance with the ARCF GRR Habitat Mitigation, Monitoring, and Adaptive Management Plan, which includes conceptual mitigation proposals, performance standards, and adaptive management tasks.

All areas to be avoided during construction activities will be fenced and/or flagged as close to construction limits as feasible. Where possible, protective fencing or flagging shall be installed 5 feet beyond the tree canopy dripline boundary of each tree or tree group, referred to as the protected tree zone. Contractors and subcontractors shall avoid heavy equipment operation, grading, and excavation in the protected tree zones, to the greatest extent practicable. Heavy equipment operation, grading, and excavation activities in the protected tree zone shall be overseen by a qualified arborist/ecologist. The contractor shall maintain the fencing or flagging to always keep it identifiable. Fencing and flagging shall be removed only after all construction activities are complete.

An annual pre-construction meeting shall be held between all contractors and subcontractors (e.g., grading, tree removal/pruning, and builders) and a qualified arborist/biologist. The meeting shall focus on instructing the contractors and subcontractors on tree protection practices and answering any questions. All equipment operators and spotters, assistants, or those directing operators from the ground, shall provide written acknowledgement of receiving tree protection training. This training shall include information on the location and marking of protected tree zones, the necessity of preventing damage, and the discussion of work practices that shall accomplish these tasks.

Contractors and subcontractors shall take care when moving construction equipment or supplies near protected trees, paying special attention to overhead vegetation. Contractors and subcontractors shall ensure that damage to the trees shall be avoided when transporting or moving construction materials and working around the tree (even outside of the fenced protected zone). Contractors and subcontractors shall flag aboveground tree parts with potential for damage (e.g., low limbs, scaffold branches, and trunks) with high-visibility flagging, such as fluorescent red or orange. If contact with the tree crown is unavoidable, conflicting branches may be pruned under supervision of a qualified arborist/ecologist. The contractor or subcontractor shall not prune protected trees until all construction is completed unless standard pruning will reduce conflict between canopy

and equipment. All pruning shall be conducted under supervision of a qualified arborist, or their representative.

A qualified arborist/ecologist shall inspect the preserved protected trees adjacent to grading and construction activity prior to initiation of construction activities, during construction activities within tree protection zones, and prior to removal of tree protection zone fencing/flagging at the end of construction. A report summarizing site conditions, observations, tree health, and recommendations for minimizing tree damage shall be submitted to the Project Partners by the qualified arborist/ecologist following each inspection.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measure VEG-2 would allow for plant growth, monitoring, management and reporting during the short-term establishment period of 0-5/8 years. However, the short-term impacts remain significant and unavoidable even with Mitigation Measure VEG-2 because vegetation must be removed and replanted vegetation is not of the same size and quality with respect to visual resources. There are no other feasible mitigation measures available except for Mitigation Measure VEG-2.

Long-term impacts on scenic views along the American River would be less than significant over time once vegetation establishes from implementation of Mitigation Measure VEG-2. In addition, as vegetation grows along the SRMS, impacts would become less than significant over time, although short-term visual impacts associated with the SRMS would also be significant and unavoidable after implementation of Mitigation Measure VEG-2, as no additional feasible mitigation is available.

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable; Long-term and Moderate effects that are Less Than Significant with Mitigation.

The discussion on scenic vistas listed above under the CEQA Impact Conclusion is applicable for NEPA as well. There would be a direct short-term significant and unavoidable impact on scenic vistas. Once Mitigation Measure VEG-2 is implemented and vegetation establishes there would be a direct long-term, less-than-significant impact (long-term and moderate impact for the purposes of NEPA) on scenic vistas as the riparian plantings mature.

American River Erosion Contract 4A

CEQA Impact Conclusion (Entire Proposed Action): Short- and Long-term Less Than Significant.

The City of Sacramento General Plan describes the American and Sacramento Rivers as having important scenic views that need to be protected (City of Sacramento 2015). All projects along the American and Sacramento Rivers within the ARCF 2016 Project would have some sort of disturbance to the river views. There would be construction equipment, ground-disturbing activities, and tree removal during construction. Appendix B 4.1 provides more details on

vegetation removed. Woody vegetation may not be replanted at the site once work is finished since woody roots could risk failure of the berm. The berm associated with American River Erosion Contract 4A; however, is approximately 1 acre of the 7,000 acres of the American River Parkway (Sacramento County 2023a). In addition, the location of the berm is next to the SR 160 bridges and the UPRR bridge. Generally, the visual character of the specific location of the proposed berm is not high due to the bridges. Construction of the bike trail re-route would also not change the scenic views of the American River as there are already existing paved bike trails along the American River. Areas disturbed from American River Erosion Contract 4A work would be reseeded with native grasses and revegetated where feasible. Since the preexisting views of the area are grassy from the existing levees with views of the bridges, creating additional grassy views along the constructed berm would not be detrimental to the localized views at this site. Construction of the erosion protection work and rerouted bike trail would create a short- and long-term, less-than-significant impact on the scenic views of the American River.

NEPA Impact Conclusion (Design Refinements): Short- and Long-term Minor to Moderate effects that are Less than Significant.

The discussion of scenic vistas listed above under the CEQA Impact Conclusion is applicable for NEPA as well. There would be a direct short-term and long-term but negligible impact that is less than significant on scenic vistas since the localized views of the area would generally match the views of the American River Erosion Contract 4A work once grasses establish. Construction of the erosion protection component design refinements, and rerouted bike trail, would create a direct less-than-significant impact on the short- and long-term scenic views of the American River.

Sacramento River Erosion Contract 3

CEQA Impact Conclusion (Entire Proposed Action): Short- and Long-term Significant and Unavoidable.

The City of Sacramento General Plan describes the Sacramento River as having important scenic views that need to be protected (City of Sacramento 2015). As with American River construction activities, the disturbance associated with construction and trees removed would significantly change the scenic views along the Sacramento Rivers during construction (short term) and in the long-term.

The erosion protection features along the Sacramento River could not be designed in a manner that would allow planting benches along the whole project and in a manner that would meet flood risk reduction objectives. Planting benches would only be built along less than 25 percent of the riverbank along the Sacramento River Erosion Contract 3 site. All other locations would only be hydroseeded. Previous flood risk reduction projects along the Sacramento River with revetment have seen success with natural plant recruitment, so vegetation may reestablish along areas without planting benches. However, permanent removal of the vegetation would cause impacts to the scenic views along the Sacramento River that would be long-term. Because there is no feasible mitigation available to replace the removed trees at the tree-removal sites or

otherwise avoid or reduce these impacts, the short- and long-term visual impacts from construction and tree removal, respectively, would be significant and unavoidable.

NEPA Impact Conclusion (Design Refinements): Short- and Long-term Significant and Unavoidable.

The discussion on scenic vistas listed above under the CEQA Impact Conclusion is applicable for NEPA as well for the Sacramento River Erosion Contract 3 component design refinements. There would be a direct short- and long-term significant and unavoidable impact on scenic vistas along the Sacramento River.

Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Short- and Long-term Less than Significant

The City of Sacramento General Plan describes the American and Sacramento Rivers as having important scenic views that need to be protected (City of Sacramento 2015). Piezometers would be installed along the Sacramento and American Rivers. Infrastructure for the Piezometer Network would be placed on top of the levee or on the landside of the levee. Infrastructure associated with the Piezometer Network would be small. Small antennae or feathers would be installed, a small (approximately 12 inch) utility cover would be installed. Each group of piezometers would likely have above-ground infrastructure associated with the telemetry. Each piezometer would also include a solar panel the size of those associated with call boxes along highways. The infrastructure associated with the Piezometer Network is generally small. In addition, there is other infrastructure such as sumps, fences, powerlines, paved bike trails, boat docks, and bathrooms along the levees already, so adding the piezometers would not look out of place. Because the infrastructure is small and would not look out of place due to existing infrastructure, there would be a less than significant impact on views.

Installation of the Piezometer Network would include drill rigs. These drill rigs would be visible to those recreating along the American and Sacramento Rivers. However, it is anticipated that two to three piezometers would be installed per day and approximately three to fifteen Piezometers would be installed at each project reach. Therefore, the drill rigs would not be in one place for a long time. Because the views of the drill rigs would be very temporary at specific locations along the Sacramento and American Rivers, there would be a less-than-significant impact to the scenic vistas of the Sacramento and American Rivers from the drill rigs.

The majority of the proposed staging areas are on the land side of the levee and would be blocked from the views of the American and Sacramento Rivers by the levee. However, some staging areas needed for the Piezometer Network installation are visible along the Sacramento and American Rivers. These staging areas are not anticipated to be used for long periods of time but could be needed for up to 4 months. Because most of the staging areas would not be visible along the Sacramento and American Rivers, and because those that are would not be used for more than 4 months, there would a less-than-significant impact to the vistas of the Sacramento and American River.

NEPA Impact Conclusion (Design Refinements): Short- and Long-term Minor Impact that would be Less than Significant.

The discussion on scenic vistas listed above under the CEQA Impact Conclusion is applicable for NEPA as well for the Piezometer Network. Because the infrastructure is small and would not look out of place due to existing infrastructure, there would be a minor impact that would be less than significant on views.

Because the views of the drill rigs would be very temporary at specific locations along the Sacramento and American Rivers, there would be a direct less-than-significant impact to the scenic vistas of the Sacramento and American Rivers. Because most of the staging areas would not be visible along the Sacramento and American Rivers, and because those that are would not be used for more than 4 months, there would be a direct less-than-significant impact to the vistas of the Sacramento and American River from the drill rigs.

3.1-b Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway or national scenic byway.

CEQA Significance Conclusion: Short-term Significant and Unavoidable; Long-term Less Than Significant.

NEPA Significance Conclusion: No Impact.

Magpie Creek Project, American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): No Impact

There are no State scenic highways or National scenic byways along the American River or the MCP and so there would be no impact at or near these sites. The Sacramento River Erosion Contract 3 footprint is 0.4 mile upstream from the portion of SR 160 that is designated a State scenic highway, but the railroad berm along SR 160 blocks the view of the river and the Sacramento River Erosion Contract 3 project site, so those driving along SR 160 would not be affected by temporary visual changes during construction. Because views are blocked, there would be no impact on scenic highways along the Sacramento River.

NEPA Impact Conclusion (Design Refinements): No Impact

There are no National scenic byways along the American River, Sacramento River, or the MCP, so there would be no impact on scenic byways.

Sacramento River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable; Long-term Less Than Significant.

SR 160 travels along the Sacramento River near the SRMS and is listed as a State scenic highway at this location. The SRMS is on the opposite side of the Sacramento River. Generally, there is vegetation along SR 160 that blocks the view of the project site. There are gaps in some areas, and those driving on SR 160 would see regrading or disturbed soil for plantings done for bank mitigation work along the river. Regrading would cause a temporary change from the natural look of riparian vegetation to a less visually appealing view of disturbed soil with associated best management practice (BMP) materials needed to prevent storm water runoff such as silt fences and wattles. The visual effect from the regrading and replanting work would only last until the vegetation planted along the bank established, so there would be a direct short-term significant impact on visual resources. This short-term significant impact during the short-term period of planting maturation monitoring between approximately 0 to 8 years is unavoidable since disturbance is needed to revegetate the mitigation site and there are no feasible mitigation measures available to avoid or reduce this impact. Once vegetation matures over the long-term, and returns the visual quality of the site, the impacts on the visual character of the site would be less than significant.

NEPA Impact Conclusion (Design Refinements): No Impact

There are no National scenic byways along the Sacramento River so there would be no impact on scenic byways.

Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less Than Significant

The Sacramento River flows along SR 160. In addition, the overall ARCF 2016 Project has components along the most northern portion of where SR 160 is designated as a scenic highway (specifically the footprint associated with Sacramento River East Levee (SREL) Contract 4). Piezometers could be installed at this location on top of the levee or on the land side of the levee in view of those driving along SR 160. Infrastructure associated with the Piezometer Network would be small. Small antennae or feathers would be installed, and a small (approximately 12 inch) utility cover would be installed. The solar panels the size of those associated with call boxes along highways could be installed for each piezometer. Up to 15 piezometers would be along a single reach (see Figure 3.5.7-1 in the SEIS/SEIR for reach locations). The infrastructure is small enough that it can be installed without removing or affecting vegetation, rocks, outcroppings, or other scenic visual resources. Because scenic resources like vegetation, rocks, and outcroppings would be left in place, the Piezometer work would not damage the scenic views of SR 160. There would be a less-than-significant impact to the views of scenic highways.

Some staging areas would be near the portion of SR 160 that it is designated a State scenic highway. The shoulder near Freemont bridge, the vacant lot near Bill Conlin Sports Complex, the vacant lot near Consumers River Boulevard, and the agricultural field near River Road are all already disturbed, and no new rocks, trees, outcroppings, or other scenic features would be impacted by use of the staging areas. Because there would be no new scenic features damaged at staging areas, there would be a less-than-significant impact from staging activities on the views along the scenic highway.

NEPA Impact Conclusion (Design Refinements): No Impact

There are no National scenic byways along the American or Sacramento Rivers so there would be no impact on scenic byways.

3.1-c Result in substantial degradation to the existing visual character or quality of public views of the site and its surroundings in nonurbanized areas? (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?

CEQA Significance Conclusion: Short- and Long-term Significant and Unavoidable.

NEPA Significance Conclusion: Short- and Long-term Significant and Unavoidable.

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): Less Than Significant

Generally, the view of the area would change due to the work associated with the MCP. Specifically, the levee would likely be slightly more distinguishable after it is raised and widened and vegetation is removed. The added levee at Raley Blvd, alignment change of Raley Blvd, new culvert at Raley Blvd, and added maintenance roads would be newly visible features in the area. In addition, during construction the area would temporarily look disturbed as work is completed. Vegetation would be removed near the levee and the area would only be replanted with native grasses. The parcels near the flood risk reduction work are zoned under the City of Sacramento Planning as light industrial (City of Sacramento Planning 2023). The zoning code for light industrial does not include any visual requirements or specifications. Given the marginal existing visual quality in this developed light industrial area, the construction-related and long-term impacts on visual resources would be less than significant.

The western-most staging area for the MCP would be within the Dry Creek Parkway and the Walter S Ueda Parkway. The staging area is also adjacent to the Sacramento Northern Bike Trail. Access to the staging area would be along a trail at the end of the Walter S Ueda Parkway. Use of the area for staging would disrupt the views of those using the Sacramento Northern Bike Trail and those using the trail in the Walter S Ueda Parkway as the views would include construction equipment, material storage, and would be different than the current views of a grassy field. Since these bikeways are recreational resources, the visual character of the area is considered high. This view would be impacted over two years, but the area would be reseeded and returned to its original state after construction is complete. The size of disturbance would be limited to 0.1 mile of the 8.8 available miles of the Sacramento Northern Bike Trail and 0.25 mile of the 12.5 miles of trails available in the Walter S Ueda Parkway. The staging area would likely still be viewable farther along the trail, specifically from the north along the Sacramento Northern Bike Trail because the topography south of the staging area would block out the view and specifically farther west along the Walter S Ueda Parkway because the Walter S Ueda Parkway ends at the eastern edge of the staging area. However, this visible area would still be a

small part of the recreational areas. Generally, raised roads and trees would block views of the staging areas. Because the impact on visual resources would be limited to a small part of the recreational resources, this short- and long-term impact to visual resources in the MCP area would be less than significant.

NEPA Impact Conclusion (Design Refinements): Short-term and Minor effects that are Less Than Significant

The ARCF GRR Final EIS/EIR generally assessed the visual effect from flood risk reduction work in the MCP area and determined that there would be a less-than-significant impact since the original project area did not include many recreation, vegetation, or wildlife areas. The Proposed Action includes design refinements that were not included in the ARCF GRR Final EIS/EIR. Specifically, the MCP area has been expanded and now includes a levee raise, levee extension, and construction of maintenance roads. These changes would add visually different features as compared with what is currently in the area. Overall, most of the area around the MCP has grassy views with industrial sites throughout the area. There are some homes in the northern section of the project area, just north of the MCP and the levee work could be visible from the backyard of these homes. In general, there are homes along the extended areas of the MCP. These homes are zoned by City of Sacramento Planning as light industrial (City of Sacramento Planning 2023); consequently, the visual character of this neighborhood is considered low due to the industrial character.

Construction and vegetation removal would affect the view from these residences. In addition, levee vegetation could block the residential views of the industrial properties on the south side of the MCP. However, the visual changes to the site would be less than significant because of the mostly industrial nature of the area, visual requirements for light industrial zoning do not exist, and the area is not considered to have high visual character and is not a destination for people who want a natural view. Additionally, the viewership of the area would be mostly residences within the 18 parcels with homes (City of Sacramento 2023) along Magpie Creek. Consequentially, changes in views, both temporary and permanent from the Proposed Action, would create direct less-than-significant impacts (short-term and minor for NEPA purposes) to visual resources.

The ARCF GRR Final EIS/EIR did not discuss staging areas. The discussion of visual impacts from staging under the CEQA Impact Conclusion applies to NEPA as well. Because the impact on visual resources would be limited to a small part of the recreational resources and because the visual impact would be limited to 2 years, this direct impact to visual resources would be less than significant (short-term and minor for NEPA purposes).

American River Erosion Contract 3B North and South

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable; Long-term Less Than Significant with Mitigation Incorporated.

The existing visual character along the American River is considered high valued and visible to those wishing to recreate and get a break from the urban spaces. Disrupting the highly valued visual character of the American River with construction and a reduction of trees and riparian vegetation would cause a significant impact on visual resources. Appendix B Section 4.1 “Vegetation and Wildlife” provides more details on vegetation removed. Because construction is only temporary, this would be a short-term significant impact to visual resources because the flood risk reduction work cannot be done without the construction equipment and disturbance. There is no feasible mitigation available to avoid or reduce this short-term impact. Therefore, the short-term construction-related impacts would be significant and unavoidable.

Many of the staging areas and access sites being used for the American River Erosion Contract 3B North and South include parks and recreational areas along the American River Parkway, specifically University Park, Watt Avenue Boat Launch, Larchmont Community Park, Kadema River Access, Estates River Access, and Waterton Way River Access, would be affected by the proposed action. These recreation sites have high visual character and visual sensitivity since they provide a break for those wanting to escape urban viewsheds. Equipment frequently carrying material through or adjacent to these parks would have a significant impact on the viewshed and tranquility of those wanting to recreate. Though access and use of the staging areas would be designed to minimize tree removal, there may be some trees that must be removed in the parks to allow access and use of the park for staging areas. Likely, no more than 10 trees would need to be removed from any single park, no trees would be removed from Larchmont Park. Once work is over, new trees would be planted in place of any removed trees within parks. Larger trees may not feasibly be replaceable with similar-sized trees and would need to be replaced with younger trees. All trees removed and replaced would require consultation with the park managers to ensure appropriate tree species are placed in areas that meet the needs of the park. Trees removed along the levee could also have an impact on the viewshed of the parks.

In addition, a buffer of heritage oaks would be kept in place near Larchmont Park, so the viewshed of trees from those parks would not be affected. There would be a buffer of trees left around the Watt Ave Boat Ramp area near the riverbank which would provide some natural views, though some trees directly adjacent to the parking lot would be removed due to the location of the erosion protection features. Overall, there would be a short-term significant impact on the visual resources associated with these parks because of construction-related impacts and the time for tree replants to grow into equivalently sized trees during the short-term period of planting maturation monitoring between approximately 0 to 8 years compared to removed trees. There is no feasible mitigation available to fully reduce these impacts. A permanent reduction of trees and vegetation also would cause a short-term significant impact on visual resources.

The following mitigation measures have been identified to address these impacts.

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Please refer to Impact 3.2-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measure VEG-2, which was previously adopted for the ARCF 2016 Project and is listed under Appendix B Section 4.1 of this SEIS/SEIR, would reduce this significant impact during the short-term period of planting maturation monitoring between approximately 0 to 8 years. In the long-term, the vegetation would be mature enough to provide a natural visual character again. The construction footprint would be replanted in most areas where vegetation was cleared. Locations at access points within the vegetation free zone would not be replanted with woody vegetation and permanent O&M ramps would not be replanted with woody vegetation. In addition, there would not be replanting along tiebacks nor on launchable toes. However, the O&M ramps, tie backs, launchable toes and vegetation free zone areas are only a small portion of the project site for American River Erosion Contract 3B North and South. There is no additional feasible mitigation available to reduce the short-term significant impact and, therefore, impacts would be significant and unavoidable.

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable; Long-term and Minor to Moderate effects that are Less than Significant with Mitigation Incorporated.

The No Action Alternative assessed the flood risk reduction work impacts on visual resources along the American River. The extension of work in the American River Erosion Contract 3B North area would still occur in a similar viewshed with similar visual character and viewer sensitivity to what was analyzed in the No Action Alternative, so the design refinements that required new locations of work would not cause a new impact on visual resources. The total riparian habitat acreage impacted, 62 acres, on the American River by the ARCF 2016 Project is under the 65 acres discussed in the ARCF GRR Final EIS/EIR. The acreage is lower than what was found in the ARCF GRR Final EIS/EIR; however, this impact would remain short-term significant and unavoidable. As discussed in the ARCF GRR Final EIS/EIR, use of launchable trench would completely remove trees and vegetation, but would be buried to allow for non-woody vegetation to be planted on top the launchable trench. In addition, the ARCF GRR Final EIS/EIR discussed that bank protection would be placed around trees so trees could be saved but all vegetation under the canopy would be removed. Under the Proposed Action, some trees would need to be removed for launchable toe, launchable trench, and tie backs similarly to what was discussed in the ARCF GRR Final EIS/EIR for launchable trench. Some trees would be saved where feasible similarly to what was discussed in the ARCF GRR Final EIS/EIR for bank protection. In addition, use of tie backs on the upper portion of the slope at Site 4-1 were chosen because they would allow for the most trees to be saved. The ARCF GRR Final EIS/EIR assumed that planting berms would be built for onsite plantings and planting benches are being installed for onsite plantings. In addition, soil-filled revetment would be used to allow portions of the bank protection areas without tie backs to be replanted. The new additional erosion protection methods for American River Erosion Contract 3B North and South are similar enough

in method and location on the levee to the erosion protection methods described in the No Action Alternative that the visual impact from the design refinements would be similar to what was already analyzed in the No Action Alternative. Because the design refinements would not create new impacts on visual resources, there would be no direct impacts to visual resources along the American River under NEPA.

Many of the staging areas and access sites include parks and recreational areas along the American River Parkway. Some of these areas were not discussed as access points or staging areas in the ARCF GRR Final EIS/EIR or previous NEPA documents. The discussion on visual impacts to these additional recreational areas above in the CEQA Impact Conclusion area applicable to NEPA as well. Overall, there would be a short-term significant and unavoidable impact on the visual resources associated with these parks during construction.

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Please refer to Impact 3.2-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measure VEG-2, which was previously adopted for the ARCF 2016 Project and is listed under Appendix B Section 4.1 of this SEIS/SEIR, would reduce this significant impact during long-term impacts to less than significant once vegetation establishes from implementation of Mitigation Measure VEG-2.

American River Erosion Contract 4B

CEQA Impact Conclusion (Entire Proposed Action): Short-term and Long-term Significant and Unavoidable

As discussed under American River Erosion Contract 3B North and South there is no feasible mitigation available to avoid or reduce this impact of disturbance caused by construction of the erosion protection work. Therefore, the short-term construction-related impacts would be significant and unavoidable. Unlike American River Erosion Contract 3B North and South, the erosion protection work associated with American River Erosion Contract 4B is almost completely within the vegetation free zone. USACE would seek a Vegetation Design Deviation to avoid the removal of native trees from this zone, but there could be native trees that may need to be removed. Many of the trees associated with American River Erosion Contract 4B are heritage oaks and are considered an important part of the visual character of the area. If any of these trees have to be removed, there would be a significant degradation of the visual character in the area. Since the trees are located in the vegetation free zone, any tree that cannot be saved could not be replaced so the degradation would be long-term significant and unavoidable impact.

Similar to what is described under American River Erosion Contract 3B North and South, staging and access would occur in local parks and Mitigation Measure VEG-2 would be implemented. The effects determination would be the same for American River Erosion Contract 4B. Overall, there would be a short-term significant and unavoidable impact on the visual

resources associated with these parks during construction because vegetation plantings from Mitigation Measure VEG-2, the only feasible mitigation measure, would not be mature. Long-term direct and indirect impacts from tree removal would be less than significant as the replantings mature with implementation of Mitigation Measure VEG-2.

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable; Long-term and Minor to Moderate effects that are Less than Significant with Mitigation Incorporated.

The 2016 ARCF GRR Final EIS/EIR already assessed that vegetation could need to be removed due to erosion protection activities. The erosion protection methods for tree scour and velocity work associated with American River Erosion Contract 4B (placing rock or revetment around trees) would be similar or less impactful than the bank protection erosion protection method (installing revetment along the riverbank or levee slope) discussed in the 2016 ARCF GRR EIS/EIR. Consequently, the analysis under the 2016 ARCF GRR Final EIS/EIR applies to the Proposed Action. There would be no new impacts.

The 2016 ARCF GRR Final EIS/EIR did not discuss access or staging. The CEQA discussion on impacts with staging and access are applicable for NEPA as well. Overall, there would be a short-term significant and unavoidable impact on the visual resources associated with these parks during construction. The following mitigation measure has been identified to address impacts.

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Please refer to Impact 3.2-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measure VEG-2, which was previously adopted for the ARCF 2016 Project, would reduce long-term impacts from tree removal to less than significant once vegetation establishes from implementation of Mitigation Measure VEG-2.

American River Erosion Contract 4A

CEQA Impact Conclusion (Entire Proposed Action): Less Than Significant

The existing visual character along the American River is considered high valued and visible to those wishing to recreate and get a break from the urban spaces. Because of the visual character of the American River Parkway, a permanent reduction of trees and vegetation could cause a significant impact on visual resources. Appendix B 4.1 provides more details on vegetation removed. Overall, the erosion protection location is approximately 1 acre of the 7,000-acre American River Parkway (Sacramento County 2023a), so tree removal would not be as drastic and noticeable. In addition, the location of the berm is adjacent to the SR 160 bridges and the UPRR bridge. Generally, the visual character of the specific location of the proposed berm is not high due to the bridges. When work is complete, areas would be reseeded with native grasses and, where feasible, the site would be replanted with vegetation. The existing visual character of

the area includes grassy slopes due to the levee. Replanting the berm with grasses would match the visual character of the existing levee. Finally, the bike trail reroute would direct recreationalists away from the site, so the site would not be viewed as much. Since the project site is small, adjacent to bridges, and would become no longer visible from the Jedediah Smith Memorial Trail, the impact would be less than significant.

The addition of permanent rerouting of the bike trail would not change the visual character of the area since the bike reroute would generally follow an existing road. Paved bike trails are already part of the visual character of the American River Parkway. However, those using the bike trail would have a different visual experience than they would if the trail were not rerouted. In general, the view from the bike trail in the area is a grassy levee slope to the north and a riparian forest to the south (Figure 3.1-18). The view from the new route would include riparian forest from the north and grassy fields with powerlines to the south (Figure 3.1-19). The characteristics of both the current bike trail and the proposed reroute have elements of natural scenery (riparian forest) and unnatural elements (levee slope and powerlines) but the visual character from the proposed bike trail reroute is not significantly different than the current visual character. There would be some tree trimming and may be some tree removal; however, only trees blocking the bike path would be removed and the overall view of the trees along the trail would remain and keep the riparian forest visual character intact. Because the visual character of the area would be little changed and since the view from the new proposed bike trail route would be comparatively similar to the current route, there would be a less-than-significant impact on visual resources in the area.



Source: Todd Rivas 2022

Figure 3.1-16. View from Existing Bike Trail



Source: Todd Rivas 2022

Figure 3.1-17. View from Proposed Bike Trail Reroute

NEPA Impact Conclusion (Design Refinements): Short-term and Negligible effects that are Less Than Significant

The Proposed Action erosion protection methods are different enough from what was originally discussed in the ARCF GRR Final EIS/EIR that replanting the site how the ARCF GRR Final EIS/EIR described is likely not feasible. The discussion on visual impacts to the parkway described in the CEQA Impact Conclusion are applicable as well. Since the project site is small, adjacent to bridges, and would become no longer visible from the Jedediah Smith Memorial Trail, the direct impact would be less than significant.

The ARCF GRR Final EIS/EIR did not discuss rerouting the Jedediah Smith Memorial Trail. The discussion of visual effects of rerouting the bike trail included in the CEQA Impact Conclusion section above applies to NEPA as well. Overall, because the visual character of the area would not change and since the elements which compose the view from the new proposed bike trail route would be similar to the current route, there would be a direct less-than significant-impact (short-term and negligible) on visual resources in the area.

Sacramento River Erosion Contract 3

CEQA Impact Conclusion (Entire Proposed Action): Short- and Long-term Significant and Unavoidable

The existing visual character along the Sacramento River is considered high valued and visible to those wishing to recreate and get a break from the urban spaces. Disrupting the highly valued visual character of the Sacramento River with construction and a reduction of trees and riparian vegetation would cause a significant impact on visual resources. Appendix B 4.1 provides more details on vegetation removed. Because construction is temporary, this would be a short-term significant impact. Because the flood risk reduction work cannot be done without the construction equipment and disturbance, and there are no other feasible mitigation measures available except Mitigation Measure VEG-2 which only partially reduces this impact, this short-term impact is significant and unavoidable.

A permanent reduction of trees and vegetation would cause a significant impact on visual resources. Mitigation Measure VEG-2, which was previously adopted for the ARCF 2016 Project and is listed under Appendix B Section 4.1 of this SEIS/SEIR, would be implemented to reduce this significant impact as much as possible. However, the Proposed Action would not include saving any trees within the erosion protection footprint of Sacramento River Erosion Contract 3. Planting benches would only be built along less than 25 percent of the riverbank along the Sacramento River Erosion Contract 3 site. All other locations would only be hydroseeded. Other flood risk reduction projects along the Sacramento River have had natural vegetation recruitment, or the process by which new individual plants are added to a population, occur after construction, so natural vegetation recruitment could occur on the Sacramento River Erosion Contract 3 project site as well. Because there would be areas where trees would be removed and not actively replanted with any vegetation, there would be a significant impact to the visual character along the riverbank. Because there are no other feasible mitigation measures available, this long-term impact from tree loss would be significant and unavoidable.

NEPA Impact Conclusion (Design Refinements): Short- and Long-term Significant and Unavoidable

The ARCF GRR Final EIS/EIR already generally assessed the flood risk reduction work impacts on visual resources along the Sacramento River. The ARCF GRR Final EIS/EIR determined that because trees would be left on the lower portions of the levee, installing planting berms, and installing vegetation on the planting berms the long-term impact to visual resources would be less than significant. However, vegetation and trees would be removed as part of the Proposed Action. The Proposed Action would not include saving any trees within the erosion protection footprint of Sacramento River Erosion Contract 3. In general, the ARCF GRR Final EIS/EIR says that during construction there would be a significant impact to visual resources from construction equipment on the river and levee. Similar construction equipment would be used for the Proposed Action, so the direct significant impact would apply for the Proposed Action. Therefore, the following mitigation measure has been identified to address this impact.

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Please refer to Impact 3.2-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measure VEG-2, which was previously adopted for the ARCF 2016 Project and is listed under Appendix B Section 4.1 of this SEIS/SEIR and plants benches, would minimize the impact on trees as much as possible. The riverbank at the Sacramento River Erosion Contract 3 site has steep slopes in some areas that would require substantial material to build planting benches. Putting too much material in the river reduces the cross-sectional area of the river, reduces water conveyance, and causes a flood stage increase. Consequently, building planting benches along the whole project would likely not meet flood risk reduction objectives and would risk backwater rise on the American River. To meet flood risk reduction objectives, planting benches would only be installed at sites that already have gentle slopes to minimize material being added to the river. Planting benches would only be built along less than 25 percent of the riverbank along the Sacramento River Erosion Contract 3 site. All other locations would only be hydroseeded. Other flood risk reduction projects along the Sacramento River have had natural vegetation recruitment occur after construction completing, so natural vegetation recruitment could occur on the Sacramento River Erosion Contract 3 project site as well. Because there would be areas where trees would be removed and not actively replanted in-place with any vegetation, there would be a direct significant and unavoidable impact to the visual character along the riverbank. There would be no new impact on visual resources from construction equipment.

American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable; Long-term Less Than Significant.

The existing visual character along the American River is considered high valued and visible to those wishing to recreate and get a break from the urban spaces. Mitigation sites were not discussed in the ARCF GRR Final EIS/EIR. Disruption and a massive regrading of the mitigation site is required to create riparian habitat at the mitigation site. Where feasible, trees would be left in place. Overall, the site currently is a former sand and gravel mine pond surrounded by grassy areas and riparian forest in the background. The site would be regraded and be designed as a backwater to connect with the LAR with varying elevations to created habitat. Removal of trees and riparian vegetation would cause a significant and unavoidable short-term impact on visual resources during the short-term period of planting maturation monitoring between approximately 0 to 8 years; there are no other feasible mitigation measures available. Appendix B 4.1 provides more details on vegetation removed. In addition, the overall view of the area would go from a grassy pond to a riparian forest habitat with the possibility of inundated drainages instead of a pond. Even though the pond itself is not natural, the pond is visually pleasing to those using the bike trail and is unique to the area. The purpose of the mitigation site is to create habitat, so eventually the vegetation planted would establish into a riparian forest.

Even though the filling in the pond at the site would change the visual character of the area, the views of the area would turn into a more natural riparian forest view that is consistent with the views along the American River in the area. The views would not degrade, the visual character would just change. Since the views would remain natural at the site, there would be a less-than-significant impact on the existing visual character.

Those recreating in this part of the American River Parkway, specifically boaters and those on the Jedediah Smith Memorial Trail, would see disturbed soil during construction and disturbed ground for a few years until vegetation establishes during the short-term period of planting maturation monitoring between approximately 0 to 8 years, creating a short-term significant impact on visual resources. The following mitigation measure has been identified to address these impacts.

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Please refer to Impact 3.2-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measure VEG-2 would reduce long-significant impacts to less than significant because vegetation would become reestablished over time and construction-related impacts would be minimized over time. Because there are no feasible mitigation measures available to reduce short-term impact, they would significant and unavoidable impact.

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable; Long-term and Minor effects that are Less Than Significant.

Mitigation sites were not discussed in the ARCF GRR Final EIS/EIR. The discussion on visual impacts to the area around the ARMS under the CEQA Impact Conclusion also applies to NEPA. Overall, those recreating in that part of the American River Parkway, specifically boaters and those on the Jedediah Smith Memorial Trail, would see disturbed soil during construction and disturbed ground for a few years until vegetation establishes, creating a short-term significant impact on visual resources. Without any feasible mitigation available except Mitigation Measure VEG-2, this short-term impact is significant and unavoidable. Long-term direct impacts would be less than significant (minor for NEPA purposes) because there are few viewer receptors in the vicinity, vegetation would become reestablished over time, and construction-related impacts would be minimized over time.

Sacramento River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable; Long-term Less Than Significant.

The existing visual character along the Sacramento River is considered high valued and visible to those wishing to recreate and get a break from the urban spaces. Mitigation sites were not discussed in the ARCF GRR Final EIS/EIR. Disruption and regrading of both sites is required to

create better habitat at the mitigation site. Though trees would be kept in place where feasible, removal of trees and riparian vegetation would cause an unavoidable short-term significant impact on visual resources where visible to recreationalists and those driving on SR 160. Appendix B 4.1 provides more details on vegetation removed. Over time, the center of the project site would change from a shrubby, grassy, and disturbed landscape to a riparian forest with streams flowing through. However, since the site is not open to the public, the center of the project site would not have high viewer sensitivity. The changes along the river would have a higher viewer sensitivity by those recreating along the Sacramento River or driving along SR 160. The view along the river would include disturbed soil during construction and reduced vegetation for a few years until vegetation matures at the project site creating a short-term significant impact on visual resources. The following mitigation measure has been identified to address this impact.

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Please refer to Impact 3.2-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measure VEG-2 would reduce long-significant impacts to less than significant because vegetation would become reestablished over time and construction-related impacts would be minimized over time. Because there are no feasible mitigation measures available to reduce short-term impact, they would significant and unavoidable impact. Additionally, the purpose of the mitigation site is to create habitat, so once vegetation establishes, the visual character of the area would consist of riparian forest habitat. Since riparian forest would be a natural and a pleasing view, there would be a long term less-than-significant impact on the visual character of the area.

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable; Long-term and Minor to Moderate effects that are Less than Significant.

Mitigation sites were not discussed in the ARCF GRR Final EIS/EIR. The discussion on visual impacts to the area around the SRMS under the CEQA Impact Conclusion also applied to NEPA. Overall, those recreating along the Sacramento River or driving along SR 160 would see disturbed soil during construction and reduced vegetation for a few years until vegetation matures at the project site creating a direct short-term significant impact on visual resources. Without any feasible mitigation available except Mitigation Measure VEG-2, this short-term impact would be significant and unavoidable. Long-term direct impacts would be minor to moderate because vegetation would become reestablished over time and construction-related impacts would be minimized over time. Mitigation Measure VEG-2 would further minimize impacts.

Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less Than Significant

The existing visual character along the Sacramento and American Rivers is considered high valued and visible to those wishing to recreate and get a break from the urban spaces. As already described under impact 3.1-a, the infrastructure associated with the Piezometer Network is small. In addition, since the shortest reach on the Sacramento and American Rivers is over a mile and a half (Figure 3.5.7-1 of the SEIS/SEIR), the addition of up to 15 solar panels along the reaches should not be noticeable to those recreating or living in the area. There is some infrastructure already along the levees on the Sacramento and American Rivers such as sumps, bathrooms, signs, powerlines, paved bike trails, boat docks and fencing. Adding scattered solar panels and utility boxes for the piezometer network would not look out of the ordinary for the typical infrastructure already present on the levees along the rivers. Consequently, there would be a minor direct less-than-significant impact.

The construction equipment and staging areas would be at the site temporarily so there would not be a lasting visual impact on the area. Due to the temporary timeframe of construction, there would be a less-than-significant impact on visual resources from construction equipment and staging areas.

Additionally, as described previously for work in the MCP area, most of the area around the MCP has grassy views with industrial sites throughout the area. The area is zoned by City of Sacramento Planning as light industrial (City of Sacramento Planning 2023 and, therefore, the visual character of this neighborhood is considered low due to the industrial character. Consequently, the short- and long-term visual impacts from the Piezometer Network would be less than significant in the MCP area.

NEPA Impact Conclusion (Design Refinements): Short-term Moderate Impact that is Less than Significant and Long-term Minor Impact that is Less than Significant.

Installation of the Piezometer Network was not discussed in the ARCF GRR Final EIS/EIR. The discussion on visual impacts of the Piezometer Network described under the CEQA Impact Conclusion also applies to NEPA.

Similar to the CEQA analysis above, due to the temporary timeframe of construction, there would be a less-than-significant moderate impact on visual resources from construction activities.

Additionally, as described previously for work in the MCP area, most of the area around the MCP has grassy views with industrial sites throughout the area. The area is zoned by City of Sacramento Planning as light industrial (City of Sacramento Planning 2023); consequently, the visual character of this neighborhood is considered low due to the industrial character. Consequently, the short- and long-term visual impacts from the Piezometer Network are considered to be less than significant in the MCP area.

3.1-d Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area

CEQA Significance Conclusion: Less than Significant with Mitigation

NEPA Significance Conclusion: Short- and Long-term Less than Significant with Mitigation

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Contract 3, Magpie Creek Project, Sacramento River Mitigation Site, American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less Than Significant with Mitigation Incorporated

The majority of vegetation anticipated to be removed along the American and Sacramento Rivers is on the water side of the levee. Generally, there would be no lighting sources along the rivers that would become visible to the homes that have views over the levee once vegetation is removed. Some minor tree removal may be needed within staging areas for American River Erosion Contract 3B. The majority of trees within parks used for staging would be left in place, so in general it is not anticipated that the specific trees removed would drastically change the canopy coverage within parks to create new lighting sources for homes surrounding the parks. On the MCP, there are some industrial businesses on the opposite side of the waterway from homes. These industrial businesses have fencing surrounding the property which would already be screening some light sources that vegetation could be screening. Since it is not anticipated that vegetation to be removed screens existing light sources, there is a less-than-significant impact on causing substantial light or glare due to vegetation removal.

During construction of the Proposed Action, staging areas would have security lighting to protect construction equipment and stored materials. This would result in new sources of nighttime light that could be visible by anyone commuting on the bike paths and vehicles passing near the staging areas. These light sources would in some cases be adjacent to existing bright lights (e.g., light already at Larchmont Community Park). Night lighting of staging areas would result in a short-term significant impact on visual resources.

Additionally, implementing night construction work is sometimes used to minimize traffic and recreational impacts. Any night work would be subject to all city ordinances and would use the minimal amount of lighting necessary to illuminate the work areas safely and effectively. New lighting could create a short-term significant impact during construction if substantial and directed at sensitive receptors. This impact could be potentially significant given the specific characteristics at each work site and staging area that require night lighting that could affect nearby homeowners. Implementing Mitigation Measure VIS-1, which was previously adopted for the ARCF 2016 Project, would reduce the potential impacts from new lighting during construction to nearby homeowners to a less-than-significant impact. Nighttime recreation is not typical along the American and Sacramento Rivers, so the recreation viewer group would not be affected by the temporary lighting. There could be visual impacts on wildlife from unnatural nightwork lighting.

Mitigation Measure VIS-1: Shielding construction lighting

Project Partners shall require its construction contractors to ensure that all temporary lighting is shielded or directed downward to avoid or minimize any direct illumination onto light-sensitive receptors located outside of the project site.

Timing: During nighttime construction

Responsibility: Project Partners

Mitigation Measure VIS-2: Minimize Disturbance to Wildlife from Nighttime Lighting

The Project Partners will minimize or avoid the effects of nighttime lighting on wildlife and special-status fish species by implementing the following actions in the area of 24-hour night work.

- Avoiding construction activities at night, to the maximum extent practicable.
- Using the minimal amount of lighting necessary to safely and effectively illuminate the work areas.
- Shielding and focusing lights on work areas and away from the water surface of the Sacramento and American Rivers, to the maximum extent practicable.
- Temporary and permanent lighting will have correlated color temperatures and under 3000K to minimize disturbance to wildlife at night.
- •A qualified biologist will monitor the work area at appropriate intervals to assure that all relevant mitigation measures are implemented. Mitigation Measure BIRD-1 (See Appendix B Section 4.3) applies to night work as well.

Timing: During any nighttime construction

Responsibility: Project Partners

Implementing Mitigation Measures VIS-1 and VIS-2 would reduce short-term significant impacts related to visual impacts on wildlife from construction-related nightwork by shielded away from waterways and having correlated colors and temperatures less impactful to wildlife. There would be no post-construction, long-term lighting so there would be no long-term impacts.

NEPA Impact Conclusion (Design Refinements): Short-term and Minor to Moderate effects that are Less Than Significant with Mitigation Incorporated

The ARCF GRR Final EIS/EIR did not consider the impacts of project lighting on visual resources. The discussion above on impacts from temporary lighting at construction and staging sites under the CEQA Impact Conclusion applies to NEPA as well. Overall, implementing

Mitigation Measure VIS-1 would reduce the potentially significant impact of nighttime lighting to a direct short-term and minor effect.

The ARCF GRR Final EIS/EIR did not consider the possible impact of removing vegetation that could be screening light sources. The discussion above on impacts from temporarily removing vegetation that could be screening light sources under the CEQA Impact Conclusion applies to NEPA as well. Overall, since vegetation to be removed is not currently screening existing light sources, there is negligible impact on lighting views due to vegetation removal.

Finally, the ARCF GRR Final EIS/EIR did not consider nighttime work. The discussion above on impacts from nighttime work under the CEQA Impact Conclusion applies to NEPA as well. Overall, Mitigation Measure VIS-2 would be implemented to minimize potentially significant impacts from lighting for nighttime work to a direct short-term and minor to moderate level.

Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

As mentioned under effect 3.1-c, the Piezometer Network would be spread along the reaches along the American and Sacramento Rivers. The utilities are fairly small (the solar panels are similar size to those seen on cell phones along highways). These utilities would be scattered over long distances (the shortest reach on the American and Sacramento River is still over 1.5 miles) the Piezometer networks should not be noticeable. Although these panels could cause glare under certain lighting conditions, this would not represent a new substantial source of glare that would adversely affect views in the area, and the impact would be less than significant.

NEPA Impact Conclusion (Design Refinements): Short-term and Long-term Minor effects that are Less than Significant

Installation of the Piezometer Network was not discussed in the ARCF GRR Final EIS/EIR. The discussion on visual impacts of the Piezometer Network described under the CEQA Impact Conclusion also applies to NEPA. Glare from the solar panels could cause a minor effect to glare that is less than significant.

Alternatives Comparison

Alternative 3a

Alternative 3a includes an alternative design for improvements to the American River Erosion Contract 4A Project Component. All other project components (American River Erosion Contract 3B, Sacramento River Erosion Contract 3, MCP, SRMS, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. Overall, a landside berm would be constructed instead of a waterside berm. Overall, impacts from Alternative 3a would be similar to the Proposed Action and are described in Table 3.1-1, below.

Table 3.1-1. Alternative 3a Effects on Aesthetics and Visual Resources

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure(s) | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------------------|--|-----------------------|---------------------------------------|---|
| 3.1 a: Have a substantial adverse effect on a scenic vista. | American River Erosion Contract 4A | Work would be on the landside of the levee. The topography of the levee would prevent the work from being viewable to the American River, so there would be no impact. | N/A | No Impact | No Impact |
| 3.1 b: Damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway or national scenic byway. | American River Erosion Contract 4A | Similar to the Proposed Action, there are no scenic highways within the project site, so there would be no impact. | N/A | No Impact | No Impact |
| 3.1 c: Result in substantial degradation to the existing visual character or quality of public views of the site and its surroundings in nonurbanized areas? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality | American River Erosion Contract 4A | The location of the landside berm would be in between the levee and highway bridge. The specific location of this work contains views of the levee and the SR 160 bridge. The topography of the levee would block most of the construction work from view of those recreating in the area. Consequently, construction of the landside berm would have a direct less-than-significant impact on the visual resources in the area. | N/A | Less than Significant | Long-term and Minor to Moderate effects that are Less than Significant |
| 3.1 d: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area | American River Erosion Contract 4A | Similar to the Proposed Action, there would be a need to provide lighting for the staging areas and as needed for night work. This could cause a direct significant impact on visual resources, but Mitigation Measure VIS-1 and VIS-2 would reduce the impact to a less-than-significant level. | VIS-1 and VIS-2 | Less than Significant with Mitigation | Short-term and Minor to Moderate effects that are Less than Significant with Mitigation |

Alternative 3b

Alternative 3b includes an alternative design for improvements to the American River Erosion Contract 4A Project Component. All other project components (American River Erosion Contract 3B and 4B, Sacramento River Erosion Contract 3, MCP, SRMS, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. The bike detour would follow parallel to the railroad to the existing location of the bike trail instead of going under the railroad. Overall, effects from Alternative 3b would be similar to the Proposed Action and are described in Table 3.1-2, below.

Table 3.1-2. Alternative 3b Effects on Aesthetics and Visual Resources

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------------------|---|---------------------------|-------------------------------------|---|
| 3.1 a: Have a substantial adverse effect on a scenic vista. | American River Erosion Contract 4A | Similar to the Proposed Action, the project site is small in size and the localized area has low visual character and would not be scenic, so impacts from vegetation removal and construction of the berm would be less than significant. In addition, paved bike trails are a part of the American River viewshed so changes to the bike trail would also cause direct less-than-significant impacts to the scenic views of the American River. | N/A | Less than Significant | Short-term and Minor effects that are Less than Significant |
| 3.1 b: Damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway or national scenic byway. | American River Erosion Contract 4A | Similar to the Proposed Action, there are no scenic highways within the project site, so there would be no impact. | N/A | No Impact | No Impact |

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------------------|---|--------------------|------------------------------|--|
| 3.1 c: Result in substantial degradation to the existing visual character or quality of public views of the site and its surroundings in nonurbanized areas? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality | American River Erosion Contract 4A | <p>Like the Proposed Action, a berm would be built on the levee that would block the bike path. Like the Proposed Action, this bike detour would follow existing roads. Because the views in the area already include this road and because the visual character of the American River Parkway already includes paved bike trails, there would be a direct less-than-significant impact on the views from rerouting this bike trail. There would be more trees removed than the Proposed Action because the bike trail would follow the UPRR bridge and reconnect to the existing Jedediah Smith Memorial Trail instead of following the existing maintenance road under the UPRR bridge. Trees would need to be removed in the area along the UPRR bridge to build the bike trail. However, only trees along the bike trail or haul route would be removed, so the overall view of riparian forest in the area would not significantly change. Also, the area where trees would be removed would be near the UPRR bridge, which would not have a lower visual character. Because of the visual character in the area due to the UPRR bridge and because the overall visual character of the area would remain riparian forest, tree removal would be a direct less-than-significant impact.</p> <p>Unlike the Proposed Action, the bike trail would eventually lead to the area where the berm would be built, so those using the Jedediah Smith Memorial Trail would be able to see the berm. Because the berm is near the SR 160 bridge and the UPRR bridge, the visual character of the area is already low, so adding the berm would not significantly impact the view of the area. In addition, the berm would be planted with grasses similar to the existing levee, so the visual character of a grassy slope already exists at the project site. The berm would have direct less-than-significant impacts on the visual resources in the area.</p> | N/A | Less than Significant | Long-term and Minor to Moderate effects that are Less than Significant |

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|------------------------------------|---|--------------------|---------------------------------------|---|
| 3.1 d: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area | American River Erosion Contract 4A | Similar to the Proposed Action, there would be a need to light up the staging areas and a need for lighting for night work. This could cause a direct significant impact on visual resources, but mitigation measures would reduce the impact to a less-than-significant level. | VIS-1 and VIS-2 | Less than Significant with Mitigation | Short-term and Minor to Moderate effects that are Less than Significant with Mitigation |

Alternative 3c

Alternative 3c includes an alternative design for improvements to the American River Erosion Contract 4A. All other project components (American River Erosion Contract 3B, Sacramento River Erosion Contract 3, MCP, SRMS, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. The bike route would be a short reroute into the wetlands instead of lower on the levee. Overall, effects from Alternative 3c would be similar to the Proposed Action and are described in further detail in Table 3.1-3, below.

Table 3.1-3. Alternative 3c Effects on Aesthetics and Visual Resources

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------------------|--|--------------------|------------------------------|---|
| 3.1 a: Have a substantial adverse effect on a scenic vista. | American River Erosion Contract 4A | Similar to the Proposed Action, the project site is small in size and the localized area has low visual character and would not be scenic, so impacts from vegetation removal and construction of the berm would be direct less than significant. In addition, paved bike trails are a part of the American River viewshed so changes to the bike trail would also cause direct less-than-significant impacts to the scenic views of the American River. | N/A | Less than Significant | Short-term and Minor effects that are Less than Significant |
| 3.1 b: Damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway or national scenic byway. | American River Erosion Contract 4A | Similar to the Proposed Action, there are no scenic highways within the project site, so there would be no impact. | N/A | No Impact | No Impact |

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------------------|--|--------------------|---------------------------------------|---|
| 3.1 c: Result in substantial degradation to the existing visual character or quality of public views of the site and its surroundings in nonurbanized areas? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality | American River Erosion Contract 4A | Instead of rerouting the bike trail lower on the levee, the bike trail would be rerouted around the berm. Additional wetland and riparian habitat would be impacted in the area to build the bike trail around the berm creating a slightly larger impact on the visual resources in the area. Once construction is completed, the area would be replanted where feasible. Unlike the Proposed Action, those using the Jedediah Smith Memorial Trail would be able to see the berm. However, since the berm is being built next to the UPRR bridge and SR 160 bridge, the visual character of the area is already low. Because of the low visual character there would be a direct less-than-significant impact to visual resources in the area. | N/A | Less than Significant | Long-term and Minor to Moderate effects that are Less than Significant |
| 3.1 d: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area | American River Erosion Contract 4A | Similar to the Proposed Action, there would be a need for lighting in the staging areas and night work when needed. This could cause a direct significant impact on visual resources, but mitigation measures would reduce the impact to a direct less-than-significant level. | VIS-1 and VIS-2 | Less than Significant with Mitigation | Short-term and Minor to Moderate effects that are Less than Significant with Mitigation |

Alternative 3d

Alternative 3d includes an alternative design for improvements to the American River Erosion Contract 4A Project Component. All other project components (American River Erosion Contract 3B and 4B, Sacramento River Erosion Contract 3, MCP, SRMS, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. The bike detour would go closer to the riverbank and follow the railroad to the existing location of the bike trail instead of going under the railroad. Overall, the effects from Alternative 3d would be similar to the Proposed Action and are described further in Table 3.1-4.

Table 3.1-4. Alternative 3d Effects on Aesthetics and Visual Resources

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------------------|--|---------------------------|-------------------------------------|---|
| 3.1 a: Have a substantial adverse effect on a scenic vista. | American River Erosion Contract 4A | Similar to the Proposed Action, the project site is small in size and the localized area has low visual character and would not be scenic, so direct impacts from vegetation removal and construction of the berm would be less than significant. In addition, paved bike trails are a part of the American River viewshed so changes to the bike trail would also cause direct less-than-significant impacts to the scenic views of the American River. | N/A | Less than Significant | Short-term and Minor effects that are Less than Significant |
| 3.1 b: Damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway or national scenic byway. | American River Erosion Contract 4A | Similar to the Proposed Action, there are no scenic highways within the project site, so there would be no impact. | N/A | No Impact | No Impact |

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------------------|--|--------------------|--------------------------------------|--|
| 3.1 c: Result in substantial degradation to the existing visual character or quality of public views of the site and its surroundings in nonurbanized areas? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality | American River Erosion Contract 4A | <p>Like the Proposed Action, a berm would be built on the levee that would block the bike path. Like the Proposed Action, this bike detour would follow existing roads. Because the views in the area already include this road and because the visual character of the American River Parkway already includes paved bike trails, there would be a direct less-than-significant impact on the views from rerouting this bike trail. There would be more trees removed than the Proposed Action because the bike trail would follow the UPRR bridge and reconnect to the existing Jedediah Smith Memorial Trail instead of following the existing maintenance road under the UPRR bridge. Trees would be removed in the area along the UPRR bridge to build the bike trail. However, only trees along the bike trail or haul route would be removed, so the overall view of riparian forest in the area would not significantly change. Also, the area where trees would be removed would be near the UPRR bridge, which would not have a lower visual character. Because of the visual character in the area due to the UPRR bridge and because the overall visual character of the area would remain riparian forest, the removal of trees would be a direct less-than-significant impact.</p> <p>Unlike the Proposed Action, the bike trail would eventually lead to the area where the berm would be built, so those using the Jedediah Smith Memorial Trail would be able to see the berm. Because the berm is near the SR 160 bridge and the UPRR bridge, the visual character of the area is already low, so adding the berm would not significantly impact the view of the area. In addition, the berm would be planted with grasses similar to the existing levee, so the visual character of a grassy slope already exists at the project site. The berm would have direct less-than-significant impacts on the visual resources in the area. Also, unlike the Proposed Action, this reroute would be closer to the riverbank and mostly be away from the powerlines. Consequently, there would be a visual benefit to putting the bike path in this area, as the view from the bike path would be more natural than the No Action Alternative and the Proposed Action, resulting in a direct beneficial impact on visual resources.</p> | N/A | Less than Significant and Beneficial | Short-term and Moderate, effects that are Less than Significant and Long-term Beneficial effects |

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|------------------------------------|---|--------------------|---------------------------------------|---------------------------------------|
| 3.1 d: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area | American River Erosion Contract 4A | Similar to the Proposed Action, there would be the potential need to light up the staging areas and a potential need for lighting for night work. This could cause a direct significant impact on visual resources, but mitigation measures would reduce the impact to a less-than-significant level. | VIS-1 and VIS-2 | Less than Significant with Mitigation | Less than Significant with Mitigation |

Alternatives 4a and 4b (CEQA-Only)

Alternative 4a for the ARMS would retain an approximately 30-acre portion of the existing pond, and Alternative 4b would retain an approximately 20-acre portion of the pond. All other project components (American River Erosion Contract 3B and 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, MCP, SRMS) would have the same effects as the Proposed Action.

Under Alternatives 4a and 4b, a berm with a top width of 30 feet would be constructed to retain the western or southern portion of the existing pond, and floodplain habitat (generally at elevations 2 to 10 feet) would be constructed on the eastern portion of the site, including a portion of the existing pond. The remnant pond would be approximately 30 acres in Alternative 4a, and this alternative would include approximately 54 acres of floodplain habitat below elevation 21. In Alternative 4b, the pond would be approximately 20 acres and approximately 47 acres of salmonid habitat, 29 acres of YBCU habitat, and 22 acres of VELB habitat.

Table 3.1-5. Alternative 4a and 4b Effects on Aesthetics and Visual Resources

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion |
|---|----------|---|--------------------|---|
| 3.1-a: Have a substantial adverse effect on a scenic vista. | ARMS | The proposed changes would be generally consistent with the Proposed Action, although the changes would be less in Alternatives 4a and 4b because a portion of the existing pond would be retained. | VEG-2 | Short term Significant and Unavoidable, Long term Less than Significant with Mitigation |
| 3.1-b: Damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway or national scenic byway. | ARMS | Similar to the Proposed Action, there are no scenic highways within the project site, so there would be no impact. | N/A | No Impact |

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion |
|---|----------|---|--------------------|---|
| 3.1-c: Result in substantial degradation to the existing visual character or quality of public views of the site and its surroundings in nonurbanized areas? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality | ARMS | Like the Proposed Action, disturbance during construction would cause a short-term significant and unavoidable impact to the views in the area until vegetation reestablishes. In the long term, this alternative would replace a large pond and a disturbed area with staged equipment and vehicles with a smaller pond, and areas of riparian habitat. The visual character of the site would change substantially, but less than with the Proposed Action, which would remove the pond completely. | VEG-2 | Short term Significant and Unavoidable, Long term Less than Significant with Mitigation |
| 3.1-d: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area | ARMS | Similar to the Proposed Action, there would be the potential need to light up the staging areas and a potential need for lighting for night work. This could cause a direct significant impact on visual resources, but mitigation measures would reduce the impact to a less-than-significant level. | VIS-1 and VIS-2 | Less than Significant with Mitigation |

Alternative 5a (Conservation bank credits)

Alternative 5a includes an alternative financial solution as opposed to constructing the SRMS. Conservation Bank Credits would be used for mitigation in lieu of the construction of SRMS.

All other project components (American River Erosion 3B and 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, MCP, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. Conservation bank credits would be used for mitigation.

There would be no new construction or disturbance associated with Alternative 5a, as existing mitigation banks would be used. Consequently, there would be no change in impacts to visual resources compared to the Proposed Action.

Table 3.1-6. Alternative 5a Effects on Aesthetics and Visual Resources

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|----------|--|--------------------|--|---|
| 3.1-a: Have a substantial adverse effect on a scenic vista. | SRMS | No changes from the Proposed Action. There would be no new construction or disturbance associated with Alternative 5a, as existing mitigation banks would be used. | VEG-2 | Short-term Significant and Unavoidable; Long-term Less than Significant with Mitigation Incorporated | Short-term Significant and Unavoidable; Long-term and Moderate effects that are Less than Significant with Mitigation |
| 3.1-b: Damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway or national scenic byway. | SRMS | No changes from the Proposed Action. There would be no new construction or disturbance associated with Alternative 5a, as existing mitigation banks would be used. | N/A | Short-term Significant and Unavoidable; Long-term Less Than Significant. | No Effect |
| 3.1-c: Result in substantial degradation to the existing visual character or quality of public views of the site and its surroundings in nonurbanized areas? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality. | SRMS | No changes from the Proposed Action. There would be no new construction or disturbance associated with Alternative 5a, as existing mitigation banks would be used. | N/A | Short-term Significant and Unavoidable; Long-term Less Than Significant | Short-term Significant and Unavoidable; Long-term and Minor to Moderate effects that are Less than Significant. |
| 3.1-d: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area | SRMS | No changes from the Proposed Action. There would be no new construction or disturbance associated with Alternative 5a, as existing mitigation banks would be used. | VIS-1, VIS-2 | Less Than Significant with Mitigation | Short-term and Minor to Moderate effects that are Less Than Significant with Mitigation Incorporated |

Alternative 5b (Watermark Farms)

Alternative 5b includes an alternative design for improvements to the SRMS. All other project components (American River Erosion Contract 3B and 4B, American River Erosion Contract 4A, Sacramento River, MCP, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. Watermark Farm, located on the right bank of the Sacramento River between RM 50.5 and 51.25, would be used as the mitigation site for Sacramento River work. Overall, Alternative 5b effects to aesthetics and visual resources are less than the Proposed Action.

Table 3.1-7. Alternative 5b Effects on Aesthetics and Visual Resources

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|-----------------|--|---------------------------|--|---|
| 3.1-a: Have a substantial adverse effect on a scenic vista. | SRMS | As already described above under the Proposed Action, the Sacramento River is considered an important scenic resource that needs to be protected. Creation of the mitigation site at Watermark Farms would include disturbance of the riverbank. This disturbance would degrade the views along the Sacramento River until the replanted vegetation reaches the preexisting maturity. There would be a direct short-term significant impact, and a long-term less-than-significant impact to the visual resources of the Sacramento River from work associated with Alternative 5b. No feasible mitigation measures are available to reduce the direct short-term significant and therefore the impact is significant and unavoidable. | N/A | Short-term Significant and Unavoidable; Long-term Less Than Significant. | Short-term Significant and Unavoidable; Long-term and Minor effects that are Less Than Significant. |
| 3.1-b: Damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway or national scenic byway. | SRMS | Alternative 5b is not near a scenic highway or byway; consequently, there would be no impacts to the visual resources along a scenic highway or byway. | N/A | No Impact | No Impact |

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|----------|---|--------------------|--|--|
| 3.1-c: Result in substantial degradation to the existing visual character or quality of public views of the site and its surroundings in nonurbanized areas? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality. | SRMS | <p>Alternative 5b would involve changing an agricultural field, homes, and ranch into a riparian forest with a channel running through it. This area is currently visible to those driving on South River Road and the views consist of the levee, homes, and a ranch. Those recreating on the Sacramento River currently see a levee with some trees at this location.</p> <p>The existing levee would be set back, and the road would be realigned to match the new conditions. Work would last 3 years. Those recreating along the Sacramento River would now be able to view a larger area of riparian forest instead of the thin strip of trees since the levee would be set back. Until vegetation establishes, the area would look disturbed because the existing levee would be regraded so the area would be visible before the mitigation establishes. This direct significant impact is unavoidable because the area must be regraded to create the riparian habitat and no feasible mitigation measures are available to avoid or reduce this impact.</p> <p>In addition, the views for those driving along the South River Road would change from homes and a ranch to agricultural fields. The road would follow the setback levee, so the new levee would be visible as well. The current views from South River Road include views of the existing levee, so that visual characteristic would not change. Overall, the views from the roads and the views from the Sacramento River would become more natural once work is complete and once vegetation establishes, creating a long-term beneficial impact on visual resources. Because the area would initially look disturbed and viewer sensitivity is high along the Sacramento River, there would be direct short-term significant impacts on visual resources. There are no feasible mitigation measures available so this direct impact would be significant and unavoidable.</p> | N/A | Short-term Significant and Unavoidable; Long-term Beneficial | Short-term Significant and Unavoidable; Long-term Beneficial |

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|-----------------------------|--|--------------------|---|---|
| (continued) 3.1-c: Result in substantial degradation to the existing visual character or quality of public views of the site and its surroundings in nonurbanized areas? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality | (continued) SRMS | 3.1c. (continued) In addition, during construction those recreating along the Sacramento River would see construction equipment and staging equipment once the existing levee is degraded. Depending on when the new road is finished, vehicles traveling along South River Road would also see construction equipment and staging areas. Since work would occur over a 3-year period and since viewer sensitivity is high on the Sacramento River, this would be a direct short-term significant impact to visual resources. There are no feasible mitigation measures available so this direct impact would be significant and unavoidable. | N/A | (continued) Short-term Significant and Unavoidable; Long-term Beneficial | (continued) Short-term Significant and Unavoidable; Long-term Beneficial |
| 3.1-d: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area | Sacramento River Mitigation | Similar to the Proposed Action, there could be a need for nighttime lighting during construction. This could cause a direct significant impact on visual resources, but mitigation measures would reduce the impact to a less- than-significant level. | VIS-1 and VIS-2 | Less than Significant with Mitigation | Short-term and Minor to Moderate effects that are Less than Significant with Mitigation |

Alternative 5c (Sunset Pumps)

Alternative 5c combines three approaches to complete the Sacramento River Mitigation requirements including 1) Purchasing Delta smelt credits from an approved conservation bank 2) Funding a NMFS recovery plan project (Sunset Pumps) to remove a weir, allowing fish passage to benefit chinook steelhead and green sturgeon and 3) Funding the improvements at Sunset Pumps would increase water availability, which would then be directed to two local wildlife refuges, benefiting the Western Yellow Billed Cuckoo. The Sunset Pumps project is listed as high priority BOR, DWR, and USFWS, and is subject to separate NEPA/CEQA analysis prior to implementation. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. All activities related to 5c involve funding another project, therefore no additional impacts to aesthetics and visual resources would result from this alternative.

Table 3.1-7. Alternative 5c Effects on Aesthetics and Visual Resources

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|-----------------|--|---------------------------|---|--|
| 3.1-a: Have a substantial adverse effect on a scenic vista. | SRMS | No changes from the Proposed Action. There would be no new construction or disturbance associated with Alternative 5a, as existing mitigation banks would be used. | VEG-2 | Short-term Significant and Unavoidable; Long-term Less than Significant with Mitigation Incorporated. | Short-term Significant and Unavoidable; Long-term and Moderate effects that are Less than Significant with Mitigation. |
| 3.1-b: Damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway or national scenic byway. | SRMS | No changes from the Proposed Action. There would be no new construction or disturbance associated with Alternative 5a, as existing mitigation banks would be used. | N/A | Short-term Significant and Unavoidable; Long-term Less Than Significant. | No Effect |
| 3.1-c: Result in substantial degradation to the existing visual character or quality of public views of the site and its surroundings in nonurbanized areas? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality | SRMS | No changes from the Proposed Action. There would be no new construction or disturbance associated with Alternative 5a, as existing mitigation banks would be used. | N/A | Short-term Significant and Unavoidable; Long-term Less Than Significant | Short-term Significant and Unavoidable; Long-term and Minor to Moderate effects that are Less than Significant. |
| 3.1-d: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area | SRMS | No changes from the Proposed Action. There would be no new construction or disturbance associated with Alternative 5a, as existing mitigation banks would be used. | VIS-1, VIS-2 | Less Than Significant with Mitigation | Short-term and Minor to Moderate effects that are Less Than Significant with Mitigation Incorporated |

3.2 Geologic Resources

3.2.1 Existing Conditions/Affected Environment

Geology, Seismicity, and Soils

The environmental setting described in Section 3.2.1 of the ARCF GRR Final EIS/EIR covering geology, seismicity, and soils is generally applicable to Proposed Action.

Mineral Resources

Aggregate resources such as sand and gravel are the primary mineral resources found in Sacramento County (Sacramento County 2011). The Proposed Action lies within the Greater Sacramento Area Production-Consumption Region for Portland concrete aggregate as well as the Portland Cement Concrete-grade Aggregate and Kaolin Clay Resource Area (CGS 1999 and 2018). Sources of riprap would come from quarries located up to 100 miles away. The Proposed Action is not located within known areas of significant mineral deposits (Sacramento County 2011: Figure 8). In compliance with the Surface and Mining Reclamation Act, the California Geological Survey (CGS) has established the classification system for Mineral Resource Zones (MRZ), shown in Table 3.2-1, to denote both the location and significance of key extractive resources. The Proposed Action is located within MRZ-1 and MRZ-3.

Table 3.2-1. California Geological Survey Mineral Land Classification System

| Classification | Description |
|----------------|--|
| MRZ-1a | Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence |
| MRZ-1b | Areas of mined out Portland cement concrete-grade aggregate resources |
| MRZ-2 | Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood exists for their presence |
| MRZ-3 | Areas containing mineral deposits, the significance of which cannot be evaluated from available data |
| MRZ-4 | Areas where available data is inadequate for assignment to any other mineral resource zone |

Notes : MRZ = Mineral Resource Zone

Source : DOC 2000

Paleontological Resources

Paleontological remains may be found in numerous types of rock formations. However, vertebrate fossils are most commonly recovered from sedimentary formations, as well as from a few igneous formations where sedimentary deposits are interbedded. The Magpie Creek Project (MCP) is underlain by the Riverbank Formation, which is the most extensive Quaternary unit in the Sacramento area (Wagner et al. 1981). The Pleistocene-age Riverbank Formation consists of weathered gravel, sand, and silt.

The Riverbank Formation is typically found as terrace deposits near the surface along the Sacramento River and its tributaries. South of the American River, at least two ancestral Riverbank gravel-filled channels are well expressed on the surface as nested fill terraces and in

the subsurface as distinct buried channels. Paleontological remains have been found at several localities in alluvial deposits referable to the Riverbank Formation in the Sacramento area (Anderson et al. 2018).

3.2.2 Applicable Laws, Regulations, Policies, and Plans

Federal

Clean Water Act Section 402

Section 402 of the CWA regulates discharges through NPDES and State waste discharge requirements including controlling erosion from construction sites and sediment-entry into receiving waterbodies. SWRCB and CVRWQCB have adopted specific NPDES permits for a variety of activities that have the potential to discharge wastes (including sediment) to waters of the State. SWRCB's Statewide storm water general permit for construction activity (2022-0057-DWQ) is applicable to all land-disturbing construction activities that would disturb 1 acre or more or less than one acre but is part of a larger plan that would disturb more than 1 acre combined. Compliance with the NPDES permit requires submitting a notice of intent to discharge to CVRWQCB and implementing a SWPPP that includes BMPs to minimize water quality degradation during construction activities.

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Fault Zoning Act, administered by the CGS, provides a mechanism for reducing losses from surface fault ruptures on a Statewide basis. The Act requires the mapping of zones around active faults in California to prohibit the construction of structures for human occupancy on active faults and minimize damage due to rupture of a fault. Active faults are those that have ruptured within the past 11,000 years. Where the Act identifies an Earthquake Fault Zone, a geologic investigation and report is necessary to prevent siting of buildings on active fault traces.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (PRC Sections 2690–2699.6) addresses earthquake hazards from non-surface fault rupture, including liquefaction and seismically induced landslides. The Act established a mapping program for areas that have the potential for liquefaction, landslide, strong ground shaking, or other earthquake and geologic hazards. The Act also specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites, and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

California Building Standards Code

Title 24, Part 2 of the California Building Standards Code contains specific requirements for construction with respect to earthquakes and seismic hazards intended to be protective of public health. Chapter 16, Section 1613, Earthquake Loads of the Code deals with structural design and requires that every structure, and portion thereof, including nonstructural components that are

permanently attached to structures and their supports and attachments, shall be designed and constructed to resist the effects of earthquake motions.

California Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act of 1975 (SMARA, Public Resources Code, Sections 2710-2796) provides a comprehensive surface mining and reclamation policy with the regulation of surface mining operations to assure that adverse environmental impacts are minimized and mined lands are reclaimed to a usable condition. The policy outlines three primary goals: 1) Ensure adverse environmental effects of mining is prevented or minimized and that mined lands are reclaimed to a usable end use; 2) encourage the production and conservation of minerals; and 3) eliminate residual hazards to the public health and safety.

Local

There are no local regulations related to geology, soils, or mineral resources that apply to the Proposed Action.

3.2.3 Analysis of Environmental Effects

Analysis Methodology

The following evaluation of potential impacts relies on a review of published geological, mineral, and paleontological literature and maps, Sacramento County General Plan Conservation Element background report, and the ARCF GRR Final EIS/EIR.

In its standard guidelines for assessment and mitigation of adverse impacts on paleontological resources, the Society of Vertebrate Paleontology (SVP) (SVP 2010) established three categories of sensitivity for paleontological resources: high, low, and undetermined. Areas where fossils have been previously found are considered to have a high sensitivity and a high potential to produce fossils. Areas that are not sedimentary in origin and that have not been known to produce fossils in the past typically are considered to have low sensitivity. Areas that have not had any previous paleontological resource surveys or fossil finds are considered to be of undetermined sensitivity until surveys and mapping are performed to determine their sensitivity. After reconnaissance surveys, observation of exposed cuts, and possibly subsurface testing, a qualified paleontologist can determine whether the area should be categorized as having high or low sensitivity. In keeping with the SVP (2010) significance criteria, all vertebrate fossils are generally categorized as being of potentially significant scientific value.

Basis of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds, and the impact analysis that follows, also take into consideration the significance of an action while providing distinction between direct and indirect effects as required under NEPA (40 CFR 1508.1(g)). The Proposed Action under consideration is determined to result in a significant impact related to geologic and mineral resources if it would do any of the following:

- a. expose people or structures to potential substantial adverse impacts, including risk of loss, injury, or death, through the rupture of a known earthquake fault, strong seismic shaking, seismic-related ground failure, soil liquefaction, or landslides;
- b. result in substantial soil erosion or the loss of topsoil;
- c. locate project facilities on a geologic unit that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- d. locate project facilities on expansive soil, creating substantial risks to property;
- 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;
- f. directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- g. result in the loss of availability of a known mineral resource, including locally designated resources.

Effects Not Discussed in Detail

Cause Exposure to Seismic Hazards (3.2-a)—Because the project sites are not located within an Alquist-Priolo Earthquake Fault Zone and there are no known active faults within or adjacent to the project sites, fault ground rupture is unlikely (CGS 2015). Other seismic hazards are considered in the engineering design for project features, and therefore this issue is not addressed further in the SEIS/SEIR.

Cause Exposure to Unstable Soils (3.2-c, 3.2-d)—Because the project site is located in an area with relatively flat topography, there would be no adverse impacts related to landslides. Unstable soil conditions, expansive soils, and soils subject to liquefaction are considered in the engineering design for project features, and this issue is not addressed further in the SEIS/SEIR.

Place Wastewater Systems in Unsuitable Soils (3.2-e)—Because the alternatives under consideration would not include the use of wastewater disposal systems of any kind, there would be no effect related to the ability of soils to support the use of septic systems. Therefore, this issue is not addressed further in the SEIS/SEIR.

Reduce Availability of a Known Mineral Resource (3.2-g)—The project sites are classified as MRZ-1 and MRZ-3, and these classifications are not considered to be a regionally important mineral resource extraction zone. Review of the Sacramento County General Plan indicated there are no locally designated important mineral resources at any of the locations where project-related activities would occur (Sacramento County 2011). Therefore, the alternatives under consideration would have no impact and this issue is not addressed further in the SEIS/SEIR.

3.2.3.1 *Effects Analysis*

No Action Alternative

Construction of the No Action Alternative would include substantial construction and earth-moving activities over large areas that would result in temporary disturbance of soil during the construction period and could expose these disturbed areas to substantial erosion during rainstorms following construction, if not properly restored. This potentially significant impact was reduced to a less-than-significant impact with mitigation (consolidated in this SEIS/SEIR as Mitigation Measure GEO-1), which was previously adopted for the ARCF 2016 Project.

The No Action Alternative would not substantially alter the composition of the levees or foundation soils or change their susceptibility to liquefaction. Because of the relatively small likelihood of a flood event and a major earthquake occurring at the same time, and because the expected magnitude of ground-shaking from large regional earthquakes is relatively low in the project site, the potential for failure or significant damage to project structures from seismic issues was determined to be low.

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Prior to the start of earthmoving activities, the Project Partners will obtain coverage under the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) stormwater permit for general construction activity (Order 2022-0057-DWQ), including preparing and submitting a project-specific SWPPP at the time the Notice of Intent to discharge is filed. The SWPPP shall identify and specify the following:

- the use of an effective combination of robust erosion and sediment control BMPs and construction techniques that shall reduce the potential for runoff and the release, mobilization, and exposure of pollutants, including legacy sources of mercury from project-related construction sites. These may include but would not be limited to temporary erosion control and soil stabilization measures, sedimentation ponds, inlet protection, perforated riser pipes, check dams, and silt fences;
- the implementation of approved local plans, non-stormwater management controls, permanent post-construction BMPs, and inspection and maintenance responsibilities;
- the pollutants that are likely to be used during construction that could be present in stormwater drainage and non-stormwater discharges, including fuels, lubricants, and other types of materials used for equipment operation;
- the means of waste disposal;
- spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills;

- personnel training requirements and procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP; and
- the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP.

Where applicable, BMPs identified in the SWPPP will be in place throughout all site work, construction/demolition activities, and will be used in all subsequent site development activities. BMPs may include, but are not limited to, such measures as those listed below:

- work window- conduct earthwork during low-flow periods;
- to the extent possible, stage construction equipment and materials on the landside of the levee in areas that have already been disturbed;
- minimize ground and vegetation disturbance during project construction by establishing designated equipment staging areas, ingress and egress corridors, spoils disposal and soil stockpile areas, and equipment exclusion zones prior to the commencement of any grading operations;
- stockpile soil on the landside of the levee reaches, and install sediment barriers (e.g., silt fences, fiber rolls, and straw bales) around the base of stockpiles to intercept runoff and sediment during storm events. If stockpiling soil on the landside of the levee is not feasible, a waterside soil stockpiling location above the OHWM will be coordinated with the appropriate agencies, such as NMFS, CVRWQCB, and USFWS (if applicable). If necessary, cover stockpiles with geotextile fabric to provide further protection against wind and water erosion;
- install sediment barriers on graded or otherwise disturbed slopes as needed to prevent sediment from leaving the project site and entering nearby surface waters;
- install plant materials to stabilize cut and fill slopes and other disturbed areas once construction is complete. Plant materials will include an erosion control native seed mixture or shrub and tree container stock. Temporary structural BMPs, such as sediment barriers, erosion control blankets, mulch, and mulch tackifier, will be installed as needed to stabilize disturbed areas until vegetation becomes established;
- conduct water quality tests to measure increases in turbidity and sedimentation caused by construction activities. Specifically, where natural turbidity is between 0 and 5 NTUs, increases shall not exceed 1 NTU; where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20%; where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs; and where natural turbidity is greater than 100 NTUs, increases shall not exceed 10%. If turbidity is found to exceed these standards, cease construction activities until filtration or construction BMPs can be demonstrated to effectively prevent sediment discharge above standards; and

- a copy of the approved SWPPP shall be maintained and available at all times on the construction site.

Project Partners will also prepare and implement a Spill Prevention, Control, and Countermeasure Plan (SPCCP). A SPCCP is intended to prevent any discharge of oil into navigable water or adjoining shorelines. The contractor will develop and implement a SPCCP to minimize the potential for adverse effects from spills of hazardous, toxic, or petroleum substances during construction and operation activities. The SPCCP will be completed before any construction activities begin. Implementation of this measure will comply with state and Federal water quality regulations. The SPCCP will describe spill sources and spill pathways in addition to the actions that will be taken in the event of a spill (e.g., an oil spill from engine refueling will be immediately cleaned up with oil absorbents). The SPCCP will outline descriptions of containment facilities and practices such as doubled-walled tanks, containment berms, emergency shut-offs, drip pans, fueling procedures, and spill response kits. It will also describe how and when employees are trained in proper handling procedures and spill prevention and response procedures.

Timing: Before and during construction

Responsibility: Project Partners

Proposed Action Alternative

3.2-b Cause substantial soil erosion or the loss of topsoil.

CEQA Significance Conclusion: Less than Significant with Mitigation Incorporated.

NEPA Significance Conclusion: Long-term and Minor effects that are Less than Significant with Mitigation Incorporated.

Magpie Creek Project, American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Contract 3, Sacramento River Mitigation Site, American River Mitigation Site, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

NEPA Impact Conclusion (Design Refinements): Long-term and Minor effects that are Less than Significant with Mitigation Incorporated.

During construction activities, rainfall of sufficient intensity could dislodge soil particles from the soil surface. If particles are dislodged and the storm is large enough to generate runoff, substantial localized erosion could occur. The proposed construction activities would mainly occur during the season when rainfall is the least likely and river flows are at their lowest, reducing the potential for water erosion. However, tree removal activities could occur in winter months, and areas which have been disturbed by construction and only recently revegetated have the potential to result in water erosion due higher river flows and ground disturbing activities. Soil disturbance from construction activities that would occur during the summer months could

result in substantial loss of topsoil due to wind erosion. Construction activities including excavation, grading, and other earth moving activities could result in the temporary and short-term disturbance of soil, which could expose disturbed areas on the waterside of the levee to storm events. Although most construction activities would occur during summer months, the project could result in substantial loss of topsoil from wind or water erosion.

Paving bike paths would cause an increase of impermeable surfaces, and potentially cause runoff due to erosion during rain events. However, paving would reduce erosion effects of high use of bikes, pedestrians, and horses on a dirt path.

The Proposed Action would result in a potentially significant impact due to the temporary, short-term construction impact. The following mitigation measure has been identified to address this impact.

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Please refer to the first instance of this mitigation measure in the discussion of the No Action Alternative.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measure GEO-1 would reduce this impact to a less-than-significant level by requiring the preparation and implementation of a SWPPP with appropriate BMPs and the implementation of a Spill Prevention Control and Countermeasures Plan (SPCCP). These actions would enable source control and re-vegetation, which would reduce erosion and maintain surface water quality conditions in adjacent receiving waters as well as prevent the discharge of oil into navigable waters. This impact would be less than significant.

3.2-f Damage a unique paleontological resource or site or unique geologic feature

CEQA Significance Conclusion: Less than Significant with Mitigation Incorporated.

NEPA Significance Conclusion: Negligible Effects that are Less than Significant with Mitigation Incorporated

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, Sacramento River Mitigation Site, American River Mitigation Site, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Negligible, and Less than Significant

The levee and erosion improvements associated with these project sites are located in Holocene-age rock formations, which are considered to be of low paleontological sensitivity. Holocene deposits contain only the remains of extant, modern taxa (if any resources are present), which are not considered “unique” paleontological resources. Therefore, the potential to encounter a unique paleontological resource is very low, and this impact would be less than significant.

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

NEPA Impact Conclusion (Design Refinements): Negligible Effects that are Less than Significant with Mitigation Incorporated

Based on detailed geologic mapping prepared by Fugro William Lettis & Associates, Inc. (2010: Figure 4 and Plate 1), there is a potential that installing box culverts at the Sacramento Northern Bikeway crossing could encounter the Riverbank Formation. Because numerous vertebrate fossils have been recovered from this formation in northern and central California, including at least nine different localities from Sacramento County, this formation is considered paleontologically sensitive. This impact would be potentially significant. The following mitigation measure has been identified to address this impact.

Mitigation Measure GEO-2: Conduct Construction Personnel Education, Stop Work if Paleontological Resources are Discovered, Assess the Significance of the Find, and Prepare and Implement a Recovery Plan, as Required.

To minimize the potential for destruction of or damage to potentially unique, scientifically important paleontological resources during project-related earthmoving activities, the Project Partners shall require the following measures to be implemented to minimize accidental damage to or destruction of unique paleontological resources:

Before the start of any earthmoving activities in the Riverbank Formation (at the bike bridge portion of the MPC), the Project Partners shall retain a qualified paleontologist to train all construction personnel involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossils be encountered.

If paleontological resources are discovered during earthmoving activities, the construction crew shall notify the Project Partners and shall immediately cease work in the vicinity of the find. The Project Partners shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines (1996). The recovery plan may include, but is not limited to, a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by the Project

Partners to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.

Timing: Before and during construction activities at the Magpie Creek bike bridge area.

Responsibility: Project Partners

Implementing Mitigation Measure GEO-2, which is a new mitigation measure, would reduce this impact to a less-than-significant level because construction workers would be alerted to the possibility of encountering paleontological resources and, in the event that resources were discovered, work would stop immediately and fossil specimens would be recovered, recorded, and undergo appropriate curation.

Alternatives Comparison

Alternatives 3a through 3d

Alternatives 3a through 3d would change the location and type of improvements for the American River Erosion Contract 4A. All other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, MCP, SRMS, and ARMS) would be unchanged. None of these Alternatives would change any of the construction impacts associated with geological resources, mineral resources, or paleontological resources compared to the Proposed Action.

Table 3.2-2. Alternatives 3a through 3d Effects on Geology

| Impact Number and Title | Location | Discussion | Mitigation Measure(s) | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------------------|--|-----------------------|---------------------------------------|---|
| 3.2-b: Cause substantial soil erosion or the loss of topsoil. | American River Erosion Contract 4A | No change in effects from the Proposed Action. | GEO-1 | Less than Significant with Mitigation | Long-term and Minor Effects that are Less than Significant with Mitigation Incorporated |
| 3.2-f: Damage a unique paleontological resource or site or unique geologic feature. | American River Erosion Contract 4A | No change in effects from the Proposed Action. | N/A | Less than Significant | Negligible Effects that are Less than Significant |

Alternatives 4a and 4b (CEQA-Only)

Alternatives 4a and 4b include alternative designs for improvements to the ARMS. All other project components (MPC, American River Erosion Contract 3B North and South, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, and SRMS) would remain unchanged. Alternatives 4a and 4b would preserve a 30-acre and 20-acre portion, respectively, of the existing pond on the ARMS. Neither of these Alternatives would change any of the construction impacts associated with geological resources, mineral resources, or paleontological resources.

Table 3.2-3. Alternatives 4a and 4b Effects on Geology (CEQA-Only)

| Impact Number and Title | Location | Discussion | Mitigation Measure(s) | CEQA Significance Conclusion |
|---|----------|--|-----------------------|---------------------------------------|
| 3.2-b: Cause substantial soil erosion or the loss of topsoil. | ARMS | No change in effects from the Proposed Action. | GEO-1 | Less than Significant with Mitigation |
| 3.2-f: Damage a unique paleontological resource or site or unique geologic feature. | ARMS | No change in effects from the Proposed Action. | N/A | Less than Significant |

Alternatives 5a (Conservation Bank Credits) and 5c (Sunset Pumps)

Alternative 5a includes an alternative financial solution as opposed to constructing the SRMS. Conservation Bank Credits would be used for mitigation in lieu of the construction of SRMS. All other project components (American River 3B, American River Erosion Contract 4A, Sacramento River, Magpie, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action.

Alternative 5c combines three approaches to complete the Sacramento River Mitigation requirements including 1) Purchasing Delta smelt credits from an approved conservation bank 2) Funding a NMFS recovery plan project (Sunset Pumps) to remove a weir, allowing fish passage to benefit chinook steelhead and green sturgeon and 3) Funding the improvements at Sunset Pumps would increase water availability, which would then be directed to two local wildlife refuges, benefiting the Western Yellow Billed Cuckoo. The Sunset Pumps project is listed as high priority BOR, DWR, and USFWS, and is subject to separate NEPA/CEQA analysis prior to implementation. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. There would be no additional impact on geological resources, mineral resources, or paleontological resources as a result of utilizing this project alternative.

Table 3.2-4. Alternatives 5a and 5c Effects on Geology

| Impact Number and Title | Location | Discussion | Mitigation Measure(s) | CEQA Significance Conclusion | NEPA Effects Determination |
|---|----------|---|-----------------------|------------------------------|----------------------------|
| 3.2-b: Cause substantial soil erosion or the loss of topsoil. | SRMS | Alternatives 5a and 5c would have no physical effects, avoiding the impacts of the Proposed Action. | N/A | No Impact | No Impact |
| 3.2-f: Damage a unique paleontological resource or site or unique geologic feature. | SRMS | Alternatives 5a and 5c would have no physical effects, avoiding the impacts of the Proposed Action. | N/A | No Impact | No Impact |

Alternative 5b (Watermark Farms)

Alternative 5b would replace the SRMS with the Watermark Farms site approximately located on the right bank of the Sacramento River from River Mile 50.5 to River Mile 51.25. This Alternative project site does not include areas designated as mineral resources, or paleontologically sensitive formations. This alternative would not change any of the construction impacts associated with geological resources, mineral resources, or paleontological resources compared to the Proposed Action.

Table 3.2-5. Alternative 5b Effects on Geology

| Impact Number and Title | Location | Discussion | Mitigation Measure(s) | CEQA Significance Conclusion | NEPA Effects Determination |
|---|-----------------|--|------------------------------|---------------------------------------|--|
| 3.2-b: Cause substantial soil erosion or the loss of topsoil. | SRMS | No change in effects from the Proposed Action. | GEO-1 | Less than Significant with Mitigation | Long-term and Minor effects that are Less than Significant with Mitigation |
| 3.2-f: Damage a unique paleontological resource or site or unique geologic feature. | SRMS | No change in effects from the Proposed Action. | N/A | Less than Significant | Negligible effects that are Less than Significant |

3.3 Hydrology and Hydraulics

3.3.1 Existing Conditions/Affected Environment

Section 3.4.1 of the 2016 American River Watershed Common Features General Reevaluation Report Final Environmental Impact Statement / Environmental Impact Report (ARCF GRR Final EIS/EIR) describes the hydrologic setting of the project area, mainly focusing on the Sacramento and American Rivers, which have been significantly altered by human activities, including hydraulic and dredge mining for gold, building of levees for land reclamation and flood control, bank protection, land use changes, reservoir construction, water export projects, and dredging of alluvium for navigation and levee maintenance purposes.

In general, the Proposed Action is located within two basins: American River North and American River South. The upstream boundary of the basins is at Verona and the downstream boundary is at the Sacramento River Mitigation Site (SRMS). These basins include the leveed portions of the American River, Sacramento River, Magpie Creek, Dry Creek, and Arcade Creek.

Surface Water

Local Hydrology

Magpie Creek: Magpie Creek, is a small stream that was diverted from its original southwesterly course in the 1950s and engineered into an artificial canal flowing to the north and west at right angles, paralleling the local roads. It receives perennial flows from the McClellan Business Park's wastewater treatment facility, approximately 1 mile upstream from Raley Boulevard, and seasonal flows from stormwater and overland flow. There are numerous seasonal wetlands east and west of Raley Boulevard. Don Julio Creek converges with Magpie Creek just to the west of Raley Boulevard. Magpie Creek merges with Steelhead Creek/Natomas East Main Drain Canal (NEMDC) approximately 3.2 miles downstream from Raley Boulevard.

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, and ARMS: Besides the American River itself, numerous surface water features exist along the American River Parkway, including Steelhead Creek/NEMDC, which enters the American River Parkway at River Mile 1.7. Steelhead Creek/NEMDC parallels the northern levee approximately 0.3 miles north of the American River, flowing across the northern boundary of the Urrutia property and Discovery Park, and conveying flows into the Sacramento River 0.2 miles upstream of its confluence with the American River. The American River Mitigation Site (ARMS) site consists of a 58-acre pit created when the property was used for gravel mining, exists between Steelhead Creek/NEMDC and the American River. Upstream from Steelhead Creek/NEMDC, a man-made wetland parallels the northern levee starting at Steelhead Creek/NEMDC and continuing east for about 2.8 miles. This wetland was created during excavation of material for the north levee that was built in the 1950s. The American River Erosion Contract 4A intersects with the western portion of this wetland.

Sacramento River Erosion Contract 3: The section of the Sacramento River affected by the Proposed Action is entirely confined within levees, separating the river from agricultural land on the west bank and urban land on the east bank at the Sacramento River Erosion Contract 3, and from agricultural lands at both sides at the SRMS. The river experiences tidal fluctuation in this area due to its closer proximity to the Sacramento River and San Joaquin River Delta (Sacramento-San Joaquin Delta). There is no floodplain between the river and the levee protecting the adjacent Pocket neighborhood.

The SRMS is located at the confluence of the Sacramento River (Mile 15), Cache and Steamboat Sloughs. The floodplain which has been disconnected from the river's tidal and seasonal flooding influence through topographic modification by levees.

The Piezometer Network would be constructed in all areas of the Proposed Action that were included in the ARCF GRR Final EIS/EIR.

Flood Hazards

The Proposed Action is within designated flood hazard areas or in areas with reduced flood risk due to the presence of levees, according to Federal Emergency Management Agency's (FEMA) National Flood Hazard Layer geospatial database (FEMA 2023).

Groundwater

The Proposed Action is part of the Sacramento River hydrologic region and more specifically overlies the North American River and South American River groundwater sub-basins, both of which are designated as high priority basins, and the Sacramento Valley – Solano groundwater sub-basin, which is designated as a medium priority basin by DWR and water suppliers associated with the Proposed Action (see Appendix B Section 2.3.1.1). Local groundwater sustainability agencies are required to submit groundwater sustainability plans under the Sustainable Groundwater Management Act. Approximately 34% of water usage in the Sacramento River hydrologic region comes from groundwater (DWR 2020). For more information on water suppliers, refer to section 2.3.1.1 in the Public Utilities Chapter.

3.3.2 Applicable Laws, Regulations, Policies, and Plans

Section 3.4 of the ARCF GRR Final EIS/EIR lists Federal and State laws applicable to Hydrology and Hydraulics, and Chapter 5 summarizes the environmental laws applicable to the Proposed Action and the status of the Proposed Action's compliance with those laws. Two relevant laws and programs, the Porter-Cologne Water Quality Control Act of 1970 and the National Flood Insurance Program, are unchanged and not summarized further in this document. The following section summarizes additional laws and plans applicable to Hydrology and Hydraulics that were not described in the ARCF GRR Final EIS/EIR.

Federal

The following Federal laws related to hydrology and hydraulics are relevant to the Proposed Action, and are described in detail in Chapter 5, "Compliance with Federal Environmental Laws and Regulations":

- Federal Emergency Management Agency Code of Federal Regulations Title 44, Section 65.10 (Levee Requirements) and FEMA Flood Zone Designations;
- Rivers and Harbors Act of 1899, As Amended (Sections 14 and 10); and
- Executive Order 11988, Floodplain Management.

State

California Executive Order S-01-06, Identification and Repair of Critical Erosion Sites

On February 24, 2006, the Governor declared a state of emergency for California's levee system. Soon after, he signed Executive Order S-01-06, directing DWR to identify and repair eroded levee sites on the Federal/State levee system to prevent catastrophic flooding and loss of life. To date, nearly 250 levee repair sites have been identified, and more than 100 of the most critical sites have been completed. Two of the sites are along the bank of the Sacramento River east levee between the Natomas Cross Canal and the American River. Rock toe protection has been installed at these sites. These improvements do not overlap with planned levee improvements on Sacramento River Contract 3.

Central Valley Flood Control Act of 2008

The Central Valley Flood Control Act of 2008, passed in 2007, recognizes that the Central Valley of California, which includes both Sacramento and American Rivers, is experiencing unprecedented development, resulting in the conversion of historically agricultural lands and communities to densely populated residential and urban centers. Because of the potentially catastrophic consequences of flooding, the Act recognizes that the Federal government's current (100-year (0.01% Annual Exceedance Probability (AEP)) design flood elevation standard is not sufficient to protect urban and urbanizing areas within flood-prone areas throughout the Central Valley and declares that the minimum standard for these areas is a 200-year (0.005% AEP) design flood elevation. To continue with urban development, cities and counties must develop and implement plans for achieving this new standard by 2025. With respect to flood risk damage reduction, the Central Valley Flood Control Act also calls upon DWR to develop a comprehensive Central Valley Flood Protection Plan that was last updated in 2022 for protecting the lands currently within the Sacramento–San Joaquin River Flood Management System.

Porter-Cologne Water Quality Control Act of 1970

The Porter-Cologne Act is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act (California Water Code section 13000 et seq.), the policy of the State is as follows:

- That the quality of all the waters of the State shall be protected,
- That all activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason, and

- That the State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) of 2014 sets forth a framework for the long-term protection of groundwater resources. The SGMA requires local agencies to form groundwater sustainability agencies for high and medium priority basins and to develop and implement groundwater sustainability plans (GSPs). The California Department of Water Resources supports SGMA implementation through evaluation of GSPs and planning, technical, and financial assistance, and through guiding development of best management practices.

Local

City of Sacramento 2035 General Plan – Environmental Resources

The City of Sacramento 2035 General Plan was adopted in March 2015 (City of Sacramento 2015). The General Plan set out numerous goals around the topic of Environmental Resources, including water quality protection and biological resources. The policies to support these goals prioritize water quality improvement, groundwater recharge, watershed protection, stormwater quality and quantity, minimization of construction impacts, wetland and riparian habitat protection, and many others.

Sacramento County General Plan of 2005 to 2030, Safety, Conservation and Delta Protection Elements

The Safety Element of the existing Sacramento County General Plan of 2005 to 2030 (Sacramento General Plan) (Sacramento County 2005) contains the goal, “Minimize the loss of life, injury and property damage due to flood hazards.” The following policies that support this goal generally require that the County work with USACE, SAFCA, and other Federal, State, and local government entities include the following: Policy SA-6 requires the County to participate through SAFCA in obtaining Federal authorization for construction of flood control projects on the Sacramento and American Rivers to provide 200-year flood protection; Policy SA-10 requires the County to continue local efforts that encourage implementation of the Federal Flood Insurance Program; Policy SA-13 requires the County to prohibit urban uses on unprotected flood land; and Policy SA-14 requires the County to participate with the City of Sacramento and USACE and other Federal, state, regional, and local governments and agencies to develop policies to finance, construct, and plan flood improvements to eliminate flooding in Sacramento County.

The Sacramento County General Plan was amended in 2017; the General Plan’s Conservation and Delta Protection Elements are relevant to the Proposed Action (County of Sacramento 2017a, b). In this plan the County prioritizes preservation, protection, and enhancement of riparian, stream, and river corridors. The County General Plan recognizes the roles natural floodplains and stream functions play in maintaining healthy hydrologic processes. It contains objectives to limit the filling of floodplains and to conduct bank stabilization and channel modification projects in a way that preserves natural stream functions. Additionally, the improvement, repair, and long-term maintenance of Delta levees is a goal contained within the Delta Protection Element.

3.3.3 Analysis of Environmental Effects

Analysis Methodology

Hydraulic analyses were conducted on Magpie Creek, the American River, and the Sacramento River during the designs for the Proposed Action and alternatives. The effects of the Proposed Action on the water surface elevations were evaluated using the Hydrologic Engineering Center's - River Analysis System (HEC-RAS) computer software. HEC-RAS performs one-dimensional steady flow, one- and two-dimensional unsteady flow calculations, sediment transport/mobile bed calculations, and water temperature/water quality modeling. The development and use of this hydraulic modeling is described in Section 3.4.2 of the ARCF GRR Final EIS/EIR.

Draft Cumulative Hydraulic Impacts Analysis on the Probability of Failure of Sacramento River Levees (MFR ARCF 2016, Cumulative Hydraulic Impacts Analysis on the Probability of Failure of Sacramento River Levees, 21 February 2023) was presented in a Memorandum of Record dated February 21, 2023, which was prepared to determine how cumulative stage impacts associated with the ARCF 2016 Project for the American and Sacramento Rivers Erosion Improvements designs affect the overtopping probability and performance of the Sacramento River levee system. Scenarios that reflect the existing conditions and the combination of proposed design elements (i.e., expanded Sacramento Weir and Bypass Project, and erosion countermeasures (ECMs) were modeled in HEC-RAS and HEC-FDA.

The results of the analysis show that the hydraulic conditions without Sacramento Weir widening (future without the ARCF 2016 Project) or the hydraulic conditions with Sacramento Weir widening and ECMs (future with ARCF 2016 Project implemented) do not provide significant changes in water surface elevations along the Sacramento River. The cumulative hydraulic impacts for the current representation of the "With ARCF 2016 Project condition" do not result in an increase in Annual Overtopping potential at any of the index locations compared to the baseline condition. When considering geotechnical failures, the Annual Erosion Potential (AEP) at all index locations was reduced by the levee improvements proposed under the WRDA 2016, ARCF 2016 Project. The changes in conveyance capacity resulting from different ECM designs do not have a significant impact on the AEP compared to the reduction provided by the system-wide levee improvements.

Basis of Significance

The thresholds, and the impact analysis that follows, take into consideration the significance of an action in terms of: the setting of the proposed action; short- and long-term effects of the proposed action; both beneficial and adverse effects; direct and indirect effects of the proposed action on public health and safety; the context and intensity of impacts; and effects that would violate Federal, State, Tribal, or local law protecting the environment, as required under NEPA (40 CFR 1508.1(g)). The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. The alternatives under consideration were determined to result in a significant impact related to hydrology and hydraulics if they would do any of the following:

- a. substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- b. substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: 1) result in a substantial erosion or siltation on- or off-site; 2) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; 3) 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 4) impede or redirect flood flows;
- c. result in the risk of release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones.

Effects Not Discussed in Detail

Result in the risk of release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones. (3.3-c)

The Proposed Action is not located in a tsunami or seiche zone. While the Proposed Action is located within a flood hazard area, the levee improvements under the Proposed Action are designed to decrease risk of flood water inundation. During construction, there is the small potential of pollutant release, such as petroleum products from construction on the waterside of the levee, and possibly on the landside of the levee in staging areas, which is addressed in Appendix B Section 3.8 “Hazards and Hazardous Materials.”. The Proposed Action would not result in long-term storage of pollutants that could be exposed to flooding, and therefore, this issue is not addressed further.

Effects Analysis

No Action Alternative

Under the NEPA No Action Alternative, the remaining work on Magpie Creek, Lower American River, and Sacramento River authorized under the ARCF 2016 Project would be constructed. This work includes fix-in-place levee improvements which would improve flow conveyance and reduce the flood risk management system. These improvements would not change channel geometry or significantly alter the footprint of the levee system. As a result, the No Action Alternative would not substantially alter the erosion or siltation in the system or increase the rate of surface runoff in a manner that would result in flooding. Additionally, there would be no impact to stormwater drainage systems or additional sources of runoff caused by the NEPA No Action Alternative. Since flows were not expected to be adversely altered, the effects to hydrology and hydraulics described in the ARCF GRR Final EIS/EIR were found to be less than significant, and no mitigation would be required.

However, since the analysis in the ARCF GRR Final EIS/EIR, additional design refinements described under the Proposed Action are proposed to meet the flood risk management goals of the ARCF 2016 Project. If these refinements were not constructed, portions of the American and Sacramento River levee system would be vulnerable to erosion and, in the case of American River 4A, be vulnerable to a breach due to adverse hydraulic conditions during high flows. A

new levee would not be constructed on Magpie Creek east of Raley Blvd, additional canal improvements would not be constructed, and North Sacramento would remain vulnerable to flooding. Effects to flood risk would be significant without the additional improvements.

The SRM and ARM sites would not be constructed, and the existing hydrology and hydraulic conditions would continue. As a part of the ARCF 2016 Project, on-site mitigation such as planting berms would be constructed along the riverbanks. This mitigation strategy would not alter river hydrology or hydraulics.

Proposed Action Alternative

3.3-a Decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

CEQA Significance Conclusion: Less than Significant

NEPA Significance Conclusion: Long-term and Negligible effects that are Less than Significant.

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Long-term and Negligible effects that are Less than Significant.

The MCP components previously described in the ARCF GRR Final EIS/EIR, such as the levee raise between Raley Boulevard and Vinci Avenue, the maintenance road between Raley Boulevard and Dry Creek Road, and the bike path culverts, would not substantially impede infiltration of surface water and would, therefore, not affect groundwater supplies or interfere substantially with groundwater recharge. The floodplain adjacent to the channel would be acquired to provide detention space to accommodate a 250-year flood event. Approximately 43.5 acres of floodplain have been purchased for this purpose. Floodplain acquisition east of Raley Boulevard would continue until approximately 80 acres are acquired. Continuation of the floodplain acquisition would permanently prevent development of these properties and maintain groundwater recharge in the area.

The MCP would not require groundwater withdrawal apart from temporary and short-term dewatering during construction activities, but the channel realignment east of Raley Boulevard could interfere with groundwater recharge in that area. Construction of the new channel and maintenance road would require filling a portion of a wetland, directly impacting approximately 0.41 acres of that wetland. While the channel and maintenance road would be designed with the goal of preventing indirect hydrologic impacts beyond the construction footprint, the construction design would maintain the area topography and would not impact the entire wetland hydrology. In addition, the rerouting of Don Julio Creek would not impact groundwater resources. The project improvement would have a long-term and negligible impact on

groundwater resources that is less than significant (NEPA); adverse impacts under CEQA also would be less than significant.

American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and Sacramento River Erosion Contract 3

CEQA Impact Conclusion (Entire Proposed Action): No Impact

NEPA Impact Conclusion (Design Refinements): No Impact

Construction would not create impervious surfaces that would substantially interfere with groundwater supplies or groundwater recharge at American River Erosion Contract 3B North and South, American River Erosion Contract 4B or Sacramento River Erosion Contract 3. In addition, these contracts would not require groundwater withdrawal and, therefore, there would be no impact.

American River Erosion Contract 4A

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Short-term and Negligible effects that are Less than Significant.

None of the proposed improvements at American River Erosion Contract 4A were discussed in the ARCF GRR Final EIS/EIR, thus the impacts would be identical under both NEPA and CEQA, see Section 1.1 “Scope of the Environmental Analysis.” The proposed berm would affect a wetland which parallels the levee and the Jedediah Smith Memorial Bike Trail near State Route 160 bridge. The wetland is on the waterside of the levee and was incidentally created during construction of the original levee when surrounding soils were used as levee fill materials and the excavated area was never backfilled with soil. The topographic depression has since become a wetland and drainage system for the area. The wetland is not hydrologically well connected and becomes stagnant throughout the year. While most of the wetland would remain intact, approximately 0.6 acres of the 11.5-acre wetland would be filled in order to construct the berm. The berm would not be constructed entirely of impervious materials, is relatively small in comparison to the rest of the wetland acreage and would not substantially interfere with groundwater recharge. Further, no groundwater would be used during construction. The project improvement would have a short-term and negligible impact on groundwater resources that is less than significant (NEPA); adverse impacts under CEQA also would be less than significant.

Sacramento River Mitigation Site and American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Short-term and Negligible effects that are Less than Significant; Long-term and Beneficial

The SRMS and ARMS were not considered in the ARCF GRR Final EIS/EIR and are considered a new action under both NEPA and CEQA. The SRMS and ARMS would involve regrading and

constructing channels into these sites, including the removal of a man-made pond, and restoring connectivity with the adjacent rivers. The channels would be designed to have hydrologic connectivity to the Sacramento and American Rivers at all flow levels. This would create increased opportunities for groundwater infiltration, while increasing soil saturation and restoring the conditions needed to sustain riparian vegetation at both sites. Design of habitat mitigation features at the SRMS would evaluate tidal damping, channel stability, and exposure time for the wetland marsh feature (Environmental Science Associates, 2019). Therefore, site restoration would have long-term beneficial impacts on groundwater resources (NEPA).

A variety of water sources would be required to establish the plantings at each mitigation site. These sources include pumping directly from the river, developing a well for revegetation purposes, municipal water, or water truck delivery to the site. At the programmatic design level, estimations include one well would be drilled at each mitigation site to temporarily water new plantings. Both ARMS and SRMS are located in the Sacramento Valley Basin, with ARMS in the North American Subbasin and SRMS in the Solano Subbasin. Groundwater data collected by DWR shown on the California's Groundwater Live, Groundwater Levels ArcGIS Dashboard (2022) show monitoring wells in the ARMS area are Normal (50-75%) to Above Normal (75-90%) for water levels. Two continuous global positioning systems (CGPS) stations exist in Sacramento County in the Sacramento Valley – South American Subbasin. CGPS Station P274 over the period of record (2005-2023) show a vertical water displacement of -0.27 feet; CGPS Station P275 shows vertical displacement of -0.15 feet from 2006 to 2023. Twenty-year groundwater level trends data shows that the subbasins that ARMS and SRMS are located within, have a generally decreasing trend of groundwater levels up to 2.5-feet/year. There are no land subsidence data for Sacramento County.

While groundwater levels are trending minor negative vertical displacement in Sacramento County, drilling several wells in areas for domestic or agricultural purposes would have a negligible impact on groundwater resources, because of the temporary nature of the wells and volume the water extraction. The shallow aquifer at grand island has both the Sac river and slough to provide recharge into a very permeable aquifer. Additionally, the outstanding water supply characteristics of the aquifer would make significant drawdown of the water table very remote. DWR estimates in California's Groundwater Update that between 7,000 and 15,000 new wells are constructed in California each year (DWR 2020). Therefore, well installation for purposes of establishing mitigation plantings would have a short-term and negligible impact on groundwater resources that is less than significant (NEPA); adverse impacts under CEQA also would be less than significant.

Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): No Impact

NEPA Impact Conclusion (Design Refinements): No Impact

Because the Piezometer Network was not considered in the ARCF GRR Final EIS/EIR, the impact conclusions are identical under both NEPA and CEQA. The purpose of the piezometer sensors is to monitor groundwater levels to ensure adequate performance of the levee

improvements and would not interfere with groundwater recharge or use groundwater supply. Therefore, there would be no adverse impact on groundwater supplies or management.

3.3-b Alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: 1) result in substantial erosion or siltation on- or off-site; 2) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; 3) 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 4) impede or redirect flood flows.

CEQA Significance Conclusion: Significant and Unavoidable

NEPA Significance Conclusion: Significant and Unavoidable

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): Significant and Unavoidable

NEPA Impact Conclusion (Design Refinements): Significant and Unavoidable

The design refinements made to MCP since the ARCF GRR Final EIS/EIR are intended to increase the flow capacity of Magpie Creek and improve hydraulics within the site over the long-term, including improved erosion protection by changing the Stream flows. Specific design refinements that improve hydraulics include vegetation clearing along approximately 2,700 linear feet of the channel between Vinci Avenue and Dry Creek Road, and overall widening of an estimated 2,100-foot segment of the channel between Raley Boulevard and Vinci Avenue. The channel slopes would be modified to a 2:1 slope and the channel bed would be widened an average of 10 to 25 feet. The widening of the channel would increase its flow capacity and modification of the channel slopes to a gentler grade would decrease bank erosion and instability of the channel. In addition, the removal of vegetation would increase flow velocities and conveyance in the channel.

The levee extension would be constructed crossing Raley Boulevard and extend approximately 1,000 feet to the east along the top bank and would be located between the channel and a developed industrial area to the south. It would not significantly impact hydrology or hydraulics because it would contain flood flows within the channel and adjacent undeveloped floodplain and keep flood flows from impacting the industrial area. The realignment of Magpie and Don Julio Creeks on either side of Raley Boulevard would be a short-term significant hydraulic impact during construction due to work occurring in the channels. An approximately 325-foot portion of Magpie Creek would be realigned to flow through a new culvert under Raley Boulevard to replace the existing undersized culvert, and approximately 200 feet of Don Julio Creek would be realigned to flow around the new culvert. Additionally, a sewer pipeline would be rerouted so that construction of the Raley Boulevard culvert does not damage it. The realignment would be done during the dry season. However, in the event that summertime flows

are too great for the work to be completed, a Low Threat General Order (LTGO) Permit would be obtained from the CVRWQCB and the channel would be dewatered using a coffer dam and pumped back into the channel downstream. The old channel would be filled in and once construction is completed the new channel would have the same hydraulic capacity.

Without the project improvements, flood waters from an approximately 7% AEP event (approximately a 1 in 15-year event) would overtop and go around the existing levee and flow through the old Magpie Creek channel, resulting in downstream flooding. The project improvements would prevent this overtopping and end-around effects and would therefore increase waters being routed through the MCDC, and eventually Robla Creek, during storm events larger than a 7% AEP. This would result in an increase in peak discharges, velocities, and flood water volumes on the downstream segments of the MCDC, and Robla and Dry Creeks. Modeling presented in the Draft SEIS/SEIR, Appendix F Draft Hydraulic Study Report, indicated downstream stage increases of up to 0.3 feet, which is a potentially significant impact. Subsequent refinements to the hydraulic model to better reflect the design of the project are in progress and will be disclosed in a future supplemental environmental document.

The design refinements would also cause minor impacts to hydrology. There is a 2.4-acre wetland east of Raley Boulevard that would be affected by the construction of the MCP. The realignment of Magpie Creek and maintenance road construction on the right bank would permanently impact approximately 0.41 acres of this wetland (See Appendix B, Section 4.1, "Vegetation and Wildlife," for a discussion of wetland impacts and mitigation). However, construction of the realignment would not significantly alter the area's topography relative to the remaining wetland and these impacts to local hydrology would be less than significant.

Staging areas would be used temporarily for up to two construction seasons and would be returned to pre-existing conditions once construction is complete. Use of the staging area east of Raley Boulevard would not impact hydrology and hydraulics, as it is located at a higher elevation than the surrounding land. The MCP's northwest staging area contains numerous wetlands, with about 1.5 acres of upland area that can be used as staging. Use of this staging area would require vehicles and equipment to be confined to the upland area and use developed roadways to avoid impacting the wetlands on this parcel. Haul routes would use existing paved roads and would not impact hydrology and hydraulics.

The levee raise, maintenance road, and bike path bridge improvements were described in the Recommended Plan in the ARCF GRR Final EIS/EIR and were not found to significantly impact hydrology or hydraulics; these impacts would be less than significant. This is because these designs would better convey water flow through the current alignment of Magpie Creek and not interfere with the drainage pattern of the surrounding area.

The realigned and widened channel between Raley Boulevard and Vinci Avenue would accommodate 2,000 cfs. Because the design flow must accommodate 3,169 cfs, Magpie Creek would not be able to convey the design flow and impacts would be significant.

Mitigation Measure HYDRO-1: Obtain flowage easements on adjacent floodplain

Prior to the start of the channel widening and levee improvements, the Project Partners shall obtain easements on 80 acres of the floodplain, to ensure the downstream portion of the system can accommodate the increased design flows conveyed by the upstream channel, and will be obtained on portions of downstream parcels that could experience stage increases of up to 0.2 feet. The easements will reserve 80 acres of floodplain area to contain flood flows and ban development of structures that could impact flood flows in perpetuity.

Timing: Before construction

Responsibility: Project Partners

Implementing Mitigation Measure HYDRO-1 would reduce significant hydrology and hydraulics impacts to a less-than-significant level through the establishing flowage easements to meet the conveyance volume of the required design flow of 3,169 cfs prior to channel widening, or through use of compensatory mitigation, if required, to permit flooding of upstream parcels on Magpie Creek and to accommodate small and localized downstream stage increases. The project improvement would have a short-term and moderate to major impact on drainage patterns that is less than significant with mitigation (NEPA); adverse impacts under CEQA also would be mitigated to less than significant. However, even after implementing Mitigation Measure HYDRO-1, impact would remain significant and unavoidable.

American River Erosion Contract 3B North and South, and American River Erosion Contract 4B

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

The American River Erosion Contract 3B North and South, and American River Erosion Contract 4B design refinements include construction of launchable rock toe and tiebacks as bank erosion control, as well as additional areas for bank and levee protection not originally considered in the ARCF GRR Final EIS/EIR. These design refinements would be entirely within the river channel and bench within the existing levee system and would not alter the drainage pattern of the surrounding area or alter the course of the river channel. The addition of the launchable rock toe would narrow the channel and raise the river stage, as compared to a launchable rock trench where the rock would be placed in an excavated trench within the existing riverbank. The tiebacks would be placed intermittently higher up on the bank slope to transition the riprap bank protection into the levee slope protection and would be built so that they interrupt and absorb the higher river flows, preventing scour at higher elevations without armoring the entire riverbank.

An evaluation of the system's overtopping risk would be established through a comprehensive Flood Damage Reduction (FDA) analysis led by the Sacramento District (SPK) Cumulative Modeling Team (CMT). Interim FDA model results by the CMT indicate that American River Erosion Contract 3B North and South and 4B do not increase the risk of overtopping of the North and South Levee Systems (See Appendix G, "Engineering."). Thus, there would be

negligible impacts from the fill material required to construct the erosion protection design in terms of channel capacity and water surface elevation changes.

The American River Erosion Contract 4B design refinements include velocity and tree scour protection work along the northern (0.2 miles) and southern (0.6 miles) levees. This work includes some tree removal, and placement of rock around trees that would be protected in place to address scour caused by localized hydraulic conditions around tree trunks during high flows. Because this work would improve hydrology or hydraulics in the surrounding area, impacts to hydrology and hydraulics are not anticipated.

NEPA Impact Conclusion (Design Refinements): Long-term and Negligible effects that are Less than Significant.

The American River Erosion Contract 3B North and South levee improvements include the launchable trench and standard bank protection with IWM incorporated as described in the 2016 ARCF GRR Final EIS/EIR, and the launchable rock toe method, tiebacks, and locations included in the design refinements. The hydraulic analysis described above for CEQA incorporated actions and described in the ARCF GRR Final EIS/EIR, as well as the design refinements made since then, would result in long-term changes that would be less than significant. Impacts to hydraulics under NEPA that would be negligible and less than significant.

American River Erosion Contract 4A

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Short-term and Negligible effects that are Less than Significant.

The American River Erosion Contract 4A improvements consist of an armored berm to be constructed along the river's right bank where the State Route 160 bridge piers are near the levee. The berm and its location were not analyzed in the ARCF GRR Final EIS/EIR and impacts from construction activities are considered new actions under both NEPA and CEQA. The function of the berm would be to redirect flood flows away from the bridge piers and the nearby levee. A hydraulic analysis on the berm found that the velocity changes created by the berm would be small and resulting scour would be negligible (See Appendix G, "Engineering."). The redirected flows would be localized, would stay within the levee system, and would not impact surrounding areas. The proposed rerouting of the Jedediah Smith Memorial Bike Trail would involve paving and regrading but would not result in a substantial increase in impervious surfaces because this action would be replacing an existing trail with another trail in a different location within the levee system. This new bike trail reroute would involve adding a new impervious surface in the parkway.

Additionally, the bike path would be constructed along a profile that matches the elevation of the existing bike path to provide equal or better access during moderate flow event that inundate portions of the floodplain. HEC-RAS rain-on-grid simulations were conducted with the proposed grading to confirm the accessibility of the proposed bike path and assess local runoff pattern change. Based on the model result, culverts were placed at several locations to allow drainage

through the elevated bike path, thus reducing the drainage pattern impact of the elevated bike path. At high flows where the floodplain is conveying water (115,000 cfs and greater), model result confirmed there is less-than-significant impact due to the elevated bike path. Use of the staging areas would be temporary and would not affect hydrology or hydraulics and the staging area would be returned to pre-existing conditions once construction is complete. Haul routes within the Parkway would require minor regrading and addition of aggregate rock to facilitate truck access, but these actions would not significantly interfere with hydrology or hydraulics. The project improvement would have a short-term and negligible impact on drainage patterns that is less than significant (NEPA); adverse impacts under CEQA also would be less than significant.

Sacramento River Erosion Contract 3

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Long-term and Minor effects that are Less than Significant.

The Sacramento River Erosion Contract 3 in the ARCF GRR Final EIS/EIR Recommended Plan include the placement of rock revetment from the riverbed to several feet above the summer water surface elevation to protect the riverbank from scour during high river flows. The Sacramento River design refinements include a launchable rock toe, which would supplement the standard rock revetment described in the ARCF GRR Final EIS/EIR, with an additional 10 feet of rock at the revetment base. The tie-backs would be placed perpendicular to the river channel to prevent erosion of the upper bank without installing continuous rock protection. These design refinements would be entirely within the river channel and would not alter the drainage pattern of the surrounding area or alter the course of the river channel itself. The staging area would be located on an existing paved parking lot and would not affect hydrology or hydraulics. Effects of the erosion protection design were modeled using the 2D HEC-RAS model for a 1-in-350-year flow event (192,000 cfs). Results of the modeling indicate the rock revetment design would lead to stage increases of less than 0.2 ft and would not increase the risk of overtopping (See Appendix G, “Engineering.”). The project improvement would have a long-term and minor impact on drainage patterns that is less than significant (NEPA); adverse impacts under CEQA also would be less than significant.

American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Long-term and Beneficial

The ARMS site lies adjacent to the right bank of the lower American River and consists of a man-made pond created as a result of a historic gravel mine. The design is in the conceptual stage and would involve re-grading the majority of the site, including backfilling portions of the man-made pond, to create floodplain containing one or more channels connected to the river.

The ARMS site has been designed to incorporate erosion control measures using IWM and other natural engineering features to mitigate erosional risks both on and offsite; The site design would also accommodate natural sedimentation processes to allow for onsite habitats, post-construction, to become self-sustaining through ecological succession. Additionally, the site design criteria specify that flood flows may not be impeded or redirected such that the rate and/or amount of surface runoff would contribute to on or offsite flooding. The project improvement would have a long-term and beneficial impact on drainage patterns (NEPA); adverse impacts under CEQA would be less than significant.

Sacramento River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Long-term and Beneficial

At the confluence of Cache Slough, Steamboat Slough, and the Sacramento River, the SRMS forms a peninsula currently used as a dredge material disposal site. The eastern half of the SRMS is bordered by a Federal levee. The western half of SRMS is bordered by a non-Federal levee system which has been breached for Sacramento Shipping Channel dredging operations.

The SRMS design is still in the conceptual phase. All concepts would involve breaching the levee on the western half and excavation of one or more channels to reconnect the floodplain to the adjacent waterbodies. Breaching the Federal levee to establish additional floodplain on the eastern half is being considered. Any of the designs considered under the SRMS would improve hydrology and hydraulics because they would reconnect a portion of floodplain in the Sacramento-San Joaquin Delta to natural hydrologic influence, while decreasing river stage at high flow events. During high flow events, the SRMS would provide additional floodplain at the site, compared to the existing confined channel, resulting in lower river stages and erosion potential. The project improvement would have a long-term and beneficial impact on drainage patterns (NEPA); adverse impacts under CEQA would be less than significant.

Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): No Impact

NEPA Impact Conclusion (Design Refinements): No Impact

Because the piezometer installations were not considered in the ARCF GRR Final EIS/EIR, the impact conclusions are identical under both NEPA and CEQA. The ground-disturbing work for Piezometer Network is confined to the drilling of boreholes on the levee top or landward of the levees. Therefore, installation and operation of the piezometers would have no impact on hydrology or hydraulics.

Alternatives Comparison

Alternatives 3a, 3b, 3c, and 3d

Alternatives 3a, 3b, 3c, and 3d include alternative designs for improvements to the American River Erosion Contract 4A. All alternatives would be constrained within the construction buffer

limits of the American River Erosion Contract 4A. Spatial constraints include the State Route 160 bridge to the northwest, the existing levee to the north and the American River to the south. All other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, MCP, SRMS, ARMS, and Piezometer Network) would have the same effects as American River Erosion Contract 4A. Overall the effects from Alternatives 3a through 3d would be similar to the Proposed Action and are described in Table 3.3-1.

Alternative 3a includes an alternative berm configuration for the American River Erosion Contract 4A. The waterside berm described in the American River Erosion Contract 4A would address unfavorable hydraulic conditions created by flood waters flowing past the State Route 160 bridge piers, which could erode the nearby levee and cause a breach. However, the waterside berm would require filling of a wetland in order to construct. Alternative 3a would avoid this impact by constructing a landside berm connected to the existing levee. This structure would contain floodwaters in the event that the main levee is breached. The bike trail would not require re-routing.

Alternative 3b would be similar to the American River Erosion Contract 4A but would require a different permanent bike trail reroute. The route following the railroad would be slightly longer than the American River Erosion Contract 4A and would require some vegetation trimming, clearing, regrading, and paving.

Alternative 3c would be similar to the American River Erosion Contract 4A but would change the permanent bike trail reroute to include building a bridge or adding fill and routing bikes through the wetland and around the berm. Installing this route would require vegetation trimming, vegetation clearing, regrading, paving and possible construction of a bridge. This alternative would require temporary closure of the bike trail and require temporary detours.

Alternative 3d would be similar to the American River Erosion Contract 4A for the Proposed Action, except that the permanent bike trail reroute would be a paved bike trail closer to the river along an existing off-road bike trail. Installing this route would require some vegetation trimming, vegetation clearing, regrading, and paving.

Table 3.3-1. Alternative 3a, 3b, 3c, and 3d Effects on Hydraulics and Hydrology

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|------------------------------------|---|--------------------|------------------------------|--|
| 3.3 - a: Decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. | American River Erosion Contract 4a | Similar to the Proposed Action for American River Erosion Contract 4A, the landside berm would not affect groundwater. | N/A | Less than Significant | Short-term and Negligible effects that are Less than Significant |
| 3.3 - b: 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 | American River Erosion Contract 4A | Similar to the Proposed Action for American River Erosion Contract 4A, Alternative 3 has less than significant impacts. | N/A | Less than Significant | Short-term and Negligible effects that are Less than Significant |

Alternatives 4a and 4b (CEQA-Only)

Alternatives 4a and 4b include alternative designs for improvements to the ARMS. Alternatives 4a and 4b would preserve a 30-acre and 20-acre portion, respectively, of the existing pond on the Urrutia site. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, and SRMS) would remain unchanged compared to the Proposed Action. Overall the effects from Alternatives 4a and 4b would be similar to the Proposed Action and are described in Table 3.3-2.

Table 3.3-2. Alternative 4a and 4b Effects on Hydraulics and Hydrology

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion |
|--|----------|---|--------------------|------------------------------|
| 3.3 - a: Decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. | ARMS | Similar to the Proposed Action, Alternatives 4a and 4b would provide opportunities for groundwater infiltration on the ARMS. | N/A | Less than Significant |
| 3.3 - b: 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 | ARMS | Similar to the Proposed Action, Alternatives 4a and 4b would not increase flows or create unfavorable hydraulic conditions on the American River. | N/A | Less than Significant |

Alternative 5a (Conservation Bank Credits)

Alternative 5a includes an alternative financial solution as opposed to constructing the SRMS.

This alternative includes the purchase of all remaining required mitigation credits from Service Approved Conservation Banks, whose service areas cover the Proposed Action Area. There would be no additional resources impacts. All other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, MCP, SRMS, ARMS, and Piezometer Network) would have the same effects as the Proposed Action.

Table 3.3-3. Alternative 5a Effects on Hydraulics and Hydrology

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|-----------------------------|--|---------------------------|-------------------------------------|-----------------------------------|
| 3.3 - a: Decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. | Approved Conservation Banks | Alternative 5a would have no effect on the hydrology or hydraulics of the Site. Credits would be purchased for offsite mitigation. | N/A | No Impact | No Impact |
| 3.3 - b: 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, | Approved Conservation Banks | Alternative 5a would have no effect on the hydrology or hydraulics of the Site. Credits would be purchased for offsite mitigation. | N/A | No Impact | No Impact |

Alternative 5b (Watermark Farms)

Alternative 5b would meet the SRMS mitigation target acreage by constructing a mitigation site at Watermark Farms, instead of the SRMS. All other project components (MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, MCP, SRMS, ARMS, and Piezometer Network) would have the same effects as the Proposed Action.

Watermark Farms is privately owned and located within Sacramento County and includes the waterside of the levee to landside toe, and adjacent existing farmland. Watermark Farms is on the right bank of the Sacramento River, from River Mile 50.5 to River Mile 51.25, across from the Pocket neighborhood and can be accessed from South River Road. The conceptual design is to restore approximately 227 acres of riverine and floodplain habitat by breaching the existing levee and creating a new setback levee and secondary channel. This floodplain and shallow-water habitat would provide suitable habitat for salmonid species, green sturgeon, and Delta

smelt. Overall, the effects from Alternatives 5b would be similar to the Proposed Action and are described in Table 3.3-4.

Table 3.3-4. Alternative 5b Effects on Hydraulics and Hydrology

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Comparison to No Action |
|---|-----------------|---|--------------------|------------------------------|------------------------------|
| 3.3 - a: Decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. | Watermark Farms | Alternative 5b would not interfere substantially with groundwater or recharge potential. Similar to the Proposed Action, this alternative would have beneficial impacts associated with increasing the size of the floodplain and improving hydrologic connection. | N/A | Less than Significant | Beneficial |
| 3.3 - b: 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, | Watermark Farms | Alternative 5b would have substantial effects on the hydrology or hydraulics of the Site, by converting farmland to a natural floodplain via setback levee. This alternative would not increase risk of erosion or affect the hydrology of the Sacramento River negatively. | N/A | Less than Significant | Beneficial |

Alternative 5c (Sunset Pumps)

Alternative 5c combines three approaches to complete the Sacramento River Mitigation requirements including 1) Purchasing Delta smelt credits from an approved conservation bank 2) Funding a NMFS recovery plan project (Sunset Pumps) to remove a weir, allowing fish passage to benefit chinook steelhead and green sturgeon and 3) Funding the improvements at Sunset Pumps would increase water availability, which would then be directed to two local wildlife refuges, benefiting the Western Yellow Billed Cuckoo. The Sunset Pumps project is listed as high priority BOR, DWR, and USFWS, and is subject to separate NEPA/CEQA analysis prior to implementation. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. All activities related to 5c involve funding another project, therefore no additional impacts to hydraulics and hydrological resources would result from this alternative.

Table 3.3-5. Alternative 5c Effects on Hydraulics and Hydrology

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|--|--|---------------------------|-------------------------------------|-----------------------------------|
| 3.3 - a: Decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. | Approved Conservation Banks and Sunset Pumps | Alternative 5c would have no effect on the hydrology or hydraulics of the Site. Credits would be purchased for offsite mitigation. | N/A | No Impact | No Impact |
| 3.3 - b: 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, | Approved Conservation Banks and Sunset Pumps | Alternative 5c would have no effect on the hydrology or hydraulics of the Site. Credits would be purchased for offsite mitigation. | N/A | No Impact | No Impact |

3.4 Water Quality

3.4.1 Existing Conditions/Affected Environment

The environmental and regulatory framework described in Section 3.5 of the ARCF GRR Final EIS/EIR adequately described the current water quality conditions within the project sites. However, the Magpie Creek Project (MCP) and the Sacramento River Mitigation Site (SRMS) were not included in the ARCF GRR Final EIS/EIR and are discussed below in more detail.

Magpie Creek Project

Magpie Creek is not specifically mentioned in the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan), as it is impractical to list every surface water in the Central Valley Region. Waters, which are not specifically listed are assigned the Municipal and Domestic Supply beneficial use by default, and other uses may apply. The MCP area is located just downstream of the former McClellan Airforce Base (now McClellan Business Park), which was designated a Federal Superfund site in 1987 due to contamination from organic solvents, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), vinyl chloride, metals, pesticides, oils and greases, and radioactive compounds. Cleanup activities associated with the base extended as far west as the MCP site. Today, Magpie Creek receives perennial water from the McClellan Business Park wastewater effluent and stormwater runoff before its confluence with Don Julio Creek at Raley Blvd. Additional details are described in Appendix B Section 3.8 Hazards and Hazardous Materials.

Because of the area's history, the anticipated work to be conducted, and to support acquisition of the floodplain, soil testing was conducted in 2016 east of Raley Blvd and again in 2021, adjacent to the canal west of Raley Blvd. The results are summarized in two separate Phase II Environmental Site Assessment (ESA) reports (Kleinfelder 2017). During the 2016 sampling event, several locations contained PCBs and metals at concentrations that exceeded the lower end of the ecological screening levels, indicating potential low level adverse effects to aquatic or terrestrial organisms. The majority of the samples did not contain detectable concentrations of these contaminants. Volatile and semi-volatile organic compounds, dioxins, diesel, and gasoline were analyzed, but not detected. The 2021 sampling event included both soil and surface water testing for organochlorine pesticides (OCPs), PCBs, and metals. OCPs and PCBs were not detected in the water samples, and metals were below the screening levels for tap water. Several OCPs and one PCB were detected in the soil samples, but not at concentrations exceeding the screening levels for industrial soil.

Sacramento River Mitigation Site

Water quality in the Sacramento-San Joaquin River Delta (Delta) near the SRMS is highly variable and heavily influenced by inflows from rivers and by seawater intrusion into the western and central portions of the Delta during periods of low Delta outflow. Water quality impairment parameters of particular concern include salt intrusion, turbidity, temperature, pesticides, methylmercury, nutrients, and mercury. The concentrations of these materials in the Delta are affected by river inflows, tidal flows, agricultural diversions, drainage flows, wastewater discharges, water exports, cooling water intakes and discharges, and groundwater connectivity

(CVPIA, 1999). Prior to construction, an ESA will be performed to identify any potential residual contamination on the site.

Clean Water Act 303(d) Listed Impaired Waters

Pursuant to the Porter-Cologne Water Quality Control Act (Water Code Section 13000 et seq.), the Central Valley Regional Water Quality Control Board (CVRWQCB) updates the Basin Plan (which includes portions of the Delta area such as the area around SRMS) every 3 years. The Basin Plan describes the designated beneficial uses for surface and ground water sources and associated water quality objectives to protect those uses. The most recent Basin Plan was published in February 2019 (CVRWQCB 2019).

Under Section 303(d) of the Federal Clean Water Act (CWA), the State Water Resources Control Board (SWRCB) is required to submit to the U.S. Environmental Protection Agency a list identifying waterbodies not meeting water quality standards established to meet their designated beneficial uses. The most recent CWA 303(d) list was published in the 2020 – 2022 Integrated Report (SWRCB 2022).

Surface waters in the region can be affected by contamination from agricultural pesticide runoff, industrial chemicals, mercury, other metals, and temperature exceedances. The Lower American River is on the 303(d) list for the pesticides Bifenthrin and pyrethroids, PCBs, bacteria, temperature, mercury, and toxicity. More recently it has been proposed to be listed for temperature (SWRCB 2022).

The Sacramento River from Knights Landing to the Delta (the Basin Plan defines the Delta boundary to be near the City of Antioch) which includes the area around SRMS,) has been proposed to be on the 303(d) list for pesticides, (chlordane, dichlorodiphenyltrichloroethane (DDT), and dieldrin), mercury, PCBs, toxicity, and water temperature. The Sacramento River from the Sacramento City Marina to Suisun Marsh Wetlands, which includes the area of Sacramento River Erosion Contract 3, has been listed for pesticides (fipronil and pyrethroids), toxicity, Chlordane, chlorpyrifos, DDT, Diazinon, Dieldrin, Group A Pesticides, Invasive Species, Mercury, PCBs and water temperature. Plans for meeting water quality standards, which includes determining the total maximum daily loads (TMDLs) for each contaminant, have been and are still being developed for these pollutants in the Sacramento River (SWRCB 2022).

As a surface water that does not contain water quality standards in the Basin Plan, Magpie Creek is not listed on the State's CWA 303(d) List of Impaired Waters.

Existing Water Quality Conditions

Section 3.5 of the ARCF GRR Final EIS/EIR (page 95-108) describes existing conditions of the American and Sacramento Rivers within the project sites. The Basin Plan identifies the following beneficial uses as applicable to the Lower American River from Folsom Dam to its confluence with the Sacramento River, and for the portion of the Sacramento River falling within the legal Delta including SRMS (CVRWQCB 2019):

Lower American River

- Municipal and domestic supply
- Industrial Service Supply
- Agricultural Irrigation
- Sport Fishing
- Warm freshwater habitat
- Cold freshwater habitat
- Warm Migration
- Cold Migration
- Wildlife habitat
- Spawning for warm-water species
- Spawning for cold-water species
- Industry Power
- Contact Recreation-1
- Canoeing and Rafting Recreation – 1
- Non-Contact Recreation -2

Sacramento River

- Municipal and domestic supply
- Industrial Service Supply
- Industrial Process
- Agricultural Irrigation
- Agricultural Stock watering
- Navigation
- Commercial and sport fishing
- Warm freshwater habitat
- Cold freshwater habitat
- Warm Migration
- Cold Migration
- Wildlife habitat
- Spawning for warm-water species
- Contact Recreation-1
- Canoeing and Rafting Recreation – 1
- Non-Contact Recreation -2

Temperature and Dissolved Oxygen

Water temperature is a critical parameter from the standpoint of aquatic life, and the American and Sacramento Rivers have cool water temperatures. The Basin Plan states that temperatures cannot deviate more than 5°F from ambient river temperatures (CVRWQCB 2019). Dissolved oxygen (DO) is inversely related to temperature, another critical parameter for aquatic life; higher temperatures decrease the amount of oxygen that the water can carry. DO levels can also be affected by water flow and can be depleted by decaying organic matter such as leaf litter. The Basin Plan has established DO objectives for waters with cold- and warm- freshwater habitat beneficial uses as well as spawning habitat beneficial uses, which apply to both the American and Sacramento Rivers (CVRWQCB 2019).

Salinity

Salinity for municipal, agricultural, and fish and wildlife uses are more of a concern in the tidally influenced Delta as saltwater intrusion from the ocean can negatively impact the Delta during below average water years as the river outflow is not adequate to keep the saltwater intrusion far enough out of the Delta system. Salinity in the Delta is subject to control through modifications caused by exports and floods, with climate as the primary long-term driver (Enright & Culberson 2009). For salinity, the Basin Plan states Total Dissolved Solids shall not exceed 125 mg/l for the Lower American River and salinity objectives for the Delta are listed in the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, 2006

Turbidity and Total Suspended Sediment

Although sediment transport is part of natural river processes and dams have decreased sediment inputs into the American and Sacramento Rivers, it is considered a pollutant when concentration

reach higher than normal amounts, by the CVRWQCB and some streams are designated impaired in the region for sediment (SWRCB 2022). Suspended sediment can be a source of transport for certain contaminants that bind to sediment. Sediment may smother benthic organisms and can have negative aesthetic impacts to surface waters. Construction activities can be a source of excess sedimentation into rivers and streams. Turbidity is an optical measurement of suspended sediment, and construction activities need to comply with the turbidity thresholds specified in the Basin Plan (CVRWQCB 2019).

Mercury and Methylmercury

Inorganic mercury was utilized in Sierra Nevada gold mining operations starting in the late 1800s and is still present in sediment along downstream streams and rivers. Methylmercury is a highly toxic form of mercury, which bioaccumulates in aquatic organisms and is formed by bacteria in wetlands, lakes, and stream beds. Controlling erosion of sediment into waterways is important for reducing fish mercury levels. The Basin Plan lists mercury fish tissue concentrations for the Delta. Methylmercury load allocations were adopted by the CVRWQC for the Delta and its tributaries and implemented a Delta Mercury Control Program.

Nutrients

Nutrients, primarily nitrogen (N) and phosphorus (P) elements and compounds, may trigger excessive growth of algae or toxic blue-green cyanobacteria. Primary sources of nutrients are erosion, agricultural runoff, urban runoff, and treated municipal effluent. The emergency of increased concentrations of harmful algae blooms is indicated of potential problems with water stagnation, nutrient loading, and temperature increases. The cyanobacterium *Microcystis aeruginosa* has been an increasing component of summer harmful algal blooms in the Delta.¹

Groundwater Quality

In 2010, the CVRWQCB adopted a roadmap for protecting groundwater quality in the Central Valley. This roadmap is not a regulatory document but is intended to outline priorities and strategies for improving groundwater quality. The Plan identifies salinity, pesticides, and pathogens as the primary groundwater quality constituents of concern throughout the CVRWQCBs.²

3.4.2 Applicable Laws, Regulations, Policies, and Plans

Section 3.5 of the ARCF GRR Final EIS/EIR (page 96) identifies Federal, State, and Local environmental laws and regulations that apply to regulating water quality. The following laws and regulations may have been updated since the ARCF GRR Final EIS/EIR or may have not been included and are included now.

¹ Lehman, P.W., Boyer, G., Satchwell, M. and Waller, S., 2008. The influence of environmental conditions on the seasonal variation of *Microcystis* cell density and microcystins concentration in the San Francisco Estuary. *Hydrobiologia*, 600(1), pp. 187-204.

² Central Valley Regional Water Quality Control Board, "Groundwater Quality Protection Strategy: A 'Roadmap' for the Central Valley Region," August 2010, https://www.waterboards.ca.gov/centralvalley/water_issues/groundwater_quality/2010aug_gwq_protect_strat_approved.pdf.

Federal

Clean Water Act

The CWA is the primary Federal law governing water pollution. It established the basic structure for regulating discharges of pollutants into Waters of the U.S. (WOTUS) and gives the United States Environmental Protection Agency (USEPA) the authority to implement pollution control programs. In California, the USEPA has delegated authority to enforce the CWA to State agencies such as the CVRWQCB and SWRCB. Section 401 of the CWA regulates any activity that may result in any in-water work or discharge into navigable waters. These actions must not violate Federal water quality standards. The CVRWQCB administers Section 401 of the CWA in California, and either issues or denies water quality certifications for in-water work or discharge into navigable waters. Water quality certifications typically include project-specific requirements to ensure attainment of water quality standards. USACE obtained a Programmatic CWA 401 water quality certification (Order No. 5A34CR00819) on July 13, 2021, for the 2016 ARCF Project. Each individual component of the 2016 ARCF Project will request coverage under this overall permit and this permit will expire July 12, 2026.

A CWA Section 401 Water Quality Certification and Order (WDID No. 5A34CR00819) was received from the CVRWQCB and went into effect for the ARCF 2016 Project on July 13, 2021, and expires on July 12, 2026. The order requires USACE contractors to implement best management practices such as installation of a turbidity curtain to protect water quality. In addition, the order requires the contractor to monitor water quality during in-water construction and submit monthly monitoring reports to the CVRWQCB. If any of the ARCF 2016 Projects extend past the orders sunset date of July 12, 2026, USACE will be required to either amend its current permit or obtain a new permit from the CVRWQCB. Separate 401 Water Quality Certifications will be obtained for offsite mitigation sites.

Section 404 of the CWA requires that a permit be obtained from USACE when an action will result in the discharge of dredged or fill material into wetlands and WOTUS. The 404(b)(1) guidelines specify that “no discharge of dredged or fill material shall be permitted if there is a practical alternative to the proposed discharge, which will have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences” (40 C.F.R. § 230.10[a]). When conducting its own projects, USACE does not issue permits to itself. Rather, USACE complies with the guidelines and substantive requirements of the CWA, including Section 404 and Section 401. The Proposed Action will require discharge of fill material into WOTUS; therefore, a Section 404(b)(1) alternatives analysis is included as Appendix K to the Final SEIS/SEIR. The discharge of fill material must comply with the 404(b)(1) guidelines with the inclusion of appropriate measures to minimize pollution or adverse effects on the aquatic ecosystem.

The ARCF Project will also require a National Pollution Discharge Elimination System (NPDES) Construction Stormwater General Permit since it will disturb more than one acre of land and involve possible storm water discharges to surface waters. Prior to construction, the contractor will prepare a Storm Water Pollution Prevention Plan (SWPPP) and then submit a Notice of Intent form to the CVRWQCB, requesting approval of the proposed work. The SWPPP will identify Best Management Practices (BMPs) to be used to avoid or minimize any adverse

effects of construction on surface waters. Once the work is completed, the contractor will submit a Notice of Termination to terminate coverage by the NPDES permit.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources (e.g., rivers, lakes, reservoirs, springs, and ground water wells). SDWA authorizes the USEPA to set national health-based standards for drinking water to protect against both naturally occurring and man-made contaminants that may be found in drinking water. USEPA, states, and the local water system managers work together to ensure these standards are met.

State

Porter-Cologne Water Quality Control Act of 1970

The Porter-Cologne Water Quality Control Act (Water Code 13000 et seq.) requires each of the state's nine regional water quality control boards (RWQCBs) to prepare and periodically update basin plans for water quality control. The jurisdiction of each RWQCB includes Federally protected waters as well as areas that meet the definition of "waters of the State," which are defined as any surface water or groundwater, including saline waters, within the State's boundaries.

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

The Basin Plan documents the water quality standards for these basins per Section 303 of the CWA as described previously. This document was last updated in 2019 (CVRWQCB 2019).

Water Quality Control Plan for the San Francisco Bay / Sacramento – San Joaquin Delta Estuary

The water quality standards applicable to the Delta are contained within this plan, per Section 303 of the CWA. This document was last updated in 2018 (SWRCB 2018).

The Delta Plan

The Delta Plan was enacted in response to the Sacramento-San Joaquin Delta Reform Act of 2009, which established the Delta Stewardship Council to create a comprehensive management plan to guide Federal, State, and local agencies on how to manage the Delta's water and environmental resources. The Delta Plan includes 14 regulatory policies and 95 recommendations. Collectively, these policies and recommendations address current and predicted challenges related to the Delta's ecology, flood management, land use, water quality, and water supply reliability. State and local agencies proposing to undertake a project covered by the Delta Plan must prepare and file a "consistency determination" with the Council to demonstrate that the project is consistent with Delta Plan requirements.

Local

City of Sacramento 2035 General Plan – Environmental Resources

The City of Sacramento (City) 2035 General Plan was adopted in March 2015 (City of Sacramento 2015). The City set out numerous goals around the topic of Environmental Resources, including water quality protection and biological resources. The policies to support these goals prioritize water quality improvement, groundwater recharge, watershed protection, stormwater quality and quantity, minimization of construction impacts, wetland and riparian habitat protection, and many others.

3.4.3 Analysis of Environmental Effects

Analysis Methodology

Water quality impacts resulting from the Proposed Action were evaluated based on construction methods and duration, onsite soil testing, the materials used, the location, and the design of the project. The impacts were compared to the designated beneficial uses of the project's waterways and the thresholds of significance defined in the following section.

Basis of Significance

The thresholds, and the impact analysis that follows, take into consideration the significance of an action in terms of the setting of the proposed action; short- and long-term effects of the proposed action; both beneficial and adverse effects; direct and indirect effects of the proposed action on public health and safety; the context and intensity of the impact; and effects that would violate Federal, State, Tribal, or local law protecting the environment, as required under NEPA (40 CFR 1508.1(g)). The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. The alternatives under consideration were determined to result in a significant impact related to water quality if they would do any of the following:

- a. violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality; or,
- b. conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Effects Analysis

No Action Alternative

Under the NEPA No Action Alternative, the remaining work on Magpie Creek, Lower American River, and Sacramento River described in the ARCF GRR Final EIS/EIR would be constructed, but without the components of the Proposed Action. The MCP consisted of a levee raise and widening, a landside maintenance road, a new levee, culvert installation, and floodplain acquisition. With the exception of the floodplain acquisition, the MCP work was to occur west of Raley Blvd. The No Action Alternative did not include in-water work and effects to water quality were found to be less than significant.

The ARCF GRR Final EIS/EIR found that construction of the launchable rock trenches on the American River would not impact water quality because this work would occur outside of the ordinary high water mark (OHWM). Construction of standard bank protection along the American and Sacramento Rivers would involve placement of underwater rock revetment along the riverbanks and could result in turbidity exceedances caused by sediment plumes, resulting in a significant but temporary impact. Equipment operation on land could result in stormwater runoff of soil from access and staging areas on the American River, while barge movement and anchoring could increase turbidity levels on the Sacramento River. Water temperature effects on the American and Sacramento Rivers were found to be less than significant because removed vegetation would primarily consist of shrubs and grasses that do not contribute significantly to shade, and trees would be protected in place. Additionally, the bank protection sites would include riparian plantings, which would contribute to shade in the long-term. Therefore, water quality effects were mainly temporary and during construction. With the avoidance and minimization measures discussed in the ARCF GRR Final EIS/EIR Section 3.5.6 as part of the original Proposed Action, which include BMPs and water quality sampling, effects to water quality would be reduced to less than significant.

However, since the analysis in the ARCF GRR Final EIS/EIR, additional design refinements described under the Proposed Action were developed to meet the flood risk management goals of the ARCF 2016 Project. Without these additional improvements, portions of the American and Sacramento River levee system would be vulnerable to erosion, and MCP would not have capacity to convey a 200-year flood event. This could leave portions of the project area vulnerable to flooding and the adverse water quality impacts related to that flooding. Therefore, the effects to water quality under the No Action Alternative would be significant.

Proposed Action Alternative

3.4-a Violate any water quality standards or waste discharge requirements, otherwise substantially degrade surface or ground water quality, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan due to project construction activities.

CEQA Significance Conclusion: Less than Significant with Mitigation Incorporated

NEPA Significance Conclusion: Long-term and Moderate effects that are Less than Significant with Mitigation Incorporated

Magpie Creek Project, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, Sacramento River Mitigation Site, American River Mitigation Site, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

NEPA Impact Conclusion (Design Refinements): Long-term and Moderate effects that are Less than Significant with Mitigation Incorporated

Construction of the MCP, American River Erosion Contracts 3B North and South, 4A, and 4B, Sacramento River Erosion Contract 3, SRMS, ARMS, and the Piezometer Network would involve use of construction equipment and associated hazardous compounds (e.g., oil, grease, lubricants, etc.) and include ground-disturbing activities adjacent to surface waters, which could increase sediment entering those waters, and potentially affect surface water and groundwater quality, aquatic organisms, and beneficial uses. In addition, dewatering could occur in areas where construction activities encounter shallow groundwater to continue with construction activities. Construction contractors would be required to prepare and implement a SWPPP, which includes installation of BMPs to help protect surface water quality from storm water runoff. In addition, the Proposed Action would either use or amend its existing CWA Section 401 Water Quality Certification from the CVRWQCB and follow the avoidance and minimization measures in the permit prior to commencement of construction to ensure compliance with the Basin Plan and protect beneficial uses. The existing CWA 401 Water Quality Certification would be amended to include SRMS and ARMS. A new NPDES permit for dewatering for the MCP and American River Erosion Contract 4A would be obtained prior to construction. Nonetheless, the Proposed Action would cause a potentially significant impact.

The Proposed Action requires discharges of fill into Federal and State waters. A Section 404(b)(1) evaluation would be completed to ensure impacts to the chemical, physical, and biological integrity of these waters along with the permanent fill footprint is adequately assessed. The Proposed Action would have a significant impact. The following mitigation measures have been identified to address impacts.

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Prior to the start of earthmoving activities, the Project Partners will obtain coverage under the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) stormwater permit for general construction activity (Order 2022-0057-DWQ), including preparing and submitting a project-specific SWPPP at the time the Notice of Intent to discharge is filed. The SWPPP shall identify and specify the following:

- the use of an effective combination of robust erosion and sediment control BMPs and construction techniques that shall reduce the potential for runoff and the release, mobilization, and exposure of pollutants, including legacy sources of mercury from project-related construction sites. These may include but would not be limited to temporary erosion control and soil stabilization measures, sedimentation ponds, inlet protection, perforated riser pipes, check dams, and silt fences;
- the implementation of approved local plans, non-stormwater management controls, permanent post-construction BMPs, and inspection and maintenance responsibilities;

- the pollutants that are likely to be used during construction that could be present in stormwater drainage and non-stormwater discharges, including fuels, lubricants, and other types of materials used for equipment operation;
- the means of waste disposal;
- spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills;
- personnel training requirements and procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP; and
- the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP.

Where applicable, BMPs identified in the SWPPP will be in place throughout all site work, construction/demolition activities, and will be used in all subsequent site development activities. BMPs may include, but are not limited to, such measures as those listed below:

- work window- conduct earthwork during low-flow periods;
- to the extent possible, stage construction equipment and materials on the landside of the levee in areas that have already been disturbed;
- minimize ground and vegetation disturbance during project construction by establishing designated equipment staging areas, ingress and egress corridors, spoils disposal and soil stockpile areas, and equipment exclusion zones prior to the commencement of any grading operations;
- stockpile soil on the landside of the levee reaches, and install sediment barriers (e.g., silt fences, fiber rolls, and straw bales) around the base of stockpiles to intercept runoff and sediment during storm events. If stockpiling soil on the landside of the levee is not feasible, a waterside soil stockpiling location above the OHWM will be coordinated with the appropriate agencies, such as NMFS, CVRWQCB, and USFWS (if applicable). If necessary, cover stockpiles with geotextile fabric to provide further protection against wind and water erosion;
- install sediment barriers on graded or otherwise disturbed slopes as needed to prevent sediment from leaving the project site and entering nearby surface waters;
- install plant materials to stabilize cut and fill slopes and other disturbed areas once construction is complete. Plant materials will include an erosion control native seed mixture or shrub and tree container stock. Temporary structural BMPs, such as sediment barriers, erosion control blankets, mulch, and mulch tackifier, will be installed as needed to stabilize disturbed areas until vegetation becomes established;

- conduct water quality tests to measure increases in turbidity and sedimentation caused by construction activities. Specifically, where natural turbidity is between 0 and 5 NTUs, increases shall not exceed 1 NTU; where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20%; where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs; and where natural turbidity is greater than 100 NTUs, increases shall not exceed 10%. If turbidity is found to exceed these standards, cease construction activities until filtration or construction BMPs can be demonstrated to effectively prevent sediment discharge above standards; and
- a copy of the approved SWPPP shall be maintained and available at all times on the construction site.

Project Partners will also prepare and implement a Spill Prevention, Control, and Countermeasure Plan (SPCCP). A SPCCP is intended to prevent any discharge of oil into navigable water or adjoining shorelines. The contractor will develop and implement a SPCCP to minimize the potential for adverse effects from spills of hazardous, toxic, or petroleum substances during construction and operation activities. The SPCCP will be completed before any construction activities begin. Implementation of this measure will comply with state and Federal water quality regulations. The SPCCP will describe spill sources and spill pathways in addition to the actions that will be taken in the event of a spill (e.g., an oil spill from engine refueling will be immediately cleaned up with oil absorbents). The SPCCP will outline descriptions of containments facilities and practices such as doubled-walled tanks, containment berms, emergency shut-offs, drip pans, fueling procedures, and spill response kits. It will also describe how and when employees are trained in proper handling procedures and spill prevention and response procedures.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters.

In compliance with the CWA, the Project Partners would compensate for fill of State and Federally protected waters to ensure no net loss of functions and values of jurisdictional waters at a minimum 1:1 ratio. Mitigation for permanent impact on aquatic resources shall be provided at a minimum 1:1 ratio. Mitigation can include onsite restoration, in-lieu fee payment, or purchase of mitigation credits at a resource agency approved mitigation bank. Mitigation as required in regulatory permits issued through USFWS, NMFS, and/or the Regional Water Quality Control Board may be applied to meet the performance standard of a minimum 1:1 ratio to ensure no net loss of functions and values of jurisdiction waters.

Water quality certification pursuant to Section 401 of the CWA would be obtained from the Central Valley RWQCB before starting project activities subject to Section 401. Any measures determined necessary during the permitting processes would be implemented, such that there is no net loss of functions and values of jurisdictional waters.

If compensation is provided through permittee-responsible mitigation with additional NEPA and/or CEQA documentation, a mitigation plan would be developed to detail appropriate compensation measures determined through consultation with USACE and Central Valley RWQCB. These measures would include methods for implementation, success criteria, monitoring and reporting protocols, and contingency measures to be implemented if the initial mitigation fails.

Timing: Before and after construction

Responsibility: Project Partners

Mitigation Measure WQ-1: Obtain Appropriate Discharge and Dewatering Permit and Implement Provisions for Dewatering

Before discharging any dewatered effluent to surface water, USACE and its Partners will obtain a Limited Threat General Order (LTGO) from the CVRWQCB. The LTGO will include water quality monitoring to adhere to the effluent and receiving water quality criteria outlined in the permit, which is typically based on the CVRWQCB Basin Plan. As part of the permit, the permittee will design and implement measures as necessary to meet the discharge limits identified in the relevant permit. For example, if dewatering is needed during the construction of a cutoff wall, the dewatering permit would require treatment or proper disposal of the water prior to discharge if it is contaminated. These measures will represent the best available technology that is economically achievable to achieve maximum sediment removal.

Measures could include retaining dewatering effluent until particulate matter has settled before it is discharged, use of infiltration areas, and other BMPs. Final selection of water quality control measures will be subject to approval by the CVRWQCB. USACE will verify that coverage under the appropriate NPDES permit has been obtained before allowing dewatering activities to begin. USACE or its authorized agent will perform routine inspections of the construction area to verify that the water quality control measures are properly implemented and maintained. USACE will notify its contractors and Project Partners immediately if there is a non-compliance issue and compliance will be required and met.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures GEO-1, WATERS-1, and WQ-1, which were previously adopted for the ARCF 2016 Project, would reduce impacts on water quality from construction activities and reduce impacts from discharges of fill into Federal and State waters to less than significant under both CEQA and NEPA. Additionally, mitigation for effects caused by adding fill to Federal or State waters would be accomplished either through ESA-listed species mitigation required under the USFWS and NMFS Biological Opinions, or through the habitat mitigation requirements defined in the USFWS Coordination Act Report, which typically requires creation of new habitat at high mitigation ratios (see further discussion in Appendix B

Section 4.1, “Vegetation and Wildlife,” 4.2, “Aquatic Resources and Fisheries,” and 4.3, “Special Status Species” for details on mitigation for impacts to biological resources).

3.4-b Violate any water quality standards or waste discharge requirements, otherwise substantially degrade surface or ground water quality, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan due to post-construction project improvements.

CEQA Significance Conclusion: Short-Term Significant and Unavoidable, Long-Term Less than Significant with Mitigation.

NEPA Significance Conclusion: Short-Term Significant and Unavoidable; Long-Term and Minor effects that are Less than Significant.

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable; Long-term Less than Significant

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable; Long-term and Negligible effects that are Less than Significant with Mitigation Incorporated

The MCP design refinements include substantial in-channel work, including the realignment and widening of Magpie Creek on either side of Raley Blvd, levee widening west of Raley Blvd, culvert installation at Raley Blvd, and the removal of channel vegetation between Vinci Avenue and Dry Creek Road. For the culvert installation, channel realignment, and channel widening, coffer dams would be installed for each section under construction and pumps would dewater the construction area. Water would be pumped and diverted around the construction area so that in-water work would not occur, which would minimize the amount of sediment entering receiving waters. The new channel would be excavated first, the box culvert installed, then the old channel would be filled in. The new channel would be widened to achieve 2:1 slopes along the banks with a 25-foot bed width, adding additional WOTUS acreage under jurisdiction. Water flowing through the new channel would carry sediment from the newly excavated canal downstream into Robla Creek, and ultimately into the Sacramento River approximately 8.5 miles downstream. Until the channel banks are revegetated, greater quantities of sediment would travel downstream when compared to the No Action Alternative. Due to the distance, it is likely this additional sediment would settle out before reaching the Sacramento River, particularly in the emergent wetlands in Robla Creek. In addition, the summertime and fall flows of Magpie Creek at this location are low which would minimize transport of sediments. The potential exists for legacy contamination from organochlorine pesticides, metals, and PCBs to be carried downstream along with the eroding sediment, though these contaminants were not found to be widespread throughout the project area.

Further, Magpie Creek receives wastewater effluent from McClellan Business Park before its confluence with Don Julio Creek within the project site. Because it is not specifically mentioned in the Basin Plan, its default beneficial use designation is Municipal and Domestic Supply,

though it is highly unlikely this use is occurring on Magpie Creek. Improper handling, storage, or disposal of construction related materials or fuels and lubricants could cause degradation of surface waters or groundwater quality if they are not stored or handled properly. These factors result in the Proposed project causing significant impacts on water quality. The following mitigation measures have been identified to address this impact.

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Please refer to Impact 3.4-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters.

Please refer to Impact 3.4-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Mitigation Measure WQ-1: Obtain Appropriate Discharge and Dewatering Permit and Implement Provisions for Dewatering

Please refer to Impact 3.4-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures GEO-1, WATERS-1, and WQ-1, would reduce impacts to the extent feasible, however, construction of the MCP would result in significant and unavoidable impacts on water quality in Magpie Creek in the short-term due to sediment mobilization after water is introduced back into the new and widened channel after construction is complete. No additional feasible mitigation measures are available. Long-term effects would be less than significant as vegetation reestablishes and stabilizes the channel banks.

The City of Sacramento 2035 General Plan states water quality protection as a goal and contains numerous policies to support that goal. The Proposed Action would not conflict with these policies and would implement several of these policies. The project would acquire, conserve and/or restore wetlands and floodplains at Magpie Creek and preserve SRA habitat when feasible; when not feasible, adverse impacts would be mitigated at a minimum 1:1 ratio by restoring this habitat onto planting benches on the American and Sacramento Rivers and at the mitigation sites considered under the Proposed Action.

American River Erosion Contract 3B North and South and 4B

CEQA Impact Conclusion (Entire Proposed Action): Short term and Long-term Less than Significant

NEPA Impact Conclusion (Design Refinements): Short term and Long-term Less than Significant

The American River Erosion Contract 3B North and South, and 4B, design refinements include the staging area, haul routes, construction of launchable rock toe and associated planting benches, construction of tiebacks as bank erosion protection, and additional areas for bank and levee protection not originally considered in the ARCF GRR Final EIS/EIR. In addition, American River Erosion Contract 4B overlays the same construction access as 3B and involves work to address tree scour and high velocities.

The planting benches would be constructed between the launchable rock toe erosion protection and the existing riverbank, resulting in the conversion of open water habitat to riparian forest, once the plantings have matured. The trees along the existing shoreline would be protected in place where possible, though some trees may require removal due to the location of the erosion protection features to allow for equipment access. These would be replanted in the same locations to replace those removed. However, existing trees left in place at locations where planting benches would be installed, would no longer be directly adjacent to the river and instead would be 20 feet away because the planting bench would be between the river and the existing trees. This would result in a temporary loss of shade where the planting benches are constructed until the young trees on the benches grow to sufficient height to shade the river (approximately 8- to 10- year period for vegetation to mature). Instream woody material (IWM) would be embedded into the planting benches to partially compensate for this impact.

Water temperatures can be affected by a number of factors, including air temperatures, elevation, flow and velocity, and presence of riparian vegetation. For the American River, the major factor that impacts water temperature are the operations of Folsom Dam. The releases from Folsom are heavily studied and modeled in several recent Central Valley Project/State Water Project Biological Assessments from the Bureau of Reclamation, as well as the responsive Biological Opinions from NMFS (2009, 2019, pending 2024/2025). While the removal of bank vegetation in several areas may seem extensive, the removal is a temporary occurrence that would be vegetated upon completion. Additionally, adjacent habitat upstream and downstream would provide interim cover for fish during the construction timeframe. Temporary removal of the amount of vegetation on the proposed sections of the Lower American River is not expected to cause a measurable increase to water temperatures in the Lower American River due to the small shaded area relative to the surface area of the river and the fact that the volume and temperature of water released from Folsom Dam drive the temperature of the water in the lower American River, overwhelming other influences. Although, the Lower American River is 303(d) listed under the CWA for water temperature (SWRCB 2022), the Proposed Action would result in less-than-significant short-term and long-term impacts under both NEPA and CEQA.

American River Erosion Contract 4B located near American River Erosion Contract 3B North and South would require removal of trees above the OHWM. Because these trees do not provide

shade to the river during the summer low flows, there would be no effect to water quality (temperature or dissolved oxygen) caused by tree removal at this site.

American River Erosion Contract 4A

CEQA Impact Conclusion (Entire Proposed Action): Short term and Long-term Less than Significant

NEPA Impact Conclusion (Design Refinements): Short term and Long-term Less than Significant

Because American River 4A was not considered in the ARCF GRR Final EIS/EIR, the impact conclusions are identical under both NEPA and CEQA. The American River 4A site is located above the American River OHWM and approximately 1,600 feet from the channel. Post-construction impacts on water quality would be less than significant because disturbed areas would be stabilized and/or revegetated to prevent erosion in storms and flood flows. In addition, implementation of Mitigation Measure WQ-1, which was previously adopted for the ARCF 2016 Project, would further reduce impacts associated with dewatering to a less-than significant level.

The County of Sacramento General Plan (County of Sacramento 2017) contains numerous objectives for protecting and restoring in-stream riverine habitat and natural stream functions for preservation of water quality. Shaded riverine aquatic (SRA) habitat, and mitigation for SRA habitat, were specifically identified among the priorities for maintaining water quality. The City of Sacramento 2035 General Plan states water quality protection as a goal and contains numerous policies to support that goal. The Proposed Action would not conflict with these policies and would implement several of these policies. The project would acquire, conserve and/or restore wetlands and floodplains at American River Erosion Contract 4A and preserve SRA habitat when feasible; when not feasible, adverse impacts would be mitigated at a minimum 1:1 ratio by restoring this habitat onto planting benches on the American and Sacramento Rivers and at the mitigation sites considered under the Proposed Action. The Proposed Action would not conflict with these plans.

Sacramento River Erosion Contract 3

CEQA Impact Conclusion (Entire Proposed Action): Short Term and Long-Term Less than Significant

NEPA Impact Conclusion (Design Refinements): Short Term and Long-Term Less than Significant

Under the Proposed Action design refinements, all vegetation, including trees, would be removed within the erosion protection footprint. Additional trees outside this footprint may be trimmed or removed to provide sufficient clearance for equipment to operate on the narrow shoreline to place rock. Existing IWM would be removed to provide room for equipment to operate. Vegetation removal would result in a temporary loss of shade until the young trees grow to sufficient height to shade the river (approximately 8- to 10- year period for vegetation to

mature). New IWM would be embedded into the bank revetment during rock placement to replace some of the shade removed by the project.

Water temperatures can be affected by a number of factors, including air temperatures, elevation, flow and velocity, and presence of riparian vegetation. For the ARCF sites on the lower Sacramento River, the major factor that impacts water temperature are the operations of Folsom Dam on the American River. The ARCF project is in response to increased potential flow releases from Folsom Dam. The releases from Folsom are heavily studied and modeled in several recent Central Valley Project/State Water Project Biological Assessments from the Bureau of Reclamation, as well as the responsive Biological Opinions from NMFS (2009, 2019, pending 2024/2025). While the removal of bank vegetation in several areas may seem extensive, the removal is a temporary occurrence that would be vegetated upon completion. Adjacent habitat upstream and downstream would provide interim cover for fish during the construction timeframe. Temporary removal of the amount of vegetation on the proposed sections of the Sacramento River is not expected to cause a measurable increase to water temperatures due to the small shaded area relative to the surface area of the river and the fact that the volume and temperature of water released from Folsom Dam drive the temperature of the water in the lower American River, and also heavily influence the Sacramento River near the confluence with the American River. Although the Sacramento River is 303(d) listed under the CWA for water temperature (SWRCB 2022), the Proposed Action would result in less-than-significant short-term and long-term impacts under both NEPA and CEQA.

American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable, Long-term Less than Significant with Mitigation Incorporated

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable; Long-term and Negligible effects that are Less than Significant with Mitigation Incorporated

The habitat mitigation features at the approximately 120-acre ARMS would include breaching the existing riverbank, grading of the site to create a back channel and allowing surface water to flow through the constructed channels and create floodplain riparian forest for habitat. Channels would be designed to remain inundated year-round. Soil and water at the site would be tested prior to any construction activities to determine the presence of hazardous materials. Water quality testing of the former sand and gravel mine pond would need to be conducted to ensure that the American River does not receive water, that could cause violation of water quality standards or degradation of water quality. Imported soils would require laboratory testing in accordance with CWA Section 401 permit requirements prior to placement to avoid materials that could adversely affect water quality.

The channels would be constructed in a way that the centers of the channels would be connected to the American River at low flows, while the channel margins would be inundated annually during higher flows. Periodic flooding of the mitigation area would benefit water quality as suspended sediment carried by the river would be deposited on the new floodplain. Additionally, new shallow water and floodplain habitat would incorporate instream woody material and revegetation with native riparian trees and shrubs, which would provide shade. However,

construction activities would result in a temporary loss of shade until the young trees grow to sufficient height to shade the river (approximately 8- to 10- year period for vegetation to mature).

Water temperatures can be affected by a number of factors, including air temperatures, elevation, flow and velocity, and presence of riparian vegetation. For the American River, the major factor that impacts water temperature are the operations of Folsom Dam. The releases from Folsom are heavily studied and modeled in several recent Central Valley Project/State Water Project Biological Assessments from the Bureau of Reclamation, as well as the responsive Biological Opinions from NMFS (2009, 2019, pending 2024/2025). While the removal of bank vegetation in several areas may seem extensive, the removal is a temporary occurrence that would be vegetated upon completion. Additionally, adjacent habitat upstream and downstream would provide interim cover for fish during the construction timeframe. Temporary removal of the amount of vegetation on the proposed sections of the Lower American River is not expected to cause a measurable increase to water temperatures in the Lower American River due to the small shaded area relative to the surface area of the river and the fact that the volume and temperature of water released from Folsom Dam drive the temperature of the water in the lower American River, overwhelming other influences. Although, the Lower American River is 303(d) listed under the CWA for water temperature (SWRCB 2022), the Proposed Action would result in less-than-significant short-term and long-term impacts under both NEPA and CEQA on water temperature. The following mitigation measures have been identified to address this impact.

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Please refer to Impact 3.4-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters.

Please refer to Impact 3.4-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measure GEO-1 and WATERS-1, which were previously adopted for the ARCF 2016 Project, would reduce long-term post-construction impacts of the Proposed Action on water quality to less-than-significant levels under both CEQA and NEPA. To maintain water quality and decrease likelihood for fish stranding, the channels would be designed and sloped so that fish stranding does not occur and to maintain adequate water flow, lower temperatures, and dissolved oxygen levels that meet water quality criteria.

The County of Sacramento General Plan (County of Sacramento 2017) contains numerous objectives for protecting and restoring in-stream riverine habitat and natural stream functions for preservation of water quality. Shaded riverine aquatic (SRA) habitat, and mitigation for SRA habitat, were specifically identified among the priorities for maintaining water quality. The City of Sacramento 2035 General Plan states water quality protection as a goal and contains numerous policies to support that goal. The Proposed Action would not conflict with these policies and would implement several of these policies. The project would acquire, conserve and/or restore wetlands and floodplains at the ARMS. The project would preserve SRA habitat when feasible; when not feasible, adverse impacts would be mitigated at a minimum 1:1 ratio by restoring this habitat onto planting benches on the American and Sacramento Rivers and at the mitigation sites considered under the Proposed Action.

Sacramento River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Short Term Significant and Unavoidable, Long Term Less than Significant

NEPA Impact Conclusion (Design Refinements): Short Term Significant and Unavoidable, Long Term Less than Significant

Habitat restoration at the approximately 100-acre SRMS would entail breaching the existing river side berm in at least one place and grading the site to create one or more channels and expose the interior to tidal influence. This mitigation site would be designed to increase the amount of shallow water and wetland acreage in the area to compensate for the placement of fill for construction of Sacramento River Erosion Contracts 3 (discussed previously) and 4 (discussed in a previous Supplemental EA/EIR prepared for Sacramento River Erosion Contract 4).

At the SRMS, there is the potential for contaminated sediment on site related to a closed municipal solid waste landfill located on the eastern portion of the site; this area would be avoided. However, because the western portion was used as a dredge material disposal site, soil in this area of the project site would need to be tested prior to construction activities. Any contaminated material would be removed from the site to avoid releases into the newly created shallow water habitat or adjacent waterways. Excavation and grading would disturb sediment that could contribute to turbidity issues along with residual amounts of organic or inorganic materials, algae and other microorganisms during construction. This impact would be significant

As with the ARMS, the design would incorporate IWM and native trees and shrubs, which would provide shade over the channels and keep water temperatures low and dissolved oxygen levels high. However, construction activities would result in a temporary loss of shade until the young trees grow to sufficient height to shade the river (approximately 8- to 10- year period for vegetation to mature).

Water temperatures can be affected by a number of factors, including air temperatures, elevation, flow and velocity, and presence of riparian vegetation. For the ARCF sites on the lower Sacramento River, the major factor that impacts water temperature are the operations of Folsom Dam on the American River. The ARCF project is in response to increased potential flow

releases from Folsom Dam. The releases from Folsom are heavily studied and modeled in several recent Central Valley Project/State Water Project Biological Assessments from the Bureau of Reclamation, as well as the responsive Biological Opinions from NMFS (2009, 2019, pending 2024/2025). While the removal of bank vegetation in several areas may seem extensive, the removal is a temporary occurrence that would be vegetated upon completion. Adjacent habitat upstream and downstream would provide interim cover for fish during the construction timeframe. Temporary removal of the amount of vegetation on the proposed sections of the Sacramento River is not expected to cause a measurable increase to water temperatures due to the small shaded area relative to the surface area of the river and the fact that the volume and temperature of water released from Folsom Dam drive the temperature of the water in the lower American River, and also heavily influence the Sacramento River near the confluence with the American River.”

To maintain water quality and decrease likelihood for fish stranding, the channels would be designed and sloped so that fish stranding does not occur and to maintain adequate water flow, lower temperatures, and dissolved oxygen levels that meet water quality criteria. However, this impact would remain significant.

Tidal wetland habitat restoration could result in greater tidal exchange and flows in the area and could alter the salinity regime and or change methylmercury conditions in the Delta. Increased levels of salinity or methylmercury could negatively impact drinking water quality. The Lookout Slough Tidal Restoration and Flood Improvement Project EIR³ modeled salinity impacts associated with its 3,164-acre restoration project and found that given the dynamic nature of the tidal system, the effects of the Lookout Slough Restoration project on salinity would not result in substantial adverse effects on the beneficial use of the Delta water as drinking water. In addition, the Lookout Slough project determined that the project would not increase methylmercury levels. Because the SRMS is only 100 acres, it is expected that when detailed designs are available for modeling, the SRMS would have substantially less effects on salinity in the Delta than the Lookout Slough project and long-term effects to salinity from the SRMS would be less than significant.

The following mitigation measures have been identified to address impacts.

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Please refer to Impact 3.4-a above for full text of this mitigation measure.

Timing: Before and during construction

³ California Department of Water Resources (DWR). 2020. Final Environmental Impact Report. Lookout Slough Tidal Habitat Restoration and Flood Improvement Project. Available: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Environmental-Services/Restoration-Mitigation-Compliance/Files/Lookout-Slough-FEIR_DES_v1_11032020_ay11.pdf

Responsibility: USACE

Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters.

Please refer to Impact 3.4-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measure GEO-1 and WATERS-1, which were previously adopted for the ARCF 2016 Project, would reduce long-term post-construction impacts of the Proposed Action on water quality to less-than-significant levels under both CEQA and NEPA.

The County of Sacramento General Plan (County of Sacramento 2017) contains numerous objectives for protecting and restoring in-stream riverine habitat and natural stream functions for preservation of water quality. SRA habitat, and mitigation for SRA habitat, were specifically identified among the priorities for maintaining water quality. The Proposed Action would acquire, conserve, and/or restore wetlands and floodplains at the SRMS and preserve SRA habitat when feasible; when not feasible, adverse impacts would be mitigated at a minimum 1:1 ratio by restoring this habitat onto planting benches on the American and Sacramento Rivers and at the mitigation sites considered under the Proposed Action. This long-term effect would be less than significant.

Piezometer Network

NEPA Impact Conclusion (Entire Proposed Action): No Impact

CEQA Impact Conclusion (Design Refinements): No Impact

The piezometer installations involve drilling wells for the purpose of monitoring water levels throughout the project site and are not anticipated to conflict with any water quality control plans or sustainable groundwater management plans. There would be no short- or long-term impact.

Alternatives Comparison

Alternative 3a

Alternative 3a includes an alternative design for improvements to the American River 4A Project Component. Alternative 3a would avoid the wetland impact described in the Proposed Action by instead constructing a landside berm connected to the existing levee. This structure would contain floodwaters in the event that the main levee is breached. The bike trail would not require re-routing. All other project components (American River Erosion Contract 3B, Sacramento River Erosion Contract 3, MCP, SRMS, and ARMS) would have the same effects as the Proposed Action.

Table 3.4-1. Alternative 3a Effects

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|-------------------|---|--------------------|---------------------------------------|--|
| 3.4-a: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan due to project construction activities | American River 4A | Lesser impacts compared to the Proposed Action. The landside berm would avoid filling a wetland; however, construction activities would have a significant effect on water quality | GEO-1, WQ-1 | Less than Significant with Mitigation | Long-term and Moderate effects that are Less than Significant with Mitigation |
| 3.4-b: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan due to post-construction improvements | American River 4A | Similar impacts to the Proposed Action, which would result in a significant impact without mitigation. The landside berm would not conflict or obstruct implementation of a water quality control plan or sustainable groundwater management plan | WQ-1 | Less than Significant with Mitigation | Short-term and Minor effects that are Less than Significant; Long-term and Minor |

Alternative 3b

Alternative 3b includes an alternative design for the American River 4A Project component, featuring a different bike trail alignment. In this Alternative, the bike trail would parallel the railroad and be routed through the same wetland that would be partially filled by the berm described under the Proposed Action. This bike trail alignment is above the American River OHWM and would result in a less-than-significant impact with mitigation. All other project components (American River Erosion Contract 3B, Sacramento River Erosion Contract 3, MCP, SRMS, and ARMS) would have the same effects as the Proposed Action.

Table 3.4-2. Alternative 3b Effects

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|-------------------|---|-----------------------|---------------------------------------|---|
| 3.4-a: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan due to project construction activities | American River 4A | Similar to the Proposed Action. Construction activities would result in a significant impact on water quality | GEO-1, WATERS-1, WQ-1 | Less than Significant with Mitigation | Long-term and Moderate effects that are Less than Significant with Mitigation |
| 3.4-b: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan due to post-construction improvements | American River 4A | Similar to the Proposed Action, which would result in a significant impact without mitigation. The bike trail alignment would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan | WQ-1 | Less than Significant with Mitigation | Long-term and Minor effects that are Less than Significant |

Alternative 3c

Alternative 3c includes an alternative design for the American River 4A Project component, featuring a different bike trail alignment. It would route the bike trail through the same wetland that would be partially filled by the berm described under the Proposed Action. The bike trail would either involve building a bridge across the wetland or adding fill to the wetland to route the bike trail around the berm. This bike trail alignment is above the American River OHWM and would result in a less-than-significant impact with mitigation. All other project components (American River Erosion Contract 3B, Sacramento River Erosion Contract 3, MCP, SRMS, and ARMS) would have the same effects as the Proposed Action.

Table 3.4-3. Alternative 3c Effects

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|--|-------------------|---|---------------------------|---------------------------------------|---|
| 3.4-a: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan due to project construction activities | American River 4A | This would result in similar impacts from construction compared to the Proposed Action and a significant impact on water quality would occur | GEO-1, WATERS-1, and WQ-1 | Less than Significant with Mitigation | Long-Term and Moderate effects that are Less than Significant with Mitigation |
| 3.4-b: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan due to post-construction improvements | American River 4A | Similar to the Proposed Action, which would result in a significant impact without mitigation. The bike trail alignment would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan | WQ-1 | Less than Significant with Mitigation | Short-term and Minor effects that are Less than Significant |

Alternative 3d

Alternative 3d includes a different bike trail alignment at American River 4A. The longer paved bike trail would be closer to the river and would use an existing off-road bike trail. This would add approximately 0.2 acres of fill below the river's OHWM. All other project components (American River Erosion Contract 3B, Sacramento River Erosion Contract 3, MCP, SRMS, and ARMS) would have the same effects as the Proposed Action.

Table 3.4-4. Alternative 3d Effects

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Significance Conclusion |
|--|-------------------|--|---------------------------|---------------------------------------|---|
| 3.4-a: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan due to project construction activities | American River 4A | Greater impacts than the Proposed Action. This would require approximately 0.2 acres of additional fill below the American River OHWM and result in similar construction impacts compared to the Proposed Action, which would be a significant impact on water quality | GEO-1, WATERS-1, and WQ-1 | Less than Significant with Mitigation | Long-term and Moderate effects that are Less than Significant with Mitigation |
| 3.4-b: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan due to post-construction improvements | American River 4A | Similar to the Proposed Action, which would result in a significant impact without mitigation. The bike trail alignment would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan | WQ-1 | Less than Significant with Mitigation | Long-term and Minor effects that are Less than Significant |

Alternatives 4a and 4b (CEQA-Only)

Alternative 4a includes a design for the ARMS area that retains a 30-acre portion of the existing pond, while 54 acres of floodplain habitat containing channels connecting to the river would be constructed on the eastern portion of the site. Alternative 4b is similar, except that a 20-acre portion of the pond would be retained. An approximately 30-foot-wide berm would retain the pond and separate it from the hydrologic influence of the river. Under these alternatives, the restored floodplain would be smaller. This would still improve water quality by restoring a portion of the river's historic floodplain, but to a lesser extent than the Proposed Action. All other project components (American River Erosion Contract 3B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, MCP, and SRMS) would have the same effects as the Proposed Action.

Table 3.4-5. Alternative 4a and 4b Effects (CEQA-Only)

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion |
|--|-----------------|---|---------------------------|--|
| 3.4-a: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan due to project construction activities | ARMS | Less than the Proposed Action. Construction activities under Alternatives 4a and 4b would restore a portion of the American River's floodplain at ARMS, but a smaller portion than under the Proposed Action. These Alternatives would have a significant impact on water quality | GEO-1, WATERS-1, and WQ-1 | Less than Significant short-term construction impacts with Mitigation, Long-term Less than Significant |
| 3.4-b: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan due to post-construction improvements | ARMS | Similar to the Proposed Action. These alternatives would not conflict with or obstruct water quality or groundwater management plans | | Short-term and long-term Less Than Significant. |

Alternative 5a (Conservation Bank Credits)

Alternative 5a would involve purchasing mitigation bank credits to compensate for Sacramento River project impacts and would eliminate the need to construct the Sacramento River Mitigation Site. All other project components (American River Erosion Contract 3B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, MCP, and ARMS) would remain the same. There would be no additional resource impacts from this alternative.

Alternative 5b (Watermark Farms)

Alternative 5b is an alternative location for the SRMS, a site named Watermark Farms. The site is near the Sacramento River portion of the Proposed Action, but on the opposite (Yolo County) side of the river. It would involve construction of a setback levee and excavation of a channel into the site, restoring 227 acres of riverine and floodplain habitat. Unlike the SRMS under the Proposed Action, which is used as a dredge disposal site and contains a decommissioned landfill, the Watermark Farms site has been in agricultural use. The site could also contain areas of chemical contamination; if present, the contaminated materials would need to be removed and disposed of at an appropriate landfill to avoid water quality impacts (HAZ-1). Temporary construction-related water quality impacts and permanent water quality impacts would be similar to those described under the Proposed Action.

Table 3.4-6. Alternative 5b Effects

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Significance Conclusion |
|--|-----------------------------|---|----------------------|--|---|
| 3.4-a: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan due to project construction activities | Sacramento River Mitigation | Similar to the Proposed Action. Alternative 5b would create a new channel connected to the Sacramento River. | GEO-1, WATERS-1 WQ-1 | Less than Significant with Mitigation | Long-term and Moderate effects that are Less than Significant with Mitigation |
| 3.4-b: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan due to post-construction improvements | Sacramento River Mitigation | Similar to the Proposed Action. Alternative 5b would not conflict with or obstruct water quality or groundwater management plans. | GEO-1, WATERS-1 | Short-term and Long-term Less than Significant with Mitigation | Short-term and Long-term Less than Significant with Mitigation |

Alternative 5c (Sunset Pumps)

Alternative 5c combines three approaches to complete the Sacramento River Mitigation requirements including 1) Purchasing Delta smelt credits from an approved conservation bank 2) Funding a NMFS recovery plan project (Sunset Pumps) to remove a weir, allowing fish passage to benefit chinook steelhead and green sturgeon and 3) Using Sunset Pumps to provide irrigation to two local wildlife refuges to benefit riparian habitat for yellow billed cuckoo. The Sunset Pumps project is listed as high priority BOR, DWR, and USFWS, and is subject to separate NEPA/CEQA analysis prior to implementation. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. All activities related to 5c involve funding another project, therefore no additional impacts to water quality would result from this alternative.

3.5 Air Quality

This section examines the degree to which implementing the Proposed Action may result in adverse changes in air quality. This section describes existing air quality conditions, summarizes applicable regulations, and analyzes construction- and operation-related air quality impacts from the Proposed Action. The analysis of criteria air pollutant and toxic air contaminant (TAC) emissions is consistent with rules and regulations, as well as recommendations of the Sacramento Metropolitan Air Quality Management District (SMAQMD) and Bay Area Air Quality Management District (BAAQMD).

3.5.1 Existing Conditions/Affected Environment

The Proposed Action is located within the Sacramento Valley Air Basin (SVAB); however, Sacramento River Erosion Improvements include transporting materials by barge in the San Francisco Bay Area Air Basin (SFBAAB). The majority of the Proposed Action is in Sacramento County, which places the project primarily under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). However, material associated with the Sacramento River Erosion Contract 3 are likely to be transported from within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD).

The Proposed Action is located within the Central Valley of California, which has a Mediterranean climate characterized by hot, dry summers and mild, rainy winters. Summer high temperatures are hot, often exceeding 100 degrees Fahrenheit (°F). Winter temperatures are cool to cold, with minimum temperatures often dropping into the high 30s. Most of the precipitation occurs as rainfall during winter storms. The rare occurrence of precipitation during summer is in the form of convective rain showers. Additionally, during winter there are periods of dense and persistent low-level fog that are most prevalent between storms. Prevailing wind speeds are moderate.

The topographic features giving shape to the SVAB include the Coast Range to the west, the Sierra Nevada to the east, and the Cascade Range to the north. These mountain ranges channel winds through the SVAB, but also inhibit the dispersion of pollutant emissions. Ozone pollution presents a serious problem when an inversion layer traps pollutants close to the ground, causing unhealthy air quality levels. Vehicles and other mobile sources, including trucks, locomotives, buses, motorcycles, agricultural equipment, and construction equipment cause about 70 percent of the region's air pollution problems during the summer (SMAQMD 2010).

Sensitive Receptors

Sensitive receptors include schools, residences, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Most of the levees in the project area are near local residences, with many peoples' backyards very close to the toe of the levee, within 25 to 50 feet. Additionally, there are several schools located along Magpie Creek and within the Magpie Creek component, as well as along the Sacramento and American Rivers, within 2 miles of the Proposed Action.

Recreationists using the levee systems, American River Parkway, Sacramento Northern Bike Trail, and nearby parks including Miller Park, Discovery Park, and Garcia Bend Park, are also considered to be sensitive receptors.

Criteria Air Pollutants

The Clean Air Act established the National Ambient Air Quality Standards (NAAQS) for specific air pollutants: ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM), which includes two different forms; respirable PM with an aerodynamic diameter of 10 micrometers or less (PM₁₀), and fine PM with an aerodynamic resistance diameter of 2.5 micrometers or less (PM_{2.5}), and lead (Pb). O₃ is a secondary pollutant that is not emitted directly into the atmosphere. Instead, it forms by the reaction of two ozone precursors: reactive organic gases (ROG) and nitrogen oxides (NO_x).

Established to protect public health and welfare, NAAQS and the California Ambient Air Quality Standards (CAAQS) include these criteria pollutants. The U.S. Environmental Protection Agency (EPA) is responsible for enforcing the NAAQS, primarily through their review of the State Implementation Plans (SIPs). In California, the California Air Resources Board (CARB) is responsible for the establishment of the SIP. The local air quality management districts are responsible for the enforcement of the SIP, as well as the NAAQS and CAAQS. If an area is meeting the NAAQS and CAAQS, that area is considered in “attainment”; however, areas that are noncompliant are designated “non-attainment” areas. Once attainment has been achieved, the air basin may be placed under a maintenance plan to demonstrate long-term compliance with the NAAQS. The State and Federal attainment status for the Sacramento Valley Air Basin (SVAB) and San Francisco Bay Area Air Basin (SFBAAB) are shown in Tables 3.5-1 and 3.5-2, respectively. Additionally, **Figure 3.5-1** shows the boundaries of the air basins with the Proposed Action Area (SMAQMD, BAAQMD, and YSAQMD), as well as the designated non-attainment areas under NAAQS and CAAQS.

Due to the non-attainment designations for the SVAB, the SMAQMD is required to prepare SIPs for O₃, and PM_{2.5} to establish how the area would attain the standards by dates specified within the plans. The SMAQMD is currently under a maintenance plan for PM₁₀, which must show maintenance of the NAAQS through 2033.

Barges transporting material to the site would travel through the SFBAAB in addition to the SVAB. The SFBAAB is in non-attainment for O₃ (8-hour averaging), PM₁₀ (24-hour and annual), and PM_{2.5} (24-hour and annual) (BAAQMD 2017). Due to the non-attainment designations for the Bay Area, the BAAQMD is required to prepare SIPs for O₃, PM₁₀, and PM_{2.5} to establish how the area would attain the standards by dates specified within the plans.

Additionally, Federal projects are subject to the Clean Air Act General Conformity Rule (40 CFR 51, Subpart W). The General Conformity Rule ensures that Federal projects conform to applicable SIPs so that Federal actions do not interfere with a state’s strategies used to attain the NAAQS. The rule applies to Federal projects in non-attainment areas for any of the six criteria pollutants for which EPA has established these standards, and in any areas designated as “maintenance” areas. The rule covers both direct and indirect emission of criteria pollutants or their precursors that result from a Federal project, are reasonably foreseeable, and can be practicably controlled by the Federal agency through its continuing program responsibility.

Table 3.5-1. Sacramento Metropolitan Air Quality Management District Pollutant Attainment Status

| Pollutant | Federal Attainment Status | State Attainment Status |
|---------------------------|--------------------------------|-------------------------------|
| 1-hour Ozone | Severe non-attainment | Serious non-attainment |
| 8-hour Ozone | Severe non-attainment | Serious non-attainment |
| 24-hour PM ₁₀ | Maintenance Area | Non-attainment |
| Annual PM ₁₀ | Not Applicable | Non-attainment |
| 24-hour PM _{2.5} | Moderate non-attainment | Not Applicable |
| Annual PM _{2.5} | Attainment | Attainment |
| 1-hour Carbon Monoxide | Attainment | Attainment |
| 8-hour Carbon Monoxide | Attainment | Attainment |
| 1-hour Nitrogen Dioxide | Not Applicable | Attainment |
| Annual Nitrogen Dioxide | Attainment | Not Applicable |
| 3-hour Sulfur Dioxide | Attainment | Not Applicable |
| 24-hour Sulfur Dioxide | Attainment | Attainment |
| Annual Sulfur Dioxide | Attainment | Not Applicable |
| 30-day Lead | Not Applicable | Attainment |
| Quarter Lead | Attainment | Not Applicable |

Notes: PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less

Source: SMAQMD 2020

Table 3.5-2. Bay Area Air Quality Management District Pollutant Attainment Status

| Pollutant | Federal Attainment Status | State Attainment Status |
|---------------------------|---------------------------|-------------------------|
| 1-hour Ozone | Non-attainment | Non-attainment |
| 8-hour Ozone | Non-attainment | Non-attainment |
| 24-hour PM ₁₀ | Unclassified | Non-attainment |
| Annual PM ₁₀ | Not Applicable | Non-attainment |
| 24-hour PM _{2.5} | Non-attainment | Not Applicable |
| Annual PM _{2.5} | Unclassified | Non-attainment |
| 1-hour Carbon Monoxide | Attainment | Attainment |
| 8-hour Carbon Monoxide | Attainment | Attainment |
| 1-hour Nitrogen Dioxide | Not Applicable | Attainment |
| Annual Nitrogen Dioxide | Attainment | Not Applicable |
| 3-hour Sulfur Dioxide | Attainment | Not Applicable |
| 24-hour Sulfur Dioxide | Attainment | Attainment |
| Annual Sulfur Dioxide | Attainment | Not Applicable |
| 30-day Lead | Not Applicable | Unclassified |
| Quarter Lead | Attainment | Not Applicable |

Notes: PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less

Source: BAAQMD 2017

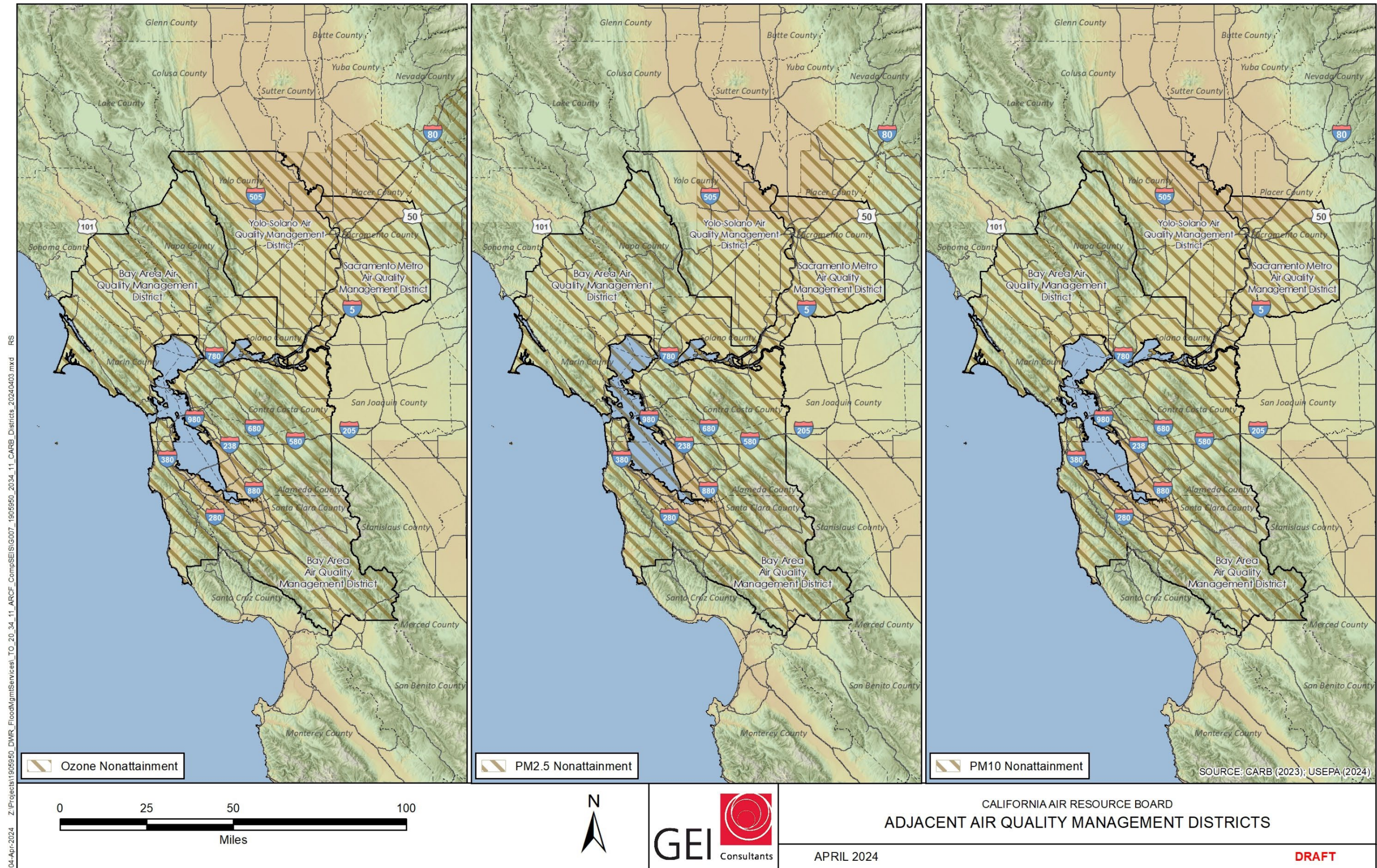


Figure 3.5-1. Air Districts and Associated Non-attainment Areas

California and National Area Designations

Both EPA and CARB use ambient air quality monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and initiate planning efforts for improvement. The three basic designation categories are non-attainment, attainment, and unclassified. An “attainment” designation for an area signifies that pollutant concentrations did not exceed the established standard. In most cases, areas designated or redesignated as attainment must develop and implement maintenance plans, which are designed to ensure continued compliance with the standard.

In contrast, a “non-attainment” designation indicates that a pollutant concentration has exceeded the established standard. Non-attainment may differ in severity. To identify the severity of the problem and the extent of planning and actions required to meet the standard, non-attainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe, extreme).

Finally, an “unclassified” designation indicates that insufficient data exist to determine attainment or non-attainment. The California designations also include a subcategory called “non-attainment-transitional,” a designation given to non-attainment areas that are progressing and nearing attainment.

Toxic Air Contaminants

In addition to criteria air pollutants, EPA regulates TACs, also known as hazardous air pollutants. Concentrations of TACs are also used as indicators of ambient air quality conditions. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in ambient air; however, their high toxicity may pose a threat to public health even at low concentrations. Most TACs originate from human-made sources: on-road mobile sources, off-road mobile sources such as construction equipment, area sources such as dry cleaners, and stationary sources such as factories and refineries.

For evaluation purposes, TACs are separated into carcinogens and non-carcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with criteria air pollutants for which acceptable levels of exposure can be determined and for which the ambient standards have been established. Cancer risk from TACs is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure. TACs are primarily regulated through State and local risk management programs (BAAQMD 2011).

3.5.2 Applicable Laws, Regulations, Policies, and Plans

Federal

Federal Clean Air Act

The Federal Clean Air Act requires the EPA to establish health-based air quality standards at the Federal level. The NAAQS were established for the following criteria pollutants: CO, ozone, SO₂, NO₂, PM₁₀, PM_{2.5}, and lead. Areas of the State are designated as attainment, non-attainment, maintenance, or unclassified for the various pollutant standards according to the Federal Clean Air Act.

State

California Clean Air Act

The California Clean Air Act requires CARB to establish health-based air quality standards at the State level. The CAAQS were established for the following criteria pollutants: CO, O₃, SO₂, NO₂, PM₁₀, PM_{2.5}, lead, sulfate, visibility reducing particles, hydrogen sulfide, and vinyl chloride. Areas of the State are designated as attainment, non-attainment, maintenance, or unclassified for the various pollutant standards according to the California Clean Air Act.

Local

Sacramento Metropolitan Air Quality Management District

Within Sacramento County, SMAQMD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of Federal and State air quality regulations. SMAQMD works with other local air districts in the Sacramento region to maintain the region's portion of the State Implementation Plan (SIP) for ozone. The SIP is a compilation of plans and regulations that govern how the region and state will comply with the CCA requirements to attain and maintain the NAAQS for ozone. The Sacramento Region has been designated as a "serious" non-attainment area for the 2015 8-hour ozone Federal standard (EPA 2022). However, the Sacramento Federal Ozone Non-attainment Area (SFNA) submitted a voluntary reclassification request to change the designation from "serious" to "severe-15." The request is pending EPA approval.

SMAQMD has developed a set of guidelines for use by lead agencies when preparing environmental documents. The guidelines contain thresholds of significance for criteria air pollutants and toxic air contaminants (TACs) and make recommendations for conducting air quality analyses. Thresholds of significance are designed on a cumulative basis, considering regional growth and anticipated development, such that projects that do not exceed the adopted thresholds would not impede the region from achieving the CAAQS and the NAAQS. Further, because the ambient air quality standards are designed to protect public health, projects that do not exceed SMAQMD-adopted thresholds, or are reduced to below the thresholds with applied mitigation, would be considered to have a less-than-significant impact under CEQA, would not contribute to exceedance of a CAAQS or NAAQS, and would not result in adverse health effects.

After SMAQMD guidelines have been consulted and the air quality impacts of a project have been assessed, the lead agency's analysis undergoes a review by SMAQMD. SMAQMD submits comments and suggestions to the lead agency for incorporation into the environmental document.

All projects in the Sacramento area are subject to SMAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of the project may include but are not limited to the following:

- **Rule 201:** General Permit Requirements. Any project that includes the use of equipment capable of releasing emissions to the atmosphere may be required to obtain permit(s) from SMAQMD before equipment operation. Portable construction equipment (e.g., generators, compressors, pile drivers, lighting equipment) with an internal combustion engine greater than 50 horsepower must have a SMAQMD permit or CARB portable equipment registration.
- **Rule 402:** Nuisance. A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause or have natural tendency to cause injury or damage to business or property.
- **Rule 403:** Fugitive Dust. The developer or contractor is required to control dust emissions from earthmoving activities or any other construction activity to prevent airborne dust from leaving the Project Area.

In addition, SMAQMD recommends that all construction projects include Basic Construction Emission Control Practices, as outlined in the *SMAQMD CEQA Guide* (SMAQMD 2019) and that any projects with construction mitigation requirements must reduce emissions from off-road equipment. According to the *CEQA Guide*, if modeled construction-generated emissions for a project are not reduced to SMAQMD's threshold of significance by application of these standard construction mitigation measures, then payment of a mitigation fee may be assessed to achieve the remaining mitigation necessary.

At the local level, air districts may adopt and enforce CARB control measures. Under SMAQMD Rule 201 ("General Permit Requirements"), construction equipment that possess the potential to emit TACs must be permitted by SMAQMD. Permits may be granted if a project is constructed and operated in accordance with applicable regulations, including air toxics control measures. SMAQMD limits emissions and public exposure to TACs through several programs. SMAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. Sensitive receptors are people, or facilities that generally house people (e.g., schools, hospitals, residences), that may experience adverse effects from unhealthful concentrations of air pollutants.

In September 2020, SMAQMD released the most recent version of the Mobile Source Air Toxics Protocol (MSAT Protocol). The MSAT Protocol provides guidance to local land use jurisdictions on assessing and disclosing potential cancer risk and PM_{2.5} concentrations from major roadways

and railways throughout Sacramento County. The MSAT Protocol replaces the *Recommended Protocol for the Evaluation of Sensitive Receptors Adjacent to Major Roadways*.

Bay Area Air Quality Management District

BAAQMD is the primary agency responsible for assuring that the NAAQS and CAAQS, are attained and maintained in the Bay Area. BAAQMD's jurisdiction includes all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo and Santa Clara counties, and the southern portions of Solano and Sonoma counties. The BAAQMD responsibilities in improving air quality in the region include: preparing plans for attaining and maintaining air quality standards; adopting and enforcing rules and regulations; issuing permits for stationary sources of air pollutants; inspecting stationary sources and responding to citizen complaints; monitoring air quality and meteorological conditions; awarding grants to reduce mobile emissions; implementing public outreach campaigns; and assisting local governments in addressing climate change. The BAAQMD prepared the 2017 Clean Air Plan to address non-attainment of the national 1-hour ozone standard in the SFBAAB and CAAQS.

BAAQMD has developed a set of guidelines for use by lead agencies when preparing environmental documents. The guidelines contain thresholds of significance for criteria air pollutants and TACs and make recommendations for conducting air quality analyses.

All projects in the Bay Area are subject to BAAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of the project may include but are not limited to the following:

- **Regulation 2, Rule 1, General Permit Requirements:** Includes criteria for issuance or denial of permits, exemptions, appeals against decisions of the Air Pollution Control Officer and BAAQMD actions on applications.
- **Regulation 6, Rule 1, General Requirements:** Limits the quantity of particulate matter in the atmosphere by controlling emission rates, concentration, visible emissions, and opacity.
- **Regulation 7, Odorous Substances:** Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. A person (or facility) must meet all limitations of this regulation but meeting such limitations shall not exempt such person from any other requirements of BAAQMD, state, or national law. The limitations of this regulation shall not be applicable until BAAQMD receives odor complaints from 10 or more complainants within a 90-day period alleging that a person has caused odors perceived at or beyond the property line of such person and deemed to be objectionable by the complainants in the normal course of their work, travel, or residence. When the limits of this regulation become effective as a result of citizen complaints described above the limits shall remain effective until such time as no citizen complaints have been received by BAAQMD for 1 year. The limits of this regulation shall become applicable again if BAAQMD receives odor complaints from five or more complainants within a 90-day period. BAAQMD staff shall investigate and track all odor complaints they receive and shall attempt to visit the site, identify the source of the objectionable odor, and assist the owner or facility in finding a way to reduce the odor.

City of Sacramento 2035 General Plan

The City of Sacramento 2035 General Plan Environmental Resources Element contains the following air quality goals and policies relevant to the proposed project (City of Sacramento 2015):

GOAL: Improve the health and sustainability of the community through improved regional air quality and reduced greenhouse gas emission that contribute to climate change.

- **Policy ER 6.1.1: Maintain Ambient Air Quality Standards.** The City shall work with the California Air Resources Board and the Sacramento Metropolitan Air Quality Management District (SMAQMD) to meet State and Federal ambient air quality standards in order to protect residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution.
- **Policy ER 6.1.3: Emissions Reduction.** The City shall require development projects that exceed SMAQMD ROG and NO_x operational thresholds to incorporate design or operational features that reduce emissions equal to 15 percent from the level that would be produced by an unmitigated project.
- **Policy ER 6.1.4: Sensitive Uses.** The City shall coordinate with SMAQMD in evaluating exposure of sensitive receptors to TACs and will impose appropriate conditions on projects to protect public health and safety.
- **Policy ER 6.1.10:** The City shall coordinate with SMAQMD to ensure projects incorporate feasible mitigation measures to reduce GHG emissions and air pollution if not already provided for through project design.

Sacramento County 2030 General Plan

The Sacramento County 2030 General Plan's Air Quality Element, most recently updated in December 2020, contains the following air quality goals and policies relevant to the proposed project (Sacramento County 2011):

GOAL: Improve air quality to promote the public health, safety, welfare, and environmental quality of the community.

Multidisciplinary Coordination Objective: The integration of air quality planning with land use, transportation, and energy planning processes to provide a safe and healthy environment.

- **Policy AQ-3:** Buffers and/or other appropriate exposure reduction measures shall be established on a project-by-project basis and incorporated during review to provide for protection of sensitive receptors from sources of air pollution or odor. The California Air Resources Board's "Strategies to Reduce Air Pollution Exposure Near High Volume Roadways" Technical Advisory and the [SM]AQMD's "Mobile Sources Air Toxics Protocol" or applicable [SM]AQMD guidance shall be utilized when establishing these exposure reduction measures.

- **Policy AQ-4.** Developments which meet or exceed thresholds of significance for ozone precursor pollutants, and/or GHG as adopted by the SMAQMD, shall be deemed to have a significant environmental impact. An Air Quality Mitigation Plan and/or a Greenhouse Gas Reduction Plan shall be submitted to the County of Sacramento prior to project approval, subject to review and recommendation as to technical adequacy by the SMAQMD.

Motor Vehicle Emissions Objective: A reduction in motor vehicle emissions through a decrease in the average daily trips and vehicle miles traveled and an increasing reliance on the use of low emissions vehicles.

- **Policy AQ-11.** Encourage contractors operating in the county to procure and to operate low-emission vehicles, and to seek low emission fleet status for their off-road equipment.

Reducing Air Pollutants Objective: Compliance with Federal and State air quality standards to reduce all air pollutants, including ozone-depleting compounds to ensure the protection of the stratospheric ozone layer.

- **Policy AQ-16.** Prohibit the idling of on-and off-road engines when the vehicle is not moving or when the off-road equipment is not performing work for a period of time greater than five minutes in any 1-hour period.
- **Policy AQ-17.** Promote optimal air quality benefits through energy conservation measures in new development.
- **Policy AQ-19.** Require all feasible reductions in emissions for the operation of construction vehicles and equipment on major land development and roadway construction projects.

3.5.3 Analysis of Environmental Effects

Analysis Methodology

Emissions of criteria air pollutants were evaluated using methodologies and guidance recommended by SMAQMD. Construction-related emissions were compared with the applicable thresholds of significance. Operations and Maintenance activities associated with the Proposed Action would generate emissions similar to current conditions, therefore, operational emissions were not modeled. Project emissions of criteria air pollutants were quantified using the California Emissions Estimator Model (CalEEMod) Version 2022.1 and SMAQMD's Harborcraft, Dredge and Barge Emission Factor Calculator. For the Sacramento River Erosion Contract 3 component, barge modeling conducted by the Dutra Group for the Contract 2 was relied upon due to the similarity in construction techniques and equipment for both contracts. Additionally, the Sacramento River Erosion Contract 2 is currently in construction with the first year of construction having been completed in 2023; therefore, modeling is based on actual on-the-ground construction activities instead of best guess assumptions. This approach provides a realistic view of anticipated barge emissions for the Sacramento River Erosion Contract 3. On-road emissions were modeling using CalEEMod based on anticipated timeline and project needs for the Sacramento River Erosion Contract 3. Both barge emissions and on-road emissions are used to present the total anticipated emissions from construction of the Sacramento River Erosion Contract 3.

ARCF 2016 Projects that are not a part of the Proposed Action but would be constructed concurrently with the Proposed Action are included in analysis discussions and are shown in Tables 3.5.3 through 3.5.6 as they would contribute to a cumulatively net increase of criteria air pollutants. ARCF 2016 Project components that are included in this discussion but are not a part of the Proposed Action include: Sacramento River Erosion Contract 2, Sacramento River Erosion Contract 4, Lower American River Contract 3A, and the Sacramento Weir Widening Project. Air quality emissions generated from these project components were obtained from previous adopted environmental documents and therefore are not included in Appendix C (see Section 2.1.1 “Related Documents and Resources”).

Construction-related emissions were estimated using information such as construction schedule and phasing, expected duration of activities, equipment types, volumes of material to be hauled, and number of construction workers on-site during each construction phase. Construction information used to estimate air emissions is discussed in Chapter 2, “Description of Project Alternatives.” These activities have been combined in various years to show a worst-case scenario. Types of activities that would generate emissions of air pollutants include vegetation clearing, excavation, installation of rock revetment, construction of launchable rock filled trench, reconstruction of levees, construction of mitigation sites, hauling of materials, and worker trips. The construction-related criteria air pollutant emissions estimated for each year of project construction are presented and compared to the applicable Air Quality Management District significance thresholds in Tables 3.5-3 through 3.5-6. Air quality modeling data summarized in this section are provided in Appendix C, “Air Quality and GHG Emissions Modeling.”

Because the project includes only temporary effects on air quality during construction, air quality model outputs were not further processed to estimate foreseeable adverse health outcomes using SMAQMD’s Strategic Area Project Health Screening Tool.

The SMAQMD provided comments during the NEPA scoping period. These comments pertained to the content of the mitigation measures, the potential need to update the General Conformity Report (finalized in June 2021), and active transportation mode detours.

Table 3.5-3. Maximum Daily Emissions Estimates for the ARCF Comprehensive Project and Remaining ARCF 2016 Project Components – Sacramento Valley Air Basin

| Project Component | Unmitigated PM ₁₀ | Unmitigated PM _{2.5} | Unmitigated ROG | Unmitigated NO _x | Mitigated PM ₁₀ | Mitigated PM _{2.5} | Mitigated ROG | Mitigated NO _x |
|---|---------------------------------|----------------------------------|--------------------|--------------------------------|-------------------------------|--------------------------------|------------------|------------------------------|
| 2024 | | | | | | | | |
| Sacramento River Erosion Contract 2 | 53.31 | 13.27 | 15.35 | 166.62 | 52.77 | 12.76 | 9.86 | 81.15 |
| Sacramento River Erosion Contract 4 | 18.4 | 15.8 | 26.1 | 335 | 18.1 | 15.6 | 25.2 | 328 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 71.71 | 29.07 | 41.45 | 501.62 | 70.87 | 28.36 | 35.06 | 409.15 |
| CEQA Threshold | 80 | 82 | | 85 | 80 | 82 | | 85 |
| Exceeds Threshold? | No | No | | Yes | No | No | | Yes |
| 2026 | | | | | | | | |
| Sacramento River Erosion Contract 3 (including Barge emissions) | 16.40 | 14.71 | 57.58 | 481.58 | 14.86 | 13.29 | 54.17 | 452.93 |
| ARMS | 45.6 | 15.1 | 4.82 | 124 | 30.0 | 8.75 | 2.17 | 98.2 |
| SRMS | 14.4 | 6.25 | 3.04 | 64.7 | 9.52 | 3.54 | 1.26 | 48.40 |
| American River Contract 3B North and South, and Contract 4B | 76.8 | 34.8 | 41.94 | 47 | 49.4 | 18.48 | 14.94 | 273 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 153.20 | 70.86 | 107.38 | 717.28 | 103.78 | 44.06 | 72.54 | 872.53 |
| CEQA Threshold | 80 | 82 | | 85 | 80 | 82 | | 85 |
| Exceeds Threshold? | Yes | No | | Yes | Yes | No | | Yes |
| 2027 | | | | | | | | |
| Sacramento River Erosion Contract 3 (including Barge emissions) | 16.65 | 14.29 | 56.24 | 473.28 | 15.2 | 13.36 | 53.88 | 453.67 |
| ARMS | 20.90 | 9.84 | 3.00 | 60.5 | 11.7 | 4.73 | 1.04 | 43.7 |
| SRMS | 9.57 | 4.62 | 2.08 | 60.3 | 8.16 | 2.58 | 1.16 | 52.9 |
| American River Contract 4A Erosion Improvements | 562 | 62.3 | 4.44 | 142 | 559 | 61 | 2.73 | 127 |
| American River Contract 3B North and South, and Contract 4B | 74.4 | 35.4 | 20.57 | 246.6 | 38.5 | 15.79 | 8.08 | 139.9 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 683.52 | 126.45 | 86.33 | 982.68 | 632.56 | 97.46 | 66.89 | 817.17 |
| CEQA Threshold | 80 | 82 | | 85 | 80 | 82 | | 85 |
| Exceeds Threshold? | Yes | Yes | | Yes | Yes | Yes | | Yes |
| 2028 | | | | | | | | |
| Magpie Creek | 23.00 | 10.1 | 19.4 | 237 | 18.90 | 7.14 | 10.40 | 165 |
| Lower American River Contract 3A ² | 47 | 6 | 4 | 176 | 47 | 6 | 4 | 176 |

| Project Component | Unmitigated PM ₁₀ | Unmitigated PM _{2.5} | Unmitigated ROG | Unmitigated NO _x | Mitigated PM ₁₀ | Mitigated PM _{2.5} | Mitigated ROG | Mitigated NO _x |
|---|---------------------------------|----------------------------------|--------------------|--------------------------------|-------------------------------|--------------------------------|------------------|------------------------------|
| <i>Total ARCF Comprehensive Project Emissions</i> | 70 | 16.1 | 23.4 | 413 | 65.9 | 13.14 | 14.4 | 341 |
| CEQA Threshold | 80 | 82 | | 85 | 80 | 82 | | 85 |
| Exceeds Threshold? | No | No | | Yes | No | No | | Yes |

Notes: All results are in pounds per day. Bold numbers indicate concentrations above thresholds.

ARCF = American River Common Features; ARMS = American River Mitigation Site; SRMS = Sacramento River Mitigation Site; NO_x = oxides of nitrogen; PM₁₀ = particulate matter with aerodynamic diameter less than 10 microns; PM_{2.5} = particulate matter with aerodynamic diameter less than 2.5 microns; ROG = reactive organic gases

Table 3.5-4. Annual Emissions Estimates for the ARCF Comprehensive Project and Remaining ARCF 2016 Project Components – Sacramento Valley Air Basin

| Project Component | Unmitigated PM ₁₀ | Unmitigated PM _{2.5} | Unmitigated ROG | Unmitigated NO _x | Mitigated PM ₁₀ | Mitigated PM _{2.5} | Mitigated ROG | Mitigated NO _x |
|---|---------------------------------|----------------------------------|--------------------|--------------------------------|-------------------------------|--------------------------------|------------------|------------------------------|
| 2024 | | | | | | | | |
| Sacramento Weir Widening Project ¹ | 27.16 | 6.17 | 1.73 | 16.03 | 26.72 | 5.75 | 1.20 | 6.0 |
| Sacramento River Erosion Contract 2 | 1.71 | 0.81 | 1.09 | 14.24 | 1.52 | 0.64 | 0.85 | 10.45 |
| Sacramento River Erosion Contract 4 | 0.18 | 0.14 | 0.27 | 3.16 | 0.18 | 0.13 | 0.23 | 2.88 |
| <i>Total ARCF Comprehensive Project Emissions in Sacramento County</i> | 1.89 | 0.95 | 1.63 | 27.16 | 1.70 | 0.77 | 1.35 | 23.09 |
| <i>Total ARCF Comprehensive Project Emissions in SVAB</i> | - | 7.12 | 3.09 | 33.43 | - | 6.52 | 2.28 | 19.33 |
| CEQA Threshold (all project components in Sacramento County) | 14.6 | 15 | | | 14.6 | 15 | | |
| Exceeds Threshold? | No | No | | | No | No | | |
| General Conformity <i>de Minimis</i> Threshold (all project components in SVAB) | 100 | 100 | 25 | 425 | 100 | 100 | 25 | 25 |
| Exceeds Threshold? | No | No | No | Yes | No | No | No | Yes |
| 2025 | | | | | | | | |
| Sacramento Weir Widening Project ¹ | 24.96 | 5.71 | 1.63 | 15.21 | 24.63 | 5.41 | 1.26 | 7.99 |
| <i>Total ARCF Comprehensive Project Emissions in Sacramento County</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <i>Total ARCF Comprehensive Project Emissions in SVAB</i> | - | 5.71 | 1.63 | 15.21 | - | 5.41 | 1.26 | 7.99 |
| CEQA Threshold (all project components in Sacramento County) | 14.6 | 15 | | | 14.6 | 15 | | |
| Exceeds Threshold? | No | No | | | No | No | | |

| Project Component | Unmitigated PM ₁₀ | Unmitigated PM _{2.5} | Unmitigated ROG | Unmitigated NO _x | Mitigated PM ₁₀ | Mitigated PM _{2.5} | Mitigated ROG | Mitigated NO _x |
|---|---------------------------------|----------------------------------|--------------------|--------------------------------|-------------------------------|--------------------------------|------------------|------------------------------|
| General Conformity <i>de Minimis</i> Threshold (all project components in SVAB) | 100 | 100 | 25 | 25 | 100 | 100 | 25 | 25 |
| Exceeds Threshold? | No | No | No | No | No | No | No | No |
| 2026 | | | | | | | | |
| Sacramento River Erosion Contract 3 (including Barge emissions) | 0.87 | 0.78 | 3.06 | 25.65 | 0.81 | 0.72 | 2.91 | 24.35 |
| ARMS | 2.06 | 0.92 | 0.25 | 6.82 | 1.23 | 0.48 | 0.11 | 5.53 |
| SRMS | 0.02 | 0.01 | 0.01 | 0.15 | 0.02 | 0.01 | <0.01 | 0.11 |
| American River Contract 3B North and South, and Contract 4B | 2.87 | 1.41 | 1.39 | 13.89 | 1.50 | 0.62 | 0.50 | 7.20 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 5.82 | 3.12 | 4.71 | 46.51 | 3.56 | 1.83 | 3.52 | 37.19 |
| CEQA Threshold | 14.6 | 15 | | | 14.6 | 15 | | |
| Exceeds Threshold? | No | No | | | No | No | | |
| General Conformity <i>de Minimis</i> Threshold | 100 | 100 | 25 | 25 | 100 | 100 | 25 | 25 |
| Exceeds Threshold? | No | No | No | Yes | No | No | No | Yes |
| 2027 | | | | | | | | |
| Sacramento River Erosion Contract 3 (including Barge emissions) | 0.87 | 0.77 | 3.03 | 25.45 | 0.81 | 0.72 | 92.91 | 24.50 |
| ARMS | 1.77 | 0.82 | 0.19 | 4.91 | 1.00 | 0.41 | 0.07 | 3.88 |
| SRMS | 0.20 | 0.07 | 0.04 | 1.30 | 0.17 | 0.06 | 0.02 | 1.11 |
| American River Contract 4A Erosion Improvements | 6.91 | 0.83 | 0.08 | 1.97 | 6.78 | 0.76 | 0.04 | 1.62 |
| American River Contract 3B North and South, and Contract 4B | 2.56 | 1.24 | 0.80 | 9.13 | 1.27 | 0.52 | 0.29 | 4.8 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 12.31 | 3.73 | 4.14 | 42.76 | 10.03 | 2.47 | 3.33 | 35.91 |
| CEQA Threshold | 14.6 | 15 | | | 14.6 | 15 | | |
| Exceeds Threshold? | No | No | | | No | No | | |
| General Conformity <i>de Minimis</i> Threshold | 100 | 100 | 25 | 25 | 100 | 100 | 25 | 25 |
| Exceeds Threshold? | No | No | No | Yes | No | No | No | Yes |
| 2028 | | | | | | | | |
| Magpie Creek | 0.29 | 0.12 | 0.24 | 2.92 | 0.23 | 0.08 | 0.12 | 1.97 |
| Lower American River Contract 3A | <1.00 | <1.00 | 0.27 | 9.76 | <1.00 | <1.00 | 0.27 | 9.76 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 0.29 | 0.12 | 0.51 | 12.68 | 0.23 | 0.08 | 0.39 | 11.73 |
| CEQA Threshold | 14.6 | 15 | | | 14.6 | 15 | | |

| Project Component | Unmitigated PM ₁₀ | Unmitigated PM _{2.5} | Unmitigated ROG | Unmitigated NO _x | Mitigated PM ₁₀ | Mitigated PM _{2.5} | Mitigated ROG | Mitigated NO _x |
|--|---------------------------------|----------------------------------|--------------------|--------------------------------|-------------------------------|--------------------------------|------------------|------------------------------|
| Exceeds Threshold? | No | No | | | No | No | | |
| General Conformity <i>de Minimis</i> Threshold | 100 | 100 | 25 | 25 | 100 | 100 | 25 | 25 |
| Exceeds Threshold? | No | No | No | No | No | No | No | No |

Notes: Bold numbers indicate concentrations above thresholds

ARCF = American River Common Features; ARMS = American River Mitigation Site; SRMS = Sacramento River Mitigation Site NO_x = oxides of nitrogen; PM₁₀ = particulate matter with aerodynamic diameter less than 10 microns; PM_{2.5} = particulate matter with aerodynamic diameter less than 2.5 microns; ROG = reactive organic gases

¹ The Sacramento Weir Widening Project, a component of the ARCF 2016 Project, is located within Yolo County. Since Yolo County is not within the jurisdiction of SMAQMD, emissions generated from this component are not evaluated against SMAQMD thresholds of significance. The Sacramento Weir Widening Project component was evaluated in an SEIS/EIR prepared in 2020 (USACE and CVFPP 2020) and concludes with a significance level of less than significant with mitigation incorporated. However, Yolo County is located within a non-attainment area for ozone and PM_{2.5}, therefore, the emissions from the Sacramento Weir Widening Project component are included in the evaluation for General Conformity for these criteria air pollutants. Yolo County is not located within a non-attainment area for PM₁₀; therefore, Sacramento Weir Widening Project emissions are not included for General Conformity for PM₁₀.

Table 3.5-5. Maximum Daily Emissions Estimates for the ARCF Comprehensive Project and Remaining ARCF 2016 Project Components– San Francisco Bay Area Air Basin

| Project Component | Unmitigated/mitigated PM ₁₀ ¹ | Unmitigated/mitigated PM _{2.5} ¹ | Unmitigated/mitigated ROG | Unmitigated/mitigated NO _x |
|---|--|---|------------------------------|--|
| 2024 | | | | |
| Sacramento Weir Widening Project | 16.10 | 14.40 | 20.90 | 357.10 |
| Sacramento River Erosion Contract 2 | 14.49 | 12.96 | 19.81 | 321.39 |
| Sacramento River Erosion Contract 4 | 18.4 | 16.4 | 23.8 | 408 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 48.99 | 43.76 | 64.51 | 1,086.49 |
| CEQA Threshold | 82 (exhaust) | 54 (exhaust) | 54 | 54 |
| Exceeds Threshold? | No | No | Yes | Yes |
| 2025 | | | | |
| Sacramento Weir Widening Project | 14.4 | 16.1 | 20.90 | 357.1 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 14.4 | 16.1 | 20.90 | 357.1 |
| CEQA Threshold for Average Daily Emissions | 82 (exhaust) | 54 (exhaust) | 54 | 54 |
| Exceeds Threshold? | No | No | No | Yes |
| 2026 | | | | |
| Sacramento River Erosion Contract 3 (Barge emissions) | 0.93 | 0.84 | 6.11 | 43.36 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 0.93 | 0.84 | 6.11 | 43.36 |
| CEQA Threshold for Average Daily Emissions | 82 (exhaust) | 54 (exhaust) | 54 | 54 |
| Exceeds Threshold? | No | No | No | No |

| Project Component | Unmitigated/mitigated PM ₁₀ ¹ | Unmitigated/mitigated PM _{2.5} ¹ | Unmitigated/mitigated ROG | Unmitigated/mitigated NO _x |
|---|--|---|------------------------------|--|
| 2027 | | | | |
| Sacramento River Erosion Contract 3 (Barge emissions) | 0.99 | 0.84 | 6.38 | 45.27 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 0.99 | 0.84 | 6.38 | 45.27 |
| CEQA Threshold for Average Daily Emissions | 82 (exhaust) | 54 (exhaust) | 54 | 54 |
| Exceeds Threshold? | No | No | No | No |

Notes: ARCF = American River Common Features; NO_x = oxides of nitrogen; PM₁₀ = particulate matter with aerodynamic diameter less than 10 microns; PM_{2.5} = particulate matter with aerodynamic diameter less than 2.5 microns; ROG = reactive organic gases

¹ Given that some project components do not break out dust and exhaust components of PM emissions, the values in this column account for both components.

Table 3.5-6. Annual Emissions Estimates for the ARCF Comprehensive Project and Remaining ARCF 2016 Project Components – San Francisco Bay Area Air Basin

| Project Component | Unmitigated/ Mitigated PM ₁₀ | Unmitigated/ Mitigated PM _{2.5} | Unmitigated/ Mitigated ROG | Unmitigated/ Mitigated NO _x |
|---|---|--|----------------------------------|--|
| 2024 | | | | |
| Sacramento Weir Widening Project | 0.16 | 0.15 | 0.21 | 3.65 |
| Sacramento River Erosion Contract 2 | 0.41 | 0.36 | 0.53 | 9.02 |
| Sacramento River Erosion Contract 4 | 0.01 | 0.01 | 0.01 | 0.20 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 0.58 | 0.52 | 0.75 | 12.87 |
| General Conformity <i>de Minimis</i> Threshold | 25 | 25 | 100 | 100 |
| Exceeds Threshold? | No | No | No | No |
| 2025 | | | | |
| Sacramento Weir Widening Project | 0.16 | 0.15 | 0.21 | 3.65 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 0.16 | 0.15 | 0.21 | 3.65 |
| General Conformity <i>de Minimis</i> Threshold | 25 | 25 | 100 | 100 |
| Exceeds Threshold? | No | No | No | No |
| 2026 | | | | |
| Sacramento River Erosion Contract 3 (Barge emissions) | 0.05 | 0.04 | 0.31 | 2.20 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 0.05 | 0.04 | 0.31 | 2.20 |
| General Conformity <i>de Minimis</i> Threshold | 25 | 25 | 100 | 100 |
| Exceeds Threshold? | No | No | No | No |
| 2027 | | | | |

| Project Component | Unmitigated/ Mitigated PM ₁₀ | Unmitigated/ Mitigated PM _{2.5} | Unmitigated/ Mitigated ROG | Unmitigated/ Mitigated NO _x |
|---|---|--|----------------------------------|--|
| Sacramento River Erosion Contract 3 (Barge emissions) | 0.05 | 0.04 | 0.31 | 2.20 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 0.05 | 0.04 | 0.31 | 2.20 |
| General Conformity <i>de Minimis</i> Threshold | 25 | 25 | 100 | 100 |
| Exceeds Threshold? | No | No | No | No |

Notes: ARCF = American River Common Features; NO_x = oxides of nitrogen; PM₁₀ = particulate matter with aerodynamic diameter less than 10 microns; PM_{2.5} = particulate matter with aerodynamic diameter less than 2.5 microns; ROG = reactive organic gases

The Bay Area Air Quality Management District does not have annual California Environmental Quality Act thresholds of significance.

Basis of Significance

The thresholds, and the impact analysis that follows, take into consideration the significance of an action in terms of: the setting of the proposed action; short- and long-term effects of the proposed action; both beneficial and adverse effects; direct and indirect effects of the proposed action on public health and safety; the context and intensity of impacts; and effects that would violate Federal, State, Tribal, or local law protecting the environment, as required under NEPA (40 CFR 1508.1(g)) and the State CEQA Guidelines, as amended. The alternatives under consideration were determined to result in a significant impact related to air quality if they would do any of the following:

- a. conflict with or obstruct implementation of the applicable air quality plan;
- 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;
- c. expose sensitive receptors to substantial pollutant concentrations;
- d. result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Local air district (SMAQMD and BAAQMD) significance thresholds used in this analysis are presented in Tables 3.5-7 and 3.5-8, respectively, and General Conformity *de minimis* thresholds that apply to the project are presented in Table 3.5-9 and 3.5-10.

The No Action Alternative (the project as approved based on the ARCF GRR Final EIS/EIR) identified construction of the ARCF project over a longer timeline (14 years compared to 8 years as currently proposed). Since the ARCF 2016 Project was authorized, the schedule has changed and compressed substantially. Because the overall timeline and the specific years in which construction would occur have changed considerably since the project was authorized, the design refinements are the entire Proposed Action for the purposes of air quality analysis and conclusions under NEPA and CEQA are identical.

Table 3.5-7. Sacramento Metropolitan Air Quality Management District Thresholds of Significance for Construction

| Pollutant | Threshold |
|---|---|
| Oxides of Nitrogen (NO _x) | 85 pounds per day |
| Respirable Particulate Matter (PM ₁₀) | Fugitive dust BACT/BMPs and 80 pounds per day, 14.6 tons per year |
| Fine Particulate Matter (PM _{2.5}) | Fugitive dust BACT/BMPs and 82 pounds per day, 15 tons per year |

Notes: BACT = Best Available Control Technology; BMPs = Best Management Practices. Thresholds for PM₁₀ and PM_{2.5} are zero unless BACT/BMPs are implemented as part of the project.

Source: Sacramento Metropolitan Air Quality Management District 2020

Table 3.5-8. Bay Area Air Quality Management District Thresholds of Significance for Construction

| Pollutant | Threshold (pounds per day) |
|---|----------------------------|
| Oxides of Nitrogen (NO _x) | 54 |
| Reactive Organic Gases (ROG) | 54 |
| Respirable Particulate Matter (PM ₁₀) - Exhaust | 82 (exhaust) |
| Fine Particulate Matter (PM _{2.5}) -Exhaust | 54 (exhaust) |

Notes: BACT = Best Available Control Technology; BMPs = Best Management Practices. Thresholds for PM₁₀ and PM_{2.5} are zero unless BACT/BMPs are implemented as part of the project.

Source: Bay Area Air Quality Management District 2020

Table 3.5-9. General Conformity *de minimis* Thresholds for the Sacramento Valley Air Basin

| Pollutant | Threshold (tons per year) |
|---|---------------------------|
| Carbon Monoxide (CO) | 100 |
| Oxides of Nitrogen (NO _x) | 25 |
| Volatile Organic Compounds (VOC)/Reactive Organic Gases (ROG) | 25 |
| Respirable Particulate Matter (PM ₁₀) | 100 |
| Fine Particulate Matter (PM _{2.5}) | 100 |

Sources: 40 CFR 93 Section 153 (b)(1); Sacramento Metropolitan Air Quality Management District 2020

Table 3.5-10. General Conformity *de minimis* Thresholds for the San Francisco Bay Area Air Basin

| Pollutant | Threshold (tons per year) |
|---|---------------------------|
| Carbon Monoxide (CO) | None |
| Oxides of Nitrogen (NO _x) | 100 |
| Volatile Organic Compounds (VOC)/Reactive Organic Gases (ROG) | 100 |
| Respirable Particulate Matter (PM ₁₀) | None |
| Fine Particulate Matter (PM _{2.5}) | 100 |

Sources: 40 CFR 93 Section 153 (b)(1); Bay Area Air Quality Management District 2020

Effects Not Discussed in Detail

Effects from Piezometer Network. Air quality impacts from construction of the piezometer network are expected to be minimal; the equipment for the installations would consist of a drill rig and a support vehicle to provide well installation supplies. Furthermore, the piezometer installation would occur scattered across the entire Proposed Action Area. No additional hauling would be required beyond those already identified for the Proposed Action. Additionally, once construction is complete GHG emissions would cease. Therefore, the Piezometer Network would not cause additional direct or indirect air quality impacts and is not discussed further in this section.

Conflict with or Obstruct Implementation of the Applicable Air Quality Plan or 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 during

Operation, Maintenance, and Inspection. Long-term operational and maintenance activities under the Proposed Action would result in limited emissions of criteria air pollutants and precursors from the use of on-road vehicles on the levees for inspection and maintenance activities, mowing grasses on the levees, vegetation removal from channels, and possibly limited heavy earth-moving equipment for repair of any damage to the site. These emissions would be limited to a temporary time frame once or twice per year, and operations and maintenance activities would be essentially the same as those conducted under current conditions, as well as future conditions without the Proposed Action. Emissions resulting from long-term operational and maintenance activities would not exceed SMAQMD or *de minimis* thresholds.

Effects Analysis

No Action Alternative

Construction of the No Action Alternative would exceed the SMAQMD and BAAQMD daily emission thresholds for NO_x and PM₁₀ and would be a significant impact. Mitigation would be implemented to reduce dust emissions to less than significant. Although mitigation measures would be implemented to reduce NO_x for off-road equipment by 20 percent, construction-related emissions still would exceed SMAQMD's emission thresholds for NO_x. USACE would be required to pay an off-site mitigation fee for NO_x emissions in the SVAB, which would reduce the effect to a less-than-significant level. Borrow activities and barge delivery emissions would not exceed thresholds and would result in a less-than-significant impact. Borrow activities emissions associated with potential borrow sites located north of the project site were captured in the SMAQMD off-site soil estimations.

Annual construction emissions from the No Action Alternative would exceed the General Conformity threshold for NO_x in the Sacramento Federal Ozone Non-attainment Area (SFNA), resulting in a significant adverse effect. Implementing mitigation such as Enhance Exhaust Control Practices for off-road equipment and only using on-road heavy-duty diesel trucks or equipment that comply with USEPA 2010 on-road emission standards and using Tier 3 and 4 marine engines and electrical equipment, as feasible, would reduce annual construction emissions; however, emissions would remain above the *de minimis* threshold. Therefore, USACE would contribute to SMAQMD's off-site mitigation fee program sufficiently to offset the amount of emissions generated from project activities. With mitigation, this direct effect would be reduced to a less-than-significant level.

Construction activities would result in short-term diesel particulate (DPM) emissions from onsite heavy-duty equipment and trucks and could expose sensitive receptors to DPM generated during construction, therefore resulting in a potential adverse health effect. However, implementing mitigation measures would reduce DPM and associated health risks during construction to less than significant.

The project would not result in any major sources of odor.

Finally, long-term O&M activities would result in limited emissions of criteria pollutants from activities such as driving trucks on the levees for inspections and maintenance actions, mowing grasses on the levees, and possibly limited heavy earth-moving equipment for repair of any damage to the site. These O&M activities would be essentially the same as the activities that are

currently undertaken and would be continued. Therefore, impacts from long-term O&M activities would be less than significant.

Proposed Action Alternative

3.5-a, b Conflict with or Obstruct Implementation of the Applicable Air Quality Plan or 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 during Construction

CEQA Significance Conclusion: Significant and Unavoidable

NEPA Significance Conclusion: Significant and Unavoidable

American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, Magpie Creek Project, Sacramento River Mitigation, American River Mitigation

CEQA Impact Conclusion (Entire Proposed Action): Significant and Unavoidable

NEPA Impact Conclusion (Design Refinements): Significant and Unavoidable

Consistency with an air quality plan is determined based on whether the Proposed Action would conflict with or obstruct implementation of the Federal and State air quality plans, which would lead to increases in the frequency or severity of existing air quality violations. The Proposed Action is located within Sacramento County as part of the larger SFNA and is under the jurisdiction of SMAQMD. However, material associated with the Sacramento River Erosion Improvements would be hauled up the Sacramento River from areas within the SFBAAB, which is under the jurisdiction of the BAAQMD. Therefore, both SMAQMD and BAAQMD are responsible for establishing and enforcing air quality rules and regulations in the jurisdiction of the Proposed Action that address the requirements of Federal and State air quality laws.

The SFNA is designated a “severe” non-attainment area for the Federal 8-hour ozone standard. Additionally, Sacramento County is designated non-attainment for the state 24 hour and annual PM₁₀ standards (SMAQMD 2020). The SFBAAB is designated non-attainment for 8-hour ozone, 24-hour, annual PM₁₀, 24-hour, and annual PM_{2.5} (BAAQMD 2017).

By its nature, air pollution is largely a cumulative impact. No single project by itself is sufficient in size to result in non-attainment of ambient air quality standards. Instead, a project’s individual emissions contribute to existing cumulatively significant adverse air quality impacts by violating air districts rules and regulations, generate emissions over air district significance threshold, and emitting TACs. SMAQMD and BAAQMD have developed regional air quality thresholds as allowable project-level emissions limits to enable the region to attain and maintain ambient air quality standards. Therefore, for CEQA purposes, an air quality effect is significant if the project’s construction emissions would exceed SMAQMD and BAAQMD CEQA daily emission thresholds, as shown in Table 3.5-7 and 3.5-8.

Additionally, Federal projects are also subject to the CAA General Conformity Rule (40 CFR 51, Subpart W). The purpose of the General Conformity Rule is to ensure that Federal project conform to applicable State Implementation Plan (SIP) so that they do not interfere with strategies used to attain the NAAQS. The rule applies to Federal project in non-attainment areas for any of the six criteria pollutants for which EPA has established these standards, and in any areas designated as “maintenance” areas. Therefore, under NEPA, an air quality effect is significant if the project’s construction emissions exceed the General Conformity *de minimis* threshold, which is shown in Tables 3.5-9 and 3.5-10.

Construction activities for the project would temporarily generate emissions of criteria air pollutants including ROG, NO_x, PM₁₀, and PM_{2.5}. Emissions of the ozone precursors ROG and NO_x are generated primarily by on-road mobile sources (i.e., delivery vehicles, construction worker vehicles) and off-road construction equipment. Emissions of fugitive PM dust is generated by hauling along unpaved roads and ground disturbing activities such as excavation and grading. Movement of off-road construction equipment and work trucks on unpaved roads can also generate fugitive PM dust. Construction-related emissions of fugitive PM dust can vary greatly depending on the level of activity, the specific operations taking place, the number and types of equipment operated, vehicle speeds, local soil conditions, weather conditions, and the amount of earth disturbance. Criteria air pollutant emissions would be generated throughout construction activities in 4 calendar years.

Maximum daily and annual emissions are estimated for ROG, NO_x, PM₁₀, and PM_{2.5} to evaluate emissions compared to the SMAQMD’s threshold for on-road vehicles as well as off-road equipment operated within the Sacramento Valley Air Basin. These results are shown in Tables 3.5-3 and 3.5-4. Construction-related emissions would exceed the SMAQMD’s emission threshold in all 5 years of construction. NO_x would exceed the maximum daily threshold in 2024 through 2028, and annual threshold in 2024, 2026, and 2027. PM₁₀ would exceed the maximum daily thresholds in 2026 and 2027; however, it would not exceed the annual threshold, and PM_{2.5} would exceed the maximum daily threshold in 2027; however, it would not exceed the annual threshold. The actual emissions may be reduced depending on the availability of the borrow sites that are located closer to the Proposed Action, but the overall construction emissions under the Proposed Action would exceed the thresholds and result in a significant impact.

Maximum daily and annual emissions are estimated for ROG, NO_x, PM₁₀, and PM_{2.5} to evaluate emissions compared to BAAQMD thresholds from barge activities. These results are shown in Tables 3.5-5 and 3.5-6. Construction-related emissions would exceed the BAAQMD’s emission threshold in 2 out of 5 years of construction. NO_x thresholds would be exceeded in 2024 and 2026 and ROG thresholds would be exceeded in 2024.

Annual *de minimis* emissions are estimated for ROG, NO_x, PM₁₀, and PM_{2.5} and are shown in Tables 3.5-4 and 3.5-6 to evaluate the total ARCF project actions against Federal General Conformity standards. Construction-related emissions would exceed SVAB Federal General Conformity standards for NO_x in 2024, 2026, and 2027. The Proposed Action would not exceed SFNA Federal General Conformity standards.

The Proposed Action would emit NO_x, PM₁₀, and PM_{2.5}, at concentrations above applicable local thresholds of significance in at least one year during construction. Additionally, the Proposed Action would exceed SVAB Federal General Conformity standards in 3 years of construction. Therefore, this would be a significant impact. Implementing Mitigation Measures AIR-1, AIR-2,

AIR-3, AIR-4, and AIR-5, which have been modified since being previously adopted for the ARCF 2016 Project, have been identified to address these impacts.

Mitigation Measure AIR-1: Implement the Sacramento Metropolitan Air Quality Management District and Bay Area Air Quality Management District Basic Construction Emission Control Practices.

SMAQMD and BAAQMD requires that all projects, regardless of their significance, implement the following measures to minimize the generation of fugitive PM dust. The Basic Construction Emission Control Practices shall include measures to control fugitive PM dust pursuant to SMAQMD Rule 403, as well as measures to reduce construction-related exhaust emissions. USACE shall require its contractors to comply with the basic construction emission control practices listed below for all construction-related activities occurring in SMAQMD jurisdiction.

- Water all exposed surfaces two times daily or more, as needed. Exposed surfaces include but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover, or suitably wet soils and other materials on haul trucks transporting soil, sand, or other loose material on the site. Cover any haul trucks that travel along freeways or major roadways.
- Use wet power vacuum street sweepers to remove any visible track out mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speed on unpaved roads to 15 miles per hour.
- Complete pavement of all roadways, driveways, sidewalks, and parking lots to be paved as soon as possible.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (required by CCR, Title 13, Sections 2449[d][3] and 2485).
- Provide clear signage that posts this requirement for workers at the entrances to the construction sites.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. Have the equipment checked by a certified mechanic and determined to be running in proper condition before it is operated.

Timing: Before and during construction

Responsibility: Project Partners and construction contractor(s)

Mitigation Measure AIR-2: Implement the Sacramento Metropolitan Air Quality Management District's Enhanced Fugitive PM Dust Control Practices.

SMAQMD recommends that construction projects that will exceed or contribute to the mass emissions threshold for PM₁₀ implement the Enhanced Fugitive PM Dust Control Practices, as applicable to the project. As the construction activities for the Proposed Action will involve substantial material movement activities and will be located in proximity of residential receptors, the Project Partners shall require construction contractors to implement the Enhanced Fugitive PM Dust Control Practices listed below to help reduce potential fugitive PM dust emissions.

Soil Disturbance Areas

- Water exposed soil with adequate frequency for continued moist soil; however, do not overwater to the extent that sediment flows off the site.
- Suspend excavation, grading, and/or demolition activity when wind speeds exceed 20 miles per hour.
- Plant vegetative ground cover (fast germinating native grass seed) in disturbed areas as soon as possible and water appropriately until vegetation is established.

Unpaved Roads (Entrained Road Dust)

- Install wheel washers for all exiting trucks or wash off all trucks and equipment leaving the site.
- Treat site accesses with a 6- to 12-inch layer of wood chips, mulch, or gravel to a distance of 100 feet from the paved road to reduce generation of road dust and road dust carryout onto public roads.
- Post a publicly visible sign with the telephone number and person to contact at USACE regarding dust complaints. This person will respond and take corrective action within 48 hours. The phone number of SMAQMD also will be visible to ensure compliance.

Timing: Before and during construction

Responsibility: Project Partners and construction contractor(s)

Mitigation Measure AIR-3: Implement SMAQMD's Enhanced Exhaust Control Practices and Require Lower Exhaust Emissions for Construction Equipment.

The Project Partners shall require all off-road diesel-powered equipment used during construction to be zero-emission if reasonably available. If not reasonably available, all off-road equipment shall be equipped with Tier 4 Final or cleaner engines, except for specialized construction equipment in which Tier 4 Final engines are not available. In place of Tier 4 Final engines, off-road equipment can incorporate retrofits such that emissions reductions achieved equal or exceed that of a Tier 4 Final engine. All heavy-

duty trucks entering the construction sites must be zero-emission if reasonably available. If not reasonably available, on-road heavy duty trucks must be model year 2014 or later and must meet CARB's lowest optional low-NOx standard. Diesel equipment will be required to use renewable diesel fuel, to demonstrate compliance with this requirement:

- The construction contractor shall submit to USACE and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, which will be used an aggregate of 8 or more hours during any portion of the construction project.
- The inventory shall include the horsepower rating, engine model year, and projected hours of use for each piece of equipment, and the CARB equipment identification number for each piece of equipment. This will include all owned, leased, and subcontracted equipment to be used. The construction contractor shall provide the anticipated construction timeline including start date, and the name and phone numbers of the project manager and the on-site foreman. This information shall be submitted at least 4 business days prior to the use of subject heavy-duty off-road equipment. The SMAQMD Construction Mitigation Tool can be used to submit this information. The inventory shall be updated and submitted monthly throughout the duration of the project, or as pre-arranged with SMAQMD, except for any 30-day period in which no construction activity occurs. If no construction occurs for any 30-day period, a notification will be sent to SMAQMD stating that no construction occurred.
- The construction contractor shall provide a plan for approval by USACE and SMAQMD demonstrating that the heavy-duty off-road vehicles (50 horsepower or more) to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve Tier 4 emissions. This plan shall be submitted in conjunction with the equipment inventory. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.
- SMAQMD's Construction Mitigation Tool can be used to identify an equipment fleet that achieves this reduction. The construction contractor shall ensure that emissions from all off-road diesel-powered equipment used in the project area do not exceed 40 percent opacity for more than 3 minutes in any 1 hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. Non-compliant equipment will be documented, and a summary provided monthly to USACE and SMAQMD. A visual survey of all in-operation equipment shall be made at least weekly. A monthly summary of the visual survey results shall be submitted throughout the duration of the project, except for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed, as well as the dates of each survey.
- Use the Construction Mitigation Tool to track PM₁₀ emissions and mileage traveled by on-road trucks, reporting results to USACE and SMAQMD on a monthly basis.

Timing: Before and during construction

Responsibility: Project Partners and construction contractor(s)

Mitigation Measure AIR-4: Use the Air District's Off-site Mitigation Fee to Reduce NO_x and PM₁₀ Emissions.

The Project Partners shall implement the measures listed below to reduce NO_x and PM₁₀ construction-related emissions.

Pursuant to air district thresholds of significance, if the projected construction-related emissions exceed the NO_x and/or PM₁₀ thresholds of significance, based on the equipment inventory and use, USACE shall contribute to SMAQMD's and/or BAAQMD's off-site mitigation fee program sufficiently to offset the amount by which the project's NO_x and PM₁₀ emissions exceed the threshold. If emissions for the ARCF 2016 Project in any given year will exceed the *de minimis* threshold of 25 tons per year for NO_x, USACE will enter into an agreement with SMAQMD and/or BAAQMD to purchase offsets for all NO_x emissions in any year that projected emissions will exceed the threshold. The determination of the estimated mitigation fees shall be conducted in coordination with SMAQMD and/or BAAQMD before any ground disturbance occurs for any phase of project construction. (USACE anticipates purchasing offsets for NO_x emissions in 2024 through 2026, because the ARCF 2016 Project is forecast to exceed the *de minimis* threshold. Estimated fees for the Proposed Action are \$37,350 annually to SMAQMD for emissions in the SVAB.) All mitigation fees shall be paid prior to the start of construction activity to allow air districts to obtain emissions reductions for the proposed project. If there are changes to construction activities (e.g., equipment lists, increased equipment usage or schedules), USACE shall work with SMAQMD and BAAQMD to ensure emission calculations and fees are adjusted appropriately.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure AIR-5: Implement Marine Engine Standards

Project Partners shall require use of Tier 4 marine engines where locally available and feasible. Due to uncertainty as to the availability of Tier 4 marine engines within the required project timeline, the lowest emission marine engines locally available shall be required, either Tier 3 or Tier 2. The Tier 3 standards reflect the application of technologies to reduce engine PM and NO_x emission rates. Tier 4 standards reflect application of high-efficiency catalytic after-treatment technology enabled by the availability of ultra-low sulfur diesel.

Timing: Before and during construction

Responsibility: Project Partners

Implementation of Mitigation Measures AIR-1 to AIR-5 would require establishment of BMPs and other on-site controls, including use of Tier 4 equipment for off-road equipment and higher-tier marine engines, to reduce NO_x and PM emissions at the project site to the extent possible. USACE would pay a mitigation fee to offset remaining emissions. Mitigation Measure AIR-4 would further reduce this impact to a less-than-significant level by paying a fee to reduce NO_x and PM emissions at off-site sources. As a result, the project would continue to generate maximum daily PM emissions that exceed SMAQMD thresholds of significance in 2026, 2025, and 2027. There are no other feasible mitigation measures available, or additional mitigation measures approved by the SMAQMD, that can be implemented to further reduce this significant adverse impact related to PM₁₀ emissions generated at the project site during construction. Therefore, these impacts would be significant and unavoidable.

3.5-c Expose Sensitive Receptors to Substantial Pollutant Concentrations.

CEQA Significance Conclusion: Less than Significant

NEPA Significance Conclusion: Short-term and Minor effects that are Less than Significant

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, Magpie Creek Project, Sacramento River Mitigation Site, American River Mitigation Site

CEQA Impact Conclusion (Design Refinements): Less than Significant

NEPA Impact Conclusion (Entire Proposed Action): Short-term and Minor effects that are Less than Significant.

Diesel PM, which is classified as a carcinogenic TAC by CARB, is the primary pollutant of concern regarding indirect health risks to sensitive receptors. Nearby land uses, especially residences and schools downwind of the project sites, could be exposed to diesel PM during construction activities, resulting in potential adverse health effects.

The assessment of health risks associated with exposure to diesel exhaust typically is associated with chronic exposure, in which a 30- or 70-year exposure period is often assumed. However, while cancer can result from exposure periods of less than 30 or 70 years, short-term exposure periods (i.e., exposure periods of 2 to 3 years) to diesel exhaust are not anticipated to result in increased health risk, as health risks associated with exposure to diesel exhaust are typically seen in exposure periods that are chronic (OEHHA 2015).

Construction of the Proposed Action would result in short-term emissions of TACs, primarily diesel particulate (DPM) emissions from on-site heavy-duty equipment and on-road haul trucks, as shown in Table 3.5-11. Construction activities associated with the ARCF 2016 Project, which includes the Proposed Action would continue for up to 4 years. As shown in Table 3.5-11 construction-generated exhaust emissions of PM₁₀, which includes DPM, would not exceed SMAQMD's mass daily threshold of 82 lbs/day for specific project components. California Air Resources Board (CARB) *Specification Profiles Used in CARB Modeling* indicates that DPM exhaust consists of 92 percent PM_{2.5} and 100 percent PM₁₀ (PM_{2.5} is a subset of PM₁₀) (CARB 2024). Therefore, utilizing the PM₁₀ exhaust emissions reported by CalEEMod is appropriate for

analyzing potential health risk impacts from DPM. Table 3.5-11 does not include PM₁₀ emissions associated with the Sacramento River Erosion Contract 3 component due to modeling limitations; however, given that the PM₁₀ exhaust emissions are far below significance thresholds, exhaust emissions generated during construction activities would be below local significance thresholds. The exhaust component of the PM₁₀ is a very small portion of this total PM₁₀ emissions.

Construction of the Proposed Action would not occur over a prolonged period in any one specific location, minimizing exposure from diesel PM at any one receptor. Additionally, as required by 13 CCR Section 2449(d)(3), no in-use off-road diesel vehicles may idle for more than 5 consecutive minutes.

Nevertheless, a Health Risk Assessment (HRA) has been completed for the American River Erosion Contract 3B North and South project component due to the staging and hauling activities proposed in proximity to O.W. Erlewine Elementary School. The HRA identified a maximum risk exposure (defined in terms of additional cancer cases in a population of 1 million) of 6.06. The estimated risk presented here represents the point of maximum exposure (PMI) and does not exceed the SMAQMD-adopted thresholds of significance of an incremental cancer risk of 10 in one million. For chronic hazard risk, the maximum risk exposure would be 0.09, compared to a threshold of 1 in one million. Therefore, values would not exceed the applicable threshold at any other nearby receptors. Thus, no sensitive receptor would be exposed to substantial TAC concentrations. Because these values do not exceed 10 in 1 million, exposure of sensitive receptors to TACs would not be a significant impact.

Therefore, the Proposed Action would have a less-than-significant impact associated with exposure of sensitive receptors to TACs.

Table 3.5-11. PM_{2.5} Emissions by Construction Year

| Construction Year | Unmitigated total PM ₁₀ generated – exhaust and dust (lbs/day) | Unmitigated PM ₁₀ – exhaust only (lbs/day) | Mitigated total PM ₁₀ generated – exhaust and dust (lbs/day) | Mitigated PM ₁₀ – exhaust only (lbs/day) |
|--|---|---|---|---|
| 2024 | | | | |
| Sacramento Weir Widening | 205.75 | - | 202.40 | - |
| Sacramento River Erosion Contract 2 | 53.47 | - | 52.77 | - |
| Sacramento River Erosion Contract 4 | 86.25 | - | 74.61 | - |
| Total | 345.47 | - | 329.78 | - |
| 2025 | | | | |
| Sacramento Weir Widening | 224.57 | - | 221.86 | - |
| Total | 224.57 | - | 221.86 | - |
| 2026 | | | | |
| American River Contract 3B North and South, and Contract 4B | 76.80 | 12.16 | 49.40 | 4.29 |
| Sacramento River Erosion Contract 3 (not including Barge emissions) ³ | 1.81 | 1.71 | 0.28 | 0.18 |
| ARMS | 14.20 | 1.05 | 9.44 | 0.50 |
| SRMS | 45.60 | 2.41 | 30.00 | 1.00 |
| Total | 138.41 | 17.33 | 89.12 | 5.97 |

| Construction Year | Unmitigated total PM ₁₀ generated – exhaust and dust (lbs/day) | Unmitigated PM ₁₀ – exhaust only (lbs/day) | Mitigated total PM ₁₀ generated – exhaust and dust (lbs/day) | Mitigated PM ₁₀ – exhaust only (lbs/day) |
|--|---|---|---|---|
| 2027 | | | | |
| American River Contract 3B North and South, and Contract 4B | 74.40 | 7.87 | 38.50 | 2.26 |
| Sacramento River Erosion Contract 3 (not including Barge emissions) ³ | 2.06 | 1.16 | 0.61 | 0.19 |
| ARMS | 3.01 | 0.56 | 2.55 | 0.19 |
| SRMS | 20.90 | 1.56 | 11.70 | 0.48 |
| American River Contract 4A Erosion Improvements | 562 | 2.13 | 559 | 1.49 |
| Total | 662.37 | 13.28 | 612.36 | 4.61 |
| 2028 | | | | |
| Magpie Creek Project (MCP) | 23.00 | 6.26 | 18.90 | 3.19 |
| Lower American River Contract 3A | 47 | - | - | - |
| Total | 70 | - | - | - |

Notes:

¹ Mitigated exhaust emissions are unknown.

² Unmitigated and mitigated exhaust emissions are unknown.

³ The HarborCraft calculator used to calculate barge emissions does not break out PM_{2.5} by dust and exhaust emissions, therefore, the barge exhaust emissions are not captured in the "exhaust only" columns.

3.5-d Result in Other Emissions (Such as Those Leading to Odors) Adversely Affecting a Substantial Number of People.

CEQA Significance Conclusion: Less than Significant

NEPA Significance Conclusion: Short-term and Negligible effects that are Less than Significant

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, Magpie Creek Project, Sacramento River Mitigation Site, American River Mitigation Site

CEQA Impact Conclusion (Design Refinements): Less than Significant.

NEPA Impact Conclusion (Entire Proposed Action): Short-term and Negligible effects and Long-term and minor effects that are Less than Significant.

During construction, the project would generate odor from the use of diesel fuels over the 4-year construction period. However, the project would not generate a considerable amount of other emissions that would adversely affect a substantial number of people. This impact would be less than significant.

The California Environmental Protection Agencies, Air Resources board, Asbestos Airborne Toxic Control Measures for Surfacing Applications (ATCM) has exempted rip rap for the use of

restricted asbestos containing materials (CalEPA Air Resources Board 2002). According to the most current regulations, the use of restricted material for riprap along waterways for erosion prevention and stabilization should not result in significant asbestos exposures because according to ATCM there would be no vehicular traffic and very little pedestrian access to these surfaces (CalEPA Air Resources Board 2002). However, the current rock quality Specification requirements for American River Erosion Contract 3B prohibit use of undesirable rocks for revetment with low density and detrimental veins, which are common in with high concentration asbestos containing rocks. Consequently, there is a low risk of revetment being brought to the site with high concentrations of asbestos. There would be a less than significant impact (long-term and minor) related to naturally occurring asbestos.

Alternatives Comparison

Alternative 3a

Alternatives 3a would change the location and type of improvements for the American River Contract 4A project component. All other project components (American River 3B, Sacramento River, Magpie Creek Project, Sacramento River Mitigation, and American River Mitigation) would be unchanged. It is anticipated that the material and equipment needed for Alternative 3a would be significantly lower than the Proposed Action because this alternative would not require any bike trail reroutes and would only include construction of the landside berm. However, even with reduced air quality emissions from the American River Contract 4A project component, emissions generated in conjunction with other project components would remain over applicable thresholds. Therefore, this alternative would not change any of the air quality related construction impacts.

Table 3.5-12. Alternative 3a Effects on Air Quality

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------------------|--|--|--|---|
| 3.5-a,b: Result in a Cumulatively Considerable Net Increase of Any Criteria Area Pollutant Leading to a Conflict with Applicable Air Quality Plans During Construction Activities | American River Erosion Contract 4A | Consistent with Proposed Action. A slight reduction in emissions due to less materials and equipment usage; however, it is assumed that overall air emissions would not change from the Proposed Action. | AIR -1 AIR-2 AIR-3 AIR-4 AIR-5 | Significant and Unavoidable | Significant and Unavoidable |
| 3.5-c: Expose Sensitive Receptors to Substantial Pollutant Concentrations | American River Erosion Contract 4A | Consistent with Proposed Action. A slight reduction in emissions due to less materials and equipment usage; however, it is assumed that overall air emissions would not change from the Proposed Action. | N/A | Less than Significant | Short-term and Minor Effects that are Less than Significant |
| 3.5-d: Result in Other Emissions (Such as Those Leading to Odors) Adversely Affecting a Substantial Number of People | American River Erosion Contract 4A | Consistent with Proposed Action. A slight reduction in emissions due to less materials and equipment usage; however, it is assumed that overall air emissions would not change from the Proposed Action. | N/A | Short-term and Negligible Effects that are Less than Significant | Less than Significant |

Alternative 3b, 3c, 3d

Alternatives 3b, 3c, and 3d would change the location and type of improvements for the American River Contract 4A project component. All other project components (American River 3B, Sacramento River, Magpie Creek Project, Sacramento River Mitigation, and American River Mitigation) would be unchanged. It is anticipated that the material and equipment needed as well as construction activities for these alternatives would be similar to the Proposed Action. Therefore, these alternatives would not change any of the air quality related construction impacts.

Table: 3.5-13: Alternatives 3b, c, and d Effects on Air Quality

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------------------|--|--|------------------------------|--|
| 3.5-a: Result in a Cumulatively Considerable Net Increase of Any Criteria Area Pollutant Leading to a Conflict with Applicable Air Quality Plans During Construction Activities | American River Erosion Contract 4A | Consistent with Proposed Action. A slight reduction in emissions due to less materials and equipment usage; however, it is assumed that overall air emissions would not change from the Proposed Action. | AIR -1 AIR-2 AIR-3 AIR-4 AIR-5 | Significant and Unavoidable | Significant and Unavoidable |
| 3.5-c: Expose Sensitive Receptors to Substantial Pollutant Concentrations | American River Erosion Contract 4A | Consistent with Proposed Action. A slight reduction in emissions due to less materials and equipment usage; however, it is assumed that overall air emissions would not change from the Proposed Action. | N/A | Less than Significant | Short-term and Minor Effects that are Less than Significant |
| 3.5-d: Result in Other Emissions (Such as Those Leading to Odors) Adversely Affecting a Substantial Number of People | American River Erosion Contract 4A | Consistent with Proposed Action. A slight reduction in emissions due to less materials and equipment usage; however, it is assumed that overall air emissions would not change from the Proposed Action. | N/A | Less than Significant | Short-term and Negligible Effects that are Less than Significant |

Alternatives 4a and 4b (CEQA-Only)

Alternatives 4a and 4b include an alternative design for improvements to the American River Mitigation project component. All other project components (Magpie Creek, American River 3B, American River 4A, Sacramento River, and Sacramento River Mitigation) would remain unchanged. Alternatives 4a and 4b would retain a portion of the existing pond on the Urrutia site, therefore reducing the need for fill materials, construction-related transportation, and construction equipment usage. Alternative 4a and 4b would result in a decrease in the generation of criteria air pollutants and toxic air contaminants due to the preservation of a portion of the on-site pond and a reduction in material import. However, the combined criteria air pollutants generated during the years in which the American River Mitigation project component would be constructed (2026 and 2027) would remain above the SMAQMD threshold. Therefore, these alternatives would not change any of the construction impacts associated with air quality compared to the Proposed Action.

Table 3.5-14: Alternatives 4a and 4b (CEQA Only) Effects on Air Quality

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion |
|---|----------|--|--|--|
| 3.5-a,b: Result in a Cumulatively Considerable Net Increase of Any Criteria Area Pollutant Leading to a Conflict with Applicable Air Quality Plans During Construction Activities | ARMS | Consistent with Proposed Action. A slight reduction in emissions due to less materials and equipment usage; however, it is assumed that overall air emissions would not change from the Proposed Action. | AIR -1 AIR-2 AIR-3 AIR-4 AIR-5 | Significant and Unavoidable |
| 3.5-c: Expose Sensitive Receptors to Substantial Pollutant Concentrations | ARMS | Consistent with Proposed Action. A slight reduction in emissions due to less materials and equipment usage; however, it is assumed that overall air emissions would not change from the Proposed Action. | N/A | Less than Significant |
| 3.5-d: Result in Other Emissions (Such as Those Leading to Odors) Adversely Affecting a Substantial Number of People | ARMS | Consistent with Proposed Action. A slight reduction in emissions due to less materials and equipment usage; however, it is assumed that overall air emissions would not change from the Proposed Action. | N/A | Short-term and Negligible Effects that are Less than Significant |

Alternatives 5a (Conservation Bank Credits) and 5c (Sunset Pumps)

Alternatives 5a and 5c would eliminate the need to construct the Sacramento River Mitigation project component and proposes alternative mitigation fulfillment. All other project components (Magpie Creek Project, American River 3B, American River 4A, Sacramento River, and Sacramento River Mitigation) would remain unchanged. Alternative 5a includes purchasing all remaining, required mitigation credits from USFWS- Approved Conservation Banks.

Alternative 5c combines three approaches to complete the Sacramento River Mitigation requirements including 1) Purchasing Delta smelt credits from an approved conservation bank 2) Funding a NMFS recovery plan project (Sunset Pumps) to remove a weir, allowing fish passage to benefit chinook steelhead and green sturgeon and 3) Funding the improvements at Sunset Pumps would increase water availability, which would then be directed to two local wildlife refuges, benefiting the Western Yellow Billed Cuckoo. The Sunset Pumps project is listed as high priority BOR, DWR, and USFWS, and is subject to separate NEPA/CEQA analysis prior to implementation. All activities related to 5c involve funding another project, therefore no additional impacts to air quality would result from this alternative.

Table 3.5-15. Alternative 5a and 5c Effects on Air Quality

| Impact Number and Title | Location | Discussion | Mitigation Measure | Significance Conclusion | NEPA Effects Determination |
|--|----------|---|--------------------|-------------------------|----------------------------|
| 3.5-a,b: Conflict with Applicable Air Quality Plans During Construction Activities | SRMS | Less than the Proposed Action. Alternatives 5a and 5c would eliminate the need to construct the SRMS; therefore, there would be no impact to air quality. | N/A | No Impact | No Impact |
| 3.5-c: Expose Sensitive Receptors to Substantial Pollutant Concentrations | SRMS | Less than the Proposed Action. Alternatives 5a and 5c would eliminate the need to construct the SRMS; therefore, there would be no impact to sensitive receptors. | N/A | No Impact | No Impact |
| 3.5-d: Result in Other Emissions (Such as Those Leading to Odors) Adversely Affecting a Substantial Number of People | SRMS | Less than the Proposed Action. Alternatives 5a and 5c would eliminate the need to construct the SRMS; therefore, there no other emissions would be generated. | N/A | No Impact | No Impact |

Alternative 5b (Watermark Farms)

Alternative 5b would replace the Sacramento River Mitigation project component with the new Watermark Farms Mitigation Site. All other project components (Magpie Creek Project, American River 3B, American River 4A, Sacramento River, and Sacramento River Mitigation) would remain unchanged. It is anticipated that the material and equipment needed as well as construction activities for this alternative would be substantially greater than the Proposed Action, due to the need to construct a new levee. Therefore, this alternative would increase the amount of criteria air pollutants; however, the impact conclusion would remain consistent with the Proposed Action.

Table 3.5-16 Alternative 5b Effects on Air Quality

| Impact Number and Title | Location | Discussion | Mitigation Measure | Significance Conclusion | NEPA Effects Determination |
|--|-----------------|--|---|--------------------------------|--|
| 3.5-a,b: Conflict with Applicable Air Quality Plans During Construction Activities | SRMS | Consistent with the Proposed Action. Alternative 5b would require a new levee be constructed at the Watermark Farms Mitigation site that would increase the amount of criteria air pollutants; however, the impact would remain consistent with the Proposed Action. | AIR-1 AIR-2 AIR-3 AIR-4 AIR-5 | Significant and Unavoidable | Significant and Unavoidable |
| 3.5-c: Expose Sensitive Receptors to Substantial Pollutant Concentrations | SRMS | Consistent with the Proposed Action. Alternative 5b would require a new levee be constructed at the Watermark Farms Mitigation site that would increase the amount of criteria air pollutants; however, the impact would remain consistent with the Proposed Action. | N/A | Less than Significant | Short-term and Minor Effects that are Less than Significant |
| 3.5-d: Result in Other Emissions (Such as Those Leading to Odors) Adversely Affecting a Substantial Number of People | SRMS | Consistent with the Proposed Action. Alternative 5b would require a new levee be constructed at the Watermark Farms Mitigation site that would increase the amount of criteria air pollutants; however, the impact would remain consistent with the Proposed Action. | N/A | Less than Significant | Short-term and Negligible Effects that are Less than Significant |

3.6 Greenhouse Gas Emissions and Energy Consumption

This section assesses the Proposed Action's greenhouse gas (GHG) emissions, energy consumption, and incorporates changing conditions related to variable long-term weather conditions. This section has been prepared in accordance with the Interim NEPA Guidance on Consideration of Greenhouse Gas Emissions promulgated by the Council on Environmental Quality (CEQ) in 2023 (CEQ-2022-0005) CEQ 2023). GHG emissions have the potential to adversely affect the environment because such emissions contribute on a cumulative basis, to global long-term weather conditions. This section discusses existing sources of GHG emissions, electrical use and generation, applicable regulations, and potential impacts of the Proposed Action related to GHG emissions, and energy consumption. There are no Federal GHG thresholds. The thresholds in this document were deferred to the State of California air boards' existing thresholds for CEQA assessment purposes.

3.6.1 Existing Conditions/Affected Environment

The existing conditions and affected environment related to GHG and energy consumption are consistent with the ARCF GRR Final EIS/EIR. The majority of the Proposed Action is in Sacramento County, which places the project primarily under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). However, materials that are associated with the Sacramento River Erosion Contract 3 are likely to be transported from within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD).

Greenhouse Gas Inventory

The Sacramento County Climate Action Plan (CAP) (State of California, California Environmental Quality Act [CEQA-only]) includes an emissions inventory, which reflects a snapshot of the major sources of emissions in a single year and provides a baseline from which emissions trends are projected. The baseline year of 2015 was selected based on data available at the time the CAP was prepared. Additionally, the CAP includes forecasted GHG emissions, which provide an estimated reduction in future GHG levels as shown in Table 3.6-1 (Sacramento County 2022).

Table 3.6-1. Comparison of the Sacramento County Community GHG Emissions Inventory for 2015 and Legislative-Adjusted Business as Usual Forecast

| Sector | 2015 GHG Emissions (MT CO _{2e} /year) | 2030 Forecast |
|--------------------|--|------------------|
| Residential Energy | 1,086,580 | 493,311 |
| Commercial Energy | 843,168 | 300,450 |
| On-Road Vehicles | 1,695,127 | 1,463,349 |
| Off-Road Vehicles | 195,769 | 253,857 |
| Solid Waste | 352,909 | 280,694 |
| Agriculture | 254,899 | 251,102 |
| High-GWP Gases | 251,085 | 245,175 |
| Wastewater | 27,253 | 19,248 |
| Water-Related | 15,222 | 2,526 |
| Total | 4,723,011 | 3,309,712 |

Flood-related Hazards, Trends, and Impacts

A general summary of flood-related risks facing the Sacramento Valley Region include warming air and water temperatures, more extreme heatwaves, drier landscapes, less snow, variable precipitation and seasonal shifts, more intense droughts and floods with less predictability, higher Delta water levels compounded by subsidence, increased risk of wildfire, and loss of ecosystem habitat. GHG-driven disruptions are resulting in human health, economic and environmental damages, altering patterns of human migration, harming public health, compromising national security, and harming business and industry (Houlton, Benjamin, Jay Lund 2018).

California precipitation is highly irregular and growing more so, often with relatively long duration between storms (Dettinger et al. 2011). As a result, large, discrete storms provide a substantial fraction of California's rainy season total precipitation. Many of California's largest storms are atmospheric rivers, which can carry more water than seven to 15 Mississippi Rivers combined (Ralph & Dettinger 2011). These storms may result in heavy rainfall over a narrow area or short time frame (Gimeno et al. 2014). Additionally, many of California's most damaging events are considered compound flood events. Compound floods are those that occur when more than one flood-producing mechanism occur simultaneously such as large precipitation events, power outages, levee or dam failure, etc. The impacts from compound floods are significantly higher than that of the impact of any one compound alone, and the infrastructure damage caused is usually significantly more than the sum of the individual parts.

Historically, much of California's precipitation falls as winter snow, which melts slowly throughout the spring and provides a prolonged period of runoff throughout spring and early summer. However, as the frequency and intensity of heavy precipitation events (i.e., atmospheric rivers) have increased since the 1950s over most land area, and warmer, earlier springs have become more frequent, this pattern is shifting. Increasing periods of precipitation are likely to lead to more flooding throughout California. Additionally, projections show that the wet season will be shortened, which will result in a compressed period during which the increased precipitation will fall. The Sacramento Valley Region largest winter storms will potentially become more intense and likely more damaging (Swain et al. 2018.)

Electricity Use and Generation

The Sacramento Municipal Utility District (SMUD) is the primary electricity provider in Sacramento County. Pacific Gas and Electric Company (PG&E) provides natural gas service.

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. One-third of energy commodities consumed in California is natural gas. In 2021, natural gas accounted for approximately 38 percent of California's power mix. Large hydroelectric powered approximately 9 percent of electricity and renewable energy from solar, wind, small hydroelectric, geothermal, and biomass combustion totaled 34 percent (CEC 2022).

In 2021, SMUD provided its customers with 29.6 percent eligible renewable energy (i.e., biomass combustion, geothermal, small scale hydroelectric, solar, and wind) and 17.7 percent and 51.4 percent from large scale hydroelectric and natural gas, respectively (SMUD 2021). The proportion of SMUD-delivered electricity generated from eligible renewable energy sources is anticipated to increase over the next three decades to comply with the Senate Bill (SB) 100 goals, as described in the section below.

3.6.2 Applicable Laws, Regulations, Policies, and Plans

Federal

Federal Clean Air Act

EPA is the Federal agency responsible for implementing the Federal Clean Air Act (CAA). On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that GHGs are air pollutants covered by the CAA and that EPA has the authority to regulate GHGs. The court held that the EPA Administrator must determine whether GHG emissions from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

Energy Policy and Conservation Act and Corporate Average Fuel Economy Standards

The Energy Policy and Conservation Act of 1975 established nationwide fuel economy standards to conserve oil. Pursuant to this Act, the National Highway Traffic Safety Administration (NHTSA), part of the U.S. Department of Transportation (DOT), is responsible for revising existing fuel economy standards and establishing new vehicle economy standards.

Under the Energy Independence and Security Act of 2007 (described below), the Corporate Average Fuel Economy (CAFE) standards were revised for the first time in 30 years then later updated in 2012 and 2019.

Greenhouse Gas Findings under the Clean Air Act

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- **Endangerment finding:** The EPA Administrator found that the current and projected concentrations of the six key well-mixed GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or contribute finding:** The EPA Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution, which threatens public health and welfare.

Energy Policy Act of 1992 and 2005

The Energy Policy Act of 1992 (EPAct) was enacted to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan

areas. EPCA requires certain Federal, State, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are also included in EPCA. Federal tax deductions are allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs. The Energy Policy Act of 2005 provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a Federal purchase requirement for renewable energy.

National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions

Consistent with section 102(2)(C) of NEPA, Federal agencies must disclose and consider the reasonably foreseeable effects of their proposed actions including the extent to which a proposed action and its reasonable alternatives, including the no action alternative would result in reasonably foreseeable GHG emissions. NEPA established CEQ within the Executive Office of the President to ensure that Federal agencies meet their obligations under NEPA. CEQ oversees NEPA implementation, principally through issuing guidance and interpreting regulations that implement NEPA's procedural requirements. CEQ updated their guidance to help Federal agencies better assess and disclose climate impacts as they conduct environmental reviews.

This guidance is intended to assist agencies in disclosing and considering the effects of GHG emissions. This guidance does not establish any particular quantity of GHG emissions as “significantly” affecting the quality of the human environment. However, quantifying a proposed action's reasonably foreseeable GHG emissions whenever possible, and placing those emissions in appropriate context are important components of analyzing a proposed action's reasonably foreseeable long-term, variable weather condition effects.

Federal agencies should take the following steps when analyzing a proposed action's GHG effects under NEPA:

1. Quantify the reasonably foreseeable direct and indirect GHG emissions of a proposed action, the no action alternative, and any reasonable alternatives as discussed.
2. Analyze reasonable alternatives, including those that would reduce GHG emissions relative to baseline conditions, and identify available mitigation measures to avoid, minimize, or compensate for effects of changing long-term weather conditions.

State

With the passage of legislation, including Senate Bills (SBs), Assembly Bills (ABs), and executive orders, California launched an innovative and proactive approach to dealing with GHG emissions and climate change at the State level.

Senate Bill 100

Senate Bill 100, which is officially titled “The 100 Percent Clean Energy Act of 2018,” requires the public utilities commission to establish a renewables portfolio standard, under the California Renewables Portfolio Standard Program, that requiring all retail sellers to procure a minimum

quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours (KWH) of those products sold to their retail end-use customers achieve 25 percent of retail sales by December 31, 2016, 33 percent by December 31, 2020, 40 percent by December 31, 2024, 45 percent by December 31, 2027, and 50 percent by December 31, 2030.

Assembly Bill 1493

AB 1493 requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emission standards were designed to apply to automobiles and light trucks beginning with model year 2009. In 2009, the EPA Administrator granted a CAA waiver of preemption to California. This waiver allowed California to implement its own GHG emissions standards for motor vehicles beginning with model year 2009. California agencies worked with Federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger car model years 2017–2025.

Executive Order S-3-05

The goal of Executive Order S-3-05, signed in 2005 by Governor Arnold Schwarzenegger, is to reduce California's GHG emissions to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of AB 32.

Executive Order B-30-15

In April of 2015, Governor Brown signed Executive Order B-30-15 which established a new interim GHG reduction target of 40 percent below 1990 levels by 2030 to ensure California meets the target of reducing GHG emissions to 80 percent below 1990 levels by 2050.

Assembly Bill 32

AB 32, the California Global Warming Solutions Act of 2006, was signed in September 2006. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on Statewide GHG emissions. It requires that Statewide GHG emissions be reduced to 1990 levels by 2020. In December 2008, CARB adopted its *Climate Change Scoping Plan* (Scoping Plan) (State of California, CEQA only) (CARB 2008), which contains the main strategies California will implement to achieve the required GHG reductions required by AB 32. The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of the State's GHG inventory. CARB further acknowledges that decisions about how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors.

CARB is required to update the Scoping Plan at least once every 5 years to evaluate progress and develop future inventories that may guide this process. CARB has updated the Scoping Plan three times since it was first adopted in December 2008. The latest update was published in November 2022.

Executive Order S-01-07

Governor Schwarzenegger set forth the low carbon fuel standard for California; under Executive Order S-01-07, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Senate Bill 97 (Chapter 185, 2007)

SB 97, signed in August 2007, acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 required the Governor's Office of Planning and Research to develop recommended amendments to the State CEQA Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Executive Order S-13-2008

Executive Order S-13-08 required the National Academy of Sciences to complete a California Sea Level Rise Assessment Report. The Executive Order also dictates that the California Ocean Protection Council shall work with DWR, the California Energy Commission, California's coastal management agencies, and SWRCB to conduct a review of the Assessment Report every 2 years or as necessary. California adopted its 2009 Climate Adaptation Strategy (CNRA 2009) in response to this Executive Order, which is used to prepare, plan, and respond to future detrimental climate effects.

Local

CARB's Scoping Plan states that local governments are "essential partners" in the effort to reduce GHG emissions (CARB 2022). It also acknowledges that local governments have broad influence and, in some cases, exclusive jurisdiction over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Many of the proposed measures to reduce GHG emissions rely on local government actions.

Sacramento Metropolitan Air Quality Management District

SMAQMD provides guidance to lead agencies for conducting GHG analyses under CEQA and is currently in the process of updating their guidance and thresholds of significance for GHG emissions. In February 2021, SMAQMD adopted the final version of the *Greenhouse Gas Thresholds for Sacramento County* guidance document. The final guidance document provides recommendations for thresholds that can be applied to construction and operational activities and provides a tailored approach for land use development projects. However, the Proposed Project does not fit the criterion of being a land use development project; therefore, the construction thresholds of significance identified by SMAQMD, 1,100 MT of CO₂e per year, would be applied in this analysis (SMAQMD 2021).

Sacramento County General Plan of 2005 to 2030, Air Quality and Energy Elements

GOAL: Improve air quality to promote the public health, safety, welfare, and environmental quality of the community.

Multidisciplinary Coordination Objective: The integration of air quality planning with land use, transportation and energy planning processes to provide a safe and healthy environment.

- **Policy AQ-4:** Developments which meet or exceed thresholds of significance for ozone precursor pollutants, and/or GHG as adopted by the Sacramento Metropolitan Air Quality Management District (SMAQMD), shall be deemed to have a significant environmental impact. An Air Quality Mitigation Plan and/or a Greenhouse Gas Reduction Plan shall be submitted to the County of Sacramento prior to project approval, subject to review and recommendation as to technical adequacy by the Sacramento Metropolitan Air Quality Management District.

Sacramento County Climate Action Plan (State of California, CEQA only)

The Sacramento County Climate Action Plan (CAP) details specific measures that would be implemented in Sacramento County by 2030 to GHG emissions from communitywide activities and government operations. It also includes an adaptation plan that recommends actions to reduce the community's vulnerability to the anticipated impacts of climate change. The CAP has been developed in response to mitigation measures contained in the Sacramento County's General Plan EIR, the County's adoption of a Climate Emergency Resolution in December 2020, and State legislation including Assembly Bill (AB) 32, Senate Bill (SB) 32, and SB 743 as well as Executive Orders S-3-05 and B55-18. The strategies and measures contained in the CAP complement a wide range of policies, plans, and programs that have been adopted by Sacramento County, State, and regional agencies to protect communities from hazards and activities contributing to GHG emissions. This CAP is organized into a main CAP document that provides general information about the County's approach and actionable strategies followed by seven appendices containing more information on the analyses used to inform the strategies and measures (Sacramento County 2022).

City of Sacramento Preliminary Climate Action and Adaptation Plan

The Climate Action and Adaptation Plan (CAAP) builds off the City of Sacramento's 2012 Climate Action Plan, the City of Sacramento's Climate Emergency Declaration, and incorporates recommendations from the Mayors' Commission on Climate Change. The CAAP sets new and ambitious targets for the City and identifies key strategies and actions that form the foundation of Sacramento's goal of achieving carbon neutrality by 2045 (City of Sacramento 2022).

3.6.3 Analysis of Environmental Effects

Analysis Methodology

Construction-related exhaust emissions for the Proposed Action were estimated for construction worker commutes, haul trucks, barge activities, and the use of off-road equipment (see Tables 3.6-2 to 3.6-4). Only unmitigated emissions are presented in the BAAQMD because these emissions are associated with barge engines and there is no feasible mechanism available to reduce these emissions. The Proposed Action's potential GHG impact was analyzed using a conservative construction scenario to estimate the maximum construction emissions generated. Since operation and maintenance activities are part of the existing environmental baseline and thus would not create a substantial source of new emissions, operational GHG emissions were not modeled. Where significant impacts are identified, mitigation measures to reduce these

impacts are specified. The potential for long-term changes in conditions to affect the Proposed Action, including the potential for more severe or extreme storm events that would affect the flood risk reduction system, are incorporated into the assumptions for the Hydraulic and Hydrologic modeling and related impact discussion in Appendix B Section 3.4, “Hydraulics and Hydrology.”

A variety of methods and emissions modeling software were used to quantify criteria air pollutants, described in Appendix B Section 3.5, “Air Quality.” The emission factors and models described there, were also used to quantify GHG emissions. Additionally, this analysis relied on GHG modeling and analysis conducted by Ascent Environmental for a previous version of the Proposed Action improvements for the Lower American River Erosion Contract 3B. GHG emissions were summed over the duration of all anticipated activity, including the use of heavy-duty equipment, haul trucks, and worker commute trips. All inputs and assumptions are included in Appendix C.

The Interim NEPA Guidance on Consideration of Greenhouse Gas Emissions promulgated by the CEQ in 2023 was used for the NEPA analysis. The baseline (the No Action Alternative) includes the buildout of the authorized project described in the ARCF GRR Final EIS/EIR. Additionally, the Proposed Action would not result in indirect long-term impacts since GHG emissions would cease following construction (see Section 3.6.3.3. “Effects Not Addressed in Detail

Table 3.6-2. Proposed Action Unmitigated GHG Emissions from Construction Activities Within SMAQMD

| Project Component | MT of CO ₂ e per year |
|---|----------------------------------|
| 2024 | |
| Sacramento Weir Widening Project | 3,938 |
| Sacramento River Erosion Contract 2 | 1,736 |
| Sacramento River Erosion Contract 4 | 433 |
| <i>Total ARCF Comprehensive Project Emissions</i> | <i>6,107</i> |
| CEQA Threshold | 1,100 |
| Exceeds Threshold? | Yes |
| 2025 | |
| Sacramento Weir Widening Project | 2,731 |
| <i>Total ARCF Comprehensive Project Emissions</i> | <i>2,731</i> |
| CEQA Threshold | 1,100 |
| Exceeds Threshold? | Yes |
| 2026 | |
| Sacramento River Erosion Contract 3 (including Barge emissions) | 494 |
| American River Mitigation (ARMS) | 2,831 |
| Sacramento River Mitigation (SRMS) | 58 |
| American River Erosion Contract 3B North and South, and Contract 4B | 4,776 |
| <i>Total ARCF Comprehensive Project Emissions</i> | <i>8,159</i> |
| CEQA Threshold | 1,100 |
| Exceeds Threshold? | Yes |
| 2027 | |
| Sacramento River Erosion Contract 3 (including Barge emissions) | 499 |

| Project Component | MT of CO ₂ e per year |
|---|----------------------------------|
| American River Erosion Contract 4A Erosion Improvements | 838 |
| ARMS | 2,065 |
| SRMS | 117 |
| American River Erosion Contract 3B North and South, and Contract 4B | 2,782 |
| <i>Total ARCF Comprehensive Project Emissions</i> | <i>6,301</i> |
| CEQA Threshold | 1,100 |
| Exceeds Threshold? | Yes |
| 2028 | |
| Maggie Creek Project (MCP) | 1,147 |
| Lower American River Contract 3A | 3,536 |
| <i>Total ARCF Comprehensive Project Emissions</i> | <i>4,683</i> |
| CEQA Threshold | 1,100 |
| Exceeds Threshold? | Yes |

Notes: yellow-shaded cells indicate exceedance of SMAQMD significance threshold.

CO₂e/year=carbon dioxide equivalent per year; MT=metric tons; SMAQMD=Sacramento Metropolitan Air Quality Management District

Source: GEI Consultants, 2023

Table 3.6-3. Proposed Action Mitigated GHG Emissions from Construction Activities Within SMAQMD

| Project Component | MT of CO ₂ e per year |
|---|----------------------------------|
| 2024 | |
| Sacramento Weir Widening Project | 3,918 |
| Sacramento River Erosion Contract 2 | 1,736 |
| Sacramento River Erosion Contract 4 | 433 |
| <i>Total ARCF Comprehensive Project Emissions</i> | <i>6,087</i> |
| CEQA Threshold | 1,100 |
| Exceed Threshold? | Yes |
| 2025 | |
| Sacramento Weir Widening Project | 2,605 |
| <i>Total ARCF Comprehensive Project Emissions</i> | <i>2,605</i> |
| CEQA Threshold | 1,100 |
| Exceeds Threshold? | Yes |
| 2026 | |
| Sacramento River Erosion Contract 3 (including Barge emissions) | 427 |
| American River Mitigation (ARMS) | 2,831 |
| Sacramento River Mitigation (SRMS) | 58 |
| American River Erosion Contract 3B North and South, and Contract 4B | 4,782 |
| <i>Total ARCF Comprehensive Project Emissions</i> | <i>8,098</i> |
| CEQA Threshold | 1,100 |
| Exceeds Threshold? | Yes |
| 2027 | |
| Sacramento River Erosion Contract 3 (including Barge emissions) | 499 |
| American River Erosion Contract 4A Erosion Improvements | 838 |
| ARMS | 2,065 |
| SRMS | 117 |

| Project Component | MT of CO _{2e} per year |
|---|---------------------------------|
| American River Erosion Contract 3B North and South, and Contract 4B | 2,790 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 6,309 |
| CEQA Threshold | 1,100 |
| Exceeds Threshold? | Yes |
| 2028 | |
| MCP | 1,150 |
| Lower American River Contract 3A | 3,536 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 4,686 |
| CEQA Threshold | 1,100 |
| Exceeds Threshold? | Yes |

Notes: yellow-shaded cells indicate exceedance of SMAQMD significance threshold.

CO_{2e}/year=carbon dioxide equivalent per year; MT=metric tons; SMAQMD=Sacramento Metropolitan

Air Quality Management District

Source: GEI Consultants, 2023

Table 3.6-4. Proposed Action Unmitigated GHG Emissions from Construction Activities Within BAAQMD/CEQA Threshold

| Project Component | MT of CO _{2e} per year |
|---|---------------------------------|
| 2024 | |
| Sacramento Weir Widening Project | 131 |
| Sacramento River Erosion Contract 2 | 1,736 |
| Sacramento River Erosion Contract 4 | 7 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 139 |
| BAAQMD Threshold | 10,000 |
| Exceeds Threshold? | <i>No</i> |
| 2025 | |
| Sacramento Weir Widening Project | 131 |
| <i>Total ARCF Comprehensive Project Emissions</i> | 131 |
| BAAQMD Threshold | 10,000 |
| Exceeds Threshold? | <i>No</i> |
| 2026 | |
| Sacramento River Erosion Contract 3 (Barge emissions) | N/A |
| <i>Total ARCF Comprehensive Project Emissions</i> | N/A |
| BAAQMD Threshold | 10,000 |
| Exceeds Threshold? | <i>No</i> |
| 2027 | |
| Sacramento River Erosion Contract 3 (Barge emissions) | N/A |
| <i>Total ARCF Comprehensive Project Emissions</i> | N/A |
| BAAQMD Threshold | 10,000 |
| Exceeds Threshold? | <i>No</i> |

Notes: The barge emissions calculated do not include values of greenhouse gas emissions, therefore, Sacramento River Erosion Contract 3 barge emissions are not captured.

CO_{2e}/year=carbon dioxide equivalent per year; MT=metric tons; BAAQMD=Bay Area Air Quality Management District; N/A=Not available.

Thresholds within this document are for CEQA analysis only, there are no Federal thresholds.

Source: GEI Consultants, 2023

Basis of Significance

The thresholds, and the impact analysis that follows, take into consideration the significance of an action in terms of: the setting of the proposed action; short- and long-term effects of the proposed action; both beneficial and adverse effects; direct and indirect effects of the proposed action on public health and safety; context and intensity of impact; and effects that would violate Federal, State, Tribal, or local law protecting the environment, as required under NEPA (40 CFR 1508.1(g)) and the State CEQA Guidelines, as amended. The CEQ has rescinded the NEPA regulations at 40 C.F.R. Parts 1500-1508. However, the preparation of this document began, and the Draft SEIS/SEIR was circulated for public review, prior to the regulations being rescinded. As such, this Final SEIS/SEIR has followed the 2024 NEPA guidance previously in effect. The alternatives under consideration were determined to result in a significant impact related to GHG emissions and energy consumption if they would do any of the following:

- a. generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment;
- b. conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases;
- c. result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- d. conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

At the time this Draft SEIS/SEIR was written, there were no NEPA thresholds for determining if GHG emissions constitute a significant effect; therefore, a qualitative analysis was used which considered the quantity of GHG emissions anticipated and the potential for preventing any GHG reduction goal from being met to determine if GHG emissions would produce a significant effect.

The effects analysis in Appendix B, Section 3.3, “Hydrology and Hydraulics,” includes assumptions about future meteorological and flow conditions.

Effects Not Addressed in Detail

Generate GHG emissions during operations and maintenance. The Proposed Action would involve short-term construction activities to improve levee structures and implement erosion protection along the American River, Sacramento River, and Magpie Creek. The Proposed Action would also establish habitat mitigation at sites along the American and Sacramento Rivers. Once construction activities are complete, emissions-generating activities would cease. Operational activities may require maintenance crews to visit the sites periodically. However, these activities would be essentially the same as maintenance activities currently conducted, and the Proposed Action would not result in any substantial long-term increase in GHG emissions due to operations and maintenance. This issue is not discussed further.

Effects from Piezometer Network. GHG impacts from construction of the piezometer network are expected to be minimal; the equipment for the installations would consist of a drill rig and a support vehicle to provide well installation supplies. No additional hauling would be required beyond those already identified for the Proposed Action. Additionally, once construction is

complete GHG emissions would cease. Therefore, the Piezometer Network would not cause significant additional direct or indirect GHG impacts and is not discussed further in this section.

Effects Analysis

No Action Alternative

The short-term construction emissions estimated for the No Action Alternative, which is also known as Alternative 2 in the 2016 GRR Final EIS/EIR, are shown in Table 3.6-5 below. The material delivery and placement tasks were calculated using the assumption that the same amount of material would be barged to the project site and would be trucked to the site in the same period of time. While most GHG emissions would be generated during construction and would cease following construction operations, the No Action Alternative would result in long-term indirect impacts from the increased maintenance activities and potential future flood fighting activities that would likely be required due to the continued presence of deficiencies in the Sacramento Valley Region levee system. Although the NEPA No Action Alternative would result in short-term direct impacts of GHG emissions, the project would comply with all Federal, State, and local air quality regulations.

At the time of writing the Draft SEIS/SEIR, there were no NEPA thresholds for determining whether GHG emissions constitute a significant effect; therefore, a qualitative analysis was used which considered the quantity of greenhouse gas emissions anticipated and the potential for preventing any greenhouse gas reduction goal from being met to determine if GHG emissions would produce a significant effect. Emissions associated with future flood fighting activities are unknown; however, it is assumed that the No Action Alternative would provide a moderate reduction in emissions due to the implementation of flood protection measures associated with the No Action Alternative. Based on this analysis, less-than-significant effects from GHG emissions are anticipated from carrying out the No Action Alternative.

Table 3.6-5. No Action Alternative Unmitigated Emissions from Construction Activities

| Construction Year and Activity | Total GHG Emissions (MT/year of CO _{2e}) SMAQMD | Total GHG Emissions (MT/year of CO _{2e}) BAAQMD |
|---|---|---|
| Truck Delivery Scenario | | |
| Year 2 On-site Construction | 3,204.6 | 0 |
| Year 2 Off Site Soil Borrow | 101.3 | 0 |
| Bypass Widening and Demolition of Old Levee | 0 | 0 |
| Year 2 Total | 3,305.9 | 0 |
| Barge Delivery Scenario | | |
| Year 2 On-site Construction | 1,920.8 | 0 |
| Year 2 Off-site Soil Borrow | 101.3 | 0 |
| Year 2 Barge Delivery | 148.6 | 164.7 |
| Bypass Widening and Demolition of Old Levee | 0 | 0 |
| Year 2 | 2,170.7 | 164.7 |
| BAAQMD Threshold | 1,100 | 10,000 |
| Exceeds Threshold? | Yes | No |

Notes: BAAQMD – Bay Area Air Quality Management District. GHG – greenhouse gas, MT – metric tons, CO – carbon dioxide equivalent

Proposed Action Alternative

3.6-a Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

CEQA Significance Conclusion: Less than Significant with Mitigation Incorporated

NEPA Significance Conclusion: Short-term and Minor effects that are Less than Significant

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, Magpie Creek Project, Sacramento River Mitigation Site, American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

The Proposed Action would generate construction-related emissions from heavy-duty construction equipment vehicle engine exhaust, haul trips, and construction worker vehicle trips. The construction-related GHG emissions estimated for each year of construction are presented in Tables 3.6-2 to 3.6-4

The Proposed Action would generate direct short-term GHG emissions from construction-related activities exceeding the SMAQMD construction threshold of 1,100 MT of CO_{2e} per year during all construction years. The Proposed Action would not generate GHG emissions over the BAAQMD threshold of 10,000 MT of CO_{2e} per year in any construction years.

Since the Proposed Action would generate emissions over the SMAQMD threshold, the Proposed Action would cause a potentially significant impact from GHG emissions on the environment under CEQA. The following mitigation measure has been identified to address this impact.

Mitigation Measure GHG-1: Implement GHG Reduction Measures

Measures that would be implemented to reduce the project's contribution from generation of GHGs are as follows:

- Encourage and provide carpools, shuttle vans, transit passes, and/or secure bicycle parking for construction worker commutes.
- Recycle at least 50 percent of construction waste and demolition debris.
- Purchase at least 20 percent of the building materials and imported soil from sources within 100 miles of the project site.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 5-minute, as required by the State's airborne toxics control measure [Title 13, sections 2449(d)(3) and 2485 of the California Code of

Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.
- Use equipment with new technologies (e.g., repowered engines, electric drive trains).
- Perform on-site material hauling with trucks equipped with on-road engines (if determined to be less emissive than the off-road engines).
- Use a California Air Resources Board (CARB)-approved low carbon fuel for construction equipment. (NOx emissions from the use of low carbon fuel must be reviewed and increases mitigated.)
- Purchase GHG offset for program-wide GHG emissions (direct emissions plus indirect emissions from on-road haul trucks plus commute vehicles) that meet the criteria of being real, quantifiable, permanent, verifiable, enforceable, and additional, consistent with the standards set forth in Health and Safety Code section 38562, subdivisions (d)(1) and (d)(2). Such credits shall be based on protocols approved by the CARB, consistent with Section 95972 of Title 17 of the California Code of Regulations and shall not allow the use of offset projects originating outside of California, except to the extent that the quality of the offsets, and their sufficiency under the standards set forth herein, can be verified by USACE or SMAQMD. Such credits must be purchased through one of the following: (i) a CARB-approved registry, such as the Climate Action Reserve, the American Carbon Registry, and the Verified Carbon Standard; (ii) any registry approved by CARB to act as a registry under the California Cap and Trade program; or (iii) through the California Air Pollution Control Officers Association's (CAPCOA's) GHG Rx and SMAQMD. Purchase of carbon offsets shall be sufficient to reduce the project's GHG emissions to below SMAQMD's significance thresholds applicable through a one-time purchase of credits, based on the emissions estimates in this SEIR or on an ongoing basis based on monthly emissions estimates that will be prepared in accordance with procedures established by Measure AQ-3.

Timing: Before, during, and after construction

Responsibility: Project Partners

Implementing Mitigation Measure GHG-1 would reduce construction-related GHG emissions to a less-than-significant level under CEQA through efficient operation of construction equipment engines, enhanced emissions reductions for equipment used during construction, minimization of equipment idling when not in use, and purchasing carbon offset credits. Therefore, with implementation of Mitigation Measure GHG-1 to reduce GHG emissions and purchase offset credits, the Proposed Action would not make a cumulatively considerable incremental contribution to a significant cumulative impact with respect to GHG emissions.

NEPA Impact Conclusion (Design Refinements): Short-term and Minor effects that are Less than Significant.

The Proposed Action would generate short-term direct GHG emissions during construction, as shown in Tables 3.6-2 to 3.6-4. However, implementing the Proposed Action would significantly increase the likelihood that the flood management system could accommodate future flood events that may be more extreme. The Proposed Action would improve the resiliency of the levee system with respect to changing conditions, potentially reducing exposure of property or persons to the effects of changing conditions, which would likely occur without the implementation of the flood protection measures included in the Proposed Action. As there are no current numerical thresholds established under NEPA (at the time of writing the Draft SEIS/SEIR) for determining whether GHG emissions constitute a significant effect, the same qualitative approach discussed under the No Action Alternative is used for the Proposed Action. The GHG emissions that would result from future flood fighting that is likely to occur without the Proposed Action is unknown; however, it is assumed that the Proposed Action would provide a moderate to significant reduction in emissions due to the implementation of flood protection measures associated with the Proposed Action. Therefore, since the Proposed Action would only generate short-term direct construction emissions and would not prevent any greenhouse gas reduction goal from being met, the Proposed Action would have long-term and minor effects from GHG emissions.

3.6-b Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

CEQA Significance Conclusion: Less than Significant with Mitigation Incorporated

NEPA Significance Conclusion: Short-term and Minor effects that are Less than Significant

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, Magpie Creek Project, Sacramento River Mitigation Site, American River Mitigation Site

CEQA Impact Conclusion (Design Refinements): Less than Significant with Mitigation Incorporated

The Proposed Action would provide erosion protection along portions of the American River and Sacramento River levee systems, improvements to the Magpie Creek Diversion Channel (MCDC) and provide improved flood protection to the densely populated City of Sacramento, City of Elk Grove, and some unincorporated Sacramento County areas. Therefore, the Proposed Action is an adaptive measure against the potential effects of changing long-term weather conditions (i.e., increased flooding frequency, magnitude, and duration). The assessment contained in the 2018 Safeguarding California Plan, California's Climate Adaptation Strategy (CAS) (State of California, CEQA-only) identified floods (among heat waves, wildfires, and droughts) as likely being one of the earliest effects related to variable, long-term weather conditions experienced in California (CNRA 2018).

The intent, purpose, and function of the Proposed Action aligns with the goals of the Assembly Bill (AB) 32 Scoping Plan to protect against the detrimental effects of climate change. The Updated AB 32 Scoping Plan cites the need to buffer from the increasing effects, including floods (CARB 2022). Therefore, in addition to reducing GHG emissions, which is the primary goal of the Scoping Plan, it is also critical to implement actions and projects that would prevent, avoid, and minimize the detrimental effects of climate change. These types of projects would also help avoid reconstruction and repair expenditures, losses and disruptions to economic activities, and effects on local residents from a flood event. However, the Proposed Action would include new temporary, short-term GHG emissions during construction, which could result in a significant impact. The following mitigation measure has been identified to address this impact.

Mitigation Measure GHG-1: Implement GHG Reduction Measures

Please refer to Impact 3.6-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measure GHG-1 would reduce construction-related GHG emissions to a less-than-significant level through efficient operation of construction equipment engines, enhanced emissions reductions for equipment used during construction, minimization of equipment idling when not in use, and purchasing carbon offset credits. Therefore, the Proposed Action would not conflict with plans for reducing GHG emissions. Because the Proposed Action would be consistent with the goals of the 2018 CAS and the 2022 AB 32 Scoping Plan to protect against the detrimental effects of climate change without impeding current economic growth, the Proposed Action would have a short-term, less-than-significant effect under CEQA.

NEPA Impact Conclusion (Entire Proposed Action): Short-term and Minor effects that are Less than Significant.

Implementing the Proposed Action would not prevent a greenhouse gas reduction goal from being met. As described in the CEQA analysis provided in the preceding paragraphs, the Proposed Action is an adaptive measure to increase resiliency and provide beneficial effects to buffer projects from changing long-term weather conditions. With respect to the GHG emissions related to constructing the Proposed Action, there are no current numerical NEPA thresholds (at the time of writing the Draft SEIS/SEIR) for determining whether GHG emissions constitute a significant effect. Because the Proposed Action would comply with all State, Federal, and local regulations for the reducing emissions of greenhouse gas, the Proposed Action would have a long term and minor effect.

3.6-c Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

CEQA Significance Conclusion: Less than Significant

NEPA Significance Conclusion: No Impact

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, Magpie Creek Project, Sacramento River Mitigation Site, American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): No Impact

The Proposed Action would be constructed using typical construction methods and includes the use of gas- and diesel-fueled vehicles and equipment. The Proposed Action use of energy resources during construction would be non-recoverable but temporary and would not include unnecessary, inefficient, or wasteful energy use. Construction of the Proposed Action would temporarily increase fuel consumption; however, it is anticipated that fuel would only be used to the extent it is needed to complete construction activities and would not be consumed in a wasteful manner during construction. Additionally, the selected construction contractor(s) would use the best available engineering techniques, construction practices, and equipment operating procedures, and constructing the Proposed Action would reduce the potential for excessive energy and fuel use associated with reconstruction and repair efforts that would result from a flood event. This impact would be less than significant under CEQA. Because operational activities and energy use would be similar to the No Action Alternative activities, there would be no impact under NEPA.

3.6-d Conflict with or obstruct a state or local plan for renewable energy or energy efficiency

CEQA Significance Conclusion: No Impact

NEPA Significance Conclusion: No Impact

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, Magpie Creek Project, Sacramento River Mitigation Site, American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): No Impact

NEPA Impact Conclusion (Design Refinements): No Impact

Sacramento County adopted a CAP which details specific measures that would be implemented in Sacramento County by 2030 to reduce GHG emissions from countywide activities and government operations (Sacramento County 2022). One of the main sectors addresses in the CAP is energy. The actions that would be taken to reduce GHG emissions in the energy sector include improving energy efficiency in new and existing buildings, as well as County infrastructure, and increasing renewable energy sources.

The City of Sacramento adopted a Preliminary CAAP which sets targets for the city and identifies key decarbonization strategies and implementable actions that form the foundation of Sacramento's goal for achieving carbon neutrality by 2045 (City of Sacramento 2022). Energy-

related actions include increasing energy efficiency in new and existing building, increasing the amount of electricity produced by local sources, and increasing renewable energy resources and storage. The State's Climate Commitment is to reduce greenhouse gas emissions by 85 percent by 2045. Additionally, this goal includes 90 percent clean energy by 2035, 95 percent clean energy by 2040 and 100 percent clean energy by 2045 (State of California 2022). The Proposed Action would result in energy consumption during construction activities; however, the Proposed Action would not result in energy consumption that would conflict with State or local plans for renewable energy or energy efficiency and there would be no impact under CEQA or NEPA.

Alternatives Comparison

Alternatives 3a

Alternatives 3a would change the location and type of improvements for the American River Erosion Contract 4A. All other project components (American River Erosion Contract 3B, American River Erosion Contract 4B, Sacramento River, MCP, SRMS, and ARMS) would be unchanged. It is anticipated that the material and equipment needed for Alternative 3a would be significantly lower than the Proposed Action because this alternative would not require any bike trail reroutes and would only include construction of the landside berm. However, even with reduced GHG emissions from the American River Erosion Contract 4A, short-term construction GHG emissions generated in conjunction with other project components would remain significant. Energy usage during construction activities would decrease slightly and would remain less than significant. Therefore, this alternative would not change any of the GHG or energy related construction impacts.

Table 3.6-6. Alternative 3a Effects on GHG and Energy

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------------------|---|---------------------------|---------------------------------------|--|
| 3.6-a: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. | American River Erosion Contract 4A | Consistent with Proposed Action. A slight reduction in emissions due to less materials and equipment usage; however, it is assumed that overall GHG emissions would continue to be above applicable thresholds. | GHG-1 | Less than Significant with Mitigation | Short-term and Minor effects that are Less than Significant. |
| 3.5-b: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. | American River Erosion Contract 4A | Consistent with Proposed Action. A slight reduction in emissions due to less materials and equipment usage; however, it is assumed that overall GHG impact would not change from the Proposed Action. | GHG-1 | Less than Significant with Mitigation | Short-term and Minor effects that are Less than Significant. |
| 3.5-c: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. | American River Erosion Contract 4A | Consistent with Proposed Action. This alternative would not result in increased energy consumption, or consumption of energy in a wasteful, inefficient or unnecessary manner. | N/A | Less than Significant | No Impact |
| 3.5-d: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency. | American River Erosion Contract 4A | Consistent with Proposed Action. This alternative would not conflict with or obstruct any state or local plans for renewable energy. | N/A | No Impact | No Impact |

Alternatives 3b, 3c, and 3d

Alternatives 3b, 3c, and 3d would change the location and type of improvements for the American River Erosion Contract 4A. All other project components (American River Erosion Contracts 3B and 4B, Sacramento River, MCP, SRMS, and ARMS) would be unchanged. It is anticipated that the material and equipment needed for as well as construction activities for Alternatives 3b, 3c, and 3d would be similar to the Proposed Action. Therefore, these alternatives would not change any of the construction impacts associated with GHG emissions or energy consumption.

Table 3.6-7. Alternative 3b, 3c, and 3d Effects on GHG and Energy

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------------------|---|--------------------|---------------------------------------|--|
| 3.6-a: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. | American River Erosion Contract 4A | Consistent with Proposed Action. A slight reduction in emissions due to less materials and equipment usage; however, it is assumed that overall GHG emissions would continue to be above applicable thresholds. | GHG-1 | Less than Significant with Mitigation | Short-term and Minor effects that are Less than Significant. |
| 3.5-b: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. | American River Erosion Contract 4A | Consistent with Proposed Action. A slight reduction in emissions due to less materials and equipment usage; however, it is assumed that overall GHG impact would not change from the Proposed Action. | GHG-1 | Less than Significant with Mitigation | Short-term and Minor effects that are Less than Significant. |
| 3.5-c: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. | American River Erosion Contract 4A | Consistent with Proposed Action. This alternative would not result in increased energy consumption, or consumption of energy in a wasteful. Inefficient or unnecessary manner. | N/A | Less than Significant | No Impact |
| 3.5-d: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency. | American River Erosion Contract 4A | Consistent with Proposed Action. This alternative would not conflict with or obstruct any state or local plans for renewable energy. | N/A | No Impact | No Impact |

Alternatives 4a and 4b (CEQA-Only)

Alternatives 4a and 4b includes alternative designs for improvements to the ARMS. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River, and SRMS) would remain unchanged. Alternatives 4a and 4b would retain a 30-acre or 20-acre portion, respectively, of the existing pond on the Urrutia site, therefore reducing the need for fill materials, construction-related transportation, and construction equipment usage. Alternatives 4a and 4b would result in a decrease in the generation of GHG emissions as well as energy usage due to the preservation of a portion of the on-site pond. However, the combined Proposed Action related GHG emissions generated during the years in which the ARMS would be constructed (2026 through 2029) would remain above the SMAQMD threshold and therefore would be a significant impact; Mitigation Measure GHG-1 would be implemented to reduce this impact to less than significant. Energy usage during construction activities would decrease slightly and would remain less than significant. Alternatives 4a and 4b also would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, these alternatives would not change any of

the construction impacts associated with GHG emissions or energy consumption compared to the Proposed Action.

Table 3.6-8 Alternative 4a and 4b Effects on GHG and Energy

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion |
|---|----------|---|--------------------|---------------------------------------|
| 3.6-a: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. | ARMS | Consistent with Proposed Action. A slight reduction in emissions due to less materials and equipment usage; however, it is assumed that overall GHG emissions would continue to be above applicable thresholds. | GHG-1 | Less than Significant with Mitigation |
| 3.5-b: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. | ARMS | Consistent with Proposed Action. A slight reduction in emissions due to less materials and equipment usage; however, it is assumed that overall GHG impact would not change from the Proposed Action. | GHG-1 | Less than Significant with Mitigation |
| 3.5-c: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. | ARMS | Consistent with Proposed Action. This alternative would not result in increased energy consumption, or consumption of energy in a wasteful, inefficient or unnecessary manner. | N/A | Less than Significant |
| 3.5-d: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency. | ARMS | Consistent with Proposed Action. This alternative would not conflict with or obstruct any state or local plans for renewable energy. | N/A | No Impact |

Alternative 5a (Mitigation Bank Credits) and 5c (Sunset Pumps)

Alternatives 5a and 5c would eliminate the need to construct the SRMS and proposes alternative mitigation fulfillment. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River, and SRMS) would remain unchanged. Alternative 5a includes purchasing all remaining, required mitigation credits from Service Approved Conservation Banks. Alternative 5c combines three approaches to complete the Sacramento River Mitigation requirements including 1) Purchasing Delta smelt credits from an approved conservation bank 2) Funding a NMFS recovery plan project (Sunset Pumps) to remove a weir, allowing fish passage to benefit chinook steelhead and green sturgeon and 3) Funding the improvements at Sunset Pumps would increase

water availability, which would then be directed to two local wildlife refuges, benefiting the Western Yellow Billed Cuckoo. The Sunset Pumps project is listed as high priority for BOR, DWR, and USFWS, and is subject to separate NEPA/CEQA analysis prior to implementation. All activities related to 5c involve funding another project, therefore no additional impacts from GHG emissions or energy consumption would result from this alternative.

Table 3.6-9 Alternative 5a and 5c Effects on GHG and Energy

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|----------|---|--------------------|------------------------------|----------------------------|
| 3.6-a: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. | SRMS | Less than the Proposed Action. Alternatives 5a and 5c would eliminate the need to construct the SRMS; therefore, there would be no impact to GHG. | N/A | No Impact | No Impact |
| 3.5-b: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. | SRMS | Less than the Proposed Action. Alternatives 5a and 5c would eliminate the need to construct the SRMS; therefore, there would be no impact to GHG. | N/A | No Impact | No Impact |
| 3.5-c: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. | SRMS | Less than the Proposed Action. Alternatives 5a and 5c would eliminate the need to construct the SRMS; therefore, there would be no impact to sensitive receptors. | N/A | No Impact | No Impact |
| 3.5-d: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency. | SRMS | Less than the Proposed Action. Alternatives 5a and 5c would eliminate the need to construct the SRMS; therefore, there no other emissions would be generated. | N/A | No Impact | No Impact |

Alternative 5b (Watermark Farms)

Alternative 5b would replace the SRMS with the new Watermark Farms Mitigation Site. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, American River Erosion Contract 4B Sacramento River, and SRMS) would remain unchanged. It is anticipated that the material and equipment needed as well as construction activities for Alternative 5b would be similar to the Proposed Action. Therefore, this alternative would not change any of the construction impacts associated with GHG emissions or energy consumption compared to the Proposed Action. Alternative 5b would also not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Table 3.6-10 Alternative 5a and 5c Effects on GHG and Energy

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|----------|--|--------------------|---------------------------------------|--|
| 3.6-a: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. | SRMS | Consistent with the Proposed Action. Alternative 5b would require a new levee be constructed at the Watermark Farms Mitigation site and therefore, increase the amount of GHG emissions; however, the impact would remain consistent with the Proposed Action. | GHG-1 | Less than Significant with Mitigation | Short-term and Minor effects that are Less than Significant. |
| 3.5-b: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. | SRMS | Consistent with the Proposed Action. Alternative 5b would require a new levee be constructed at the Watermark Farms Mitigation site and therefore, increase the amount of GHG emissions; however, the impact would remain consistent with the Proposed Action. | GHG-1 | Less than Significant with Mitigation | Short-term and Minor effects that are Less than Significant. |
| 3.5-c: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. | SRMS | Consistent with Proposed Action. This alternative would not result in increased energy consumption, or consumption of energy in a wasteful, inefficient, or unnecessary manner. | N/A | Less than Significant | No Impact |
| 3.5-d: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency. | SRMS | Consistent with the Proposed Action. This alternative would be consistent with state or local plans for renewable energy. | N/A | No Impact | No Impact |

3.7 Noise and Vibration

This section provides an overview of the existing noise conditions within the project vicinity, identifies the regulatory framework for noise, and analyzes potential noise impacts from project implementation.

3.7.1 Existing Conditions/Affected Environment

Noise is defined as sound that is unwanted (loud, unexpected, or annoying). Excessive exposure to noise can result in adverse physical and psychological responses (e.g., hearing loss and other health effects, anger, and frustration); interfere with sleep, speech, and concentration; or diminish the quality of life.

Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). The decibel (dB) scale is used to quantify sound intensity, with 0 dB being the lowest threshold of hearing. Decibel levels range from 0 to 140: 50 dB for light traffic is considered a low decibel level, whereas 120 dB for a jet takeoff at 200 feet is considered a high decibel level. Groundborne vibration is energy transmitted in waves through the ground. Vibration attenuates at a rate of approximately 50 percent for each doubling of distance from the source.

Noise Descriptors

The perceived loudness of sounds depends on many factors, including sound pressure level and frequency content. However, within the usual range of environmental sound levels, perception of loudness is relatively predictable, and can be approximated through frequency filtering using the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (decibels expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard descriptor for environmental noise assessment. All noise levels reported in this section are in terms of A-weighting. Community noise is commonly described in terms of “ambient” or all-encompassing noise level in a given environment. The noise descriptors most often used to describe environmental noise are defined below.

- **L_{\max} (Maximum Noise Level):** The maximum instantaneous noise level during specific a specific period of time. The L_{\max} may also be referred to as the peak noise level.
- **L_{eq} (Equivalent Noise Level):** The average noise level. The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. From the sum of the relative energy values, an average energy value is calculated, which is then converted back to dBA to determine the L_{eq} . In noise environments determined by major noise events, such as aircraft overflights, the L_{eq} value is heavily influenced by the magnitude and number of single events that produce the high noise levels.
- **L_{dn} (Day-Night Average Noise Level):** The 24-hour L_{eq} with a 10-dBA “penalty” for noise events that occur during the noise-sensitive hours between 10 p.m. and 7 a.m. In other words, 10 dBA is “added” to noise events that occur in the nighttime hours, and this generates a higher reported noise level when determining compliance with noise standards. The L_{dn}

attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.

- **Community Noise Equivalent Level (CNEL)** – The energy-average of the A-weighted sound levels occurring over a 24-hour period, with penalties of 10 dB and 5 dB, respectively, applied to A-weighted sound levels occurring during the nighttime hours (10 p.m. to 7 a.m.) and the evening hours (7 p.m. to 10 p.m.). The CNEL is similar to L_{dn} —it is usually within 1 dB of the L_{dn} —and for all intents and purposes, the two measurements are interchangeable. Because it is easier to compute and of more common use, the L_{dn} is used as the long-term noise measurement in this evaluation.¹

Groundborne Vibrations

The existing vibration environment in the proposed levee improvement area is dominated by transportation-related vibration from roads, highways, and trains. Heavy truck traffic can generate groundborne vibration, which varies considerably depending on vehicle type, weight, and pavement conditions. If the vibration level in a residence reaches 85 vibration decibels (VdB), most people would be strongly annoyed by the vibration (Federal Transportation Agency (FTA 2018)). The background vibration level in residential areas is usually 50 VdB or lower.

Noise Generation

The majority of the project area is located in urban and residential areas. The primary existing noise sources near the project sites ((Magpie Creek Project (MCP), American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, American River Mitigation Site (ARMS), Sacramento River Mitigation Site (SRMS), and the Piezometer Network)) include vehicular traffic, trains, common urban uses such as those in downtown Sacramento, air traffic, boats operating along the American River and Sacramento River, and light industrial uses and agricultural machinery in the vicinity of the MCP.

Certain areas along the Sacramento River have higher boating noise due to public marinas such as Discovery Park, Garcia Bend Park, Miller Park, Stan's Yolo, and Sherwood Harbor. Magpie Creek may experience higher levels of air traffic noise due to the proximity to the McClellan Airport.

Freeways within the project area include Interstate 80 Business (Business 80), State Route 160 (SR 160), Interstate 5 (I-5), and U.S. Highway 50 (U.S. 50). Other major roadways that would likely be used for hauling routes within the project area include Exposition Boulevard, Elvas Avenue, Fair Oaks Boulevard, American River Drive, Howe Avenue, Watt Avenue, Richards Boulevard, Riverside Boulevard, Pocket Road, Freeport Boulevard, Marysville Boulevard, Raley Boulevard, Norwood Avenue, SR 84, and Rio Linda Boulevard. Arterial roadways and stationary sources have a localized influence on the noise environment. Other, smaller local roadways would also be used to access levee improvement areas from the major roads specifically identified here.

¹ L_{dn} and CNEL values rarely differ by more than 1 dB. L_{dn} and CNEL values are considered equivalent as a matter of practice, and this assessment treats them as such.

Noise Receptors

The majority of the levees in the project area are in close proximity to local residences, with many peoples' backyards very close to the toe of the levee. Since the levee elevation is higher than the houses, noise on the levees travels into nearby yards and houses. Some areas have trees between the levee and homes, which would filter some noise from levee activities. Additionally, residential properties near haul routes would be subject to a temporary increase in noise levels. Refer to Chapter 2, "Description of the Project Alternatives," for proposed haul routes.

Recreationists using the levee systems, American River Parkway, Sacramento Northern Bike Trail, and local parks including Miller Park, Discovery Park, and Garcia Bend Park, are sensitive noise receptors. In addition, local wildlife near the American and Sacramento Rivers, and Magpie Creek are considered sensitive receptors.

3.7.2 Applicable Laws, Regulations, Policies, and Plans

Federal

United States Environmental Protection Agency

The EPA Office of Noise Abatement and Control was established to coordinate Federal noise control activities. The Office of Noise Abatement and Control established guidelines in response to the Federal Noise Control Act of 1972 to identify and address the effects of noise on public health and welfare, and the environment. Table 3.7-1 summarizes EPA's recommended guidelines for noise levels considered safe for community exposure. The yearly average L_{eq} for a person seeking to avoid hearing loss over his or her lifetime should not exceed 70 dB. To minimize interference and annoyance, noise levels should not exceed 55 dB L_{dn} in outdoor activity areas and 45 dB L_{dn} in residential structures (FTA 2018).

Table 3.7-1. Summary of United States Environmental Protection Agency Recommended Noise Level Standards

| Effect | Sound Level | Area |
|---|-------------------------|--|
| Hearing loss | $L_{eq(t)} \leq 70$ dB | All areas |
| Interference with and annoyance during outdoor activities | $L_{dn} \leq 55$ dB | Outdoor areas of residences and farms, and other areas where people spend widely varying amounts of time or where quiet is a basis for use |
| Interference with and annoyance during outdoor activities | $L_{eq(24)} \leq 55$ dB | Outdoor areas where people spend limited amounts of time, such as school yards and playgrounds |
| Interference with and annoyance during indoor activities | $L_{dn} \leq 45$ dB | Indoor residential areas |
| Interference with and annoyance during indoor activities | $L_{eq(24)} \leq 45$ dB | Other indoor areas with human activities, such as schools |

Source: FTA 2018

Federal Transit Administration

The Federal Transit Administration (FTA) has developed guidelines for assessing the significance of vibration produced by transportation sources and construction activity. To address human response (annoyance) to groundborne vibration, FTA has established maximum-

acceptable vibration thresholds for different land uses. These guidelines recommend 72 vibration dB for residential uses and buildings where people normally sleep when the source of vibrations is frequent in nature, see Table 3.7-2 (FTA 2018).

**Table 3.7-2. Ground-borne Vibration Impact Criteria for General Assessment
(VdB re 1 micro-inch/second)**

| Land Use Category | Frequent Events ^a | Occasional Events ^b | Infrequent Events ^c |
|---|------------------------------|--------------------------------|--------------------------------|
| Category 1: Buildings where vibration would interfere with interior operations. | 65 ^d | 65 ^d | 65 ^d |
| Category 2: Residences and buildings where people normally sleep. | 72 | 75 | 80 |
| Category 3: Institutional land uses with primarily daytime uses. | 75 | 78 | 83 |

Notes:

VdB = vibration decibels referenced to 1 microinch per second and based on the root mean square velocity amplitude.

^a "Frequent Events" is defined as more than 70 vibration events of the same source per day.

^b "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.

^c "Infrequent Events" is defined as fewer than 30 vibration events of the same source per day.

^d This criterion is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research would require detailed evaluation to define acceptable vibration levels.

Source: FTA 2018

State

California Department of Transportation

In 2013, Caltrans published the *Transportation and Construction Vibration Manual*. The manual provides general guidance on vibration issues associated with construction and operation of projects in relation to human perception and structural damage. Table 3.7-3 presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

**Table 3.7-3. California Department of Transportation Recommendations
Regarding Levels of Vibration Exposure**

| Effect on Buildings | PPV (in/sec) |
|---|--------------|
| Architectural damage and possible minor structural damage | 0.4-0.6 |
| Risk of architectural damage to normal dwelling houses | 0.2 |
| Virtually no risk of architectural damage to normal buildings | 0.1 |
| Recommended upper limit of vibration to which ruins and ancient monuments should be subjected | 0.08 |
| Vibration unlikely to cause damage of any type | 0.006-0.019 |

Notes: in/sec = inches per second; PPV = peak particle velocity

Source: Caltrans 2020

Local

City of Sacramento Noise Ordinance

The City of Sacramento exterior noise standard, as stated in the City's noise ordinance, is 55 dBA during the hours from 7:00 a.m. to 10:00 p.m. for residential and agricultural uses. The standard then adjusts to 50 dBA between 10:00 p.m. and 7:00 a.m. for residential and agricultural uses. The noise ordinance also exempts construction noise during the hours from

7:00 a.m. to 6:00 p.m. Monday through Saturday and from 9:00 a.m. to 6:00 p.m. on Sundays. The ordinance further states that the operation of an internal combustion engine is not exempt if the engine is not equipped with suitable exhaust and intake silencers in good working order. (8.68.080 Exemptions, Noise Control Standards, City of Sacramento Municipal Code)

Sacramento County Noise Ordinance

The Sacramento County noise ordinance states that a standard of 55 dBA is applied during the hours from 7:00 a.m. to 10:00 p.m., and a standard of 50 dBA is applied during the hours from 10:00 p.m. to 7:00 a.m. for residential and agricultural uses. The noise ordinance also states that construction noise is exempt during the hours from 6:00 a.m. to 8:00 p.m. Monday through Friday and from 7:00 a.m. to 8:00 p.m. on Saturdays and Sundays. (Chapter 6.68 Noise Control, County of Sacramento Code)

City of Sacramento 2035 General Plan – Environmental Constraints

The City of Sacramento’s 2035 General Plan includes policies related to construction noise and vibration effects, and includes some compatibility standards for new land uses. Although these compatibility standards are not directly applicable to the construction noise that would be generated by the alternatives under consideration, they provide useful context for acceptable noise levels (City of Sacramento 2015).

GOAL EC 3.1: Noise Reduction. Minimize noise impacts on human activity to ensure the health and safety of the community.

- **Policy EC 3.1.1: Exterior Noise Standards.** The City shall require noise mitigation for all development where the projected exterior noise levels exceed those shown in Table 3.7-4 (Table EC 1 in the General Plan), to the extent feasible.

Table 3.7-4. Exterior Noise Compatibility Standards for Various Land Uses

| Land Use Type | Highest Level of Noise Exposure that is Regarded as “Normally Acceptable” (L _{dn} ^b or CNEL ^c) |
|---|--|
| Residential – Low Density Single Family, Duplex, Mobile Homes | 60 dBA _{d,e} |
| Residential—Multi-family | 65 dBA |
| Urban Residential Infill ^f and Mixed-Use Projects ^g | 70 dBA |
| Transient Lodging—Motels, Hotels | 65 dBA |
| Schools, Libraries, Churches, Hospitals, Nursing Homes | 70 dBA |
| Auditoriums, Concert Halls, Amphitheaters | Mitigation based on site-specific study |
| Sports Arena, Outdoor Spectator Sports | Mitigation based on site-specific study |
| Playgrounds, Neighborhood Parks | 70 dBA |
| Golf Courses, Riding Stables, Water Recreation, Cemeteries | 75 dBA |
| Office Buildings—Business, Commercial and Professional | 70 dBA |
| Industrial, Manufacturing, Utilities, Agriculture | 75 dBA |

Note: CNEL = community noise equivalent level; dBA = A-weighted decibels; L_{dn} = day/night average sound level

a As defined in the State of California General Plan Guidelines, “Normally Acceptable” means that the “specified land use is satisfactory, based upon the assumption that any building involved is of normal conventional construction, without any special noise insulation requirements.”

b Ldn or Day Night Average Level is an average 24-hour noise measurement that factors in day and night noise levels.

c CNEL or Community Noise Equivalent Level measurements are a weighted average of sound levels gathered throughout a 24-hour period.

d dBA or A-weighted decibel scale is a measurement of noise levels.

e The exterior noise standard for the residential area west of McClellan Airport known as McClellan Heights/Parker Homes is 65 dBA.

f. With land use designations of Central Business District, Urban Neighborhood (Low, Medium, or High) Urban Center (Low or High), Urban Corridor (Low or High).

g All mixed-use projects located anywhere in the city of Sacramento.

Source: City of Sacramento 2015.

- **Policy EC 3.1.2: Exterior Incremental Noise Standards.** The City shall require noise mitigation for all development that increases existing noise levels by more than the allowable increment shown in Table 3.7-5 (Table EC 2 in the General Plan), to the extent feasible.

Table 3.7-5. Exterior Incremental Noise Impact Standards for Noise-Sensitive Uses (dBA)

| Residences and buildings where people normally sleep ^a Existing Ldn | Allowable Noise Increment | Institutional land uses with primarily daytime and evening uses ^b Existing Peak Hour Leq | Allowable Noise Increment |
|---|---------------------------|--|---------------------------|
| 45 | 8 | 45 | 12 |
| 50 | 5 | 50 | 9 |
| 55 | 3 | 55 | 6 |
| 60 | 2 | 60 | 5 |
| 65 | 1 | 65 | 3 |
| 70 | 1 | 70 | 4 |
| 75 | 0 | 75 | 1 |
| 80 | 0 | 80 | 0 |

Note:

^a This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.

^b This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material.

Source: City of Sacramento 2015, FTA 2006

- **Policy EC 3.1.5: Interior Vibration Standards.** The City shall require construction projects anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby residential and commercial uses based on the current City or Federal Transit Administration (FTA) criteria.
- **Policy EC 3.1.7: Vibration.** The City shall require an assessment of the damage potential of vibration-induced construction activities, highways, and rail lines in close proximity to historic buildings and archaeological sites and require all feasible measures be implemented to ensure no damage would occur.
- **Policy EC 3.1.10. Construction Noise.** The City shall require development projects subject to discretionary approval to assess potential construction noise impacts on nearby sensitive uses and to minimize impacts on these uses, to the extent feasible

3.7.3 Analysis of Environmental Effects

Analysis Methodology

Construction activities would be the predominant source of noise and vibration associated with the Proposed Action. An analysis of construction noise was conducted using methodology recommended by the U.S. Department of Transportation for construction of large public works infrastructure projects (FTA 2018). Additionally, this analysis relied on the noise modeling and analysis conducted by Ascent Environmental for a previous version of the Proposed Action improvements for the American River Erosion Contract 3B North and South. Based on anticipated construction equipment types and methods of operation, construction noise levels for the construction process associated with the Proposed Action were calculated. These predicted noise levels were compared to significance criteria to determine whether significant impacts are anticipated to occur during construction. Where significant noise impacts are identified, mitigation measures have been identified to reduce noise impacts.

The magnitude of construction noise and vibration impacts at sensitive land uses depends on the type of construction activity, the noise and vibration levels generated by various pieces of construction equipment, and the distance between the activity and sensitive land uses. For this analysis, noise levels at various distances were estimated using calculation procedures recommended by FTA (FTA 2018). The calculations used for this analysis include distance attenuation (6 dB per doubling of distance) and attenuation from ground absorption for both hard ground and soft ground (1 to 2 dB per doubling of distance). This analysis uses a conservative approach and presents impacts of the most noise-generating improvements located in the nearest vicinity to sensitive land uses.

Basis of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. These thresholds, and the impact analysis that follows, also take into consideration the significance of an action while providing distinction between direct and indirect effects as required under NEPA (40 CFR 1508.1(g)). The alternatives under consideration were determined to result in a significant impact related to noise and vibration if they would do any of the following:

- a. Generate 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;
- b. Generate excessive ground-borne vibration or ground-borne noise levels;
- 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, expose people residing or working in the project area to excessive noise levels.

Additionally, the Sacramento County noise ordinance further states that construction noise is exempt from 6:00 a.m. to 8:00 p.m. Monday through Friday and from 7:00 a.m. to 8:00 p.m. on Saturdays and Sundays (Chapter 6.68 Noise Control, County of Sacramento Code). The City of Sacramento exempts construction noise from 7:00 a.m. to 6:00 p.m. Monday through Saturday

and from 9:00 a.m. to 6:00 p.m. on Sundays (8.68.080 Exemptions, Noise Control Standards, City of Sacramento Municipal Code). Thus, construction noise impacts were evaluated using the City and County noise codes, where applicable.

Effects Not Discussed in Detail

Noise impacts during operations (3.7-a)—The project does not include the construction of new stationary noise sources necessary for project operations after construction is complete.

Additionally, the project would not include any permanent increases in traffic noise. Once construction is complete, operational activities would be limited to maintenance activities, which would involve a small crew traveling to and from the site periodically to conduct inspections and limited work on-site. These activities are essentially the same as current operations and would not result in traffic increases that could generate perceptible increases in noise. Therefore, this issue is not addressed further in the SEIS/SEIR.

Vibration impacts during operations (3.7-b)—The project would not result in any long-term sources of vibration caused by operations and maintenance activities after construction is complete and, therefore, operational vibration impacts are not discussed further in the SEIS/SEIR.

Expose people residing or working in the project area to excessive noise levels generated by airports (3.7-c)—All project components except for the Sacramento River Erosion improvements are more than 2 miles from the nearest airport or private airstrip. Therefore, these improvements would not expose people to excess noise levels due to the proximity to a public airport or private airstrip and no impact would occur. Although the Sacramento River Erosion improvements include work areas within 2 miles of the Borges-Clarksburg airport, occasional noise generated from this airport would not impact people working on constructing the project. No impact would occur, and this issue is not discussed further in this SEIS/SEIR.

Effects of Piezometer Network installation (3.7-a, 3.7-b, 3.7-c)—Construction of the Piezometer Network would include minimal construction equipment (a drill rig and support truck) and duration of work at each individual location would be short (generally less than a day) because the network would be dispersed throughout the Proposed Action Area. Therefore, noise impacts from installation of the Piezometer Network are captured in the analysis of the remaining project components and do not require a separate evaluation.

Effects Analysis

No Action Alternative

The No Action Alternative, which is Alternative 2 in the 2016 GRR EIS/EIR, would generate temporary, short-term, and intermittent noise at or near noise sensitive receptors in and around the project area due to construction activities associated with the previously authorized levee and erosion repairs. Construction activities along the American and Sacramento Rivers would result in temporary significant impacts on “residents, recreationists, and other noise sensitive groups.” While Sacramento County has a construction noise exemption during daylight hours, noise levels above 55 dBA are generally considered to be a significant effect on sensitive receptors because they exceed the noise standard for the project area. However, implementation of mitigation

measures adopted in the ARCF GRR Final EIS/EIR would reduce this impact to less than significant.

Ground vibration from construction of the No Action Alternative is expected to be discernible only at residences within 40 feet of the construction equipment resulting in a potentially significant impact. However, implementation of mitigation measures adopted in the ARCF GRR Final EIS/EIR would reduce this impact to less than significant.

Proposed Action Alternative

3.7-a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

CEQA Significance Conclusion: Significant and Unavoidable

NEPA Significance Conclusion: Significant and Unavoidable

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Erosion Contract 3

CEQA Impact Conclusion (Entire Proposed Action): Significant and Unavoidable

NEPA Impact Conclusion (Design Refinements): Significant and Unavoidable

Erosion improvements and tree clearing for the American River and Sacramento River are similar in nature and therefore would produce similar noise levels. However, erosion protection work along the Sacramento River would occur from barges, and the existing levee would act as a natural barrier between the construction work area and nearby sensitive receptors on the landside of the levee (i.e. residential properties). Therefore, noise generation at nearby sensitive receptors during construction of the Sacramento River Erosion Contract 3 would be slightly reduced because of the attenuation provided by this natural barrier.

Construction of the American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, and Sacramento River Erosion Contract 3 would result in a temporary increase in ambient noise levels in the vicinity of these proposed improvements, including at nearby residential properties and recreation sites, in excess of local standards. Noise would be generated from use of heavy-duty equipment operating at the sites, use of heavy-duty trucks for hauling of materials to and from the site, worker commute traffic, and project activities at staging areas. Proposed access roads for material deliveries and hauling are described above in Section 3.7.1 “Existing Conditions/Affected Environment.”

While the City of Sacramento and Sacramento County have construction noise exemptions during daylight hours, as described in Section 3.7.2 “Applicable Laws, Regulations, Policies and Plants,” noise levels above 55 dBA during daylight hours (7 a.m. to 6 p.m.) and 50 dBA during nighttime hours (6 p.m. to 7 a.m.) are generally considered to be a significant effect on sensitive receptors because they exceed the noise standards for the Action Area. Construction activities

associated with these improvements would occur during daylight hours. Noise sensitive receptors in the above-mentioned improvement areas were described previously in Section 3.7.1 “Existing Conditions/Affected Environment.” Typical construction equipment noise levels are shown in Table 3.7-6. Additionally, Table 3.7-7 shows estimated noise levels for construction activities.

Table 3.7-6. Construction Equipment Noise Levels

| Equipment Type ¹ | dBA at 50 feet |
|-----------------------------|----------------|
| Asphalt Paver | 85 |
| Backhoe | 80 |
| Chainsaw | 76 |
| Compactor | 82 |
| Crane, Mobile | 83 |
| Dozer | 85 |
| Drill | 95 |
| Excavator | N/A |
| Loader | 80 |
| Grader | 85 |
| Roller | 85 |
| Scraper | 84 |
| Trucks | 84 |
| Water Pump | 77 |

Notes: ¹ All noise levels based on equipment fitted with properly maintained and operational noise control devices, per manufacturers specifications

Source: Federal Transportation Authority 2018

Table 3.7-7. Noise Levels during Construction Activities

| Distance Between Source and Receiver (feet) | Calculated 1-Hour Leq Sound Level (dBA) |
|---|---|
| 50 | 85 |
| 100 | 77 |
| 200 | 69 |
| 300 | 65 |
| 400 | 62 |
| 500 | 59 |
| 1,000 | 51 |
| 1,500 | 47 |
| 2,000 | 43 |
| 3,000 | 40 |

Note: These calculations do not include the effect, if any, of local shielding from walls, topography, or other barriers, which may reduce sounds levels further.

Source: Modeled by GEI Consultants, 2023.

Sensitive receptors near the American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, and Sacramento River Erosion Contract 3 include nearby residential neighborhoods and recreational facilities. The closest sensitive receptors to these improvement areas include single family residences located as close as 25 feet from proposed haul routes and construction areas.

Based on the anticipated construction activities and associated noise levels, applicable thresholds (i.e., 55 dBA L_{eq}) would be exceeded where construction activity would occur within approximately 600 feet of existing sensitive land uses. Considering that construction activities could occur less than 50 feet from residences in some cases, noise levels experienced at nearby receptors could be as high as 85 dBA L_{eq} . There is the potential for noise above applicable thresholds at sensitive receptors at distances of up to 600 feet during construction activities (see Table 3.7-7). This impact would be significant. The No Action Alternative includes a similar mix of equipment for erosion repairs along the American and Sacramento Rivers. The Proposed Action would have similar effects to the No Action Alternative for NEPA purposes.

The following previously adopted mitigation measure has been identified to address this impact.

Mitigation Measure NOI-1: Implement Measures to Reduce Construction Noise and Vibration Effects

The Project Partners will require contractors to implement the following measures at each work site to avoid and minimize construction noise and vibration effects on sensitive receptors. To the extent feasible and practicable, the primary construction contractor(s) will employ noise-reducing construction practices such that noise effects are limited to the maximum degree practical during construction. Measures that will be used to limit noise will include, but not be limited to, the measures listed below:

- Provide written notice to residents or other sensitive receptors within 1,200 feet of the construction zone, advising them of the estimated construction schedule, and including the City and County Noise Ordinance limits and hours, Mitigation Measure NOI-1 applicable minimization measures, and a link to the USACE Construction Inquiry Form to advise residents of the process for handling their concerns related to impacts from levee construction. This written notice will be provided within 1 week to 1 month of the start of construction at that location.
- Display notices with information including, but not limited to, contractor contact telephone number(s) and proposed construction dates and times in a conspicuous manner, such as on construction site fences.
- Schedule the loudest and most intrusive construction activities during daytime hours (7:00 a.m. to 7:00 p.m.) Monday through Friday, when feasible.
- Require that construction equipment be equipped with factory-installed muffling devices, and that all equipment be operated and maintained in good working order to minimize noise generation. No equipment will have unmuffled exhaust.
- Only use equipment that will comply with pertinent equipment noise standards of EPA and the State of California.
- Locate stationary noise-generating equipment as far as practicable from sensitive receptors.
- Limit unnecessary engine idling (i.e., more than 5 minutes) as required by State air quality regulations.

- Employ equipment that is specifically designed for low noise emission levels, when feasible.
- Employ equipment that is powered by electric or natural gas engines, as opposed to those powered by gasoline fuel or diesel, when feasible.
- If the construction zone is within 500 feet of a sensitive receptor, place temporary noise-reduction barriers (e.g., sound curtains) between stationary noise equipment and noise sensitive receptors to block noise transmission, when feasible, or take advantage of existing barrier features, such as existing terrain or structures, when feasible.
- Locate construction staging areas as far as practicable from sensitive receptors.
- Design haul routes to avoid sensitive receptors, to the extent practical.
- To the extent feasible and practicable, the primary construction contractors will employ vibration-reducing construction practices such that vibration from construction complies with applicable noise-level rules and regulations that apply to the work, including the vibration standards established for construction vibration-sources by the applicable agencies (City of Sacramento and Sacramento County), depending on the jurisdictional location of the affected receptor(s), and the California Department of Transportation's (Caltrans) Transportation and Construction Vibration Guidance Manual, which identifies maximum vibration levels of 0.2 to 0.5-inch per second Peak Particle Velocity (PPV) for minimizing damage to structures. Project construction specifications will require the contractor to limit vibrations to less than 0.2-inch per second PPV, and less than 72 vibration velocity level in decibel scale (VdB) within 50 feet at any building. If construction will occur within 50 feet of any occupied building, the contractor will prepare and implement a vibration control plan prior to construction. The plan will include measures to limit vibration, including but not limited to the following:
 - Establish numerical thresholds above which the contractor will be required to document vibration sources and implement measures to reduce vibration, and above which work will be required to stop for consideration of alternative construction methods.
 - Avoid vibratory rollers and packers near sensitive areas to the maximum extent practicable.
 - Route heavily loaded trucks away from residential streets, if possible. If no alternatives are available, select streets with the fewest homes.
 - Prior to construction activities, notify each residence within 100 feet of construction and provide contact information to request pre- and post-construction surveys. These pre- and post-construction surveys will assess the existing condition of structures prior to construction and potential architectural/structural damage induced by levee construction vibration at each structure within 100 feet of construction activities, including staging areas. The survey will include visual

inspection of the structures that could be affected and documentation of structures by means of photographs and video. This documentation will be reviewed with the individual owners prior to any construction activities. Post-construction monitoring of structures will be performed to identify (and repair, if necessary) damage, if any, from construction activities. Any construction-related damage will be documented with photographs and video. This documentation will be reviewed with the individual property owners.

- Place vibration monitoring equipment in lines approximately parallel to the levee alignment at intervals not to exceed 200 feet along the construction limits, including active staging areas. Vibration monitors will be operational at all times during the performance of construction activities. The contractor will monitor and record vibrations continuously.

Timing: Before and during construction.

Responsibility: Project Partners

Implementing Mitigation Measure NOI-1 will reduce construction-related noise generation to the extent feasible by requiring the preparation and implementation of a noise control plan, implementing feasible best management practices such as placing noise barriers between the construction site and nearby residence, and notifying sensitive users of excessive noise generation during the day. However, it is still possible that noise levels will exceed significance thresholds and no additional feasible mitigation measures are available to further reduce construction-related noise impacts. Since construction noise exceeding the L_{eq} thresholds is still likely to be generated during the daytime, after implementation of all feasible mitigation measures, this impact will be significant and unavoidable.

Magpie Creek Project, American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Significant and Unavoidable

NEPA Impact Conclusion (Design Refinements): Significant and Unavoidable

Construction of MCP and the ARMS would be similar to what was discussed above for the American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, and Sacramento River Erosion Contract 3. However, for the MCP, a drill would be used intermittently for construction of the Raley Blvd crossing. The drill would only be used for very short durations of time and would occur more than 1,000 feet from residential properties. Therefore, to get a more accurate indication of noise levels at sensitive receptors near the MCP, a more commonly used piece of equipment (i.e. dozer and grader) was used to calculate noise levels.

The MCP and ARMS would include the potential for nighttime construction activities. Nighttime work at MCP would reduce the amount of time Raley Boulevard would be closed. Construction would result in a temporary increase in ambient noise levels in the vicinity of these proposed improvements, include at nearby residential properties, in excess of local General Plan

ordinances. Typical construction equipment noise levels are shown in Table 3.7-6. Additionally, Table 3.7-7 shows estimated noise levels for construction activities.

Nighttime construction may be necessary to complete improvements for MCP and the ARMS. The City of Sacramento and Sacramento County do not generally exempt construction noise during nighttime hours (6 p.m. to 7 a.m.) and identify an acceptable noise standard of 50 dBA during these hours. However, the Sacramento County Municipal Code state that when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after 8 p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion (Sacramento County 2022). The City of Sacramento states that the director of building inspections may permit work to be done during nonexempt construction hours in the case of urgent necessity and in the interest of public health and welfare for a period not to exceed three days (City of Sacramento 2022). Certain project improvements may qualify for these exemptions. Nevertheless, this impact discussion considers nighttime noise generation above 50 dBA during nighttime hours (6 p.m. to 7 a.m.) to be a significant effect on sensitive receptors because they exceed the noise standards for the MCP and ARMS.

The MCP and ARMS are located farther from sensitive receptors than the rest of the Proposed Action. At MCP, the potential nighttime work would be near Raley Boulevard in a commercial area, which is more than 1000 feet from the nearest residence. The closest sensitive receptors to the MCP are residential property located approximately 200 feet north of the northern section of the project alignment where canal and slope flattening would occur. The closest nighttime sensitive receptors to the ARMS are residential properties located approximately 400 feet north of the project site. Camp Pollock, adjacent the ARMS to the east, hosts a variety of daytime activities, and also allows group or youth camping by permit. The resident caretaker and permitted campers at Camp Pollock could be affected by construction on nearby portions of the ARMS.

Based on the anticipated construction activities and associated noise levels, applicable thresholds (i.e., 55 dBA L_{eq} for daytime, and 50dBA L_{eq} for nighttime) would be exceeded where daytime construction activity would occur within approximately 600 feet of existing sensitive land uses and nighttime construction activity would occur within 1,200 feet of existing sensitive land uses. Considering that construction activities could occur as close or even closer than 200 feet to residences in some cases, noise levels experienced at nearby receptors could be as high as 69 dBA L_{eq} . According to the estimates in Table 3.7-7, there is the potential for noise above applicable thresholds at sensitive receptors at distances of up to 600 feet during daytime construction activities, and 1,200 feet during nighttime construction activities. This impact would be significant. The No Action Alternative includes a similar mix of equipment for erosion repairs along the American River. Construction of the MCP and ARMS would have similar effects to the No Action Alternative for NEPA purposes. The following mitigation measure has been identified to address this impact:

Mitigation Measure NOI-1: Implement Measures to Reduce Construction Noise and Vibration Effects

Please refer to Impact 3.7-a, Project Components: American River Erosion Contract 3B North and South, American River Erosion Contract 4A and 4B, and Sacramento River Erosion Contract 3 for the full text of this mitigation measure.

Timing: Before and during construction.

Responsibility: Project Partners

Implementing Mitigation Measure NOI-1 would reduce construction-related noise generation to the extent feasible by requiring the preparation of a noise control plan, implementing feasible best management practices such as placing noise barriers between the construction site and nearby residences, notifying sensitive users of excessive noise generation, and scheduling the loudest activities for daytime hours. However, it is still possible that noise levels would exceed significance thresholds and no other feasible mitigation measures are available to further reduce construction-related noise impacts. Since construction noise exceeding the L_{eq} thresholds is still likely to be generated during daytime and nighttime hours after implementation of all feasible mitigation measures, this impact would be significant and unavoidable.

Sacramento River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Short-term and Minor effects that are Less than Significant

Construction activities at the SRMS would be similar to the activities described above for other project improvements. Construction of the SRMS would include the potential for nighttime construction activities. Construction would result in a temporary increase in ambient noise levels in the vicinity of these proposed improvements; however, this temporary increase in noise levels would be consistent with the local General Plan ordinances. Typical construction equipment noise levels are shown in Table 3.7-6. Additionally, Table 3.7-7 shows estimated noise levels for construction activities.

The closest sensitive receptor to the SRMS is a residence located approximately 1,400 feet south of the project site, across the river. Based on the anticipated construction activities and associated noise levels, applicable noise thresholds (i.e., 55 dBA L_{eq} for daytime, and 50dBA L_{eq} for nighttime) from project improvements would not be exceeded during the day or night. This impact would be less than significant. The No Action Alternative does not include construction at the SRMS. However, as discussed above, construction of the SRMS would not exceed established noise levels and therefore would result in a less-than-significant impact for NEPA purposes.

3.7-b. Generation of excessive ground-borne vibration or ground-borne noise levels.

CEQA Significance: Significant and Unavoidable

NEPA Significance: Significant and Unavoidable

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Erosion Contract 3

CEQA Impact Conclusion (Entire Proposed Action): Significant and Unavoidable.

NEPA Impact Conclusion (Design Refinements): Significant and Unavoidable.

Operation of heavy-duty construction equipment create seismic waves that radiate along the surface of the earth and downward into the earth. The surface waves can be felt as vibrations. Table 3.7-8 shows the vibration source levels for the highest vibration generating construction equipment likely to be used during construction of the proposed project. The highest level of vibration would likely come from a vibratory compactor/roller.

Table 3.7-8. Vibration Source Levels for Construction Equipment

| Equipment Type ¹ | PPV at 25 feet |
|-----------------------------|----------------|
| Vibratory roller | 0.210 |
| Large bulldozer | 0.089 |
| Loaded trucks | 0.076 |
| Small bulldozer | 0.003 |

Notes: PPV = peak particle vibrations

Sources: Federal Transportation Authority 2018

In accordance with Caltrans guidance for determining impacts from vibration to structures (i.e., vibration levels that exceed 0.2 inch per second peak particle velocity [PPV]) and based on reference vibration levels and standard attenuation rates for a vibratory compactor, vibration from heavy-duty equipment would be a potential issue if structures were located within 25 feet of construction activity. For purposes of this analysis, movement of loaded haul trucks was conservatively considered to produce a vibration level of approximately 86 VdB (0.076-inch per second peak particle velocity [PPV] at a distance of 25 feet [FTA 2018; Caltrans 2004]). Regarding disturbance to sensitive land uses, construction equipment would exceed FTA-recommended criteria for infrequent events (i.e., 80 VdB) within 75 feet of construction activity. Based on aerial imagery, sensitive receptors near the American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3 are located as close as 25 feet away.

Therefore, the use of heavy-duty construction equipment would exceed the FTA threshold for sensitive land uses and would result in a significant impact to nearby residential receptors under CEQA and NEPA. The No Action Alternative includes a similar mix of equipment for erosion repairs along the American and Sacramento Rivers. These project components would have similar effects to the No Action Alternative for NEPA purposes.

The following mitigation has been identified to address this impact.

Mitigation Measure NOI-1: Implement Measures to Reduce Construction Noise and Vibration Effects

Please refer to Impact 3.7-a, Project Components: American River Erosion Contract 3B North and South, American River Erosion Contract 4A and 4B, and Sacramento River Erosion Contract 3 for the full text of this mitigation measure.

Timing: Before and during construction.

Responsibility: USACE

Implementing Mitigation Measure NOI-1 would reduce construction-related vibrations to the extent feasible by requiring the preparation and implementation of a vibration control plan, implementing feasible best management practices such as routing heavy loaded trucks away from sensitive receptors, and limiting the use of vibratory rollers and packers near sensitive receptors. Additionally, a pre- and post-construction survey would be conducted to assess the existing condition of structures prior to construction and potential architectural/structural damage induced by levee construction vibration at each structure within 100 feet of construction activities, including staging areas. However, it is still possible that vibration levels would exceed significance thresholds and no additional feasible mitigation measures are available to further reduce construction-related vibration impacts. Since construction vibration levels exceeding the FTA thresholds are still likely to be generated during the daytime, after implementation of all feasible mitigation measures, this impact would be significant and unavoidable.

Magpie Creek Project, Sacramento River Mitigation Site, American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Short-term and Moderate effects that are Less than Significant

Construction of MCP, SRMS, and ARMS would generate vibrations similar to what was discussed above for American River Erosion Contract 3B, American River Erosion Contract 4B, American River Erosion Contract 4A, and Sacramento River Erosion Contract 3. Table 3.7-8 shows the vibration source levels for the highest vibration generating construction equipment likely to be used during construction of the proposed project. The highest level of vibration would likely come from a vibratory compactor/roller.

The nearest sensitive receptors are more than 75 feet from project improvements. Therefore, the use of heavy-duty construction equipment would not exceed the FTA threshold for sensitive land uses and would result in a less-than-significant impact to nearby residential receptors under CEQA. The No Action Alternative includes a similar mix of equipment along the American and Sacramento Rivers, which would result in similar vibration levels. Therefore, construction of MCP, SRMS, and ARMS would not exceed FTA thresholds for sensitive land use and would result in a short-term, moderate, and less-than-significant effect for NEPA purposes.

Alternatives Comparison

Alternative 3a

Alternative 3a would change the location and type of improvements for the American River Erosion Contract 4A. All other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, MCP, SRMS, and ARMS) would be unchanged. This alternative proposes construction of a landside berm instead of a waterside berm and would thus include construction closer to residential properties. Additionally, due to the placement of this berm, construction noise attenuation would not benefit from the natural shielding and potential noise decrease from the existing levee. This short-term impact during construction activities would be significant. Even with implementation of Mitigation Measure NOI-1, this alternative would remain significant and unavoidable as there is no other feasible mitigation available. Also, this alternative would have a greater significant and unavoidable impact compared to the American River Erosion Contract 4A.

Table 3.7-9. Alternative 3a Effects on Noise and Vibration

| Impact Number and Title | Location | Discussion | Mitigation Measure(s) | CEQA Significance Conclusion | NEPA Effects Determination |
|--|------------------------------------|---|-----------------------|------------------------------|-----------------------------|
| 3.7-a: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards to other agencies | American River Erosion Contract 4A | No changes in effects from the Proposed Action. | NOI-1 | Significant and Unavoidable | Significant and Unavoidable |
| 3.7-b: Generation of excessive groundborne vibration or groundborne noise levels | American River Erosion Contract 4A | No changes in effects from the Proposed Action. | N/A | Significant and Unavoidable | Significant and Unavoidable |

Alternatives 3b, 3c, and 3d

Alternatives 3b, 3c, and 3d would change the location and type of improvements for the American River Erosion Contract 4A. All other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, MCP, SRMS, and ARMS) would be unchanged. The project elements that would be altered would not change any of the construction effects on noise and vibration compared to the Proposed Action. These short-term impacts during construction activities would be significant and even with implementation of Mitigation Measure NOI-1 would remain significant and unavoidable as no additional feasible mitigation is available.

Table 3.7-10. Alternatives 3b, 3c, and 3d Effects on Noise and Vibration

| Impact Number and Title | Location | Discussion | Mitigation Measure(s) | CEQA Significance Conclusion | NEPA Effects Determination |
|--|------------------------------------|---|-----------------------|------------------------------|-----------------------------|
| 3.7-a: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards to other agencies | American River Erosion Contract 4A | No changes in effects from the Proposed Action. | NOI-1 | Significant and Unavoidable | Significant and Unavoidable |
| 3.7-b: Generation of excessive groundborne vibration or groundborne noise levels | American River Erosion Contract 4A | No changes in effects from the Proposed Action. | N/A | Significant and Unavoidable | Significant and Unavoidable |

Alternatives 4a and 4b (CEQA-Only)

Alternatives 4a and 4b include an alternative design for the improvements to the ARMS. All other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, MCP, SRMS, and ARMS) would have the same effects as the ARMS. The project elements that would be altered would not change any of the construction effects on noise and vibration compared to the Proposed Action. Short-term noise impacts during construction activities would be significant and even with implementation of Mitigation Measure NOI-1 would remain significant and unavoidable as no additional feasible mitigation is available. Groundborne vibration and noise levels would be less than significant.

Table 3.7-11. Alternative 4a and 4b Effects on Noise and Vibration

| Impact Number and Title | Location | Discussion | Mitigation Measure(s) | CEQA Significance Conclusion | NEPA Effects Determination |
|--|----------|---|-----------------------|------------------------------|--|
| 3.7-a: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards to other agencies | ARMS | No changes in effects from the Proposed Action. | NOI-1 | Significant and Unavoidable | Significant and Unavoidable |
| 3.7-b: Generation of excessive groundborne vibration or groundborne noise levels | ARMS | No changes in effects from the Proposed Action. | N/A | Less than Significant | Short-term and Moderate effects that are Less than Significant |

Alternatives 5a (Conservation Bank Credits) and 5c (Sunset Pumps)

Alternatives 5a and 5c would eliminate the need to construct the SRMS and proposes alternative mitigation fulfillment. Alternative 5a includes purchasing all remaining, required mitigation credits from Service Approved Conservation Banks. Alternative 5c combines three approaches to complete the Sacramento River Mitigation requirements including 1) Purchasing Delta smelt

credits from an approved conservation bank 2) Funding a NMFS recovery plan project (Sunset Pumps) to remove a weir, allowing fish passage to benefit chinook steelhead and green sturgeon and 3) Funding the improvements at Sunset Pumps would increase water availability, which would then be directed to two local wildlife refuges, benefiting the Western Yellow Billed Cuckoo. The Sunset Pumps project is listed as high priority BOR, DWR, and USFWS, and is subject to separate NEPA/CEQA analysis prior to implementation. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. All activities related to 5c involve funding another project, therefore no additional impacts to noise and vibration would result from this alternative.

Table 3.7-12. Alternative 5a and 5c Effects on Noise and Vibration

| Impact Number and Title | Location | Discussion | Mitigation Measure | | Significance Conclusion | NEPA Effects Determination |
|---|----------|--|--------------------|--|-------------------------|----------------------------|
| 3.7-a: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. | SRMS | Less than the Proposed Action. Alternatives 5a and 5c would eliminate the need to construct the Sacramento River Mitigation project component; therefore, there would be no impact associated with noise generation. | N/A | | No Impact | No Impact |
| 3.7-b: Generation of excessive groundborne vibration or groundborne noise levels | SRMS | Less than the Proposed Action. Alternatives 5a and 5c would eliminate the need to construct the Sacramento River Mitigation project component; therefore, there would be no impact associated with vibrations. | N/A | | No Impact | No Impact |

Alternative 5b (Watermark Farms)

Alternative 5b would replace the SRMS with the new Watermark Farms Mitigation Site. The SRMS is located in a more rural area with only scattered rural residences, the closest of which is located 1,400 feet south of the mitigation site, across the river. In contrast, this alternative would generate increased noise impacts due to the proximity of residences to the Watermark Farms Mitigation Site and this impact would be significant. Implementation of Mitigation Measure NOI-1 would reduce this impact, but the impact would remain significant and unavoidable as no additional feasible mitigation is available. The SRMS is located in a more rural area with only scattered rural residences, the closest of which is located 1,400 feet south of the mitigation site. This alternative would not change any vibration impacts associated with construction activities as all residences would be located far enough away to not result in a change to vibration impact. These impacts would be less than significant.

Table 3.7-13. Alternative 5b Effects on Noise

| Impact Number and Title | Location | Discussion | Mitigation Measure | Significance Conclusion | NEPA Effects Determination |
|--------------------------------|-----------------------|---|---------------------------|--------------------------------|--|
| 3.7-a | SRMS, Watermark Farms | Greater than the Proposed Action. Alternative 5b would replace the Sacramento River Mitigation project component with the Watermark Farms Mitigation Site. This would increase noise impacts due to the proximity of residences to the Watermarks Farm Mitigation Site. | NOI-1 | Significant and Unavoidable | Significant and Unavoidable |
| 3.7-b | SRMS Watermark Farms | Greater than the Proposed Action. Alternative 5b would replace the Sacramento River Mitigation project component with the Watermark Farms Mitigation Site. This would increase vibration impacts due to the closer proximity of structures (roughly 300 feet from the site) to the Watermarks Farm Mitigation Site. | NOI-1 | Less than Significant | Short-term and Moderate effects that are Less than Significant |

3.8 Hazards and Hazardous Materials

3.8.1 Existing Conditions/Affected Environment

Phase I Environmental Site Assessments (ESA) are required by USACE policy for all civil works projects during the reconnaissance or feasibility study phases, and also by NEPA for all construction activities. The purpose of a Phase I ESA is to identify potential current or former hazardous, toxic, or radioactive waste sites. A Phase I ESA was conducted in 2012 for the project locations considered in the ARCF GRR Final EIS/EIR and included areas within a 1-mile buffer of these locations. Within this buffer a search of Federal, State, and local environmental databases and historic aerial, topographic, and fire maps were reviewed. A site visit of the study area was also conducted to identify recognizable environmental conditions (RECs). The ARCF GRR Final EIS/EIR summarized the Phase I ESA results in Section 3.17.1 and the full report is in Appendix H of that document. The 2012 Phase I ESA identified seven sites with the potential to affect the ARCF footprint in the ARCF GRR Final EIS/EIR; however, none of those sites impact the areas considered under the Proposed Action in this SEIS/SEIR.

Due to the addition of new areas considered under the Proposed Action, updated Phase I ESAs were conducted at the American River sites and Magpie Creek. Several Phase II investigations, which include laboratory analyses of soil and water samples, were conducted at Magpie Creek. Below is a list of sites, dates, and findings of the new ESAs:

- American River 3B: A Phase I ESA was conducted in 2020 and did not find any new hazardous materials sites. Contaminated groundwater is unlikely due to overall groundwater gradients and presence of a levee cutoff wall.
- American River 4A: A Phase I ESA was conducted in 2023 and found a record of a drinking water well within ¼ mile of the site with PFAS (per- and polyfluoroalkyl substances) contamination.
- Magpie Creek: A Phase I ESA was conducted in 2015 on the undeveloped parcels to the east and west of Raley Blvd to be acquired by SAFCA for floodplain conservation. Due to the former agricultural use and the proximity of McClellan Airforce Base, the report recognized the potential for soil and groundwater contamination. A limited Phase II investigation followed in 2017. A Phase I ESA was conducted at Magpie Creek between Raley Blvd and Vinci Avenue in 2020. A Phase II investigation was conducted in this same area in 2021. The results are discussed in greater detail in the following section.

The California Environmental Protection Agency maintains data resources that provide information regarding hazardous waste disposal facilities or land containing hazardous waste, contaminated groundwater wells, and leaking underground storage tanks. A search of hazardous materials sites for the study area, including the new areas considered under the Proposed Action, was conducted in February 2023 using the CalEPA Cortese List and EnviroStor database, GeoTracker database, and list of Cease and Desist / Cleanup and Abatement Orders for sites containing hazardous materials which overlap with the projects considered under the Proposed Action. The American River Mitigation site (ARMS) and the McClellan Airforce Base are Cortese-listed sites with the potential for contaminants to affect areas considered under the

Proposed Action. A closed municipal solid waste landfill exists on the southeastern portion of Grand Island with no listed contaminants of concern. It has been closed since 1980.

The project sites for the Proposed Action are not within a moderate, high, or very high fire hazard severity zone (Cal FIRE 2022a, b).

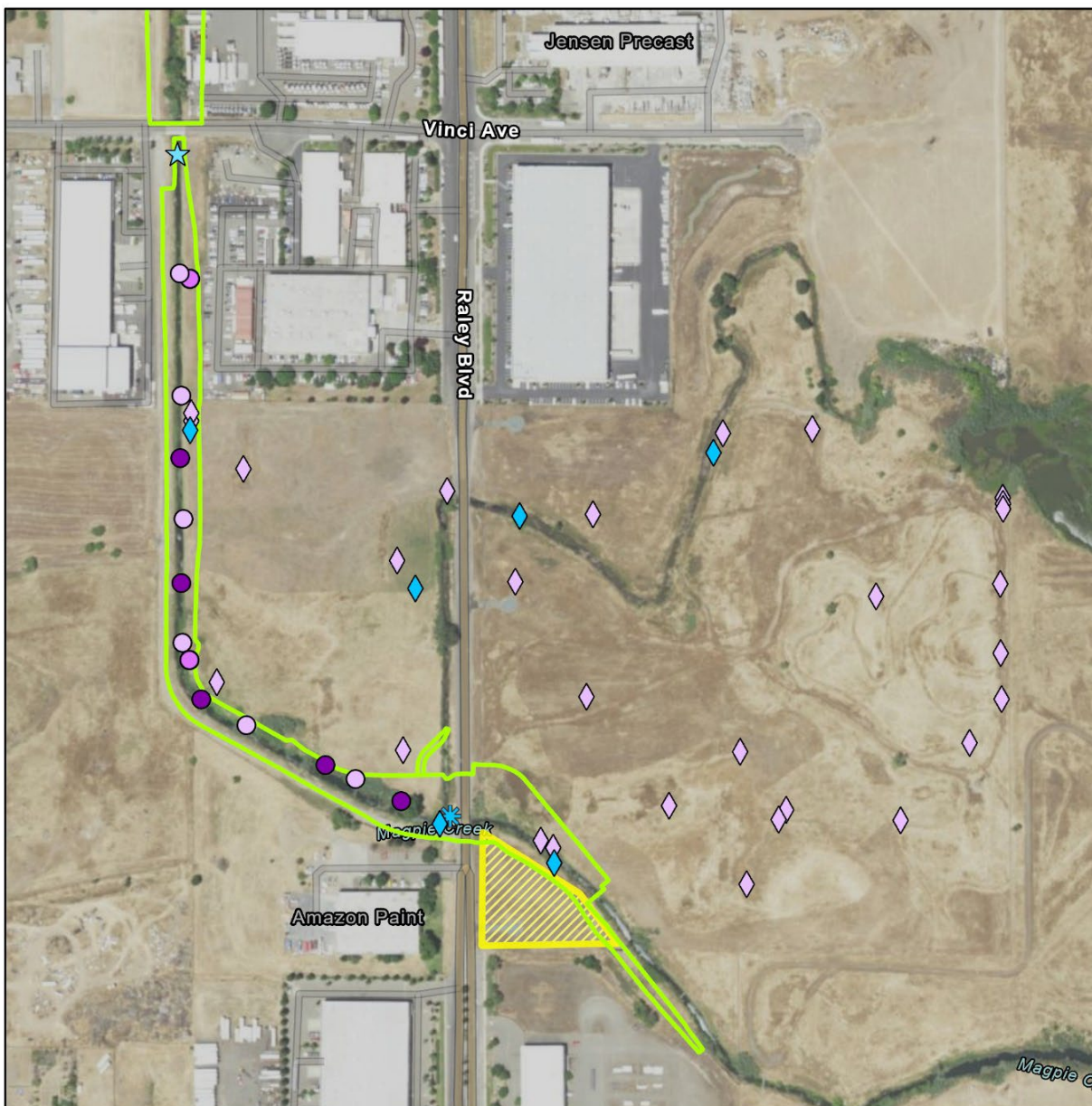
Known Hazardous Materials Sites

McClellan Air Force Base

McClellan Air Force Base was a maintenance depot for aircraft and electronic equipment from 1939 to 2001. It was designated a Federal superfund site and listed on the National Priorities List (NPL) in 1987. Magpie Creek and its tributaries run through the base east of Raley Blvd. A search of the California Department of Toxic Substances Control (DTSC) EnviroStor and California EPA Cortese list databases identified hazardous waste stored or used at the facility in significant quantities (DTSC 2023; CalEPA 2023a, b;). These include organic solvents, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), vinyl chloride, metals, pesticides, oils and greases, and radioactive compounds. From the 1940s through 1978, these materials were disposed and burned at various sites along the western side of the base. Environmental investigations beginning in 1979 identified soil and groundwater contamination both on and off the base. DTSC has been overseeing cleanup of the site, and much of the base has been converted to McClellan Business Park. Cleanup of the base extended as far west as the confluence of Don Julio and Magpie Creeks at Raley Blvd, within the project area, where Don Julio Creek was dewatered and bed sediment was excavated and transported away. Test results of the excavated material did not exceed cleanup criteria for the contaminants of concern (AECOM 2016).

As part of the 2017 Phase II investigation on the floodplain conservation parcels, 20 surface soil samples were collected between 0 and 1 feet below the ground surface and analyzed for pesticides and herbicides, metals, dioxins, semi-volatile organic compounds, volatile organic compounds, total petroleum hydrocarbons, and polychlorinated biphenyls (PCBs). The locations of these samples are in Figure 3.8-1. Following these results, additional surface soil samples were collected between 0 and 1 feet, and creek sediment samples were collected at 4 inches in depth (to represent an aerobic environment) and 2 feet in depth (to represent an aerobic environment). The analytical results found detections of dichlorodiphenyldichloroethylene (DDE) and dichlorodiphenyltrichloroethane (DDT), PCBs, and several metals that were below levels of concern to human health based on the use of the site as a floodplain area, but of possible concern to ecological health.

As part of the Phase II ESA along the channel between Raley Blvd and Vinci Ave, 7 soil borings taken to 12 feet below ground surface at 4-foot intervals, 7 surface soil samples, two composite samples from stockpile sites, and two surface water samples were tested for metals, mercury, organochlorine pesticides, and PCBs. Sample locations are in Figure 3.8-1. Arsenic was the only analyte detected above the U.S. Environmental Protection Agency regional screening levels and California DTSC screening levels for commercial/industrial soil. However, arsenic in California is known to have higher background concentrations than the screening levels.



Magpie Creek Phase II ESA Sample Locations

2017 Locations

- ◆ Stream Sediment
- ◇ Soil Surface
- ★ Water

2021 Locations

- Soil Boring
- Soil Composite
- Soil Surface
- ★ Water

- Construction Footprint
- Staging Area

Updated 4/26/2023

0 300 600 Feet



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Figure 3.8-1. Soil and water sample locations from the 2017 and 2021 Phase II ESAs for Magpie Creek

American River Mitigation Site

The ARMS is located on the northern bank of the American River at River Mile 1.3 within the American River Parkway. The property was initially used for agriculture beginning in the 1930s until approximately 1966 when the Urrutia family began sand and gravel operations on a portion of the property. By 1997, historic excavation activities resulted in the creation of an approximately 60-acre pond. The property was later used for sorting, distributing, and recycling soil and construction debris followed by a concrete pumping business operation (CVRWQCB 2023). The western portion of the site contains a garage and shop and three shipping containers. The property is used to stage concrete pumping equipment used by the property caretaker. The southwest corner of the property contains a wooded area. There are approximately 10 stockpiles of construction debris located east and south of the lake.

An environmental consultant was contracted by the Sacramento Area Flood Control Agency (SAFCA) to conduct environmental due diligence in preparation of SAFCA's planned acquisition of the property. The property has undergone a Phase I and II Environmental Site Assessment (ESA), as well as a Geotechnical Investigation.

A Phase I ESA conducted in October 2022 identified the 10 soil stockpiles, petroleum storage associated with two aboveground storage tanks (ASTs), storage of auto batteries on the ground, as well as historical conditions such as a former polychlorinated biphenyl (PCB)-containing transformer explosion, use of the property as an unpermitted construction debris site for several decades, the excavation of topsoil/aggregate from the manmade lake, and placement of fill into the pond.

Phase II ESA activities and geotechnical investigations were conducted in 2022 and 2023 and included geophysical scanning of the land portions of the property, bathymetry of the manmade lake, collection of stockpile and surface soil samples, geotechnical and environmental borings, sediment samples including grid sampling, deep boring sampling, and targeted sampling, groundwater sampling, and surface water sampling (Geosyntec 2023). Below is a summary of data results based on site locations which include Northern Area, Northeast Area, Embankment Area, Operations Area, and the Pond (Geosyntec 2023).

- In the *Northern Area*, which includes the entire area north of the onsite pond, 16 soil borings were advanced. The majority of the borings show no impacts from previous land uses. Lead was reported at slightly elevated concentrations in two samples, no other constituents of concern were reported.
- In the *Northeast Area* where buried and exposed rubble had been observed along the bank of the pond, six soil borings have previously been advanced. TPH-d, naphthalene and lead were reported at elevated concentrations in select soil samples and borings.
- In the *Embankment Area*, south of the pond between the site and the American River, 27 borings were advanced on the Embankment Area and eastern bank, and 7 samples were collected from surface stockpiles. Constituents of concern were not reported at concentrations above screening levels in samples collected from the stockpiles. Naphthalene, TPH-d, chromium, and lead were reported at concentrations above screening levels in a few of the 27 borings. Unfiltered groundwater samples were also collected in this area. Arsenic,

barium, and nickel were reported at concentrations above the MCLs in one sample, naphthalene was reported in two of the groundwater samples, and TPH-d was reported in the four groundwater samples.

- In the *Operations Area* located on the western bank and consisting of an off-site residence with three and a half shipping containers, vehicles, equipment and materials storage, half a building used as a maintenance shop, ASTs, the domestic groundwater supply well, six borings were advanced in this area. Five of the 6 borings were not advanced deeper than 2 feet bgs, with one boring advanced to 15 feet bgs. TPH-d, TPH-mo, and lead were reported at elevated concentrations near the former ASTs. Lead, mercury, and zinc were reported at elevated concentrations in the 15-foot sample. Arsenic was reported in an unfiltered water sample collected from the on-site well.
- In the *Pond Area*, from the results of bathymetric surveys it does not appear that the elevation of the pond bottom has significantly changed. Sediment and surface water samples have been collected from the pond. Constituents of concern have generally not been reported at elevated concentrations in surface water or sediment, with the exception of some soluble metals using modified elutriate testing. Based on results of a modified elutriate test (MET), chromium exceeds CTRs in two of 12 samples, and mercury exceeds levels in three of 12 samples. Methylmercury was reported in surface water samples.

SAFCA subsequently conducted additional Phase II ESA activities and implemented a Corrective Action Plan (CAP) for the site. The CAP addressed soil with elevated petroleum hydrocarbon concentrations through excavation and removal. Samples were collected from the sides and base of the excavation to confirm that the extent of the impacted material was removed. SAFCA will be required to achieve administrative closure of the Department of Toxic Substances Control's Envirostor-listed hazardous waste site prior to use of the site for habitat restoration.

School Facilities

The proposed haul routes for Magpie Creek Project and Lower American River 3B would be within ¼-mile of several schools but no hazardous materials would be transported as part of the Proposed Action. Additionally, LAR C3B erosion protection work is within ¼ mile of OW Erlewine Elementary School, but hazardous material would not be stored at this site as part of the Proposed Action.

Airports and Airstrips

The Sacramento - McClellan airport is located approximately 1 mile east of Magpie Creek Project. It is a privately owned airport located on the former site of McClellan Air Force Base. Also, with 2 miles of Sacramento River Erosion Contract 3 is the Sacramento Executive Airport this airport is operated by the County of Sacramento. A portion of the Sacramento River Erosion Contract 3 project site is located within Referral Area 2 of the Airport Influence Area, as shown in the Sacramento International Airport Land Use Compatibility Plan. The MCP project site is located within the overflight zone for the McClellan Airport. No other project components are located within Airport Influence Areas designated within airport land use plans (SACOG 1992, SACOG 1999, SACOG 2013). Referral Area 2 includes locations where airspace protection (other than wildlife hazards) and/or overflight are compatibility concerns, but not noise or safety.

The Overflight Zone identifies certain incompatible land uses, generally those that would draw large numbers of people. No restrictions were identified that would apply to construction activities.

3.8.2 Applicable Laws, Regulations, Policies, and Plans

Section 3.17 of the ARCF GRR Final EIS/FEIR (pages 322-323) identified Federal or State environmental laws and regulations that apply to hazards and hazardous materials. Chapter 5 of the ARCF GRR Final EIS/FEIR summarized the environmental laws and regulations that apply to the ARCF Project and described the status of compliance with those laws and regulations. Additional applicable laws and regulations not previously listed in the ARCF GRR Final EIS/FEIR are listed below:

Federal

Community Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act)

The Community Right-to-Know Act was enacted by Congress in 1986 to help local communities protect public health, safety, and the environment from chemical hazards. To implement the Community Right-to-Know Act, Congress requires each state to appoint a State Emergency Response Commission (SERC). The SERCs are required to divide their states into Emergency Planning Districts and to name a Local Emergency Planning Committee (LEPC) for each district.

Broad representation by fire fighters, health officials, government and media representatives, community groups, industrial facilities, and emergency managers ensures that all necessary elements of the planning process are represented.

Relocation Assistance and Real Property Acquisition Policies of 1970 (Uniform Act)

The Uniform Act was created to ensure that property owners and tenants are treated fairly, equitably and receive relocation assistance, in the case that Federally funded programs or projects require acquiring private property for the development of said program or project.

The Uniform Act provides important protections and assistance for people affected by Federally funded projects government wide. To provide guidance and assistance to Federal government agencies, the U.S. Department of Transportation (DOT) was named as the Federal lead agency for the Uniform Act, a role filled by FHWA's Office of Real Estate Services. The Lead Agency is responsible for developing, issuing, and maintaining government-wide regulations, as well as providing assistance to Uniform Act Federal agencies and providing an annual report to Congress.

Department of Transportation Hazardous Materials Transportation Act

The U.S. Department of Transportation governs the transport of chemicals and hazardous materials under CFR Title 49, which stipulates the types of containers, labeling, and other restrictions that must be used to move such material on interstate highways.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act provides a Federal "Superfund" to clean up uncontrolled or abandoned hazardous-waste sites as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment. Through this act, EPA was given power to seek out those parties responsible for any release and assure their cooperation in the cleanup State.

Hazardous Waste Control Act of 1972

The Hazardous Waste Control Act (California Health and Safety Code, Section 25100 et seq.) creates the framework for managing hazardous wastes in California. It requires that a Statewide hazardous waste program be developed to administer and implement the provisions of the Federal Resource Conservation Recovery Act. The Hazardous Waste Control Act also designates California-only hazardous wastes and includes standards (regulations) that are equal to or, in some cases, more stringent than Federal requirements. The act lists allowable exemptions and requirements for recycled materials and for other materials, such as launderable rags.

DTSC administers and implements the provisions of the Hazardous Waste Control Act at the State level, pursuant to EPA's authorization. Certified unified program agencies, which are typically local agencies, implement some provisions of the act locally.

DTSC requires preparation of written programs and response plans, such as hazardous materials business plans. DTSC's programs also include aftermath cleanup caused by improper management of hazardous waste; evaluation of samples taken from sites; enforcement of regulations regarding use, storage, and disposal of hazardous materials; and encouragement of pollution prevention.

State

California Accidental Release Response Plan Programs

The California Accidental Release Response Plan (CalARP) requires certain facilities (referred to as "stationary sources") that handle, manufacture, use, or store any regulated substances above threshold quantities to take actions to proactively prevent and prepare for accidental releases. Facilities subject to CalARP requirements must submit a Risk Management Plan (RMP).

The California Environmental Protection Agency (CalEPA) oversees the implementation of the CalARP program at the state level, while Certified Unified Program Agencies (CUPAs) and/or Participating Agencies (PAs) implement the CalARP program at the local level.

Occupational Safety and Health Administration (OSHA)

The California Occupational Safety and Health Administration (Cal/OSHA) is primarily responsible for developing and enforcing workplace safety regulations in the State. Cal/OSHA regulations pertaining to the use of hazardous materials in the workplace (CCR Title 8) require employers to provide safety training and safety equipment, conduct accident and illness prevention programs, warn against hazardous-substance exposure, and prepare emergency action and fire prevention plans.

Cal/OSHA also enforces hazard-communication program regulations that contain training and information requirements. Companies must establish procedures to identify and label hazardous substances, communicate information about hazardous substances and their handling, and prepare health and safety plans to protect workers and employees at hazardous-waste sites. Employers must make material safety data sheets available to employees and document employee information and training programs.

California Emergency Services Act

The California Emergency Services Act provides the basic authority for conducting emergency operations following a proclamation of emergency by the governor and/or appropriate local authorities. Local government and district emergency plans are considered to be extensions of the California Emergency Plan, established in accordance with the Emergency Services Act.

The California Emergency Management Agency (Cal EMA) is the State agency responsible for establishing emergency response and spill notification plans related to hazardous materials accidents. CAL EMA regulates businesses by requiring specific businesses to prepare an inventory of hazardous materials (CCR Title 19). CAL EMA is also the lead State agency for emergency management and is responsible for coordinating the State-level response to emergencies and disasters.

Central Valley Regional Water Quality Control Board – Site Cleanup Program

The Site Cleanup Program (SCP) regulates and oversees the investigation and cleanup of contaminated sites. The primary mission of the SCP is to protect water quality, regulate practices that have the potential to pollute water, and enforce State and Federal laws and policies. To do this SCP staff must identify contaminated sites, provide technical and regulatory oversight of cleanup activities, and ensure that remedies result in site restoration and protection of human health, the environment and water quality. Staff overseeing investigation and cleanup actions at sites that have been impacted by releases of pollutants to soil, soil gas, groundwater, surface water, sediments, and indoor air. SCP sites include large industrial facilities, military bases, oil refineries, factories, and smaller facilities such as dry cleaners and plating shops.

Local

Sacramento County 2021 Multi-jurisdictional Local Hazard Mitigation Plan Update

This 2021 Local Hazard Mitigation Plan (LHMP) Update serves to update the 2016 Federal Emergency Management Agency (FEMA) approved Sacramento County LHMP. The purpose of hazard mitigation is to reduce or eliminate long-term risk to people and property from hazards. The established Hazard Mitigation Planning Committee (HMPC), which includes key County representatives, and other local and regional stakeholders, conducted a risk assessment that identified and profiled hazards that pose a risk to the County and participating jurisdictions. Floods, earthquakes, drought, levee failures, landslides, wildfires, and other severe weather events are among the hazards that can have a significant impact on the County.

Based on the results of the risk assessment, the participating jurisdictions and the HMPC developed a mitigation strategy for reducing the County's and all participating jurisdictions' risk and vulnerability to hazards. The resulting Mitigation Strategy for the Sacramento County Planning Area is comprised of LHMP goals and objectives and a mitigation action plan, which includes a series of mitigation action projects and implementation measures. Based on the risk assessment, the HMPC identified goals and objectives for reducing the Sacramento County Planning Area's vulnerability to hazards.

Sacramento County 2030 General Plan

The Sacramento County 2030 General Plan's Hazardous Materials Element, most recently updated in September 2017, contains the following hazardous materials goals and policies relevant to the proposed project (Sacramento County 2017):

- Objective:** Protect the residents of Sacramento County from the effects of a hazardous material incident via the implementation of various public health and safety programs.
- **Policy HM-4:** The handling, storage, and transport of hazardous materials shall be conducted in a manner so as not to compromise public health and safety standards.
 - **Policy HM-7:** Encourage the implementation of workplace safety programs and to the best extent possible ensure that residents who live adjacent to industrial or commercial facilities are protected from accidents and the mishandling of hazardous materials.
 - **Policy HM-8:** Continue the effort to prevent ground water and soil contamination.
 - **Policy HM-9:** Continue the effort to prevent surface water contamination.
 - **Policy HM-10:** Reduce the occurrences of hazardous material accidents and the subsequent need for incident response by developing and implementing effective prevention strategies.
 - **Policy HM-11:** Protect residents and sensitive facilities from incidents which may occur during the transport of hazardous materials in the County.

3.8.3 Analysis of Environmental Effects

Analysis Methodology

Potential impacts on the environment related to hazards and hazardous materials were evaluated based on the type and location of anticipated project-related construction and O&M activities. The analysis was based on review of publicly available information and databases related to existing land uses, schools, wildfire hazard zones, and known soil and/or groundwater contamination sites within and near the project site.

Basis of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. These thresholds, and the impact analysis that follows, also take into consideration the significance of

an action while providing distinction between direct and indirect effects as required under NEPA (40 CFR 1508.1(g)). The alternatives under consideration were determined to result in a significant impact related to hazards and hazardous materials if they would do any of the following:

- a. create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- 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, including hazards associated with existing contaminated soils, asbestos, or existing contaminated groundwater during dewatering activities;
- c. emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- 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;
- e. for a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area;
- f. impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Effects Not Discussed in Detail

Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. (3.8-c)—Construction activities associated with the project would not occur within one-quarter mile of an existing or proposed school. The Magpie Creek Project's haul route would pass within 700 feet of the Main Avenue Elementary School, but hauling of hazardous materials is not anticipated. Also, project construction and a haul route for LAR C3B erosion protection work is within ¼ mile of OW Erlewine Elementary School, but hazardous material is not anticipated to be hauled or stored at the site as part of the Proposed Action.

The project would not involve hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. Therefore, this issue is not addressed further in the SEIS/SEIR.

Result in an airport-related safety hazard or excessive noise for people residing or working in the project area. (3.8-e)—A portion of the Sacramento River Erosion Contract 3 project site is located within Referral Area 2 of the Airport Influence Area, as shown in the Sacramento International ALUP. The MCP project site is located in the Overflight Zone. No other project components are located within Airport Influence Areas designated within ALUPs. Referral Area 2 includes locations where airspace protection (other than wildlife hazards) and/or overflight are compatibility concerns, but not noise or safety. The Overflight Zone identifies several

incompatible land uses but does not identify sensitivity for construction. Given that no new developments are being considered as part of Sacramento River Erosion Contract 3 or the MCP, the project component is compatible with the ALUP. Noise effects are analyzed in Section 3.7 of this document.

Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. The Proposed Action is not located in a high severity fire zone or State Responsibility Area (SRA). The Proposed Action includes construction of erosion and flood protection measures along the existing Sacramento County levee system, and the establishment of high-quality onsite mitigation. The Proposed Action would not change operations and maintenance at the improvement sites and construction activities would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

No Action Alternative

Under the No Action Alternative, the Proposed Action from the ARCF GRR Final EIS/EIR would be implemented. Construction activities would involve use of hazardous materials such as fuels, oils and lubricants, and cleaners common to construction projects. Contractors would be required to use, store, and transport these materials in compliance with Federal, State, and local regulations during project construction. With the implementation of mitigation measures discussed in the ARCF GRR Final EIS/EIR Section 3.17.6, effects from hazardous materials due to equipment operation would be less than significant.

The project would be constructed within the original footprint described in the ARCF GRR Final EIS/EIR and would not include the portions of Magpie Creek between Vinci Ave and Dry Creek Rd or the new levee east of Raley Blvd. On the Lower American River, the refined erosion protection site locations and tree scour work on Contract 3B, and the berm and associated bike trail reroute on Contract 4A, would not be constructed. The Sacramento and American River mitigation sites would not be constructed. Without the additional improvements to the flood protection infrastructure, the project area would still be vulnerable to flooding and the potential for release of hazardous materials caused by flooding would exist. This would include hazardous and toxic waste. The potential for the spread of hazardous wastes from both new and existing sites would be a significant effect under the No Action Alternative and no feasible mitigation would be available.

Proposed Action Alternative

3.8-a Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

CEQA Significance Conclusion: Less than Significant

NEPA Significance Conclusion: Short-term and Minor Effects that are Less than Significant

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, Magpie Creek

Project, American River Mitigation Site, Sacramento River Mitigation Site, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Short-term and Minor effects that are Less than Significant

The construction of the Proposed Action would require the transport, storage, and use of fuels, oils, and lubricants for equipment maintenance and operation. These materials are not classified as acutely hazardous, and the project would not require transport or use of large quantities of these materials beyond what would be required to operate construction equipment. All material transport would be in compliance with Federal, State, and local regulations and effects from using these materials would be less than significant.

3.8-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, including hazards associated with existing contaminated soils, asbestos, or existing contaminated groundwater during dewatering activities.

CEQA Significance Conclusion: Less than Significant with Mitigation Incorporated

NEPA Significance Conclusion: Short-term and Moderate effects that are Less than Significant with Mitigation Incorporated

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

NEPA Impact Conclusion (Design Refinements): Short-term and Moderate effects that are Less than Significant with Mitigation Incorporated

Soil and water testing was conducted as part of Phase II ESAs in the floodplain parcels and between Raley Blvd and Vinci Ave. The samples were collected in the area where earthwork is required on either side of Raley Blvd and cover the footprint for the creek widening and realignment. The results did not find hazardous materials at concentrations that would require disposal of contaminated materials from the site.

The testing along the portion of Magpie Creek between Raley Blvd and Vinci Ave involved collection of soil samples from the surface to 12 feet in depth. Contaminants were not detected above USEPA regional screening levels or California DTSC screening levels for industrial soil. Based on these results, it is unlikely that hazardous materials would be released into the environment from the new canal alignment and widening.

The new levee planned east of Raley Blvd is located on land bordering the former McClellan Airforce Base. The Proposed Action would involve placing of materials hauled onto the site and

would not require excavation of existing materials from this area, therefore the risk of releasing hazardous materials into the environment from contaminated soil is low. Nevertheless, there is a potential that earthmoving activities associated with project activities could encounter contaminated soil or groundwater, and/or underground utility infrastructure containing hazardous substances, which could possibly expose people or the environment to hazardous materials. This impact would be potentially significant. The following mitigation measures would be implemented to address this impact.

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Prior to the start of earthmoving activities, the Project Partners will obtain coverage under the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) stormwater permit for general construction activity (Order 2022-0057-DWQ), including preparing and submitting a project-specific SWPPP at the time the Notice of Intent to discharge is filed. The SWPPP shall identify and specify the following:

- the use of an effective combination of robust erosion and sediment control BMPs and construction techniques that shall reduce the potential for runoff and the release, mobilization, and exposure of pollutants, including legacy sources of mercury from project-related construction sites. These may include but would not be limited to temporary erosion control and soil stabilization measures, sedimentation ponds, inlet protection, perforated riser pipes, check dams, and silt fences;
- The implementation of approved local plans, non-stormwater management controls, permanent post-construction bmps, and inspection and maintenance responsibilities;
- The pollutants that are likely to be used during construction that could be present in stormwater drainage and non-stormwater discharges, including fuels, lubricants, and other types of materials used for equipment operation;
- The means of waste disposal;
- Spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills;
- Personnel training requirements and procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for bmps specified in the SWPPP; and
- The appropriate personnel responsible for supervisory duties related to implementation of the SWPPP.

Where applicable, BMPs identified in the SWPPP will be in place throughout all site work, construction/demolition activities, and will be used in all subsequent site

development activities. BMPs may include, but are not limited to, such measures as those listed below:

- Work window- conduct earthwork during low-flow periods;
- To the extent possible, stage construction equipment and materials on the landside of the levee in areas that have already been disturbed;
- Minimize ground and vegetation disturbance during project construction by establishing designated equipment staging areas, ingress and egress corridors, spoils disposal and soil stockpile areas, and equipment exclusion zones prior to the commencement of any grading operations;
- Stockpile soil on the landside of the levee reaches, and install sediment barriers (e.g., silt fences, fiber rolls, and straw bales) around the base of stockpiles to intercept runoff and sediment during storm events. If stockpiling soil on the landside of the levee is not feasible, a waterside soil stockpiling location above the ohwm will be coordinated with the appropriate agencies, such as nmfs, cvrwqcb, and usfws (if applicable). If necessary, cover stockpiles with geotextile fabric to provide further protection against wind and water erosion;
- Install sediment barriers on graded or otherwise disturbed slopes as needed to prevent sediment from leaving the project site and entering nearby surface waters;
- Install plant materials to stabilize cut and fill slopes and other disturbed areas once construction is complete. Plant materials will include an erosion control native seed mixture or shrub and tree container stock. Temporary structural bmps, such as sediment barriers, erosion control blankets, mulch, and mulch tackifier, will be installed as needed to stabilize disturbed areas until vegetation becomes established;
- Conduct water quality tests to measure increases in turbidity and sedimentation caused by construction activities. Specifically, where natural turbidity is between 0 and 5 ntus, increases shall not exceed 1 ntu; where natural turbidity is between 5 and 50 ntus, increases shall not exceed 20%; where natural turbidity is between 50 and 100 ntus, increases shall not exceed 10 ntus; and where natural turbidity is greater than 100 ntus, increases shall not exceed 10%. If turbidity is found to exceed these standards, cease construction activities until filtration or construction bmps can be demonstrated to effectively prevent sediment discharge above standards; and
- A copy of the approved swppp shall be maintained and available at all times on the construction site.

Project Partners will also prepare and implement a Spill Prevention, Control, and Countermeasure Plan (SPCCP). A SPCCP is intended to prevent any discharge of oil into navigable water or adjoining shorelines. The contractor will develop and implement a SPCCP to minimize the potential for adverse effects from spills of hazardous, toxic, or petroleum substances during construction and operation activities. The SPCCP will be completed before any construction activities begin. Implementation of this measure will comply with state and Federal water quality regulations. The SPCCP will describe spill

sources and spill pathways in addition to the actions that will be taken in the event of a spill (e.g., an oil spill from engine refueling will be immediately cleaned up with oil absorbents). The SPCCP will outline descriptions of containment facilities and practices such as doubled-walled tanks, containment berms, emergency shut-offs, drip pans, fueling procedures, and spill response kits. It will also describe how and when employees are trained in proper handling procedures and spill prevention and response procedures.

Timing: Before and during construction

Responsibility: Project Partner

Mitigation Measure HAZ-1: Address Potentially Contaminated Materials in Accordance with Applicable Laws.

The Non-Federal Partners have the responsibility to assess and clean-up HTRW prior to turn over of the site to USACE for construction. However, if soil or water showing is evidence of contamination (odor, staining, etc.) is encountered during excavation or construction activities, Project Partners will direct construction contractors to halt activities and require investigation (potentially including data collection or sampling) by a qualified professional. Any hazardous materials found will be handled, transported, and disposed of at an approved disposal site in accordance with all Federal, State, and local regulations at an approved disposal site.

Timing: During construction

Responsibility: Project Partners

Implementing Mitigation Measures GEO-1 and HAZ-1 would require testing to determine the presence and extent of potential contaminants encountered during construction. If hazardous materials are present, these materials will be handled, transported, and disposed of at an approved disposal site in accordance with all Federal, State, and local regulations, reducing the impact to a less-than-significant level.

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Erosion Contract 3

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): Short-term and Negligible effects that are Less than Significant

The American and Sacramento River erosion protection sites are not known to be associated with sites containing hazardous materials, and release of hazardous materials into the environment from these locations is unlikely. There is a potential that earthmoving activities associated with project activities could encounter contaminated soil or groundwater, and/or underground utility infrastructure containing hazardous substances, which could possibly expose people or the environment to hazardous materials. However, Project Partners have conducted research through activities such as Phase I Assessments and conducting environmental soil sampling and there has

been no substantial evidence available to indicate that there would be a risk of encountering contaminated soil. Given this unlikely event, this impact would be less than significant. The following mitigation measures would nevertheless be implemented and would further reduce this impact.

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Please refer to Impact 3.8-b, MCP above for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partner

Mitigation Measure HAZ-1: Address Potentially Contaminated Materials in Accordance with Applicable Laws

Please refer to Impact 3.8-b, MCP above for the full text of this mitigation measure.

Timing: During construction

Responsibility: Project Partners

Implementing Mitigation Measures GEO-1 and HAZ-1 would require testing to determine the presence and extent of potential contaminants encountered during construction. If hazardous materials are present, these materials will be handled, transported, and disposed of at an approval disposal site in accordance with all Federal, State, and local regulations, reducing the impact to a less-than-significant level.

American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

NEPA Impact Conclusion (Design Refinements): Short-term and Moderate effects that are Less than Significant with Mitigation Incorporated

The ARMS is a former industrial site with an approximately 60-acre man-made pond created in the 1960s by aggregate and soil mining in the central portion of the site. The western operations area contains a garage/shop and three shipping containers. The property is used to stage concrete pumping equipment. The southwest corner of the property contains a wooded area. There are approximately 10 stockpiles of construction debris located east and south of the man-made pond.

As part of the Phase II ESA activities, soil, sediment, and water testing has been conducted at the site to determine if occurrence of hazardous materials is present. See Section 3.8.1 “Existing

Conditions/Affected Environment,” for a full discussion of known hazardous materials at the site and the removal action undertaken implementing a CAP.

The Proposed Action includes use of the Urrutia site as a mitigation site to offset project impacts to Federally listed species and regional habitats. The mitigation design for the site has been informed by the locations of known metals and petroleum hydrocarbons that have been identified in soil and groundwater at levels above regulatory thresholds, and the anticipated cleanup plans being pursued with the Central Valley Regional Water Quality Control Board (CVRWQCB) by the Non-Federal Partners. According to the Project Partnership Agreement, the Non-Federal Partners are responsible for the costs of cleanup and response to hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601-9675). These known materials would be remediated by capping or removal, or otherwise addressed through project design. Nevertheless, there is a potential that earthmoving activities associated with project construction could encounter contaminated soil or groundwater that was not previously identified, and/or underground utility infrastructure containing hazardous substances, which could possibly expose people or the environment to hazardous materials. This impact would be potentially significant. The Non-Federal Partners would handle the removal of all hazardous material that qualify under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 during the construction of the mitigation project. The following mitigation measures have been identified to address this impact.

Mitigation Measure HAZ-1: Address Potentially Contaminated Materials in Accordance with Applicable Laws

Please refer to Impact 3.8-b, MCP above for the full text of this mitigation measure.

Timing: During construction

Responsibility: Project Partners

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Please refer to Impact 3.8-b, MCP above for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partner

Implementing Mitigation Measures GEO-1 and HAZ-1 would require testing to determine the presence and extent of potential contaminants encountered during construction. If hazardous materials are present, these materials will be handled, transported, and disposed of at an approval disposal site in accordance with all Federal, State, and local regulations, reducing the impact to a less-than-significant level.

Sacramento River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

NEPA Impact Conclusion (Design Refinements): Short-term and Minor effects that are Less than Significant with Mitigation Incorporated

Monitoring activities including groundwater testing have been conducted on the Grand Island site per RWQCB's Order WQ-2019-0006-DWQ dated March 20, 2019, that requested Grand Island Landfill be investigated for the presence of perfluoroalkyl and polyfluoroalkyl substances (collectively referred to as PFASs). There were several detections of PFAS compounds in each monitoring well; however, PFASs were not at concentrations exceeding OEHHA recommended Notification Levels. Based on these results, not additional testing appears to be required.

No work is planned at decommissioned landfill located on the eastern side of the SRMS. By avoiding the landfill, there would be a low risk of releasing hazardous materials into the environment from this area. Additionally, testing conducted in 2019-2020 indicated that only low levels of PFASs occur onsite. As part of the environmental soil survey work at ARMS PFAS analysis would be conducted to evaluate the possible presence of PFAS compounds in and soil and groundwater. Nevertheless, there is a potential that earthmoving activities associated with project activities could encounter contaminated soil or groundwater, and/or underground utility infrastructure containing hazardous substances, which could possibly expose people or the environment to hazardous materials. This impact would be potentially significant. The following mitigation measures would be implemented to address this impact.

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Please refer to Impact 3.8-b, MCP above for the full text of this mitigation measure.

Timing: Before and during construction.

Responsibility: Project Partner

Mitigation Measure HAZ-1: Address Potentially Contaminated Materials in Accordance with Applicable Laws

Please refer to Impact 3.8-b, MCP above for the full text of this mitigation measure.

Timing: During construction

Responsibility: Project Partners

Implementing Mitigation Measures GEO-1 and HAZ-1 would require testing to determine the presence and extent of potential contaminants encountered during construction. If hazardous materials are present, these materials will be handled, transported, and disposed of at an approval disposal site in accordance with all Federal, State, and local regulations, reducing the impact to a less-than-significant level.

Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

NEPA Impact Conclusion (Design Refinements): Short-term and Negligible effects that are Less than Significant with Mitigation Incorporated

The piezometer installation requires the drilling of boreholes 6 to 12 inches in diameter to a depth of 40-100 ft. The drilling process would produce soil cuttings and purge water, which would be captured so that the water does not spill onto the site. Each well would be purged three times. Purge water and soil cuttings would be stored in labeled and sealed drums at staging areas until the contents are analyzed for contaminants in accordance with Federal and State requirements. The analytical results determine the disposal protocol. Uncontaminated soil cuttings would be disposed of in an appropriate landfill, and uncontaminated water would be poured out on site. Each drum would be analyzed and disposed of within 90 days. There is the potential that contaminated soil, or groundwater could be brought to the surface through the drilling process. This impact would be potentially significant. The following mitigation measure has been identified to address this impact.

Mitigation Measure HAZ-1: Address Potentially Contaminated Materials in Accordance with Applicable Laws

Please refer to Impact 3.8-b, MCP above for the full text of this mitigation measure.

Timing: During construction

Responsibility: Project Partners

Implementing Mitigation Measure HAZ-1, which has been modified in this SEIS/SEIR, would reduce the impact to a less-than-significant level by testing to determine the presence and extent of any residual contaminants and disposal of materials in accordance with applicable regulations.

3.8-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.

CEQA Significance Conclusion: Less than Significant

NEPA Significance Conclusion: No Impact

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

NEPA Impact Conclusion (Design Refinements): No Impact

The only known hazardous materials site with the potential to affect the project area is the former McClellan Air Force Base. This potential exists because Magpie Creek and its tributary, Don Juilo Creek, flow through the base upstream of the project area. These streams and surrounding areas have been remediated (AECOM 2016). As previously described in Section 3.8.1, “Existing Conditions/Affected Environment,” Phase I and II ESAs were conducted, which included water and sediment testing between Raley Blvd and Vinci Ave. Results indicate the project would not create a significant hazard to the public or the environment because the site has been remediated. Based on soil testing conducted at the site, constituents of concern, except for arsenic (which is known to have higher background concentrations than screening levels in California), are below levels of concern to human health. This would be a less-than-significant impact under CEQA and no impact under NEPA.

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Contract 3, Sacramento River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): No Impact

NEPA Impact Conclusion (Design Refinements): No Impact

These sites are not included on a list of hazardous materials sites and therefore are not anticipated to create a significant hazard to the public or the environment. There would be no impact.

American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

The ARMS is identified on the Cortese list due to historical land uses and soil and groundwater contamination described in more detail in Section 3.8.1, “Existing Conditions/Affected Environment” and Impact 3.8-b. See Section 3.8.1 “Existing Conditions/Affected Environment,” for a full discussion of known hazardous materials at the site and the removal action undertaken implementing a CAP to address the potential presence of hazardous materials at this site. This impact would be less than significant.

NEPA Impact Conclusion (Design Refinements): No Impact

For NEPA purposes, there is no impact related to this listing because the Non-Federal Partners are required to handle the removal of all hazardous material that qualify under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 prior to conveying the site to USACE for use for habitat mitigation.

3.8-f Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

CEQA Significance Conclusion: Less than Significant with Mitigation Incorporated

NEPA Significance Conclusion: Short-term and Moderate effects that are Less than Significant with Mitigation Incorporated

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

NEPA Impact Conclusion (Design Refinements): Short-term and Moderate effects that are Less than Significant with Mitigation Incorporated

Construction of the crossing structure at Raley Boulevard would close this road for 3 months during either the 2028 or 2029 construction season. This could result in short-term interference with emergency response or emergency evacuation plans, as Raley Boulevard offers access to Interstate 80. The proposed Raley Boulevard detour is 1.5 miles long; utilizes Santa Ana Avenue, Dry Creek Road, and Vinci Avenue; and is discussed in Appendix B Section 2.1, “Transportation and Circulation.” There are numerous other cross streets and parallel roads in the area that could be used for emergency access. This impact would be significant. The following mitigation measure has been identified to address this impact.

Mitigation Measure TRANS-1: Prepare and Implement a Traffic Control and Road Maintenance Plan.

Before the start of project-related construction activities for each project component, the Project Partners will require the contractor to prepare and implement a Traffic Control and Road Maintenance Plan. This plan will describe the timing and methods of traffic control to be used during construction. All on-street construction traffic will be required to comply with the local jurisdiction’s standard construction specifications. The items listed below will be included in the plan and implemented as terms of the construction contracts:

- Follow the standard construction specifications of affected jurisdictions and obtain the appropriate encroachment permits, if required. Encroachment permit conditions, as known at the time of construction contract solicitation, will be included in the construction contract. Encroachment permit conditions will be enforced by USACE and the local agency that issues the encroachment permit.
- Provide a site-specific access plan specifying the roadways on which construction workers are allowed travel to access the work sites and borrow areas.
- Provide adequate parking for construction trucks, equipment, and construction workers within the designated staging areas throughout the construction period. If inadequate space for parking is available at a given work site, the construction contractor will provide an off-site staging area and, as needed, coordinate the daily transport of construction vehicles, equipment, and personnel to and from the work site.
- Queue trucks only in areas and at times allowed by the appropriate local jurisdiction.

- Post warnings about the potential presence of slow-moving vehicles during construction.
- Proposed lane closures will be coordinated with the appropriate local jurisdiction and be minimized to the extent possible during the morning and evening peak traffic periods. Construction specifications will limit lane closures during commuting hours where feasible, and lane closures will be kept as short as possible. If a road must be closed, detour routes and/or temporary roads will be made to accommodate traffic flows. Signs will be provided to direct traffic through detours.
- Post signs providing advance notice of upcoming construction activities at least 1 week in advance so that motorists and cyclists can avoid traveling through affected areas during these times.
- Provide bicycle detours to allow for continued use by bicycle commuters. Always maintain safe pedestrian and bicyclist access around the construction areas. Construction areas will be secured as required by the applicable jurisdiction to prevent pedestrians and bicyclists from entering the work site, and all stationary equipment will be located as far away as possible from areas where bicyclists and pedestrians are present. Signage for street detours will be located outside of the bike lanes and up on the curb where feasible and posted at least 1 week prior to construction affecting pedestrian and bicyclist access.
- Notify (by means such as physical signage, internet postings, letters, or telephone calls) and consult with emergency service providers at least 1 week in advance to inform them of construction activities, maintain emergency access, and facilitate the passage of emergency vehicles on city streets during construction activities. Emergency vehicle access will always be made available.
- The construction contractor will document pre- and post- construction conditions on roadways used during construction. This information will be used to assess damage to roadways used during construction. The contractor will repair all potholes, fractures, or other visual damages associated with project work.
- Comply with Caltrans requirements by submitting this Traffic Control and Road Maintenance Plan to Caltrans for review of traffic controls and points of access from the State highway system (SR-160, I-5, I-80 Business, and I-80) for haul trucks and other construction equipment.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measure TRANS-1, which was previously adopted for the ARCF 2016 Project, would minimize the Proposed Action's interference with emergency access to a less-than-significant level by requiring notification of emergency services providers, establishing detours, and minimizing project disruption of traffic.

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, Sacramento River Mitigation Site, American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

NEPA Impact Conclusion (Design Refinements): Short-term and Moderate effects that are Less than Significant with Mitigation Incorporated

The Sacramento County Local Hazard Mitigation Plan was updated in 2021 to reduce or eliminate long-term risk to people and property from hazards and ensure the County's continued eligibility for Federal disaster assistance. The plan identified levee and structural flood management improvements throughout the county and the Magpie Creek flood control project as specific measures to reduce these risks.

For all Proposed Action components except Sacramento River, hauling of materials would occur through city streets and could temporarily slow traffic while the projects are being constructed. The hours of construction would strive to comply with the City of Sacramento's construction noise ordinances and would be Monday through Saturday from 7:00 a.m. to 6:00 p.m. and Sundays from 9:00 a.m. to 6:00 p.m., and County of Sacramento construction hours, Monday through Friday from 6:00 a.m. to 8:00 p.m. and Saturday from 7:00 a.m. to 8:00 p.m. However, construction activities, including hauling, may occur outside these hours. These activities could interfere with emergency response or an emergency evacuation by increasing travel times along haul routes or adjacent city streets during the construction hours. This temporary impact would be significant and is addressed by Mitigation Measure TRANS-1 below.

Sacramento Metropolitan Fire District Station 62 uses the Watt Avenue Boat Launch for water rescues, although it is not the station's primary ramp used for water rescues. Watt Avenue boat launch is not ideal for use during low flows because of the river depth in the area. Riverbend Park, which is a 5.4-mile drive upstream from the Watt Avenue Boat Launch, is Sacramento Metropolitan Fire District Station 62's primary ramp used for water rescues. Construction of American River Contract 3B South would occur outside of flood season, when flows are the lowest, so water levels would not likely be ideal for water rescues out of the Watt Avenue Boat Launch. However, closure of the Watt Avenue Boat Launch could restrict access for fire services to provide water rescues and cause a significant impact on Sacramento Metropolitan Fire District Station 62 conducting water rescues. This impact would be significant. The following mitigation measures have been identified to address this impact.

Mitigation Measure TRANS-1: Prepare and Implement a Traffic Control and Road Maintenance Plan.

Please refer to Impact 3.8-f, MCP above for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure HAZ-2: Contact Sacramento Metropolitan Fire District Station 62 Prior to Closing Watt Avenue Boat Launch

Prior to construction, Project Partners will provide notice to the Sacramento Metropolitan Fire District Station 62 concerning closures of the Watt Avenue Boat Launch.

Timing: Before construction

Responsibility: Project Partners

Implementing Mitigation Measure TRANS-1, which was previously adopted for the ARCF 2016 Project, would reduce potential impacts to emergency access to a less-than-significant level by requiring notification of emergency services providers, establishing detours, and minimizing project disruption of traffic. Additionally, Implementing Mitigation Measure HAZ-2 would ensure notification to the Sacramento Metropolitan Fire District Station 62 to ensure the Station is aware of the Watt Avenue Boat Launch closures and will be able to determine other options (such as Riverbend Park) for river access for water rescues. This would decrease the significant impact from the project on river access for water rescues to a less-than-significant level.

Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): No Impact

NEPA Impact Conclusion (Design Refinements): No Impact

Construction of the piezometer network would not include significant material hauling or road closures. These project components would have no impact on emergency response or evacuation.

Alternatives Comparison

Alternatives 3a through 3d

Alternative 3a through 3d include an alternative design for improvements to the American River 4A Project Component. In Alternative 3a, a landside berm would be constructed instead of a waterside berm. In Alternative 3b the bike detour would follow parallel to the railroad to the existing location of the bike trail instead of going under the railroad. In Alternative 3c, the bike route would be rerouted a short distance through an existing wetland. In Alternative 4d, the bike detour would go closer to the riverbank and follow the railroad to the existing location of the bike trail. These impacts would either be less than significant with mitigation or no impact, as presented in Table 3.8-1. All other project components (American River 3B, Sacramento River Contract 3, Magpie Creek, Sacramento River Mitigation, and American River Mitigation) would have the same effects as the Proposed Action. Hazards and hazardous materials effects from these alternatives would be the same as for the Proposed Action.

Table 3.8-1. Alternative 3a through 3d Effects

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|-------------------|--|--------------------|---------------------------------------|--|
| 3.8-a: Routine Use of Hazardous Materials | American River 4A | As in the Proposed Action, these Alternatives would have similar potential for accidental release of hazardous materials associated with construction. | GEO-1 | Less than Significant with Mitigation | Short-term and Moderate effects that are Less than Significant with Mitigation |
| 3.8-b: Risk of Accidental Release of Hazardous Materials | American River 4A | As in the Proposed Action, these Alternatives would have similar potential for accidental release of hazardous materials associated with construction. | GEO-1 and HAZ-1 | Less than Significant with Mitigation | Short-term and Minor effects that are Less than Significant with Mitigation |
| 3.8-d: Risk from Cortese-listed Site | American River 4A | As in the Proposed Action, the American River 4A project site is not on the Cortese List | N/A | No Impact | No Impact |
| 3.8-f: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. | American River 4A | As in the Proposed Action, these Alternatives would have similar effects for impairment or physical interference with an emergency response or evacuation plan associated with construction. | TRANS-1 and HAZ-2 | Less than Significant with Mitigation | Short-term and Moderate effects that are Less than Significant with Mitigation |

Alternative 4a (CEQA-Only)

Alternative 4a includes a design for the American River Mitigation area that retains a 30-acre portion of the existing man-made pond, while channels would be constructed on 54 acres of floodplain on the eastern portion of the site. The effects to hazards and hazardous materials would be similar to what was discussed in the Proposed Action, but this alternative does not incorporate avoidance of buried debris at the ARMS into the design. All impacts would be less than significant or less than significant with mitigation, as presented in Table 3.8-2. All other project components (American River 3B, American River 4A, Sacramento River, Magpie Creek, and Sacramento River Mitigation) would have the same effects as the Proposed Action.

Table 3.8-2. Alternative 4a Effects (CEQA-only)

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion |
|---|----------|--|--------------------|---------------------------------------|
| 3.8-a: Routine Use of Hazardous Materials | ARMS | As in the Proposed Action, Alternative 4a would have similar potential for impact from use of hazardous materials during construction. | GEO-1 | Less than Significant with Mitigation |
| 3.8-b: Risk of Accidental Release of Hazardous Materials | ARMS | Alternative 4a would have a greater potential for accidental release of hazardous materials associated with construction compared to the proposed action due to the potential to encounter buried debris that would be avoided by the Proposed Action. | GEO-1 and HAZ-1 | Less than Significant with Mitigation |
| 3.8-d: Risk from Cortese-listed Site | ARMS | As in the Proposed Action, Alternative 7 would have similar potential for accidental release of hazardous materials associated with construction. However, since this Alternative was not designed to avoid or minimize effects associated with buried debris, the initial impact (before implementing mitigation measures) would be greater than for the Proposed Action. | | Less than Significant |
| 3.8-f: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. | ARMS | As in the Proposed Action, this Alternative would have similar effects for impairment or physical interference with an emergency response or evacuation plan associated with construction. | TRANS-1 and HAZ-2 | Less than Significant with Mitigation |

Alternative 4b (CEQA-Only)

Alternative 4b includes a design for the American River Mitigation area that retains a 20-acre portion of the existing man-made pond. Restored habitat would be constructed on the remainder of the Urrutia property, and the proposed habitat was designed to avoid or cap the known hazardous materials present on the property. The effects to hazards and hazardous materials would be similar to what was discussed in the Proposed Action. All impacts would be less than significant or less than significant with mitigation, as presented in Table 3.8-3. All other project components (American River 3B, American River 4A, Sacramento River, Magpie Creek, and Sacramento River Mitigation) would have the same effects as the Proposed Action.

Table 3.8-3. Alternative 4b Effects (CEQA-only)

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion |
|--|----------|---|--------------------|---------------------------------------|
| 3.8-a: Routine Use of Hazardous Materials | ARMS | As in the Proposed Action, Alternative 4b would have similar potential for impact from use of hazardous materials during construction. | GEO-1 | Less than Significant with Mitigation |
| 3.8-b: Risk of Accidental Release of Hazardous Materials | ARMS | As in the Proposed Action, Alternative 4b would have similar potential for accidental release of hazardous materials during construction. | GEO-1 and HAZ-1 | Less than Significant with Mitigation |

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion |
|---|----------|--|--------------------|---------------------------------------|
| 3.8-d: Risk from Cortese-listed Site | ARMS | As in the Proposed Action, Alternative 4b would have similar potential for accidental release of hazardous materials during construction. | | Less than Significant |
| 3.8-f: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. | ARMS | As in the Proposed Action, Alternative 4b would have similar effects for impairment or physical interference with an emergency response or evacuation plan associated with construction. | TRANS-1 and HAZ-2 | Less than Significant with Mitigation |

Alternative 5a (Conservation bank credits)

Alternative 5a includes an alternative financial solution as opposed to constructing the SRMS. All other project components (American River 3B, American River 4A, Sacramento River, Magpie Creek, American River Mitigation, and the Piezometer Network) would have the same effects as the Proposed Action. Conservation Bank Credits would be used for mitigation.

There would be no new construction or disturbance associated with Alternative 5a, as existing mitigation banks would be used. Consequently, there would be no impacts related to hazardous materials, as presented in Table 3.8-4, which would be reduced significance compared to the Proposed Action.

Table 3.8-4. Alternative 5a Effects

| Impact Number and Title | Location | Discussion | Mitigation Measure (s) | CEQA Significance Conclusion | NEPA Effects Determination |
|---|----------|---|------------------------|------------------------------|----------------------------|
| 3.8-a: Routine Use of Hazardous Materials | SRMS | There would be no new construction or disturbance associated with Alternative 5a. Therefore, there would be no impacts. | N/A | No Impact | No Effect |
| 3.8-b: Risk of Accidental Release of Hazardous Materials | SRMS | There would be no new construction or disturbance associated with Alternative 5a. Therefore, there would be no impacts. | N/A | No Impact | No Effect |
| 3.8-d: Risk from Cortese-listed Site | SRMS | There would be no new construction or disturbance associated with Alternative 5a. Therefore, there would be no impacts. | N/A | No Impact | No Effect |
| 3.8-f: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. | SRMS | There would be no new construction or disturbance associated with Alternative 5a. Therefore, there would be no impacts. | N/A | No Impact | No Effect |

Alternative 5b (Watermark Farms)

Alternative 5b includes an alternative strategy for the Sacramento River Mitigation project component, which included possible use of Watermark Farms to construct habitat mitigation for the Sacramento River. All impacts would be less than significant with mitigation or no impact, as presented in Table 3.8-5. All other project components (American River Erosion Contract 3B, American River Erosion Contract 4A, American River Erosion Contract 4B, Sacramento River, Magpie Creek, American River Mitigation, and the Piezometer Network) would have the same effects as the Proposed Action.

Table 3.8-5. Alternative 5b Effects

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------|---|---------------------------|---------------------------------------|--|
| 3.8-a: Routine Use of Hazardous Materials | SRMS (Watermark Farms) | As in the Proposed Action, these Alternatives would have similar potential for impact due to use of hazardous materials during construction. | GEO-1 | Less than significant with mitigation | Short-term and Moderate effects that are Less than Significant with Mitigation |
| 3.8-b: Risk of Accidental Release of Hazardous Materials | SRMS (Watermark Farms) | As in the Proposed Action, these Alternatives would have similar potential for accidental release of hazardous materials associated with construction. | GEO-1 and HAZ-1 | Less than significant with mitigation | Short-term and Minor effects that are Less than significant with mitigation |
| 3.8-d: Risk from Cortese-listed Site | SRMS (Watermark Farms) | As in the Proposed Action, the Watermark Farms site is not on the Cortese List | n/a | No Impact | No Impact |
| 3.8-f: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. | SRMS (Watermark Farms) | This Alternative would have a greater potential to impair or physically interfere with an emergency response or evacuation plan because construction would occur in proximity to South River Road and would require lane and road closures during reconstruction and realignment of the road. | TRANS-1 and HAZ-2 | Less than significant with mitigation | Short-term and Moderate effects that are Less than Significant with Mitigation |

Alternative 5c (Sunset Pumps)

Alternative 5c combines three approaches to complete the Sacramento River Mitigation requirements including 1) Purchasing Delta smelt credits from an approved conservation bank 2) Funding a NMFS recovery plan project (Sunset Pumps) to remove a weir, allowing fish passage to benefit chinook steelhead and green sturgeon and 3) Funding the improvements at Sunset Pumps would increase water availability, which would then be directed to two local wildlife refuges, benefiting the Western Yellow Billed Cuckoo. The Sunset Pumps project is listed as

high priority BOR, DWR, and USFWS, and is subject to separate NEPA/CEQA analysis prior to implementation. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. All activities related to 5c involve funding another project, therefore no additional impacts to hazards and hazardous materials would result from this alternative as presented in Table 3.8-6.

Table 3.8-6. Alternative 5c Effects

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|----------|---|--------------------|------------------------------|----------------------------|
| 3.8-a: Routine Use of Hazardous Materials | SRMS | There would be no new construction or disturbance associated with Alternative 5c. Therefore, there would be no impacts. | N/A | No Impact | No Impact |
| 3.8-b: Risk of Accidental Release of Hazardous Materials | SRMS | There would be no new construction or disturbance associated with Alternative 5c. Therefore, there would be no impacts. | N/A | No Impact | No Impact |
| 3.8-d: Risk from Cortese-listed Site | SRMS | There would be no new construction or disturbance associated with Alternative 5c. Therefore, there would be no impacts. | N/A | No Impact | No Impact |
| 3.8-f: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. | SRMS | There would be no new construction or disturbance associated with Alternative 5c. Therefore, there would be no impacts. | N/A | No Impact | No Impact |

4.1 Vegetation and Wildlife

This section focuses on analysis of vegetation and non-sensitive wildlife. Aquatic resources and fisheries (including special-status fish) are addressed in Appendix B, Section 4.2 and other special-status species are addressed in Appendix B, Section 4.3.

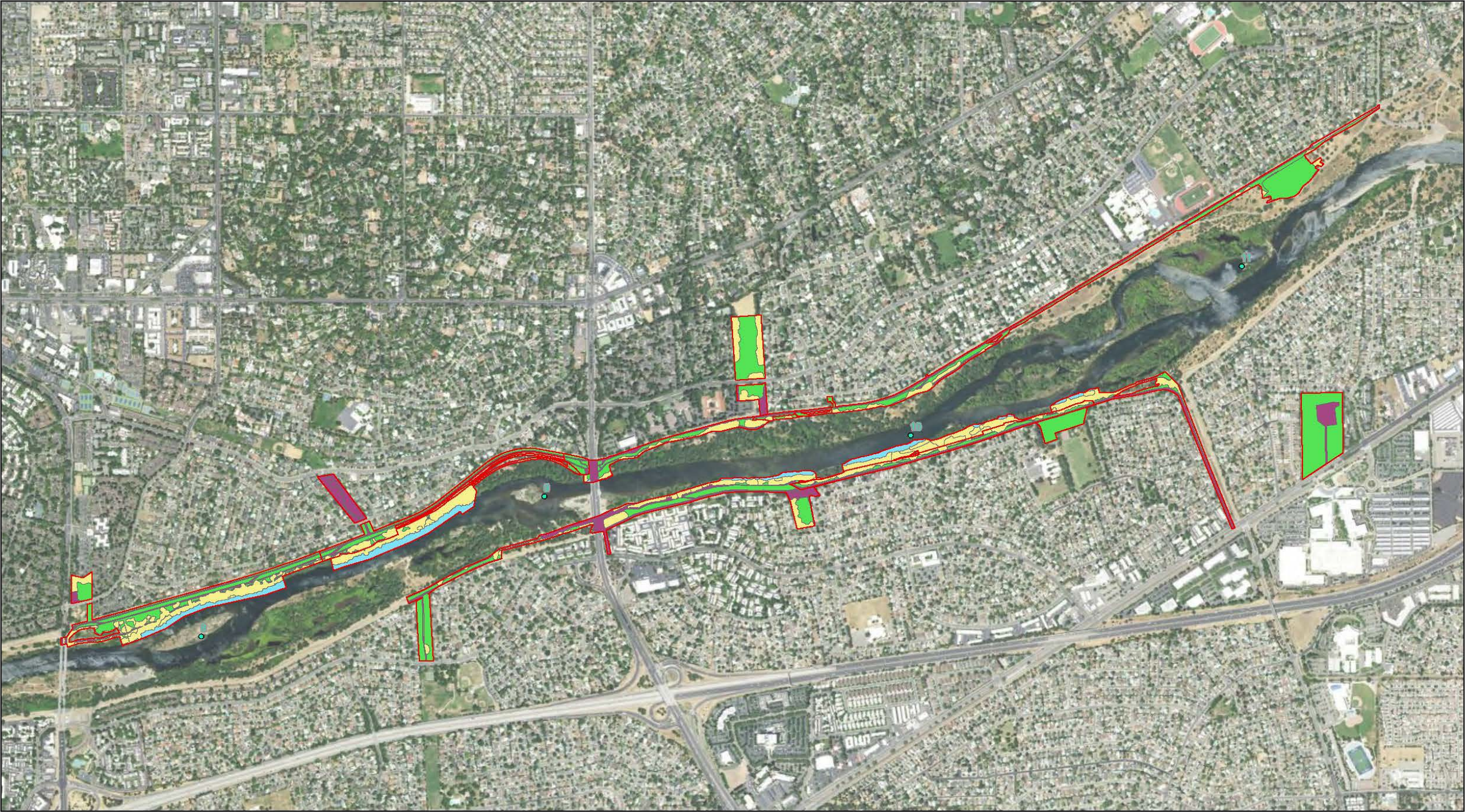
4.1.1 Existing Conditions/Affected Environment

The existing conditions at the American River, Sacramento River, and Magpie Creek Project (MCP) sites are described in Section 3.6, “Vegetation and Wildlife” (pages 109–115), of the ARCF GRR Final EIS/EIR. The following provides an overview and update of the current project sites and relevant habitat and land cover types.

Project Site Descriptions

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, and American River Erosion Contract 4B

The American River Parkway contains many vegetation types including ruderal herbaceous grassland, riverine/open water, urban/developed, and valley foothill riparian (Figure 4.1-1). Along the river channel vegetation is primarily considered shaded riverine aquatic (SRA) habitat. Throughout the document, SRA is not separated out from the Riparian and Open Water habitat types. Trees adjacent to the channel are mainly valley oak (*Quercus lobata*) and Fremont cottonwood (*Populus fremontii* ssp. *fremontii*) with a thick understory of vines, berry bushes, and willows. The river is bordered by commercial and residential neighborhoods on the landside of the levees and the American River Parkway between the levees. American River Erosion Contract 3B illustrated in Figure 4.1-1 includes the portion of the Lower American River, both above and below the ordinary high water mark (OHWM). American River Erosion Contract 4A, illustrated in Figure 4.1-2, includes open water in a former borrow pit from which material was excavated to create the earlier levees in the area and also serves as an outlet for the stormwater system. Although the constructed levee system and surrounding infrastructure have modified most of the area’s native vegetation types and habitats, remnant stands of native vegetation are present. Wildlife present along the American River Parkway includes but is not limited to deer, coyotes, bobcats, turkeys, racoons, reptiles, and many species of birds.



American River Erosion Contract 3B (North & South) and Contract 4B

Updated 9/21/2023

- River Mile
- Project Footprint
- Riverine/Open Water
- Ruderal Herb/Grassland
- Urban/Developed
- Valley Foothill Riparian

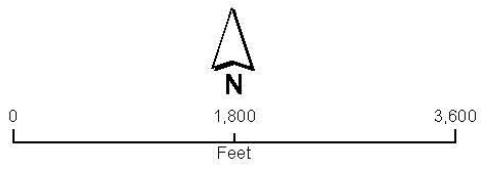
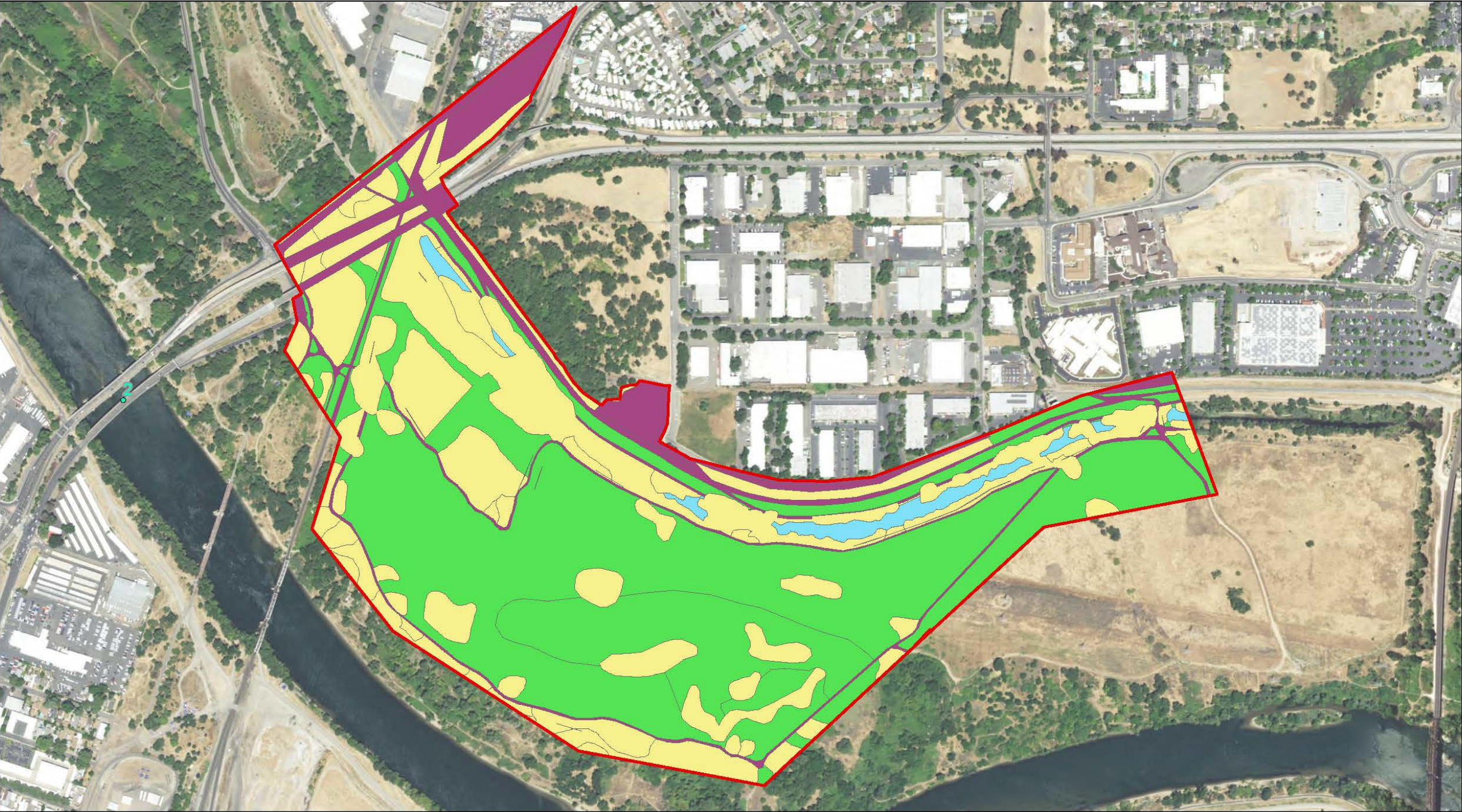


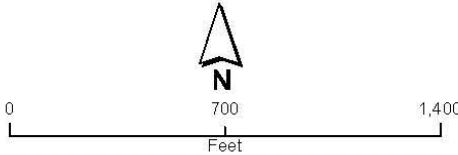
Figure 4.1-1. American River Erosion Contract 3B and 4B Land Cover Types



American River Erosion Contract 4A

Updated 9/21/2023

- Project Footprint
- River Mile
- Riverine/Open Water
- Ruderal Herbaceous/Grassland
- Urban/Developed
- Valley Foothill Riparian



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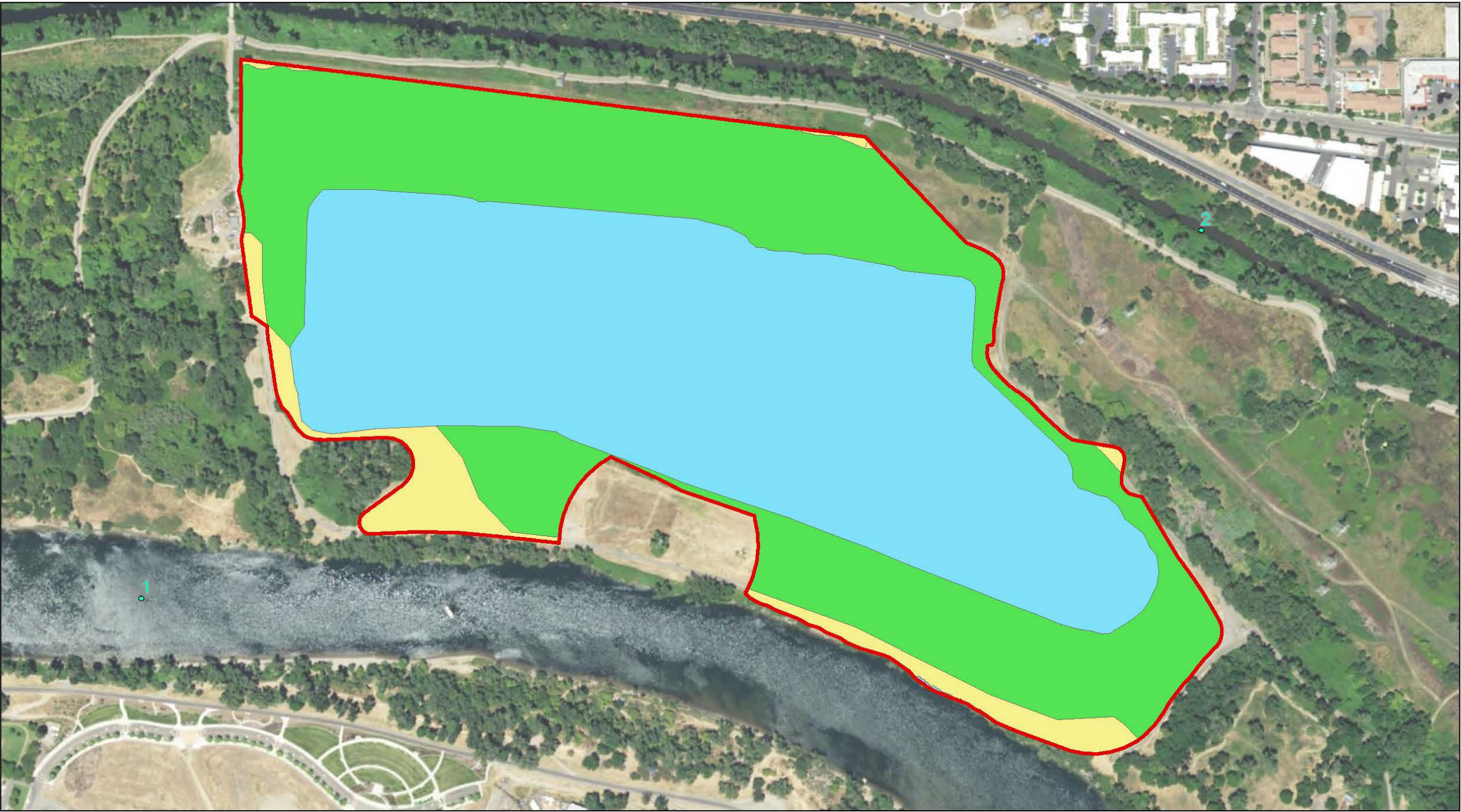
Figure 4.1-2. American River Erosion Contract 4A Land Cover Types

American River Mitigation Site

The proposed American River Mitigation Site (ARMS) was not analyzed in the ARCF GRR FEIS/EIR. As illustrated in Figure 4.1-3, the site contains primarily riverine/open water, ruderal herbaceous grassland, and valley foothill riparian. Along the riverbank is SRA habitat for fish. The primary tree species are box-elder (*Acer negundo*), Fremont's cottonwood (*Populus fremontii*), Gooddings black willow (*Salix gooddingii*), western sycamore (*Plantanus racemosa*), and valley oak (*Quercus lobata*). Only the riparian forest has a shrub layer, primarily California rose (*Rosa californica*) and California grape (*Vitis californica*). The most common herbaceous plants are mustards (*Sisymbrium* sp.), curly dock (*Rumex crispus*), Selloa pampas grass (*Cortaderia selloana*), bromes (*Bromus* spp.) and milk thistle (*Silybum marianum*) (HDR 2022). The ARMS is a former sand and gravel mine, thus the most prominent feature of the site is approximately 55 acres of open water located approximately 400 feet from the river's edge. This area is perennially filled with water due to groundwater connection with the American River. The proposed work would occur both above and below the OHWM of the American River. The site is between Discovery Park to the west, Camp Pollock to the east, and the river to the south. North of the site is Steelhead Creek, the levee, and commercial and residential development. Wildlife present along the American River Parkway includes deer, coyotes, turkeys, racoons, reptiles, and many species of native and migratory birds.

Sacramento River Erosion Contract 3

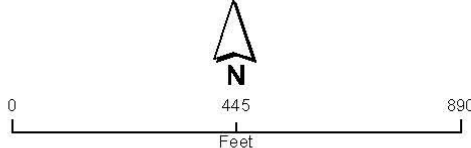
Vegetation in the Sacramento River work area is characterized by mature, well-established trees such as Fremont cottonwood and valley oak with a riparian shrub layer of smaller trees and shrubs, such as sandbar willow (*Salix exigua*) and Himalayan blackberry (*Rubus armeniacus*). As illustrated in Figure 4.1-4, onsite vegetation communities and land use types include riverine/open water, ruderal herbaceous grassland, urban/developed, and valley foothill riparian. There are intermittent locations along the waterline with no trees due to rock revetment but also some areas of SRA. Project work will occur below the OHWM of the Sacramento River. The levees on the Sacramento River are immediately adjacent to the river channel with a few short stretches that have small benches. Due to the urban development adjacent to the levees in this area wildlife is limited to small mammals and various avian species. Domestic animals from residents are also often seen along the levees in this area of the project.



American River Mitigation Site

Updated 9/21/2023

- Project Footprint
- River Mile
- Riverine/Open Water
- Ruderal Herbaceous/Grassland
- Valley Foothill Riparian



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Figure 4.1-3. American River Mitigation Site Land Cover Types

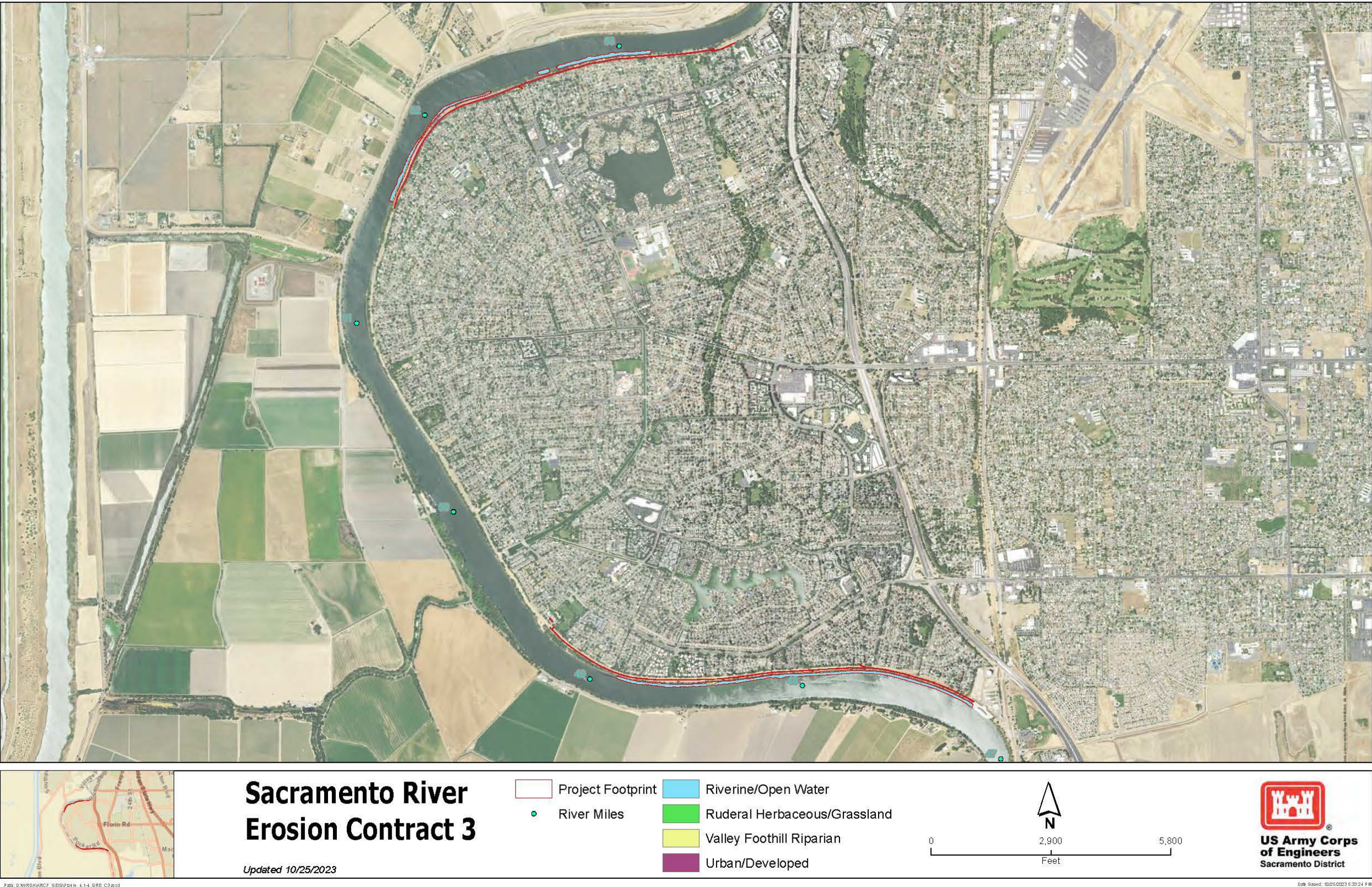


Figure 4.1-4. Sacramento River Erosion Contract 3 Land Cover Types

Sacramento River Mitigation Site

The proposed Sacramento River Mitigation Site (SRMS) was not analyzed in the ARCF GRR Final EIS/EIR. The site is composed of a large flat basin with herbaceous cover in the northern half almost completely dominated by non-native perennial pepperweed (*Lepidium latifolium*). Stands of various riparian trees and shrubs, such as sandbar willow, red willow (*Salix laevigata*), coyote brush (*Baccharis pilularis*), Fremont cottonwood, black locust (*Robinia pseudoacacia*), blue elderberry (*Sambucus nigra* ssp. *cerulea*), and northern California black walnut (*Juglans hindsii*) are also present, particularly in the eastern portion of the site and around the levee perimeter. Vegetation cover is shown in Figure 4.1-5. Cattle grazing is evident throughout the site; however, the site has predominantly remained undisturbed for over 20 years (Coast Ridge Ecology 2021). The shoreline is vegetated with native and nonnative aquatic and terrestrial species. Some areas have steep banks while others have gentler slopes with sand bars stretching away from the point. The site is surrounded by water on three sides; is at the confluence of the Sacramento River, Cache Slough, and Steamboat Slough; and has been used as a Dredged Material Placement Site (DPMS) since the 1940s, which is currently managed by USACE. Work here would occur both above and below the OHWM of these waterways, as well as in potential seasonal wetlands. Wildlife observed onsite was primarily birds; however, the site could provide habitat for rodents, reptiles, and large mammals such as deer or coyote.

Magpie Creek Project Improvements

The MCP footprint has five major land cover types: agriculture, riverine/open water, ruderal herbaceous grassland, urban/developed, and valley foothill riparian, as illustrated in Figure 4.1-6. Wetlands within and adjacent to portions of the project footprint are shown in Figures 4.1-7 and 4.1-8. A sample of the plant species (Valley Foothill Riparian) present at this site are Fremont cottonwoods and Goodding's black willow trees, as well as cocklebur (*Xanthium* spp.), iris leaved rush (*Juncus xiphioides*), slender popcorn flower (*Plagiobothrys tenellus*), bulrush (*Schoenoplectus* spp.), blackberry (*Rubus* spp.), and curly dock (ICF 2018). This site is in the floodplain of Magpie Creek and consists of vacant land, a portion of which was formerly in rice production. It has historically been disked and mowed and there is evidence of off-road vehicle use and illegal dumping. Land uses in the surrounding area are primarily light industrial, with some areas of rural residences. The flora of the project area is typical of "old field" sites in the Sacramento Valley. These sites have been historically disturbed by agriculture or other activities, and most of the vegetation cover consists of nonnative species. Based on field surveys conducted in 2018, 58 percent of the plant taxa documented onsite are nonnative (ICF 2018). This site would have impacts on seasonal wetlands and vernal pools/swales as well as Magpie Creek. Wildlife found in the area include wetland and upland invertebrates, rodents, snakes, rabbits, hares, domestic cats, and native and nonnative resident and migratory birds.

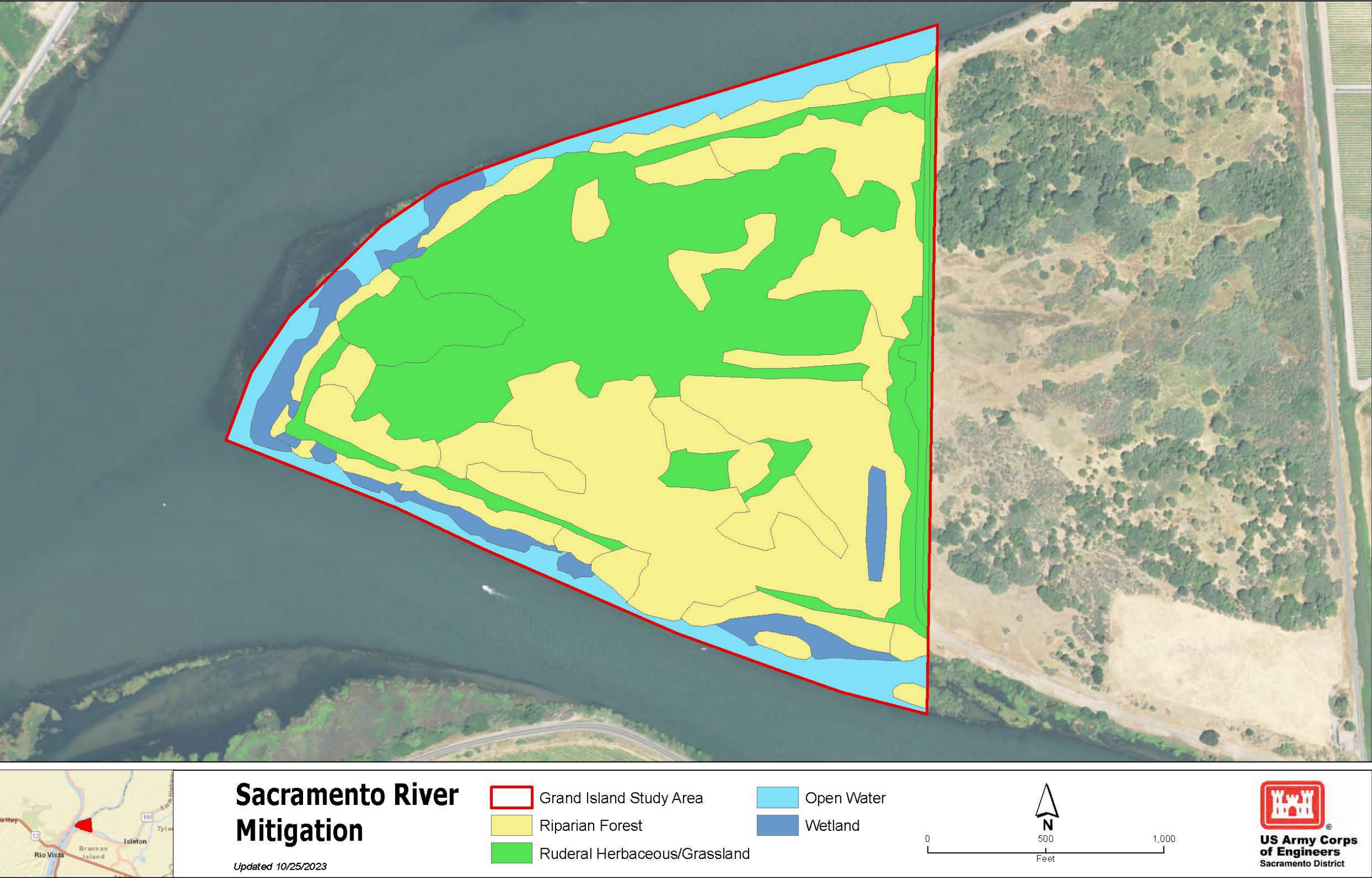


Figure 4.1-5. Sacramento River Mitigation Site Land Cover Types

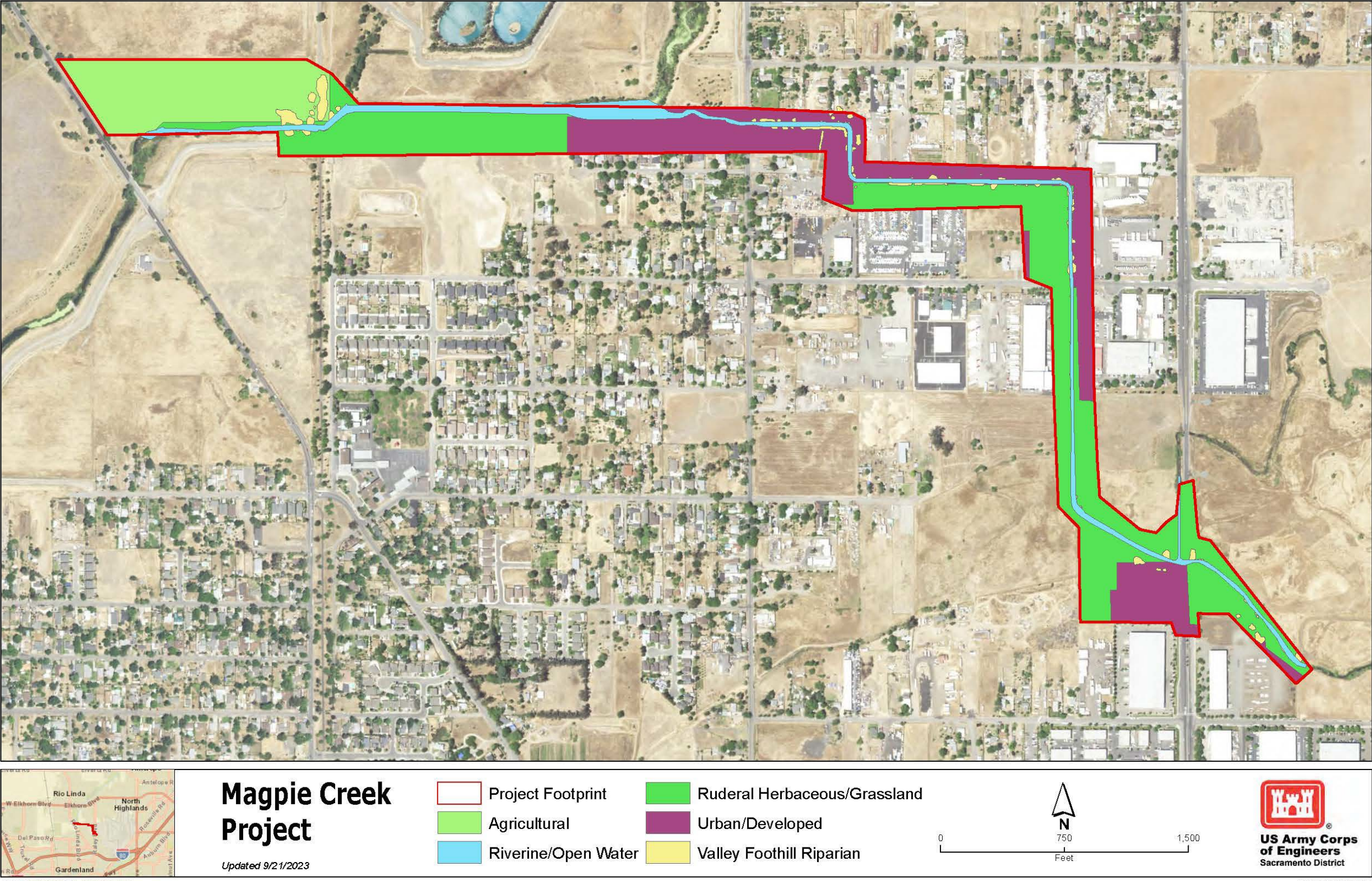


Figure 4.1-6. Magpie Creek Project Improvements Land Cover Types

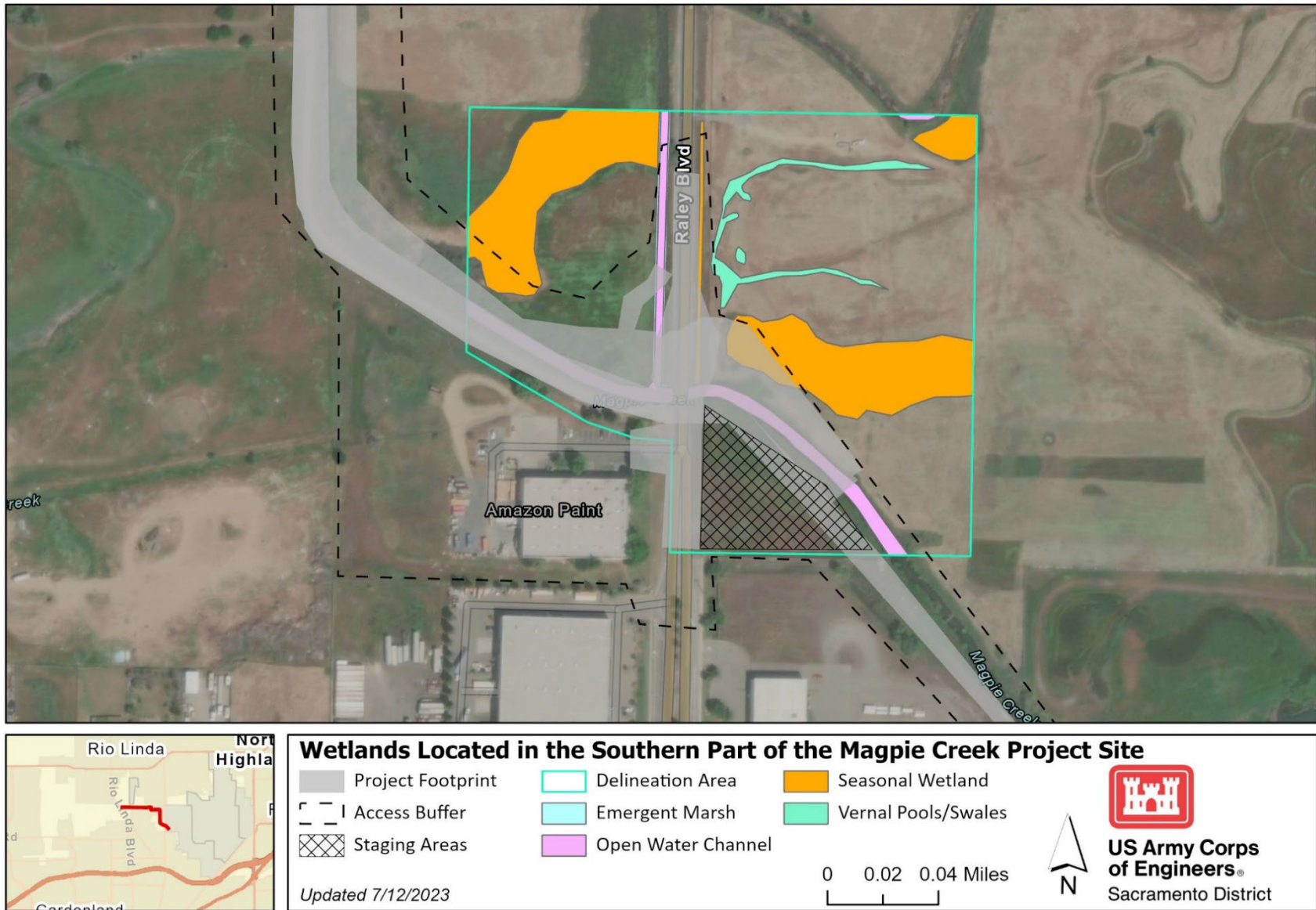


Figure 4.1-7. Wetlands within the Southern Part of the Magpie Creek Project Improvements Area

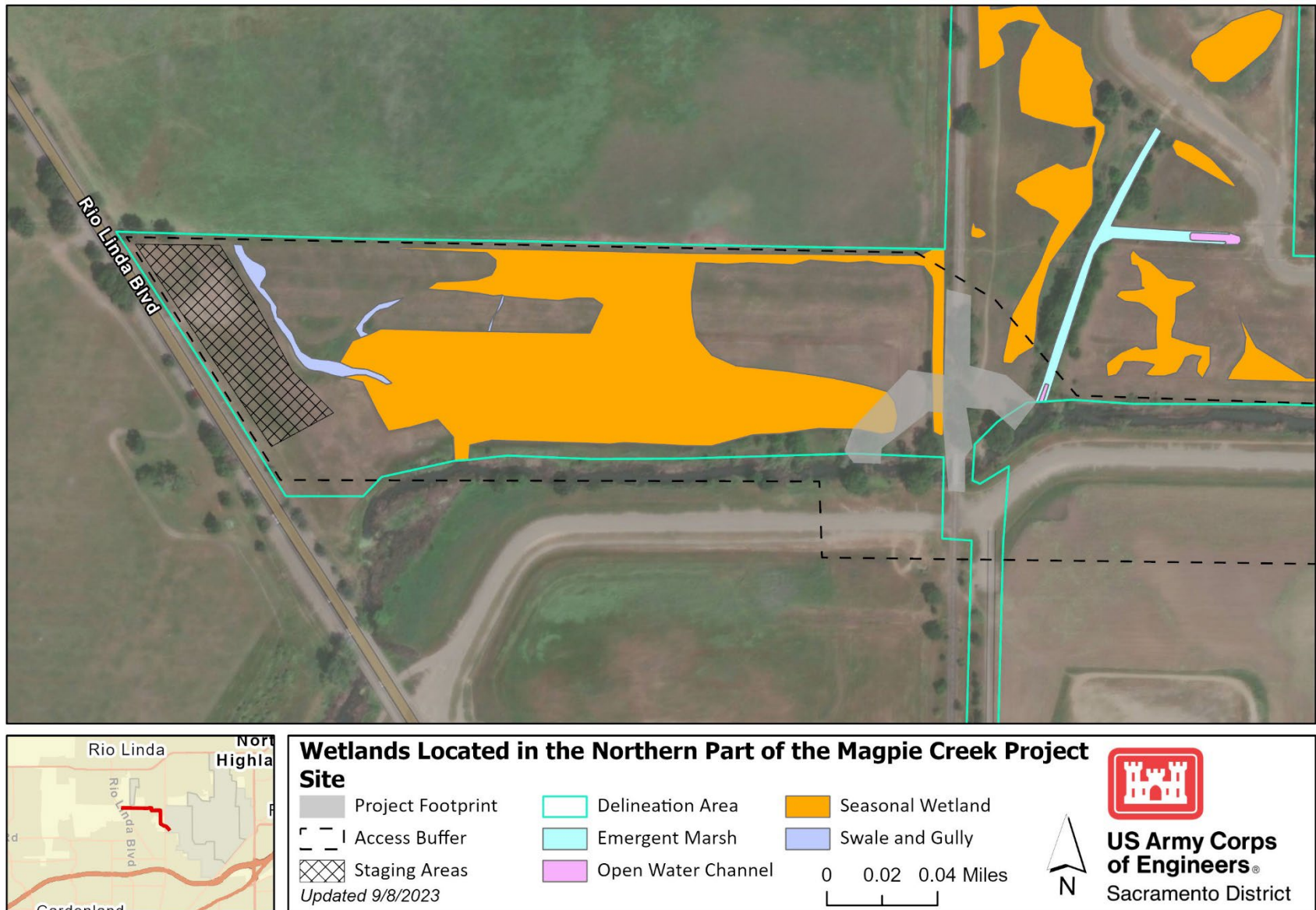
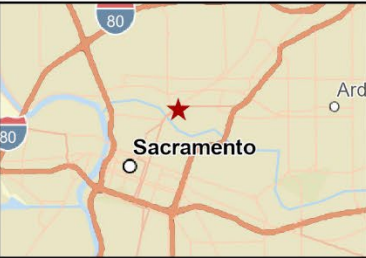


Figure 4.1-8. Wetlands within the Northern Part of the Magpie Creek Project Improvements Area



American River Erosion Contract 4A Project Footprint

- [] Access Buffer
- [] Delineation Area
- [] Scrub-shrub Wetland
- [] Project Footprint
- [] Culvert
- [] Forested Wetland
- [] Staging Area

Updated 1/15/2025

0 0.13 0.25 Miles



Figure 4.1-9. Wetlands within the Lower American River Erosion Contract 4A Improvements Area

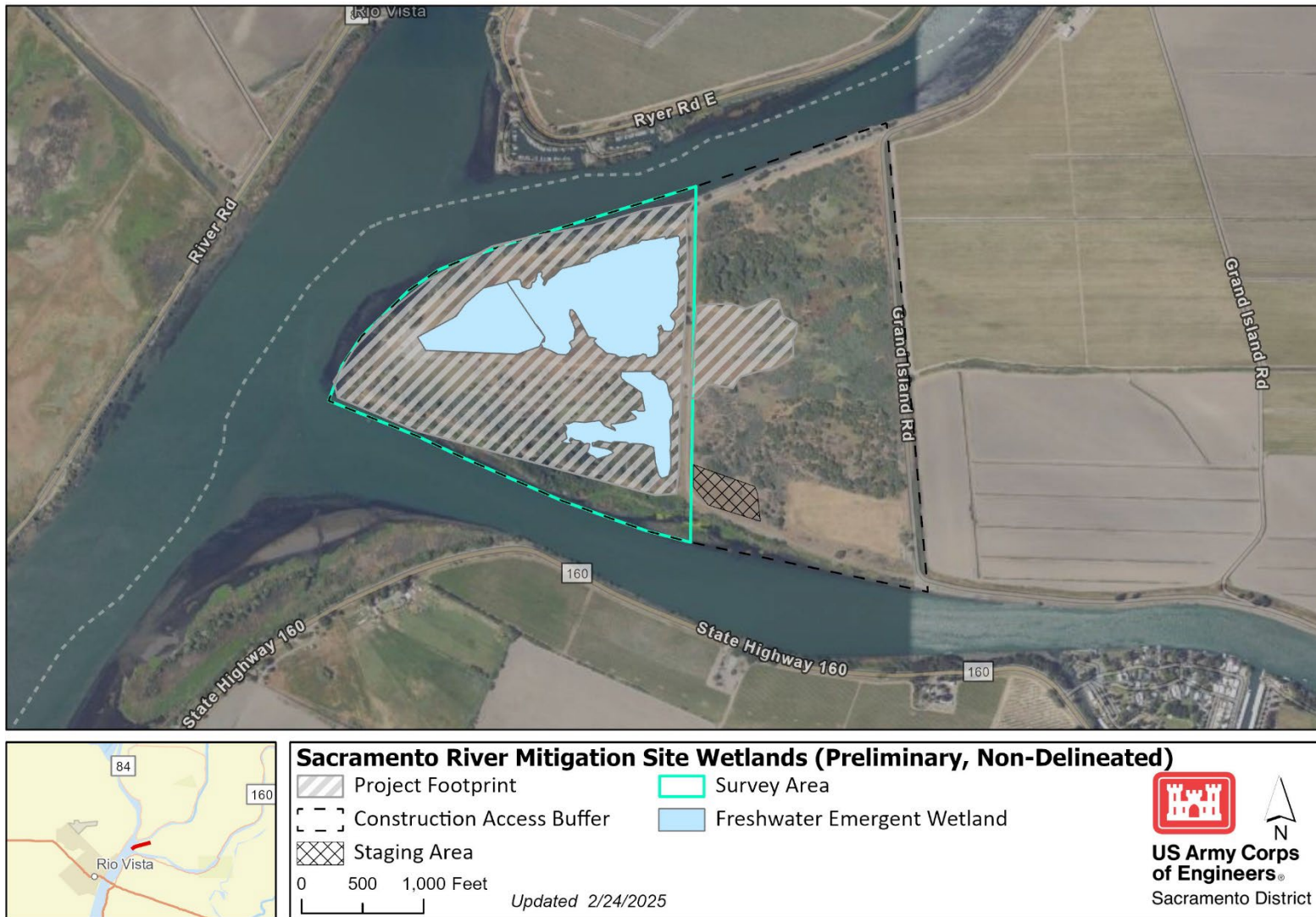


Figure 4.1-10. Wetlands (Non-Delineated) within the Sacramento River Mitigation Site

Alternative 5b – Watermark Farms

The Watermark Farms site is primarily composed of large agricultural parcels with an existing levee and road on the eastern side. Fields that range from fallow with ruderal vegetation to actively cultivated row crops occur on most of the site. The site is surrounded by farmland, the Sacramento River, and a Yolo County facility with its own ring levee. The agricultural land on the landward side of the existing levee gently slopes away from the Sacramento River, and another levee bounds the site on the western side. Tree species present in this area include northern California black walnut, clusters of tree-of-heaven (*Ailanthus altissima*), one single and one cluster of black locust, box elder, and English walnut (*Juglans regia*). Tree-of-heaven and black locust are invasive species. The landside levee slope supports predominantly valley oaks with a nonnative annual grassland understory, and one or more blue elderberry cluster. The waterside levee slope is mostly unvegetated, with a few small trees and some valley oaks, nonnative annual grasses, and gravel from the top of slope to about mid-slope in one area and riprap in another. Vegetation in the waterside riparian zone includes small trees, primarily valley oak and western sycamore (*Platanus racemosa*), with a nonnative grassland understory. A network of farm roads and agricultural drains are present within the interior of the site. An agricultural drain located south of the site connects to a freshwater marsh within the site boundary. The project would impact both above and below the OHWM of the Sacramento River as well as agricultural drainages and seasonal wetlands. Wildlife that can be found along the Sacramento River are deer, coyote, native and migratory birds, opossum, woodrat, ground squirrel, and reptiles.

Habitat Descriptions

The existing conditions described in Section 3.6, “Vegetation and Wildlife,” of the ARCF GRR Final EIS/EIR are applicable to the resources found within the project site. The ARCF GRR Final EIS/EIR used a slightly modified version of the California Wildlife Habitat Relationship System (CWHR) (Mayer and Laudenslayer, Jr. 1988) and includes descriptions of the following habitats: valley foothill riparian forest, ruderal herbaceous, wetland, and SRA habitat. Riverine/open water and agricultural habitat descriptions have been added, and all habitats are described below. Table 4.1-1 provides a crosswalk between CWHR and Manual of California Vegetation Alliance natural community types.

Table 4.1-1. Crosswalk table of natural communities from California Wildlife Habitat Relationship (CWHR) System to Manual of California Vegetation Alliance.

| CWHR | Manual of California Vegetation Alliance |
|--------------------------|--|
| Annual grassland | Annual brome grassland |
| Annual grassland | Yellow star-thistle fields |
| Annual grassland | California annual grasslands |
| Annual grassland | Western ragweed meadow |
| Annual grassland | Wild oats grassland |
| Annual grassland | Poison hemlock or fennel patch |
| Valley foothill riparian | California rose briar patch |
| Valley foothill riparian | Coastal bramble |
| Valley foothill riparian | Blue elderberry stand |
| Valley foothill riparian | Fremont cottonwood forest |

| CWHR | Manual of California Vegetation Alliance |
|--------------------------|--|
| Valley foothill riparian | Box-elder forest |
| Valley foothill riparian | Red willow thicket |
| Valley foothill riparian | Black willow thicket |
| Valley foothill riparian | White alder grove |
| Valley foothill riparian | Valley oak woodland |
| Valley foothill riparian | California sycamore woodland |
| Valley foothill riparian | Oregon ash grove |
| Valley foothill riparian | Sandbar willow thicket |
| Valley foothill riparian | Arroyo willow thicket |
| Valley foothill riparian | Pacific willow thicket |
| Valley foothill riparian | Button willow thicket |
| Valley foothill riparian | Blue elderberry stand |
| Valley foothill riparian | California rose briar patch |
| Fresh Emergent Wetland | Tule-cattail |
| Fresh Emergent Wetland | Non-native/invasive forb |
| Fresh Emergent Wetland | Water hyacinth wetlands |

The acreage of existing habitats at each project site are summarized in Table 4.1-2.

Table 4.1-2: Existing Habitats and Land Cover Types (acres)

| Item | American River Erosion Contract 3B and 4B | American River Erosion Contract 4A | ARMS | Sacramento River Erosion Contract 3 | SRMS | MCP |
|--------------------------------|---|--|---------------|---|---------------|--------------|
| Valley Foothill Riparian* | 51.32 | 65.23 | 13.6 | 5.04 | 17.26 | 2.6 |
| Rural Herbaceous/ Grassland | 71.18 | 99.51 | 52 | 1.31 | 30.29 | 37.43 |
| Wetlands* | - | 18.95 | 0 | - | 0.09 | 2.62 |
| Riverine/Open Water* | 12.07 | 4.02 | 55.4 | 20.7 | 1.21 | - |
| Agricultural | - | - | - | - | 0.0 | 13.02 |
| TOTAL | 134.57 | 187.71 | 121.00 | 27.05 | 149.18 | 55.67 |

AR C3B – Valley Foothill Riparian composed of Native and Nonnative scrub and woodland. LAR C4A – Valley Foothill Riparian composed of Native and nonnative scrub and woodland. ARMS - Valley Foothill Riparian is composed of Native and nonnative scrub and woodland. SRE C3 – Valley Foothill Riparian is composed of Fremont cottonwood forest, sandbar willow thicket, and valley oak woodland. SRMS – Valley Foothill Riparian is composed of Hardwood Woodland and Scrub. Totals are Estimates.

*Denotes sensitive natural habitats. Please refer to section below for additional information on these habitats.

Valley Foothill Riparian

Most valley foothill riparian habitat in the study area (hereafter referred to as “riparian habitat”) occurs along the American and Sacramento Rivers. The overstory of the riparian habitat consists of mature, well-established trees: Fremont cottonwood, valley oak, Goodding’s willow, and box elder. Though less common in this area, Oregon ash (*Fraxinus latifolia*), western sycamore, and white alder (*Alnus rhombifolia*) are also observed. The shrub layer consists of smaller trees and shrubs; representative species observed were poison oak (*Toxicodendron diversilobum*), sandbar willow, and Himalayan blackberry. Elderberry shrubs, the host plant of the valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*), which is Federally listed as

threatened, were observed in the riparian habitat along the American and Sacramento Rivers. Riparian habitat is considered to be a sensitive habitat by California Department of Fish and Wildlife (CDFW). In the vegetation maps (Figures 4.1-1 to 4.1-6), riparian habitat is referred to as hardwood, native and non-native woodland, native and non-native scrub, and riparian forest, depending on the vegetation classifications used by the vegetation field survey team.

Wildlife inhabiting the project area are dependent upon the trees associated with riparian habitats for vegetation diversity; microclimate conditions; and the availability of water, food, and cover. Several species of raptors, including Swainson's hawk (*Buteo swainsoni*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), Cooper's hawk (*Accipiter cooperii*), and great horned owl (*Bubo virginianus*), build their nests in the crowns of cottonwood, valley oak, and other large trees that currently exist on both the landside and waterside of the Sacramento and American River levees within the project area. Natural cavities and woodpecker holes provide nesting sites for cavity-nesting species, including wood duck (*Aix sponsa*), common merganser (*Mergus merganser*), American kestrel (*Falco sparverius*), tree swallow (*Tachycineta bicolor*), and western screech owl (*Megascops kennicottii*).

Due to the urban development adjacent to the levees in the project area, wildlife is limited primarily to small mammals and various avian species, especially those species that are adapted to human disturbance. Additionally, several Federally listed species are reliant on riparian corridors, including VELB and the western yellow-billed cuckoo (*Coccyzus americanus occidentalis*).

Riparian Scrub

Riparian scrub is a sub-category of valley foothill riparian in this analysis. It supports large numbers of insects and attracts passerines, including several species of warblers and hummingbirds. Riparian scrub is typically associated with the toe of levees and along the banks of rivers and streams and other drainages in the program study area. This land cover type is distinguished from riparian forest by the dominance of shrubs and smaller trees (i.e., less than 20 feet tall), particularly willows, and it lacks a well-developed overstory of tall trees. Dominant species are frequently arroyo willow (*Salix lasiolepis*), Goodding's black willow, and sandbar willow. Other species commonly observed in riparian scrub are California buttonbush (*Cephalanthus occidentalis*), California wild rose, California blackberry (*Rubus ursinus*), Himalayan blackberry, and blue elderberry.

Shaded Riverine Aquatic

SRA habitat was a distinct habitat type described in section 3.6 “Vegetation and Wildlife” in the ARCF GRR Final EIS/EIR. SRA is included as a sub-category of valley foothill riparian in this analysis because it includes features from both the riverine and riparian zones. SRA occurs throughout the study area as the transition between the riverine/open water habitat described below and the adjacent upland habitats. SRA is defined as the nearshore aquatic area occurring at the interface between a river and adjacent woody riparian habitat. The principal attributes of this valuable cover type include: (1) the adjacent bank being composed of natural, eroding substrates supporting riparian vegetation that either overhangs or protrudes into the water; and (2) the water containing variable amounts of woody debris, such as leaves, logs, branches, and roots, as well as variable depths, velocities, and currents.

SRA provides foraging and refuge habitat for great blue herons (*Ardea herodias*) and snowy egrets (*Egretta thula*), a variety of amphibians and juvenile fishes. The slower water is often shallower providing protection from predators below and the vegetation provides shade and refuge keeping the waters cooler and creating camouflage.

Ruderal Herbaceous/Grassland

The ruderal herbaceous habitat type consists primarily of non-native annual grasses. Within the study area, this habitat type is typically found on and around the levee slopes and anticipated staging areas, borrow sites, and disposal sites. The largest extent of non-native annual grassland occurs at the combined American River sites; it is also the dominant habitat at the SRMS. The non-native annual grassland is dominated by naturalized annual grasses with intermixed perennial and annual forbs. Grasses commonly observed in the study area are foxtail barley (*Hordeum murinum* ssp. *Leporinum*), ripgut brome (*Bromus diandrus*), Italian ryegrass (*Lolium multiflorum*), and soft chess (*Bromus hordeaceus*). Other grasses observed include wild oats (*Avena* spp.), Bermuda grass (*Cynodon dactylon*), and rattail fescue (*Vulpia myuros* var. *myuros*). Forbs commonly observed in annual grasslands in the study area are yellow star-thistle (*Centaurea solstitialis*), prickly lettuce (*Lactuca serriola*), bristly ox-tongue (*Picris echioides*), and sweet fennel (*Foeniculum vulgare*). Other forbs observed are perennial pepperweed, Italian thistle (*Carduus pycnocephalus*), horseweed (*Conyza canadensis*), black mustard (*Brassica nigra*), and fireweed (*Epilobium brachycarpum*).

Ruderal herbaceous and grassland habitats support unique food webs that thrive in California’s grasslands. For example, numerous insects feed species such as California vole (*Microtus californicus*) and gopher snakes (*Pituophis catenifer*) that are prey for white-tailed kite (*Elanus leucurus*) and red-tailed hawk.

Wetland

Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year (Cowardin et al. 1979).

There are many types of wetlands. The most common types within the project area are seasonal wetlands, areas that meet the three criteria above: vernal pools, a special status habitat that is a type of seasonal wetland; fringe wetlands that occur along the edge of open water or riverine; and forested wetlands which are seasonally wet areas with primary vegetation of woody trees. Within the study area, wetlands also include features such as drainage ditches and farm canals, and open water habitat such as rivers and creeks. Wetlands and vernal pools are considered sensitive habitats.

Representative species observed in seasonal wetlands include Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), Italian ryegrass, water pepper (*Persicaria hydropiperoides*), and alkali mallow (*Malvella leprosa*). Wetlands in the study area represent potentially jurisdictional waters of the United States that may be subject to regulation under Clean Water Act (CWA) Section 404 and waters of the State that may be subject to regulation under CWA section 401 or the Porter-Cologne Water Quality Control Act. Prior to construction, wetland delineations will be conducted at locations of potentially jurisdictional wetlands within the project sites to confirm the presence of these sensitive habitats.

Wetlands in vernal pools, provide habitat for crustaceans such as fairy shrimp (*Anostraca*) and seasonal water sources for ducks and geese. Unlike the ducks, fairy shrimp spend their entire life cycle relying on the seasonal waters, unable to relocate if the local environment becomes disturbed or eliminated. Many migratory waterfowl use seasonal wetlands as a place to find food and rest before continuing their migrations.

Riverine/Open Water

Riverine/open water habitat consists of inundated areas such as rivers, creeks, and ponds, including the American River, Sacramento River, and Magpie Creek. Many bird species use riverine and open waters for resting, foraging, and escape cover. Common species include gulls, waterfowl, and osprey (*Pandion haliaetus*). Shorelines provide hunting grounds for wading birds such as herons and egrets, and for kingfishers, waterfowl, and shorebirds. Flycatchers, swallows, and other insectivorous birds catch their prey over water. Mammal species that occur in this habitat type include river otter (*Lontra canadensis*) and beaver (*Castor canadensis*). Instream woody structure along the shoreline of riverine habitat provides perching habitat for bird species such as black phoebe (*Sayornis nigricans*) and resting or basking habitat for other species (e.g., western pond turtle [*Actinemys marmorata*] and river otter).

Agricultural

Agricultural lands occur at the western boundary of the MCP. These lands include orchards, vineyards, row and field crops (e.g., sweet corn, tomatoes, alfalfa), and pasturelands. Pasturelands typically contain a variety of native and nonnative grasses and forbs such as tall fescue (*Festuca arundinaceae*), white clover (*Trifolium repens*), dallis grass (*Paspalum dilatatum*), and chicory (*Chichorium intybus*). Agricultural fields provide similar habitat to that of grasslands for wildlife but typically support lower species diversity.

Nonnative Invasive Species

Section 3.6, “Vegetation and Wildlife,” of the ARCF GRR Final EIS/EIR describes invasive non-native plant species. Areas dominated by non-native vegetation include abandoned, fallow, and active agricultural fields; borrow and staging areas; dredger mine tailings; levee slopes; previous construction sites; and areas subject to fire, frequent flood inundation, or scour. Invasive plants have also naturalized in nearby riparian, woodland, grassland, and agricultural plant communities. The California Invasive Plant Council inventory is updated to identify nonnative, invasive and noxious plant species of concern.

Page 113 of the ARCF GRR Final EIS/EIR states:

“These invasive species typically outcompete native plant species and must be controlled aggressively including mitigation and restoration areas. Since 2001, Sacramento County and SAFCA have collaborated on invasive plant management planning efforts, which have guided local efforts towards eradication of all populations of giant reed (*Arundo donax*), tamarisk (*Tamarix* spp.), French broom (*Genista monspessulana*), Scotch broom (*Cytisus scoparius*), Pampas grass (*Cortaderia selloana*), red sesbania (*Sesbania punicea*), Chinese tallow tree (*Triadica sebifera*), oleander (*Nerium oleander*), and pyracantha (*Pyracantha* spp.).”

Additionally Spanish broom (*Spartium junceum*), stinkwort (*Dittrichia graveolens*) and yellow starthistle (*Centurea solstitialis*) are commonly found in the American River Parkway.

Sensitive Natural Habitats

Sensitive natural plant communities are vegetation cover types that are especially diverse, regionally uncommon, or of special concern to local, state, and Federal agencies. Waters of the United States (riverine, wetlands and vernal pools), riparian habitat, and mixed-oak communities qualify as sensitive natural communities, while the riparian herbaceous community generally does not (CDFW 2022).

Wildlife Corridor

The California Wildlife Connectivity and Climate Adaptation Act of 2024 defines a wildlife corridor as a habitat linkage that joins two or more patches of suitable habitat, allowing species to move from one patch to another. Habitat connectivity is described as the connectedness of habitat for a particular species, while landscape connectivity can be defined as the human perception of native vegetation cover connectedness in a landscape (Fischer and Lindenmayer 2007). Permeability of wildlife corridors is a measure of structure – hardness of barriers, connectedness of natural cover, and arrangement of land uses (Anderson & Clark 2012). Roads, development, dams, and other structures create resistance that interrupts or redirects movement and, therefore, lowers the permeability. These definitions in combination with The Nature Conservancy’s Resilient Land Mapping Tool Local Connectedness dataset, and CDFW’s Terrestrial Connectivity, Areas of Conservation Emphasis (ACE) dataset were used to inform this analysis.

4.1.2 Applicable Laws, Regulations, Policies, and Plans

Federal

Endangered Species Act

The Endangered Species Act (ESA) provides protective measures for Federally listed threatened and endangered species, including their habitats, from unlawful take (16 United States Code [USC] §§ 1531–1544). The ESA defines take to mean “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Title 50, § 222, of the CFR (50 CFR § 222) further defined harm to include an act that actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns including feeding, spawning, rearing, migrating, feeding, or sheltering.

ESA Section 7(a)(1) requires Federal agencies to use their authority to further the conservation of listed species. ESA Section 7(a)(2) requires consultation with the United States Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) if a Federal agency undertakes, funds, permits, or authorizes (termed the Federal nexus) any action that may impact endangered or threatened species or designated critical habitat. For projects that may result in the incidental take of threatened or endangered species, or critical habitat, and that lack a Federal nexus, a Section 10(a)(1)(b) incidental take permit can be obtained from USFWS and/or NMFS.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act requires an agency to consult with USFWS if the agency plans to conduct, license, or permit an activity involving the impoundment, diversion, deepening, control, or modification of a stream or body of water. The Act also requires consultation with the head of the state agency that administers wildlife resources in the affected state. The purpose of this process is to promote conservation of wildlife resources by preventing loss of and damage to such resources and to provide for the development and improvement of wildlife resources in connection with the agency action. USFWS prepared a Fish and Wildlife Coordination Act report for the ARCF 2016 Project (USFWS 2015), and recommendations from the Coordination Act Report have been incorporated into project design and mitigation measures.

Federal Wild and Scenic Rivers Act

The Wild and Scenic Rivers Act applies to the parts of the Proposed Action along the American River, specifically all construction work and some staging associated with American River scour and erosion work and Contract 3B, Contract 4A, and the ARMS.

The Wild and Scenic Rivers Act (16 USC 1217 et seq.) was enacted to preserve selected rivers or sections of rivers in their free-flowing condition to protect the quality of river waters and to fulfill other national conservation purposes. The Lower American River, below Nimbus Dam, has been included in the National Wild and Scenic Rivers System since 1981 and was designated for its outstandingly remarkable anadromous fishery resource and recreational values. The American River Parkway Plan is the management plan for the Wild and Scenic Rivers Act. The policies of the American River Parkway Plan require that flood management agencies maintain and improve the existing flood control system and manage vegetation in the Parkway to maintain

the structural integrity and conveyance capacity of the flood control system, consistent with the need to provide a high level of flood risk reduction with consideration of the outstandingly remarkable values for which the Lower American River was included under the Wild and Scenic Rivers Act.

Migratory Bird Treaty Act of 1918 (16 U.S.C. § 703, et seq.)

The Migratory Bird Treaty Act (MBTA) implements a series of international treaties (U.S., Canada, Japan, Mexico, and Russia) that provide for migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds; the act provides that it is unlawful, except as permitted by regulations, “to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird” (16 USC § 703). This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs. The current list of species protected by the MBTA (50 CFR 10.13) includes several hundred species and essentially includes all native birds. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and personal property. Mitigation Measures VEG-1, VEG-2, and BIRD-1 will ensure the Proposed Action is in compliance with the MBTA. Generally, all survey-detected, nesting birds will be avoided with the species-appropriate buffer during construction.

Clean Water Act of 1972, as amended (33 U.S.C. 1251, et seq.)

The CWA is the primary Federal law governing water pollution. It established the basic structure for regulating discharges of pollutants into waters of the United States and gives the U.S. Environmental Protection Agency (USEPA) the authority to implement pollution control programs. In California, the USEPA has delegated authority to regulate the CWA to state agencies such as the Central Valley Regional Water Quality Control Board (CVRWQCB) and State Water Resources Control Board (SWRCB). Section 401 of the CWA regulates the water quality for any activity that may result in any in-water work or discharge into navigable waters. These actions must not violate Federal water quality standards. The CVRWQCB administers Section 401 of the CWA in California, and either issues or denies water quality certifications. Water quality certifications typically include project-specific requirements to ensure attainment of water quality standards. USACE obtained a Programmatic CWA 401 water quality certification (Order No. 5A34CR00819) on July 13, 2021, for the ARCF project. Each individual project will request coverage under this overall permit and this permit will expire July 12, 2026.

Section 404 of the CWA requires that a permit be obtained from USACE when an action will result in the discharge of dredged or fill material into wetlands and waters of the United States. The 404(b)(1) guidelines specify that “no discharge of dredged or fill material shall be permitted if there is a practical alternative to the proposed discharge which will have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences” (40 C.F.R. § 230.10[a]). When conducting its own civil works projects, USACE does not issue permits to itself. Rather, USACE complies with the guidelines and substantive requirements of the CWA, including Section 404 and Section 401. The Proposed Action will require discharge of fill material into waters of the United States, therefore a Section 404(b)(1) analysis will be conducted on the project’s alternatives and included in the Final SEIS/SEIR. The discharge of fill material will comply with the 404(b)(1) guidelines with the

inclusion of appropriate measures to minimize pollution or adverse effects on the aquatic ecosystem.

Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. 668-668d)

The Bald and Golden Eagle Protection Act provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the take, possession, and commerce of eagles, including their parts (feathers), nests or eggs. USFWS adopted new amendments to policies regarding implications of the Bald and Golden Eagle Protection Act; however, these changes do not substantially change the application of NEPA to proposed plan (USFWS 2019). Mitigation Measures VEG-1, VEG-2, and BIRD-1 will ensure the Proposed Action is in compliance.

Executive Order 13112: Invasive Species Regulation

EO 13112, issued in 1989, directs Federal agencies to take actions to prevent the introduction of invasive species, provide for control of invasive species, and minimize the economic, ecological, and human health impacts that invasive species cause. EO 13112 also calls for the restoration of native plants and tree species.

USACE Invasive Species Policy, dated February 2023.

This policy requires that civil works projects will include measures to either prevent or reduce the establishment of invasive and non-native species. O&M will include strategies for invasive species management. Efforts require continuous collaboration across USACE and with Federal, Tribal, State, and local governments; non-government organizations; and partners. Executive Order 13751 directs action to continue coordinated Federal prevention and control efforts of invasive species. Section 7001(b)(20) of the Fish and wildlife Coordination Act call for increased coordination across agencies and stakeholders. The Aquatic Plant Control Program (33 U.S.C. 610) supports prevention, early detection, monitoring, and research to reduce the impact of invasive species across Civil Works Programs.

State

California Wild and Scenic Rivers Act (PRC Section 5093.50-5093.70)

The California legislature passed the California Wild and Scenic Rivers Act in 1972 (PRC Section 5093.50-5093.70). The legislature said that it was the State's intent that "certain rivers which possess extraordinary scenic, recreation, fisheries, or wildlife values shall be preserved in their free-flowing state, together with their immediate environment, for the benefit and enjoyment of the people of the State." The 23-mile portion of the American River that extends from below Nimbus Dam to the confluence with the Sacramento River has been designated as a recreational river under the California Wild and Scenic River Act for its anadromous fishery resource and recreational values. In 2008, the County of Sacramento finalized the American River Parkway Plan to provide a guide to land use decisions affecting the Parkway and specifically addressing the Parkway's preservation, use, development, and administration. The Parkway Plan acts as the management plan for the LAR under the California Wild and Scenic Rivers Act.

California Native Plant Protection Act

The Native Plant Protection Act (NPPA) was enacted in 1977 and allows the Fish and Game Commission to designate plants as rare or endangered. There are 64 species, subspecies, and varieties of plants that are protected as rare under the NPPA. The NPPA prohibits take of endangered or rare native plants but includes some exceptions for agricultural and nursery operations; emergencies; and after properly notifying CDFW for vegetation removal from canals, roads, and other sites, changes in land use, and in certain other situations. Mitigation Measure PLANT-1: 'Implement Measures to Protect Special-Status Plants' will ensure compliance with this law.

Porter-Cologne Water Quality Control Act of 1970

The Porter-Cologne Water Quality Control Act requires each of the state's nine regional water quality control boards (RWQCBs) to prepare and periodically update basin plans for water quality control. The jurisdiction of each RWQCB includes Federally protected waters as well as areas that meet the definition of "waters of the State," which are defined as any surface water or groundwater, including saline waters, within the State's boundaries. The Proposed Action will comply with this law concurrently with Section 401 of the CWA by following the programmatic Water Quality Certification acquired for the project.

California Fish and Game Code

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nests of eggs of any bird. Section 3503.3 states that it is unlawful to take, possess, or destroy any raptors, including nests or eggs.

Section 3513 of the California Fish and Game Code states that it is unlawful to take or possess any migratory nongame bird, as designated in the Federal MBTA (16 USC 703 et seq.) before January 1, 2017; any additional migratory nongame bird designated in the MBTA after that date; or any part of a migratory nongame bird described in Fish and Game Code Section 3513, except as provided by rules and regulations adopted by the U.S. Secretary of the Interior under the MBTA, unless those rules or regulations are inconsistent with the Fish and Game Code.

California Endangered Species Act

Under CESA, the California Department of Fish and Wildlife (CDFW) has the responsibility for maintaining a list of endangered and threatened species (Fish and Game Code [FGC] § 2070). CDFW also maintains a list of candidate species, which are species formally noticed as being under review for potential addition to the list of endangered or threatened species, and a list of species of special concern, which serve as a species watch lists.

Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present and determine whether the proposed project will have a potentially significant impact on such species. In addition, CDFW encourages informal consultation on any proposed project that may impact a candidate species.

Proposed project-related impacts on species on the CESA endangered or threatened list will be considered significant. State-listed species are fully protected under the mandates of the CESA. Take of protected species incidental to otherwise lawful management activities may be authorized under FGC Section 206.591. Authorization from CDFW will be in the form of an incidental take permit.

Local

American River Natural Resource Management Plan

The Sacramento County Board of Supervisors approved the American River Parkway Natural Resources Management Plan (NRMP) on February 28, 2023. “The NRMP was prepared as a guidance document for management of the natural resources of the American River Parkway. The NRMP is framed by and supplements the American River Parkway Plan (ARPP), which is the Federal and State Wild and Scenic Rivers management plan for the Lower American River, to ensure that the American River Parkway’s (Parkway) resources, its environmental quality, and natural values are protected. The NRMP management activities represent a coordinated and cooperative effort that incorporates feedback from local stakeholders and agencies with jurisdiction within the Parkway” (Sacramento County 2023).

Sacramento County General Plan of 2005 to 2030, Conservation Element

In 2016 Policy CO-105a was added: “Encourage flood management designs that respect the natural topography and vegetation of waterways while retaining flow and functional integrity.”

The General Plan is a set of goals, objectives, policies, implementation measures and maps that form a blueprint for physical development in the unincorporated County. The plan addresses important community issues such as new growth, housing needs and environmental protection. Policies are instrumental in planning infrastructure to accommodate future growth. The State mandates that the County’s General Plan include a Conservation Element which will enable the County to analyze its resources and determine policies for their use and conservation (Sacramento County 2017).

Code of Ordinances- Sacramento County

In order to protect native oak trees, Sacramento has implemented an ordinance for tree preservation and protection. Chapter 19.12 of the Sacramento County Code of Ordinances spells out requirements for preserving and protection native trees. Section 19.12.070 (c) says “The preservation or removal of trees within parks, parkways, and public recreation easements, shall be the responsibility of the Director of Parks and Recreation.” Project Partners have incorporated Sacramento Regional County Parks into the design review process. Coordinating with Sacramento Regional County Parks ensures compliance with Chapter 19.12 of the Sacramento County Code of Ordinances.

Code of Ordinances- City of Sacramento

In order to protect trees, the City of Sacramento has implemented an ordinance for tree protection. Chapter 12.56 of the outlines tree planting, maintenance, and conservation. Section 12.56.080 states that “A tree permit is not required for a public agency that performs any flood

protection work on public property or within a public easement that may cause injury to or the removal of a city tree or private protected tree. As used in this section, "public agency" includes, but is not limited to, the U.S. Army Corps of Engineers, Sacramento Area Flood Control Agency, Reclamation District 1000, or American River Flood Control District. (Ord. 2016-0026 § 4)". Consequently, tree removal for flood protection by Project Partners within the limits of the City of Sacramento is in compliance with this ordinance.

4.1.3 Analysis of Environmental Effects

Analysis Methodology

Impacts on vegetation and wildlife within the project area are evaluated based on data collected during surveys conducted from 2011 to 2023, Google Earth, USFWS's Information for Planning and Consultation (IpaC), California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDDB) and Vegetation Classification and Mapping Program (VegCAMP), and the American River Parkway Plan. These resources provide a comprehensive overview of the vegetation that exists within the project area and were used to evaluate the impacts of the Proposed Action and project alternatives. The goals and objectives of the ARPP and associated NRMP were also considered for the impact analysis, and how implementing the Proposed Action would impact those goals and objectives.

Impacts on wildlife were evaluated based on construction activities and changes in habitat types after construction of the project. Table 4.1-3 presents estimated habitat impact acreages of the CEQA Proposed Action in comparison to what is stated in the ARCF GRR Final EIS/EIR and Table 4.1-4 presents estimated habitat impact acreages of the NEPA Design Refinements in comparison to what is stated in the ARCF GRR Final EIS/EIR. Table 15 on page 126 of the ARCF GRR Final EIS/EIR provides details of habitat impact acreages estimated in the ARCF GRR Final EIS/EIR. These acreages were estimated by overlaying the footprint of anticipated project components onto aerial photographs or land use polygons and calculating the habitat within the footprint.

The ARCF GRR Final EIS/EIR project description stated that USACE would receive a Vegetation Design Deviation from addressing waterside vegetation under the requirement of ETL 1110-2-583. The vegetation free zone is a three-dimensional corridor surrounding all Federal flood protection projects that must be kept accessible to ensure adequate maintenance, monitoring, and flood fighting. The current understanding is if vegetation is to remain in the vegetation free zone, then a Vegetation Design Deviation would be required. Vegetation on the levee slopes, within the vegetation free zone, outside of the construction footprints is not being addressed by Sacramento River Erosion Contract 3 or Lower American River Erosion Contracts 3A and 4A. However, it is covered in a system-wide improvement framework (SWIF) which allows vegetation in the vegetation free zone, not impacted by ARCF, to be addressed by the local maintaining agency through standard operation and maintenance actions over time.

For the purposes of this vegetation and wildlife analysis, short-term impacts are those that are offset within 8 years of project construction and long-term impacts are those occurring beyond 8 years. This timeframe was selected based on the framework provided in the 2021 NMFS BO (NMFS 2021) wherein establishment of riparian tree and shrub species within riparian habitat was projected to take 5 to 8 years, because this is the typical timeframe required for habitat to

reach a level of maturity and vigor to be self-sustaining in the long-term. The use of an 8 to 10 - year short-term impact period is more conservative than the approach taken by NMFS, in that the 2021 BO pertaining to Federally listed fish species effects considered short-term effects as those only occurring during construction and long-term effects as those resulting from the presence of program features.

The Nature Conservancy local connectedness dataset “measures how impaired the structural connections are between natural ecosystems within a local landscape. Roads, development, noise, exposed areas, dams, and other structures all directly alter processes and create resistance to species movement by increasing the risk (or perceived risk) of harm (The Nature Conservancy 2012).” These data show that the Lower American River and Sacramento River, in the locations associated with the proposed bank protection and mitigation site contracts, are characterized as less connected to slightly less connected.

The CDFW Terrestrial Connectivity ACE dataset, version 3.2.1, updated March 13, 2024 “summarizes information on terrestrial connectivity by ACE hexagon including the presence of mapped corridors or linkages and the juxtaposition to large, contiguous, natural areas. This dataset was developed to support conservation planning efforts by allowing the user to spatially evaluate the relative contribution of an area to terrestrial connectivity based on the results of statewide, regional, and other connectivity analyses (CDFW 2024). These data show that Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, and Sacramento River Mitigation Site are all aligned with mapping units designated as having limited connectivity opportunities. CDFW limited connectivity areas occur where land use may limit options for providing connectivity (e.g., agriculture, urban) or no connectivity importance has been identified in models (CDFW 2024). The American River Mitigation Site, American River Erosion Contract 4A, and the western portion of the Magpie Creek Project align with mapping units designated as conservation planning linkages. CDFW defines conservation planning linkages as habitat connectivity linkages mapped in the California Essential Habitat Connectivity map and fine-scale regional connectivity studies (CDFW 2024).

Roads, development, noise, exposed areas, and human intrusion all directly alter processes and create resistance to species movement. Resistance of a landscape measures the extent that wildlife movement into or out of a particular habitat patch is facilitated and/or impeded by the adjacent habitat patch condition. Weights are then applied to each habitat or land cover polygon. Developed land cover types are given the highest resistance weights, including open space and low intensity uses. Open water and barren land such as rock, sand, and clay are given medium resistance weights, while all natural cover types were given the lowest resistance weights. The Nature Conservancy (2012) assumed with this methodology that wildlife movement and ecological flows through a natural landscape were less specific than individual species breeding requirements, and that natural landscapes are composed of an interacting mosaic of different ecosystems and natural cover types.

Table 4.1-3: CEQA Estimated Vegetation Impacts– Proposed Action

| Location | Valley Foothill Riparian (acres) | | Ruderal Herbaceous/Grassland (acres) | Wetland (acres) | Riverine/Open Water (acres) | Agricultural (acres) | Urban/Developed (acres) |
|---|--|---|---|--|-----------------------------------|-------------------------|---|
| American River Erosion Contract 3b | 18.75 | | 7.0 | - | 6.0 | - | 3 Ditch: 0.19 |
| American River Erosion Contract 4A – Proposed Action | 7.95 | | 6.70 | Forested Wetland: 0.60 | - | - | 3.70 |
| American River Erosion Contract 4A – Alt 3a | 0.41 | | - | - | - | - | 0.54 |
| American River Erosion Contract 4A – Alt 3b | 5.88 | | 6.87 | Forested Wetland: 0.60 | - | - | 3.16 |
| American River Erosion Contract 4A – Alt 3c | Parkway detour: 15.63 Street detour: 2.95 | | Parkway detour: 17.40 Street detour: 2.10 | Forested Wetland: Parkway detour: 1.02 Street detour: 0.98 | Parkway detour: 0.23 | - | Parkway detour: 4.56 Street detour: 3.86 |
| American River Erosion Contract 4A – Alt 3d | 14.10 | | 16.80 | Forested Wetland: 0.47 | 0.23 | - | 3.86 |
| American River Erosion Contract 4B – Tree Scour | 1.58 | | 0.26 | - | - | - | 0.14 Ditch: 0.19 |
| Sacramento River Erosion Contract 3 | 4.68 | | 0.23 | - | 20.70 | - | - |
| MCP | 2.60 | | 10.67 | 0.40 | - | 0.35 | 6.35 |
| ARMS | 2.1 | | 13 | 0.0 | 40.40 | 0.0- | 1.5 |
| SRMS | 8.63 | - | 30.29- | 0.09 | 1.21 | 0.0 | 4.40 |

Note: The American River Mitigation Site (ARMS) and Sacramento River Mitigation Site (SRMS) would emphasize restoration to native floodplain wetland and riparian habitats. It is anticipated that there would be a large net increase in freshwater emergent/seasonal wetland habitat, riparian woodland, and riverine habitats, while a reduction in grassland/upland and pond habitats would occur, resulting in a gain in aquatic resource area and functions.

Table 4.1-4: NEPA Estimated Vegetation Impacts – Proposed Action

| Location | Valley Foothill Riparian (acres) | | Ruderal Herbaceous/Grassland (acres) | Wetland (acres) | Riverine/Open Water (acres) | Agricultural (acres) | Urban/Developed (acres) |
|--|--|-----|--|---|-----------------------------|----------------------|---|
| American River Erosion Contract 3b | 1.9 | | 2.4 | - | 1.5 | - | 0.4 Ditch: 0.19 |
| American River Erosion Contract 4A – Proposed Action | 7.95 | | 6.70 | Forested Wetland: 0.60 | - | - | 3.70 |
| American River Erosion Contract 4A – Alt 3a | 0.41 | | - | - | - | - | 0.54 |
| American River Erosion Contract 4A – Alt 3b | 5.88 | | 6.87 | Forested Wetland: 0.60 | - | - | 3.16 |
| American River Erosion Contract 4A – Alt 3c | Parkway detour: 15.63 Street detour: 2.95 | | Parkway detour: 17.40 Street detour: 2.10 | Forested Wetland: Parkway detour: 1.02 Street detour: 0.98 | Parkway detour: 0.23 | - | Parkway detour: 4.56 Street detour: 3.86 |
| American River Erosion Contract 4A – Alt 3d | 14.10 | | 16.80 | Forested Wetland: 0.47 | 0.23 | - | 3.86 |
| American River Erosion Contract 4B – Tree Scour | 1.58 | | 0.26 | - | - | - | 0.14 Ditch: 0.19 |
| Sacramento River Erosion Contract 3 | 0.15 | | - | - | 0.75 | - | - |
| MCP | 1.66 | | 4.48 | 0.40 | - | 0.35 | 5.69 |
| ARMS | 2.1 | 0.0 | 13.0 | 0.0 | 40.4 | - | 1.5 |
| SRMS | 8.63 | | 30.29- | 0.09 | 1.21 | 0.0 | 4.40- |

Note: American River Mitigation Site (ARMS) and Sacramento River Mitigation Site (SRMS) would emphasize restoration to native floodplain wetland and riparian habitats. It is anticipated that there would be a large net increase in freshwater emergent/seasonal wetland habitat, riparian woodland, and riverine habitats, while a reduction in grassland/upland and pond habitats would occur (HDR 2023), resulting in a gain in aquatic resource area and functions.

Scoping Comments

Public comments were received during the SEIS/SEIR public scoping period from October 7 to December 31, 2022. Most of the comments received on biological resources expressed concerns related to mitigation but also water resources and monitoring. Comments were received from USEPA, Sacramento County Department of Regional Parks, Save the American River Association, and private individuals. Topics included: direct, indirect, and cumulative impacts on surface and ground water; mitigation site selection, long-term and adaptive management of mitigation; habitat consistency in the parkway; compliance with the American River Parkway Plan and the NRMP; and alternate designs for ARMS to include a pond for recreation and migratory bird use. See Appendix B Section 2.4 “Land Use and Prime and Unique Farmland” for a discussion regarding the Proposed Action’s consistency with the American River Parkway Plan, as well as policies outlined in the American River Parkway Plan that apply to the Proposed Action. The American River Parkway Plan identifies the ARMS parcel as a site to be acquired and restored or enhanced to improve the fish and wildlife values, to accommodate historical and cultural activities, and to support recreation. The proposed mitigation would comply with applicable policies outlined in this document and would include enhancing the upland areas and utilizing the open water or a portion thereof for fishing and non-motorized boating. The retention of open water would continue to provide off-channel roosting and foraging habitat for migratory birds. Additional discussion on consideration of alternative designs is included in Sections 3.3, and 8.1.2 of the SEIS/SEIR. The Scoping Report is included as Appendix A.

Basis of Significance

The significance thresholds, and the impact analysis that follows, take into consideration the significance of an action in terms of the setting of the proposed action; short- and long-term effects of the proposed action; both beneficial and adverse effects; direct and indirect effects of the proposed action on public health and safety; the context and intensity of effects; and effects that would violate Federal, State, Tribal, or local law protecting the environment, as required under NEPA (40 CFR 1508.1(g)). The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. The Proposed Action was determined to result in a significant impact related to vegetation and wildlife if it would do any of the following:

- a. 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;
- b. 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;
- c. 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;
- d. 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;
- e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;

- 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.

Effects Analysis

No Action Alternative

Under the No Action Alternative (see Section 3.4 for detailed description), only the components described in the ARCF GRR Final EIS/EIR and supplement documents would be built. The ARMS and SRMS would not be built, and site conditions at those locations would remain as they are now. The ARMS would remain a man-made pond. As a depleted mine site, the area is subject to State of California Surface Mining and Reclamation Act (SMARA). SMARA requires that former mines be “reclaimed to a usable condition which is readily adaptable for alternate land uses” (SMARA, Public Resources Code, Sections 2710-2796). Under SMARA, the site should be reclaimed to include the removal of hazards and hazardous materials, site contouring, and restoration (Sacramento County 2008). In addition, the SRMS would remain an active Dredged Material Placement Site managed by USACE. However, USACE would still be required to mitigate for ARCF 2016 Project habitat impacts by other means, such as purchasing mitigation bank credits or constructing mitigation sites elsewhere.

Riparian

Under the ARCF GRR Final EIS/EIR, approximately 65 acres of riparian habitat would be removed throughout the American River, 71 acres throughout the Sacramento River, and zero acres around Magpie Creek. The removal of riparian habitat would be mitigated in accordance with the CAR (or in accordance with the Section 7 ESA Biological Opinions if the area is also considered VELB habitat) by planting new riparian habitat onsite or at USFWS-approved mitigation sites.

Section 3.3.4 of the ARCF GRR Final EIS/EIR states that the launchable rock trench measure would allow for the protection of the existing SRA habitat by constructing erosion protection measures against the waterside levee toe. This measure would require the removal of upland riparian scrub habitat and grasses close to the levee to construct the trench. However, this measure would also incorporate mitigative features through the installation of plantings on the surface of the trench. Once the vegetative features reach full growth, the rock trenches would provide a natural appearance to the site and the affected habitat values would be fully restored.

Ruderal Herbaceous

The analysis in the ARCF GRR Final EIS/EIR determined that approximately 135 acres of ruderal herbaceous habitats would be impacted. Ruderal Herbaceous was defined as levees, patrol roads, and open lands with no trees. The disturbed areas would be returned to pre-project conditions to the maximum extent feasible. As a result, the impacts on these areas would be less than significant with proposed mitigation.

Wetland

The analysis in the ARCF GRR Final EIS/EIR determined that 0.40 acre of seasonal wetland and 0.25 acre of vernal pools would be impacted. Both aquatic resource types would be mitigated for in accordance with the CAR and CWA either onsite or offsite through habitat creation or through the purchase of agency-approved mitigation bank credits.

Shaded Riverine Aquatic

The analysis in the ARCF GRR Final EIS/EIR determined that constructing new bank protection features would involve launchable rock trenches created by removing grasses, shrubby vegetation, riparian woodland, and instream woody material, resulting in the loss of 80,825 linear feet of SRA habitat, a key component of salmonid habitat. SRA is defined as the unique near-shore area, where the water meets the land; it includes over-hanging and aquatic vegetation. Therefore, SRA is no longer broken down into a separate habitat type and is incorporated into the riparian and riverine habitat types. The impacts on SRA habitat were addressed in the ESA Section 7 Biological Opinions and appropriate mitigation was identified (NMFS 2021 and USFWS 2021).

Riverine/Open Water

The ARCF GRR Final EIS/EIR did not evaluate riverine or open water; however, the impacts would be the same as those described in Alternative 2 of the ARCF GRR Final EIS/EIR. The maintenance of the levees would result in discharge of fill material into the Sacramento River, American River, and Magpie Creek. Those impacts cannot be avoided with the fix-in-place nature of the project. Impacts would be mitigated under section 401 and 404 of the CWA either with the purchase of bank credits or with the compensatory mitigation created on and off site.

Proposed Action

4.1-a. 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

4.1-b. 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

CEQA Significance Conclusion: Less than Significant with Mitigation Incorporated

NEPA Significance Conclusion: Short-term to Medium Term and Moderate effects that are Less than Significant with Mitigation Incorporated

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, American River Mitigation Site, Sacramento River Erosion Contract 3, Sacramento River Mitigation Site, Magpie Creek Project, and Piezometer Network

CEQA Impact Conclusion 4.1-a and 4.1-b (Entire Proposed Action): Less Than Significant with Mitigation Incorporated.

A wildlife corridor is often defined as a habitat linkage that joins two or more patches of suitable habitat, allowing species to move from one patch to another (California Assembly Bill 2320 perception of native vegetation cover connectedness in a landscape (Fischer and Lindenmayer 2006). Permeability of wildlife corridors is a measure of structure – hardness of barriers, connectedness of natural cover, and arrangement of land uses (The Nature Conservancy 2012). Roads, development, dams, and other structures create resistance that interrupts or redirects movement and, therefore, lowers the permeability. These definitions in combination with The

Nature Conservancy's Resilient Land Mapping Tool Local Connectedness dataset, and California Department of Fish and Wildlife's (CDFW) Terrestrial Connectivity, Areas of Conservation Emphasis (ACE) dataset were used to inform this analysis.

The Nature Conservancy local connectedness dataset “measures how impaired the structural connections are between natural ecosystems within a local landscape. Roads, development, noise, exposed areas, dams, and other structures all directly alter processes and create resistance to species movement by increasing the risk (or perceived risk) of harm (The Nature Conservancy 2012).” These data show that the Lower American River and Sacramento River, in the locations associated with the proposed bank protection and mitigation site contracts, are characterized as less connected to slightly less connected.

The CDFW Terrestrial Connectivity ACE dataset, version 3.2.1, updated March 13, 2024 “summarizes information on terrestrial connectivity by ACE hexagon including the presence of mapped corridors or linkages and the juxtaposition to large, contiguous, natural areas. This dataset was developed to support conservation planning efforts by allowing the user to spatially evaluate the relative contribution of an area to terrestrial connectivity based on the results of statewide, regional, and other connectivity analyses (CDFW 2024). These data show that Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, and Sacramento River Mitigation Site are all aligned with mapping units designated as having limited connectivity opportunities. CDFW limited connectivity areas occur where land use may limit options for providing connectivity (e.g., agriculture, urban) or no connectivity importance has been identified in models (CDFW 2024). The American River Mitigation Site, American River Erosion Contract 4A, and the western portion of the Magpie Creek Project align with mapping units designated as conservation planning linkages. CDFW defines conservation planning linkages as habitat connectivity linkages mapped in the California Essential Habitat Connectivity map and fine-scale regional connectivity studies (CDFW 2024).

Roads, development, noise, exposed areas, and human intrusion all directly alter processes and create resistance to species movement. Resistance of a landscape measures the extent that wildlife movement into or out of a particular habitat patch is facilitated and/or impeded by the adjacent habitat patch condition. Weights are then applied to each habitat or land cover polygon. Developed land cover types are given the highest resistance weights, including open space and low intensity uses. Open water and barren land such as rock, sand, and clay are given medium resistance weights, while all natural cover types were given the lowest resistance weights. The Nature Conservancy (2012) assumed with this methodology that wildlife movement and ecological flows through a natural landscape were less specific than individual species breeding requirements, and that natural landscapes are composed of an interacting mosaic of different ecosystems and natural cover types. The USACE design team, through the extensive engagement process, has minimized the amount of exposed, unvegetated, infrastructure associated with the bank protection features. Based on the current design, bank protection features would be revegetated post-construction to the greatest extent practicable. Intermittently spaced rock tiebacks in planting benches, revetment placed around outfall structures, and rock slope protection placed at or below the summer water surface elevation may be partially unvegetated post-construction; however, these features are either at or below grade on American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and Sacramento River Erosion Contract 3.

Daytime construction activities could interfere with local movement of native resident or migratory wildlife species. Impacts associated with staging areas, borrow sites, disposal sites, and haul routes would be relatively minor because they would largely be sited in previously disturbed, non-native habitats. Staging areas would be placed in areas to avoid sensitive native habitats, utilizing ruderal herbaceous habitat, landscaped areas, or developed land. Tree removal and trimming, minor grading, paving, and adding aggregate base could occur at staging areas and along haul routes. Staging areas and haul routes would be restored to pre-project conditions. This may include reseeded with native grasses and forbs, planting with native vegetation, or working with recreational agencies to determine which trees would be removed and replanted. Some access ramps would be retained to allow access for the local maintaining agency. Disposal areas would be existing landfills with the appropriate licensing. Furthermore, grading, other ground-disturbing activities, and temporary fencing for public safety could also temporarily disrupt wildlife movement but would not completely block movement pathways or migratory corridors. These daytime construction activities would result in a less than significant impact on wildlife movement.

Because unvegetated, infrastructure has been limited in association with bank protection features in the post-construction condition, and an extensive replanting effort would be undertaken, the proposed action is not anticipated to substantially reduce landscape permeability for the movement of urban adapted wildlife. Land cover would remain in a natural condition post-construction in lieu of creating hardscaping and above-ground infrastructure; therefore, unaffected riparian habitat patches would still exist adjacent to replanted riparian habitat patches. As can be seen from Figure 4.1-9 and Figure 4.1-10, depicting the trees removed versus protected in association with the American River Erosion Contract 3B North and South, significant efforts have been made to retain trees and riparian habitat patches in and adjacent to bank protection construction areas. Examples of this include: installing access ramps within the construction boundary of the erosion protection features as much as feasible, selecting erosion protection methods on the river at a very localized level to minimize the habitat impacts based on the localized conditions, constructing from revetment platforms along the river's edge (away from vegetation) as much as feasible, Contract Specifications for the Lower American River Contract 3B include requirements for protecting trees left in place at the project site, and designing erosion protection features and access ramps to avoid trees where and when feasible. These unaffected riparian habitat patches provide structural complexity and diversity after replanting has occurred, along with providing some habitat value for wildlife movement during construction.

Construction work at night has the potential to disrupt wildlife movement, because many species are active at night when disturbance levels are lowest. Consecutive nights of construction activities with high levels of noise, lighting, and visual disturbance could have a substantial but temporary adverse effect on movement of some wildlife that would be considered a potentially significant impact.

American River Erosion Contract 4A would include installation of a small, above-ground deflector berm; however, it is situated immediately adjacent to the existing Jedediah Smith Memorial Trail, which experiences high human use and disturbance in the existing condition; therefore, impacts on wildlife movement from the construction of this erosion contract are not anticipated to be significant outside the active construction season. These impacts on wildlife movement would be less than significant.

Onsite planting is designed to offset riparian habitat impacted during construction activities and to be consistent with the National Wild and Scenic Rivers Act. The proposed onsite replanting strategy will include a mix of native trees, shrubs, and groundcover species. Plantings would consist of native plant species, which are containerized for ease of installation. Native tree and shrub species are selected based on their ability to establish and be self-sustaining. Areas would be replanted with appropriate revegetation of like native species currently existing on site as well as beneficial associate natives to those species already onsite would be replanted based on topography and proximity to OHWM. The replanting strategy involves reestablishment of a native canopy species mix across each replanting zone. It is not anticipated that onsite replanting would extend outside the erosion contract footprints or into the vegetation free zones.

Similarly, the Magpie Creek Project is situated in an urban environment and construction of the proposed project features are not anticipated to decrease permeability and result in impacts on wildlife movement outside the active construction season because overall permeability would not be reduced with implementation. The piezometer network impact footprint is minor and not anticipated to have a measurable impact on wildlife movement either during or after construction. These impacts on wildlife movement would be less than significant.

Implementation of the American River Mitigation Site would restore a site that has historically been heavily managed and maintained by the previous property owners; therefore, habitat availability for undisturbed wildlife movement has been limited. During construction, wildlife that use the area would be expected to be temporarily displaced. A minimal amount of impact on existing riparian vegetation would occur and those habitat areas affected are currently characterized by narrow corridors. Post-construction, riparian habitats and overall habitat continuity and quality would be improved for common and special-status wildlife species that rely upon the Lower American River for all or part of their life cycle and may use onsite habitats to move between upstream and downstream portions of the Parkway. The expanded riparian habitats and enhancement of non-native grasslands would increase overall wildlife movement value at this site post-construction in comparison with the existing condition; therefore, these impacts on wildlife movement would be beneficial.

Similar to the American River Mitigation Site, the Sacramento River Mitigation Site would displace wildlife during construction; however, the overall intent and purpose of the project is to expand native riparian and aquatic habitats beneficial to common and special-status wildlife in the region. As a result, the Sacramento River Mitigation Site would increase wildlife movement value at this location in the post-construction condition, and these impacts on wildlife movement would be beneficial.

To characterize the wildlife response to the anticipated riparian forest impacts and subsequent replanting efforts, the results of a large-scale analysis on wildlife response to riparian restoration on the Sacramento River (Golet et al. 2008) were used as a surrogate for common wildlife utilization on the Lower American River and Sacramento River. The Golet 2008 analysis found that younger restoration sites benefited species that utilize early successional riparian habitats, and after approximately 10 years, the restoration sites provided many of the same complex structural habitat elements that were characteristic of the remnant forest patches.

With respect to habitat-related impacts, tree removal and vegetation clearing would largely occur during the non-nesting season (September 1 – February 14); however, impacts on nesting birds resulting from construction-related disturbances could be potentially significant.

In addition, the Proposed Action would follow updated 2023 USACE Invasive Species Policy Guidance in fulfillment of Section 501 of WRDA 2020. Invasive plant species incursions would be controlled as early as possible to prevent wide-scale establishment and minimize control efforts such as pesticide usage. Implementing the vegetation management plan, which would be consistent with the Habitat Mitigation, Monitoring, and Adaptive Management Plan developed for the ARCF GRR Final EIS/EIR, would ensure that native riparian plantings installed within the planting benches are protected, managed, monitored, and maintained for up to 8 to 10 years following installation to ensure that they are on an ecologically sustainable trajectory and meeting



Location of Trees to be Removed for the Lower American River Contract 3B Project Component- Upstream

Data represents locations of trunks of trees to be removed. Tree trunk location points have been buffered to reflect the size of the trunk diameter at 4.5 above the ground. Larger areas reflect larger trunk sizes not canopy.

Please note: Tree data shown on this map illustrate trees over 6 inches in diameter at 4.5 feet above the ground from a survey conducted in 2021. It is possible that a small number of trees shown in yellow as protected (<5 percent) might nevertheless require removal due to potential changes in condition since 2021 to preserve safe conditions at the project site during construction. Preliminary 100% designs were used to estimate tree removal needs.

- **Trees Surveyed Outside Project Area- Not Impacted**
- **Trees Protected**
- **Trees Removed**

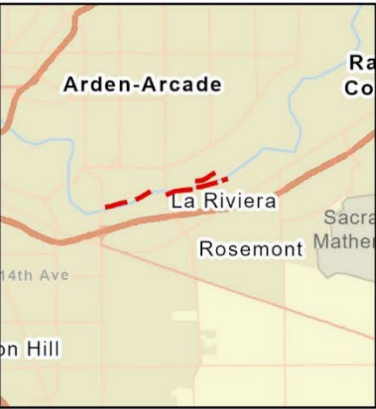
Updated 10/21/2024

0 500 1,000 Feet



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Figure 4.1-11. American River Contract 3B Upstream Protected and Removed Trees



Location of Trees to be Removed for the Lower American River Contract 3B Project Component- Downstream

Data represents locations of trunks of trees to be removed. Tree trunk location points have been buffered to reflect the size of the trunk diameter at 4.5 above the ground. Larger areas reflect larger trunk sizes not canopy.

Please note: Tree data shown on this map illustrate trees over 6 inches in diameter at 4.5 feet above the ground from a survey conducted in 2021. It is possible that a small number of trees shown in yellow as protected (<5 percent) might nevertheless require removal due to potential changes in condition since 2021 to preserve safe conditions at the project site during construction. Preliminary 100% designs were used to estimate tree removal needs.

- **Trees Surveyed Outside Project Area- Not Impacted**
- **Trees Protected**
- **Trees Removed**

Updated 10/21/2024

0 500 1,000 Feet



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Figure 4.1-12. American River Contract 3B Upstream Protected and Removed Trees

the performance and success criteria. Impacts related to invasive species would be less than significant.

All project sites would require ongoing operations and maintenance (O&M). Routine O&M activities for levee features by the LMA would be similar to existing O&M practices, so any impacts associated with O&M of project components would also be similar to existing conditions. O&M activities are anticipated to include but are not limited to inspections, weed abatement with mowers and weed whackers/trimmers, removal of encroachments and high-hazard vegetation to ensure levee integrity, replacement, and re-working of displaced or launched revetment following large flood events, and maintenance of adequate levee access along the levee toe road. O&M activities for the onsite and offsite mitigation features could vary from ongoing O&M practices but would be consistent with the Habitat Mitigation, Monitoring, and Adaptive Management Plan developed for the ARCF GRR Final EIS/EIR. These O&M activities would be short term, have a minor overall effect on habitat conditions and wildlife use, and result in a less-than-significant impact.

Impacts of the Proposed Action would not 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, and would be less than significant, with the exception of daytime and night-time construction work, which would result in a potentially significant impact. The following mitigation measures have been identified to address these impacts.

Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal

No net loss of riparian habitats will be achieved through impact avoidance, minimization, and compensatory mitigation. Impacts on sensitive natural communities that result in the removal of vegetation shall be mitigated at a minimum 2:1 ratio. Mitigation can include onsite restoration, offsite habitat creation, in-lieu fee payment, and/or purchase of mitigation credits from a resource agency approved mitigation bank. Mitigation as required in accordance with the 2015 ARCF GRR Fish and Wildlife Coordination Act Report or the Endangered Species Act consultation with USFWS and NMFS, depending on the type of habitat, may be applied to satisfy the no net loss of riparian habitat performance standard.

Timing: Before, during, and after construction

Responsibility: Project Partners

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site

Final project designs will be refined to reduce impacts on vegetation and wildlife to the extent feasible. Refinements implemented to reduce riparian habitat losses will include reducing the impact footprint, constructing bank protection rather than launchable rock trench whenever feasible, and designing and constructing planting benches. Where practicable, trees will be retained in locations where the bank protection and planting benches are constructed. Trees will be protected in place along the natural channel during rock placement. Additional plantings will be installed on the newly constructed benches

to provide habitat for fish and avian species. The planting benches will be used where feasible to minimize impacts on fish and wildlife species. Where feasible, soil-filled revetment will be used to allow plantings and erosion protection features like launchable trench to be buried to allow plantings. The on-site habitat will be created in accordance with the ARCF GRR Habitat Mitigation, Monitoring, and Adaptive Management Plan, which includes conceptual mitigation proposals, performance standards, and adaptive management tasks.

All areas to be avoided during construction activities will be fenced and/or flagged as close to construction limits as feasible. Where possible, protective fencing or flagging shall be installed 5 feet beyond the tree canopy dripline boundary of each tree or tree group, referred to as the protected tree zone. Contractors and subcontractors shall avoid heavy equipment operation, grading, and excavation in the protected tree zones, to the greatest extent practicable. Heavy equipment operation, grading, and excavation activities in the protected tree zone shall be overseen by a qualified arborist/ecologist. The contractor shall maintain the fencing or flagging to always keep it identifiable. Fencing and flagging shall be removed only after all construction activities are complete.

An annual pre-construction meeting shall be held between all contractors and subcontractors (e.g., grading, tree removal/pruning, and builders) and a qualified arborist/biologist. The meeting shall focus on instructing the contractors and subcontractors on tree protection practices and answering any questions. All equipment operators and spotters, assistants, or those directing operators from the ground, shall provide written acknowledgement of receiving tree protection training. This training shall include information on the location and marking of protected tree zones, the necessity of preventing damage, and the discussion of work practices that shall accomplish these tasks.

Contractors and subcontractors shall take care when moving construction equipment or supplies near protected trees, paying special attention to overhead vegetation. Contractors and subcontractors shall ensure that damage to the trees shall be avoided when transporting or moving construction materials and working around the tree (even outside of the fenced protected zone). Contractors and subcontractors shall flag aboveground tree parts with potential for damage (e.g., low limbs, scaffold branches, and trunks) with high-visibility flagging, such as fluorescent red or orange. If contact with the tree crown is unavoidable, conflicting branches may be pruned under supervision of a qualified arborist/ecologist. The contractor or subcontractor shall not prune protected trees until all construction is completed unless standard pruning will reduce conflict between canopy and equipment. All pruning shall be conducted under supervision of a qualified arborist, or their representative.

A qualified arborist/ecologist shall inspect the preserved protected trees adjacent to grading and construction activity prior to initiation of construction activities, during construction activities within tree protection zones, and prior to removal of tree protection zone fencing/flagging at the end of construction. A report summarizing site conditions, observations, tree health, and recommendations for minimizing tree damage

shall be submitted to the Project Partners by the qualified arborist/ecologist following each inspection.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure VIS-2: Minimize Disturbance to Wildlife from Nighttime Lighting

The Project Partners will minimize or avoid the effects of nighttime lighting on wildlife and special-status fish species by implementing the following actions in the area of 24-hour night work.

- Avoiding construction activities at night, to the maximum extent practicable.
- Using the minimal amount of lighting necessary to safely and effectively illuminate the work areas.
- Shielding and focusing lights on work areas and away from the water surface of the Sacramento and American Rivers, to the maximum extent practicable.
- Temporary and permanent lighting will have correlated color temperatures and under 3000K to minimize disturbance to wildlife at night.
- A qualified biologist will monitor the work area at appropriate intervals to assure that all relevant mitigation measures are implemented. Mitigation Measure BIRD-1 (See Appendix B Section 4.3) applies to night work as well.

Timing: During any nighttime construction

Responsibility: Project Partners

Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds

Project Partners will implement the following measures to minimize potential effects on active nests of Swainson's hawk, white-tailed kite, bank swallow, purple martin, and other migratory birds:

- Before on-site project activities begin each year, all construction personnel will participate in a worker environmental awareness program. A qualified biologist will inform all construction personnel about the life history of Swainson's hawk and other nesting birds and the importance of nest sites.
- Tree and shrub removal and other clearing, grading, and construction activities that remove vegetation will not be conducted during the nesting season (generally February 15 to August 31, depending on the species and environmental conditions for any given year) to the maximum extent feasible.

- If vegetation removal will occur during the nesting season, surveys will be conducted to identify active bird nests and measures will be implemented to avoid and minimize impacts on active nests. For special-status species, a survey will also be conducted for active nests within 500 feet of construction activities. For all other migratory birds, the survey will cover active nests within 100 feet of construction activities. All surveys will be completed using the latest techniques and protocols. If the biologist determines that the area surveyed does not contain any active nests, construction activities, including removing or pruning trees and shrubs, can commence.
- For any active bird nest found, regardless of the season, a protective buffer will be established and implemented until the nest is no longer active. The size of the buffer will be determined based on the species, nest stage, type, and intensity of project disturbance in the nest vicinity, presence of visual buffers, and other variables that may affect susceptibility of the nest to disturbance. A qualified biologist will monitor the nest during project activities to confirm effectiveness of the buffer and adjust the buffer as needed to ensure project activities do not adversely affect behavior of adults or young.
- For bald eagle, the typical maximum buffer distance between a bald eagle nest and construction activities is 660 feet (USFWS, 2007). If any bald eagle nests are discovered during the field surveys, regardless of whether a nest is classified as active, inactive/alternate, or abandoned, the Project will comply with the National Bald Eagle Management Guidelines (USFWS 2007).
- For bank swallow, if avoidance of bank swallow nests is not feasible, design measures to minimize impacts, including reducing the construction footprint to protect the upper bank from encroachment, will be considered. If nesting habitat is directly impacted, mitigation will include removal of existing rock at a former bank protection site, acquisition of a permanent easement, and/or participation in a conservation easement on an appropriate landform.
- For purple martin and white-tailed kite, a survey will also be conducted for active nests within 500 feet of construction activities. These surveys could be conducted concurrent with Swainson's hawk surveys, so long as one survey is conducted no more than 48 hours from the initiation of construction activities. If the biologist determines that the area surveyed does not contain any active nests, construction activities, including removing or pruning trees and shrubs, can commence.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measure VEG-1, VEG-2, VIS-2, and BIRD-1 during construction activities would be minimized to a less than significant level. Mitigation Measures VEG-1 and VEG-2, in combination with impact minimization and replanting would reduce potential impacts on wildlife movement from construction to less than significant. Mitigation Measure VIS-2, which was previously adopted for the ARCF 2016 Project, would reduce potential impacts on

wildlife movements from nighttime construction work to less than significant because nighttime work and associated lighting would be minimized, and light would be shielded and have correlated color temperatures less impactful to wildlife.

The potentially significant impacts related to wildlife movement during construction would be reduced to less than significant with implementation of Mitigation Measure VEG-1, VEG-2, and VIS-2 because riparian habitats necessary for wildlife movement would be fully mitigated, unaffected riparian trees during construction would be protected, nighttime work and associated lighting would be minimized, and light would be shielded and have correlated color temperatures less impactful to wildlife.

Additionally, Project Partners are committed to replanting and restoring native riparian habitats in the post-construction condition, to the greatest extent practicable. Restoring habitats is a requirement of the ESA section 7 Biological Opinion. As designs continue to evolve these acreages may increase or decrease slightly. Off-site mitigation need would be recalculated if anticipated riparian forest impacts change so that Project Partners are meeting requisite compensatory mitigation ratios. Any changes or adjustments to habitat mitigation needs would be coordinated with NMFS and USFWS.

As a result, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and Sacramento River Erosion Contract 3 are not anticipated to result in an increase in above-ground infrastructure that could result in decreased wildlife movement permeability in the post-construction condition. When combined with the implementation of the replanting strategy that would result in the restoration of native onsite habitats, impacts on wildlife movement associated with the bank protection contracts are anticipated to be associated with the active construction period wherein wildlife would be physically displaced by construction activities; however, once construction and replanting are completed, these habitats would be returned to a condition that would not preclude use by urban-adapted wildlife common to these sites. Therefore, these impacts on wildlife movement would be less than significant.

The potential significant impacts related to loss of active bird nests would be reduced to less than significant with implementation of Mitigation Measure BIRD-1 because vegetation removal during the nesting season would be avoided to the extent feasible, surveys would be conducted to identify active nests on and near the project sites, and appropriate buffers between the active nest sites and construction activities would be implemented to minimize potential for nest disturbance.

Please refer to SEIS/SEIR Appendix 4.2 Aquatic Resources and Fisheries, and SEIS/SEIR Appendix 4.3 Special-status Species for analyses on impacts as they pertain to state and/or Federally protected species.

NEPA Impact Conclusion 4.1-a (Design Refinements): Short-term to Medium-Term and Moderate effects that are Less than Significant with Mitigation Incorporated.

NEPA Impact Conclusion 4.1-b (Design Refinements): Short-term to Medium-Term and Moderate effects that are Less than Significant with Mitigation Incorporated.

The discussion of impacts on plant and wildlife communities and wildlife movement above under the CEQA impacts also applies to NEPA. There could be short-term significant impacts related to wildlife movement disturbance (Impact 4.1-a) and local nesting bird populations (Impact 4.1-b). Implementing Mitigation Measures VIS-2 and BIRD-1, which were previously adopted for the ARCF 2016 Project, would reduce these significant impacts to less than significant.

4.1-c 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.

CEQA Significance Conclusion: Short-term Significant and Unavoidable; Long-term Less Than Significant with Mitigation Incorporated.

NEPA Significance Conclusion: Short-term Significant and Unavoidable; Long-term Less than Significant with Mitigation Incorporated.

American River Erosion Contract 3B North and South and American River Erosion Contract 4B

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable; Long-term Less Than Significant with Mitigation Incorporated.

The Proposed Action would impact riparian vegetation, including SRA habitat. Riparian vegetation would be removed to construct the flood risk reduction features. Some waterside trees would be removed due to the topography and location of the bank protection features. In addition, near the American River Erosion Contract 3B North and South sites, higher up on the levee in some spots, trees have been determined to be at risk for causing localized scour around the base of the tree. Under American River Erosion Contract 4B, trees would either be removed because they are at risk for causing erosion and/or could not survive the addition of erosion protection measures. If not removed, these trees would be armored to reduce the risk of erosion. During design, each tree would be assessed to determine if it can be saved without increasing levee erosion risk; trees would be left in place were determined feasible.

Riparian woodland and riparian scrub would be removed from the erosion protection footprints on American River Erosion Contract 3B and may need to be removed from American River Erosion Contract 4B. Riparian habitat would also be damaged and removed within construction access areas and haul routes. Estimated acreages of impacts can be found in Table 4.1-3. To date, 27.53 acres of riparian habitat have been impacted by American River Erosion Contracts 1, 2, and 3A. The total riparian impact for completion of all American River erosion contracts is anticipated to be 62 acres, which would be below the 65 acres of impact that was estimated in the ARCF GRR Final EIS/EIR. The impact analysis presented in the ARCF GRR Final EIS/EIR, which concluded there would be significant and unavoidable impacts on vegetation and wildlife from project construction.

To inform the design process and quantify tree removals associated with American River Erosion Contract 3B, qualified biologists/arborists conducted a survey of the Lower American River Contract 3B bank protection construction footprint, including access and staging areas in 2019 and 2020 (Environmental Science Associates 2020). The purpose of the tree survey was to document the location, species, and diameter-at-breast-height (DBH) of each tree greater than 6 inches for environmental purposes. Data on each tree were recorded in a custom ESRI Collector web map, connected via Bluetooth to a Trimble R1 or EOS Arrow, both sub-meter accurate global positioning systems. Data used in the design and on plan sheets were collected by registered land surveyors in 2019 using survey-grade equipment to identify groups of trees greater than 6 inches DBH.

For the purposes of this analysis, the sub-meter accurate survey data collected by the government sponsored contractor in 2019 and 2020 were used; as a result, tree impacts depicted on plan sheets for the American River Erosion Contract 3B may differ from those presented here. Data were intersected with the tree removal footprints (buffered 20 feet to account for slight tree location differences in the design and environmental tree data) to quantify the number of trees that would be directly or indirectly impacted versus protected in-place for Lower American River Contract 3B Site 3-1, Site 4-1, and Site 4-2. Table 4.1-5 summarizes by providing a range of the number of trees removed and protected for each site by size class. A range is necessary because individual trees may be selected to stay or for removal that are along the edges of the construction footprints. Figures 4.1-9 and 4.1-10 depict the anticipated location and extent of protected and removed trees associated with Lower American River Contract 3B Site 3-1, Site 4-1, and Site 4-2. As can be seen in this figure series, The design team prioritized protecting large canopy trees to the greatest extent practicable, with particular emphasis adjacent to the American River Bike Trail. However, the construction-related impacts on sensitive riparian habitats would be considered a potentially significant short-term impact.

Table 4.1-5. Lower American River Contract 3B Estimated Removed and Protected Trees

| Tree Size Class | Removed | Protected |
|-----------------|---------|-----------|
| ≤ 10" DBH | 340-360 | 595-625 |
| ≤ 30" DBH | 290-305 | 755-800 |
| > 30" DBH | 45-50 | 145-155 |

Tree trimming would be completed, where necessary, to avoid damaging trees adjacent to construction access, staging, and bank protection improvement areas. Tree removal and trimming would be completed under the supervision of a qualified arborist/ecologist and within appropriate work windows. Coordination with Sacramento County Regional Parks (Regional Parks) would continue throughout the design and construction processes for consistency and compliance with the tree preservation and protection ordinance (Sacramento County Code, Title 19, § 19.12).

To further reduce long-term riparian impacts, the design includes soil-filled planting benches incorporated into the rock revetment in areas where site conditions allow riparian vegetation to be reestablished. In general, the launchable toe with planting bench would be used in place of the berms for bank protection described in the ARCF GRR Final EIS/EIR. This design allows for soil placement to create gradual slopes with typical interconnectivity of seasonal flows outside of the spring surges and vegetation growth, resulting in riparian and SRA habitat. In addition, areas

with bank protection would generally have soil-filled revetment to allow vegetation replanting onsite. The launchable trench features would be buried to allow vegetation to be planted over the erosion protection features. Along the river margin at American River Erosion Contract 3B North and South, instream woody material (IWM) structures consisting of whole trees with intact rootwads would be installed to provide fine-textured woody material for juvenile salmonid rearing habitat.

Table 4.1-6. Estimated Replanted Canopy Tree Growth Rates

| Common Name | Scientific Name | Average Height at Maturity (feet) | Average Growth Rate (feet/year) | Projected Height Year 8 (feet) |
|-------------------------|----------------------------|-----------------------------------|---------------------------------|--------------------------------|
| Big leaf maple | <i>Acer macrophyllum</i> | 80 | 3 | 24 |
| Box elder | <i>Acer negundo</i> | 50 | 3 | 24 |
| White alder | <i>Alnus rhombifolia</i> | 50 | 2.5 | 20 |
| Oregon ash | <i>Fraxinus latifolia</i> | 80 | 3 | 24 |
| California black walnut | <i>Juglans californica</i> | 45 | 2 | 16 |
| California sycamore | <i>Platanus racemosa</i> | 80 | 3 | 24 |
| Fremont cottonwood | <i>Populus fremontii</i> | 80 | 3 | 24 |
| Valley oak | <i>Quercus lobata</i> | 70 | 2.5 | 20 |
| Interior live oak | <i>Quercus wislizenii</i> | 70 | 1.5 | 12 |
| Goodding's willow | <i>Salix goodingii</i> | 25 | 2.5 | 20 |
| Red willow | <i>Salix laevigata</i> | 50 | 3 | 24 |

Source: Urban Forest Ecosystems Institute at Cal Poly SelectTree database <https://selecttree.calpoly.edu/>

The analysis in the ARCF GRR Final EIS/EIR determined that even with waterside planting benches and retaining IWM to the extent practical, construction effects on sensitive natural communities would remain because of the lag time between planting vegetation and the planted vegetation maturing. Once the plantings become established, they would provide riparian habitat that is anticipated to be of equal value to the existing habitat (Golet 2008). Habitat features that benefit native species would be included in the design, and the sites would be managed for the establishment and persistence of native trees, shrubs, and herbaceous plants. Over the long-term, the Proposed Action would not substantially reduce the quality or quantity of riparian habitat, despite the immediate and temporary habitat loss.

Overall, the Proposed Action would cause significant and unavoidable short-term adverse impacts on riparian habitat. The short-term significant impacts of riparian habitat loss would be minimized by retaining and protecting trees where possible, but the impact would remain significant and unavoidable because of the extent of required riparian vegetation removal. The following mitigation measures have been identified to address these impacts.

Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal

Please refer to Impact 4.1-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site

Please refer to Impact 4.1-a for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures VEG-1 and VEG-2 would result in long-term significant impacts reduced to less than significant. Mitigation Measure VEG-1, which includes application of a 2:1 compensatory mitigation ratio – 2 acres restored/enhanced habitat for every 1 acre of impact – through a combination of onsite replanting, Elderberry shrub transplant sites, along with establishment of the offsite American River Mitigation Site at the Urrutia property and Sacramento River Mitigation Site at the Grand Island property. Mitigation would be implemented onsite to the maximum extent feasible to replace habitat that is removed and IWM would compensate for the temporal habitat loss while the replacement habitat matures.

Implementation of the replanting strategy would offset the anticipated riparian habitat impacts from American River Erosion Contract 3B through re-establishment of structurally diverse planting zones. Monitoring and maintenance would be ongoing through the establishment period to allow for early identification of management needs to keep the replanted areas on track for meeting agency approved success criteria on or before year 8. Continued coordination and engagement with USFWS, NMFS, and Regional Parks would be required throughout the establishment period to assess the trajectory of the regreened areas, adaptive management needs, and determine when the sites have achieved success criteria, are anticipated to be self-sustaining, and no longer require intensive intervention.

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable; Long-term Negligible with Mitigation Incorporated.

The discussion of impacts on sensitive natural communities above under the CEQA impacts also applies to NEPA. Impacts on riparian vegetation would be less than described in the ARCF GRR Final EIS/EIR because a launchable toe with planting bench would be used in place of the berms for bank protection. Therefore, the design refinements reduce the impact extent. However, there would still be a short-term significant and unavoidable impact on riparian habitat. Implementing Mitigation Measures VEG-1 and VEG-2, which were previously adopted for the 2016 ARCF Project, would result in a long-term, negligible impact on riparian habitat.

American River Erosion Contract 4A

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable; Long-term Less Than Significant with Mitigation Incorporated.

The Proposed Action would impact riparian habitat. The berm design for American River Erosion Contract 4A is small but requires the site to be regraded, which would remove riparian vegetation. This site is not suitable for onsite mitigation outside of herbaceous revegetation to ensure the appropriate function of the flood risk feature and to prevent blocking the rerouted bike trail with vegetation.

Riparian woodland and riparian scrub would be removed from the erosion protection footprint. Riparian habitat would also be damaged and removed within construction access areas and haul routes. Estimated acreages of impacts can be found in Table 4.1-3. To date, 27.53 acres of riparian habitat have been impacted by American River Erosion Contracts 1, 2, and 3A. The total riparian impact for completion of all American River Erosion contracts is anticipated to be 62 acres, which is below the 65 acres of impact that was estimated in the ARCF GRR Final EIS/EIR. The impact analysis presented in the ARCF GRR Final EIS/EIR, which concluded there would be significant and unavoidable impacts on vegetation and wildlife from project construction, is applicable to the level of impact expected from the CEQA Proposed Action.

Overall, the Proposed Action would cause short-term significant and unavoidable adverse impacts on a small area of riparian habitat. The following mitigation measure has been identified to address this impact.

Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal.

Please refer to Impact 4.1-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measure VEG-1, which was previously adopted for the ARCF 2016 Project, would reduce the long-term significant impacts on riparian habitat to less than significant. Mitigation would be implemented offsite to replace habitat that is removed.

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable; Long-term Less Than Significant with Mitigation Incorporated.

The discussion of impacts on sensitive natural communities above under the CEQA impacts also applies to NEPA. Impacts on riparian vegetation would be less than described in the ARCF GRR Final EIS/EIR overall but more than initially anticipated at this location. However, there would still be a short-term significant and unavoidable impact on riparian habitat. Once Mitigation Measure VEG-1 is implemented and vegetation establishes there would be a long-term, less-than-significant impact on riparian habitat.

Sacramento River Erosion Contract 3

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable; Long-term Less Than Significant with Mitigation Incorporated.

The placement of quarry stone revetment on-grade along the riverbank between the riverbed and the summer water surface elevations would impact riparian habitat. Estimated acreages of impacts can be found in Table 4.1-3. Shrubs would be cleared to provide a clean surface. This stone would feature soil fill to cover the voids in the rock and would be hydroseeded with grasses and forbs. For the re-establishment of riparian vegetation, soil filled planting benches would be incorporated into the rock revetment Where feasible and space allows. In most areas steep slopes constrain opportunities to add a new waterside planting bench. Planting benches are proposed for locations where they are feasible. IWM consisting of whole trees would be anchored into the bank revetment at the summer water surface elevations to provide shelter and shading for fish. Project activities for this contract would include constructing the bank protection improvements, installing IWM, and applying erosion control seeding of disturbed areas.

The anticipated method of construction for the Proposed Action would still include equipment stationed on barges, but equipment would also leave the barges to place rock along the shoreline. Equipment would not be permitted to drive outside the rock placement footprint. The work area would be cleared and grubbed, including removing trees, other vegetation, and encroachments along the levee embankment. Tree clearing would occur during the fall or winter immediately prior to each segment's construction.

Project activities would require all trees to be removed within the rock placement footprint to allow equipment to operate efficiently when working on the shoreline. Designs would include planting benches, similar to those described for the American River. There would be no woody vegetation or trees planted in the vegetation free zone (VFZ) on the water side of the levee, which is approximately 15 feet from the levee toe.

Overall, the Proposed Action would result in short-term significant and unavoidable adverse impacts on riparian habitat. The following mitigation measures have been identified to address this impact.

Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal

Please refer to Impact 4.1-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site

Please refer to Impact 4.1-a for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures VEG-1 and VEG-2 would reduce long-term significant impacts to less-than-significant impact on riparian habitat.

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable; Long-term Effects that are Less than Significant with Mitigation Incorporated.

The design refinements would increase impacts on riparian habitat when compared to the ARCF GRR Final EIS/EIR. The ARCF GRR Final EIS/EIR stated that trees would be conserved by placing rock around them. Page 124 of the ARCF GRR Final EIS/EIR states:

Because a Vegetation Design Deviation would be obtained approximately 930 large trees would be left in place on the lower one-half waterside slope, and rock would be placed around the base of the trees. The trees that would remain in place are scattered over approximately 50,000 linear feet and 50 acres.

However, the design refinements would require all trees to be removed within the rock placement footprint to allow equipment to operate efficiently when working on the shoreline. Designs would include planting benches, similar to those described for the Lower American River. There would be no woody vegetation or trees planted in the VFZ on the water side of the levee, which is approximately 15 feet from the levee toe.

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable; Long-term Less Than Significant with Mitigation Incorporated.

The Proposed Action would impact an additional 2 acres of riparian habitat than stated in the ARCF GRR Final EIS/EIR. In the location of the canal realignment, vegetation has grown due to the lack of required maintenance. The canal would be cleared, resulting in a permanent long-term loss of riparian vegetation. This impact would be a short-term significant and unavoidable impact. The following mitigation measures have been identified to address this impact.

Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal

Please refer to Impact 4.1-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site

Please refer to Impact 4.1-a for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing VEG-1 and VEG-2, which were previously adopted for the ARCF 2016 Project, to compensatory with mitigation plantings implemented offsite, the long-term impact would be less than significant with mitigation incorporated.

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable; Long-term Minor Effects that are Less than Significant with Mitigation Incorporated.

The NEPA Design Refinements would be identical to the Proposed Action because the current contract description for MCP has completely changed from the ARCF GRR Final EIS/EIR. Therefore, impacts of the NEPA Design Refinements are the same as described above for the CEQA Impacts. There would be a short-term significant and unavoidable impact on riparian habitat. Implementing Mitigation Measures VEG-1 and VEG-2, which were previously adopted for the 2016 ARCF Project, would result in a long-term, minor impact on riparian habitat that would be less than significant with mitigation incorporated.

Sacramento River Mitigation Site, American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Short-term Less than Significant; Long-term No Impact.

The habitat restoration at ARMS would be designed to consider historical site conditions and adapt existing conditions to restore, enhance, and maximize habitat for three focal species: anadromous salmonids, yellow-billed cuckoo, and VELB. In the post-project condition, it is anticipated that there would be a net increase in freshwater emergent/seasonal wetland habitat, riparian woodland, and riverine habitats, while a reduction in grassland/upland and pond habitats would occur (HDR 2023). The estimated impact acreages for ARMS are provided in Table 4.1-3. Site grading would require the removal of riparian trees. Any trees planted onsite would take years to mature to provide the same value as those removed. However, ARMS would result in a net increase of riparian habitats and the temporal loss would be relatively minor in the context of the overall site and surrounding habitat. Therefore, this impact is considered to be less than significant in the short term and no effect in the long term because these sites mitigate for project-wide impacts.

Existing habitat at SRMS includes riparian forest, riparian scrub-shrub, ruderal herbaceous/grassland, and wetlands. The estimated acreages of impacts that could result from mitigation implementation are provided in Table 4.1-3. Creation of riparian habitat onsite would offset loss of riparian vegetation that must be removed during restoration activities. Any riparian trees planted onsite would take years to mature to provide the same value as those removed. However, many trees are anticipated to be retained and the temporal loss would be relatively minor in the context of the overall site. Therefore, this impact is considered to be less than significant in the short term and no effect in the long term because these sites mitigate for project-wide impacts.

Neither mitigation site has other sensitive natural communities identified in local or regional plans, policies, or regulations. The American River Parkway Plan and Natural Resource Management Plan both recommend naturalizing the area around the ARMS, which the project would achieve. Planned land use at the SRMS is identified as natural preserve/marsh in the Delta Plan.

NEPA Impact Conclusion (Design Refinements): Short-term Moderate effects that are Less than Significant; Long-term No Effect.

The NEPA Design Refinements for both the SRMS and ARMS would be identical to the Proposed Action because the ARCF GRR Final EIS/EIR did not include analysis for mitigation sites. Therefore, impacts of the NEPA Design Refinements are the same as described above for the CEQA impacts. There would be a moderate short-term less-than-significant impact on riparian habitat, but the long-term impact would be no effect because these sites mitigate for project-wide impacts.

Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Short-term and Long-term Less than Significant.

Approximately 100 piezometers would be installed at various locations along each levee, with piezometers on either the levee crown or near the landside levee toe. This is a fairly low impact activity because of the small size of the piezometers, 6-inches diameter with an associated cement pad and housing box, and their proposed location on the levee crown or near the landside levee toe. Limited tree and vegetation trimming may be necessary to install the piezometer or access the drilling location. Installation and maintenance of the piezometers and associated features would be less than significant over the short- and long-term.

NEPA Impact Conclusion (Design Refinements): Short-term and Long-term Less than Significant.

Due to the small size of the piezometers and the flexibility in their placement location, substantial vegetation removal should be avoidable. Limited tree and vegetation trimming may be necessary to install the piezometers or for access to the drilling location. The NEPA Design Refinements would be identical to the Proposed Action because the ARCF GRR Final EIS/EIR did not include analysis of a piezometer network. Therefore, impacts of the NEPA Design Refinements are the same as described previously for the CEQA Impacts. There would be a less than significant, short-term impact and long-term, negligible impact on riparian habitat.

4.1-d 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.

CEQA Significance Conclusion: Short-term Significant and Unavoidable; Long-term Less than Significant with Mitigation Incorporated

NEPA Significance Conclusion: Short-term Significant and Unavoidable; Long-term Less Than Significant with Mitigation Incorporated.

American River Erosion Contract 3B North and South and American River Erosion Contract 4B

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable; Long-term Less Than Significant with Mitigation Incorporated.

The project would place bank protection below the OHWM of the American River. The ARCF GRR Final EIS/EIR greatly underestimated the amount of material that would need to be placed below the OHWM of the American River. The design refinements have shifted the bank protection away from the toe of the levee, favoring designs that avoid heritage oaks and provide better habitat onsite, but increase the discharge of fill material. Erosion protection has been designed to avoid and minimize impacts on waters of the United States and waters of the State to the maximum extent possible. The construction of the erosion protection measures would not impact state or Federally protected wetlands. However, some staging areas and access locations have not been surveyed for wetlands because access is not yet available. Prior to being used for staging or access, these areas would be surveyed; if wetlands are present, they would be fenced and avoided to meet a performance standard of no net loss of wetlands. However, effects to the American River wetlands would be significant and unavoidable in the short term as some waters would be filled. The following mitigation measure would be implemented to address these impacts.

Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters, Including Wetlands.

In compliance with the CWA, the Project Partners would compensate for fill of State and Federally protected waters to ensure no net loss of functions and values of jurisdictional waters at a minimum 1:1 ratio. Mitigation for permanent impact on aquatic resources shall be provided at a minimum 1:1 ratio. Mitigation can include onsite restoration, in-lieu fee payment, or purchase of mitigation credits at a resource agency approved mitigation bank. Mitigation as required in regulatory permits issued through USFWS, NMFS, and/or the Regional Water Quality Control Board may be applied to meet the performance standard of a minimum 1:1 ratio to ensure no net loss of functions and values of jurisdiction waters.

Water quality certification pursuant to Section 401 of the CWA would be obtained from the Central Valley RWQCB before starting project activities subject to Section 401. Any measures determined necessary during the permitting processes would be implemented, such that there is no net loss of functions and values of jurisdictional waters.

If compensation is provided through permittee-responsible mitigation with additional NEPA and/or CEQA documentation, a mitigation plan would be developed to detail appropriate compensation measures determined through consultation with USACE and Central Valley RWQCB. These measures would include methods for implementation, success criteria, monitoring and reporting protocols, and contingency measures to be implemented if the initial mitigation fails.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measure WATERS-1, which was previously adopted for the ARCF 2016 Project, the long-term impact would be less than significant with mitigation incorporated. Impact estimates are included in Table 4.13 and 4.14.

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable; Long-term Less Than Significant with Mitigation Incorporated.

The discussion of wetland impacts below the OHWM described above under the CEQA impacts also applies to NEPA. Impacts on wetlands would be minimized to the maximum extent possible; however, the extent of unavoidable impacts resulting from the design refinements would be much greater than estimated in the ARCF GRR Final EIS/EIR for this location and this short-term impact would be significant and unavoidable. A 404(b)(1) Alternatives Analysis has been completed and included in Appendix K of the Final SEIS/EIR. Even though impacts have increased over time, the Proposed Action is still the least environmentally damaging practicable alternative. The construction of the erosion protection measures would not impact state or Federally protected wetlands. However, some staging areas and access locations have not been surveyed for wetlands because access is not yet available. Prior to being used for staging or access, these areas would be surveyed; if wetlands are present, they would be fenced and avoided to meet a performance standard of no net loss of wetlands. With implementation of Mitigation Measure WATERS-1, which was previously adopted for the ARCF 2016 Project, the long-term impact would be less than significant.

American River Erosion Contract 4A

CEQA Impact Conclusion (Entire Proposed Action): Less Than Significant with Mitigation Incorporated.

The proposed berm would affect a wetland (mapped as open water in Figure 4.1-2), which parallels the levee and Jedediah Smith Memorial Bike Trail both upstream and downstream of the State Route 160 bridge. While most of the 11.5-acre wetland would remain intact, a small portion (Table 4.1-3) would be filled to construct the berm. One end of the wetland would be filled, which would not block any surface water connectivity or fundamentally alter the wetland's hydrology. Staging areas and access that have not yet been surveyed for wetlands because of access restrictions but would be surveyed before construction begins. If any wetlands are present, the wetlands would be fenced off and avoided. However, a small portion of wetland would be filled and would be a significant impact without mitigation. Appropriate compensation for unavoidable wetland impacts would occur through permittee-responsible offsite mitigation and/or through the purchase of credits at a USFWS-approved mitigation bank, in accordance with Mitigation Measure WATERS-1. The following mitigation measure has been identified to address this impact.

Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters, Including Wetlands.

Please refer to Impact 4.1-d American River Erosion Contract 3B North and South and American River Erosion Contract 4B discussion above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measure WATERS-1, which was previously adopted for the 2016 ARCF Project, would reduce impacts on wetlands to less than significant with mitigation incorporated.

NEPA Impact Conclusion (Design Refinements): Less than Significant with Mitigation Incorporated.

The discussion of wetland impacts above under the CEQA impacts also applies to NEPA. Impacts on wetlands would be minimized to the maximum extent possible; however, these wetland impacts were not anticipated and not evaluated in the ARCF GRR Final EIS/EIR for this location. With implementation of Mitigation Measure WATERS-1, which was previously adopted for the ARCF 2016 Project, this impact would be less than significant with mitigation incorporated.

Sacramento River Erosion Contract 3

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable; Long-term Less Than Significant with Mitigation Incorporated.

There would be no impact to state or Federally protected wetlands. However, the project would place bank protection below the OHWM of the Sacramento River. The ARCF GRR Final EIS/EIR greatly underestimated the amount of material that would need to be placed below the OHWM of the Sacramento River. The design changes that occurred since the original document have reduced the overall length of the bank protection impacts, but they have been shifted down the levee slope and farther into the Sacramento River, increasing the discharge of fill material. A 404(b)(1) Alternatives Analysis has been completed and is included in Appendix K of the Final SEIS/EIR, but even though impacts have increased over time, the Proposed Action is still the least environmentally damaging practicable alternative. Bank protection has been designed to avoid and minimize impacts on waters of the United States and the State to the maximum extent possible. Effects to the Sacramento River would be significant and unavoidable in the short term as no feasible mitigation is available to reduce the significant impact. The following mitigation measure has been identified to address this impact.

Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters, Including Wetlands.

Please refer to Impact 4.1-d American River Erosion Contract 3B North and South and American River Erosion Contract 4B discussion above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measure WATERS-1, which was previously adopted for the ARCF 2016 Project, would reduce long-term impacts would be less than significant with mitigation incorporated.

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable; Long-term Less Than Significant with Mitigation Incorporated.

The discussion of wetland impacts above under the CEQA impacts also applies to NEPA. There would be no impact to state or Federally protected wetlands; however, the extent of unavoidable impacts on land below the OHWM resulting from the design refinements would be greater than estimated in the ARCF GRR Final EIS/EIR for this location. With implementation of Mitigation Measure WATERS-1, which was previously adopted for the ARCF 2016 Project, the long-term impact would be less than significant.

Sacramento River Mitigation Site, American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

The estimated acres of aquatic resources expected to be impacted at each mitigation site are shown in Table 4.1-3. ARMS would restore connection to the LAR, include a diverse planting palette, and incorporate habitat benches that would restore floodplain habitat for anadromous salmonids at various LAR elevations. In addition, the site would continue to accommodate flood events and overflow from the LAR main channel and Steelhead Creek. ARMS would emphasize restoration to native floodplain wetland and riparian habitats, consider river dynamics, and provide for adaptive management of the features as described in the Parkway Plan and NRMP. In the short-term and especially during construction activities, the impact to waters including wetlands would be significant.

In the post-project, long-term condition, it is anticipated that there would be a large net increase in freshwater emergent/seasonal wetland habitat, riparian woodland, and riverine habitats, while a reduction in grassland/upland and pond habitats would occur (HDR 2023). This would be considered the re-establishment of a former aquatic resource, resulting in a gain in aquatic resource area and functions, but the increase in aquatic resource area and functions would be used as mitigation for other project components. However, due to short-term significant impacts, the following mitigation measure has been identified to address this impact.

Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters, Including Wetlands.

Please refer to Impact 4.1-d American River Erosion Contract 3B North and South and American River Erosion Contract 4B discussion above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measure WATERS-1, which was previously adopted for the ARCF 2016 Project, effects on aquatic resources both short- and long-term would be less than significant with mitigation incorporated. The existing seasonal wetlands around the SRMS would be impacted when the levee is degraded to create the flow through side channels; however, the

channels would be planted with similar vegetation and would provide similar habitat in greater amounts than what is being impacted. The land around the channels would be graded to accommodate different water elevations of both tidally influenced and seasonally influenced wetlands. The reactivation of the river with SRMS would greatly enhance the site and result in a net benefit of wetland habitat and riverine functions, which would be applied as mitigation for other project components with significant impacts on Waters, including wetlands.

NEPA Impact Conclusion (Design Refinements): Short-term and Moderate effects that are Less than Significant with Mitigation Incorporated; Long-term negligible effects.

The NEPA Design Refinements for both the SRMS and ARMS sites would be identical to the Proposed Action because the ARCF GRR Final EIS/EIR did not include analysis for mitigation sites. Therefore, impacts of the NEPA Design Refinements are the same as described above for the CEQA impacts. With implementation of Mitigation Measure WATERS-1, which was previously adopted for the 2016 ARCF Project, this impact would be less than significant.

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): Short-term Significant and Unavoidable; Long-term Less Than Significant with Mitigation Incorporated.

The design refinements would cause minor impacts on hydrology. There is a 2.4-acre wetland east of Raley Boulevard that would be affected by the construction of the MCP. The realignment of Magpie Creek and maintenance road construction on the right bank would permanently impact approximately 0.40 acre of this wetland. However, construction of the realignment would not significantly alter the area's topography relative to the remaining wetland and impacts on local hydrology would be less than significant.

The culvert construction under Raley Boulevard would impact the Robla Creek drainage canal, which can be characterized as emergent marsh. To the west, installing the culverts and the associated staging area at Rio Linda Boulevard would impact the southeast corner of a 5.54-acre seasonal wetland, but would not affect the hydrology of the remaining wetland area.

In addition, the bed and bank of Magpie Creek would be cleared of vegetation to increase flow capacity. The soils would be hydroseeded with a native plant mix and non-woody emergent vegetation may be allowed to regrow. This activity would not result in channel fill, but the channel would be temporarily affected by vegetation clearing. The O&M manual would prohibit the establishment of woody vegetation.

Consequently, impacts on wetlands adjacent to Magpie Creek would be significant and unavoidable in the short term, as no feasible mitigation is available. The following mitigation measure has been identified to address long-term impacts.

Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters, Including Wetlands.

Please refer to Impact 4.1-d American River Erosion Contract 3B North and South and American River Erosion Contract 4B discussion above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measure WATERS-1, which was previously adopted for the ARCF 2016 Project, the long-term impacts would be less than significant with mitigation incorporated term.

NEPA Impact Conclusion (Design Refinements): Short term Significant and Unavoidable; Negligible Long-term Effects that are Less than Significant with Mitigation Incorporated.

The NEPA Design Refinements would be identical to the Proposed Action, as the current contract description has substantially changed from the ARCF GRR Final EIS/EIR. Therefore, impacts of the NEPA Design Refinements are the same as described above for the CEQA Impacts. Impacts on wetlands adjacent to Magpie Creek would be significant and unavoidable in the short term, but with implementation of Mitigation Measure WATERS-1, which was previously adopted for the ARCF 2016 Project, the impact would be negligible in the long term.

Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): No Impact.

NEPA Impact Conclusion (Design Refinements): No Impact.

Piezometers would not be installed in state or Federal protected waters, including wetlands.

4.1-e Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

CEQA Significance Conclusion: Less than Significant with Mitigation Incorporated

NEPA Significance Conclusion: Negligible effects that are Less than Significant with Mitigation Incorporated

American River Erosion Contract 3B North and South, American River Erosion Contract 4A, American River Erosion Contract 4B, American River Mitigation Site, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated.

NEPA Impact Conclusion (Design Refinements): Negligible effects that are Less than Significant with Mitigation Incorporated.

Implementation of flood protection activities by public agencies does not require a tree removal permit pursuant to Section 12.56.080 (F) of the City of Sacramento Municipal Code. Therefore, there would be no conflict with the City of Sacramento tree preservation policy or ordinance. The American River Parkway Plan states, in Policy 4.12, that “Vegetation in the Parkway should be appropriately managed to maintain the structural integrity and conveyance capacity of the flood control system, consistent with the need to provide a high level of flood protection to the heavily urbanized floodplain along the lower American River and in a manner that preserves the environmental, aesthetic, and recreational quality of the Parkway.” The Sacramento County Tree Preservation Ordinance requires “A Tree Pruning or Tree Removal Permit...to prune or remove any public tree and certain private trees.” Project Partners would include Sacramento County tree removal work to ensure compliance with county ordinance.

With the on-site replacement of riparian habitat, the Proposed Action would ensure that there would be no net impacts on lands designated by the American River Parkway Plan as Protected Areas or Nature Study Areas. A short-term initial loss of riparian habitat within the Parkway would occur, which would result in a significant impact.

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Please refer to Impact 4.1-a for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measure VEG-2, which was previously adopted for the ARCF 2016 Project, and this short-term impact would be less than significant with mitigation incorporated. Over the long-term, impacts on riparian vegetation would be significant without mitigation. By implementing Mitigation Measure VEG-2, which was previously adopted for the ARCF 2016 Project, eventually the Parkway would experience a net increase in the extent of riparian habitat over the long-term. This long-term increase in riparian vegetation is consistent with Terrestrial Resource Policy 3.2 of the Parkway Plan, which calls for the protection, enhancement, and expansion of the Parkway’s native willow, cottonwood, and valley oak–dominated riparian and upland woodlands that provide important SRA, seasonal floodplain, and riparian habitats. Consequently, the impact of the CEQA Proposed Action and NEPA Design Refinements on local conservation plans, such as the Parkway Plan, would be less than significant with mitigation incorporated.

Sacramento River Erosion Contract 3, Sacramento River Mitigation Site, Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): No Impact.

NEPA Impact Conclusion (Design Refinements): No Impact.

Implementation of flood protection activities by public agencies does not require a tree removal permit pursuant to Section 12.56.080 (F) of the City of Sacramento Municipal Code. Therefore, there would be no conflict with the City of Sacramento Tree preservation policy or ordinance. The Sacramento County Tree Preservation Ordinance requires “A Tree Pruning or Tree Removal Permit...to prune or remove any public tree and certain private trees.” Project Partners would coordinate with Sacramento County on tree removal needs to ensure compliance with county ordinance. There would be no short- or long-term impacts.

4.1-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.

CEQA Significance Conclusion: No Impact

NEPA Significance Conclusion: No Impact

American River Erosion Contract 3B North and South, American River Erosion Contract 4A and 4B, American River Mitigation Site, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): No Impact.

NEPA Impact Conclusion (Design Refinements): No Impact.

There is not a Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan that includes the American River project area. Consequently, there are no short- or long-term impacts.

Sacramento River Erosion Contract 3, Sacramento River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): No Impact.

NEPA Impact Conclusion (Design Refinements): No Impact.

The Delta Plan, which covers the lower Sacramento River including the Sacramento River Erosion Contract 3 and the SRMS locations, includes regulations supporting coequal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The Delta Stewardship Council administers the Delta Plan. CVFPB has determined that the Proposed Action is a “covered action” under the Delta Plan, because it would occur in part within the boundaries of the Legal Delta, would be approved and funded in part by State and local agencies, could have a significant impact on implementation of a government-sponsored flood control program, and would be covered by regulatory policies in the Delta Plan. Prior to implementing the Proposed Action, CVFPB would confirm the Proposed Action is consistent with the Delta Plan by submitting a Certification of Consistency with the Delta Plan in accordance with section 85225 of the California Water Code. It is expected that the CEQA Proposed Action and NEPA Design Refinements would not conflict with the Delta Plan and there would be no short- or long-term resulting impacts.

Magpie Creek Project

CEQA Impact Conclusion (Design Refinements): No Impact.

NEPA Impact Conclusion (Entire Proposed Action): No Impact.

There is not a Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan that includes the MCP location.

The Magpie Creek Floodplain Conservation Project (SAFCA 2021) provides provisions to the SAFCA-owned parcel to the east of Raley Boulevard. Flood control is the primary purpose, and the Proposed Action and Design Refinements would not conflict with this plan. In addition, the Sacramento McClellan Airport has a habitat conservation plan that is adjacent to but does not overlap with the Project Area. Therefore, the CEQA Proposed Action and NEPA Design Refinements would not conflict with either of these plans and there would be no short- or long-term resulting impacts.

Alternatives Comparison

Alternative 3a

Under Alternative 3a for the American River Erosion Contract 4A Project Component, instead of a waterside berm, a landside berm would be built between the levee and the SR 160 bridge piers (Figure 3.5.3-4 in Chapter 3, "Description of Project Alternatives" of the SEIS/SEIR). This would avoid wetland impacts. All other project components (American River Erosion Contracts 3B and 4B, Sacramento River Erosion Contract 3, MCP, SRMS, ARMS, and Piezometer Network) would have the same effects as the Proposed Action. Table 4.1-3 and Table 4.1-4 show differences in vegetation impacts between alternatives. Impacts of Alternative 3a are summarized in Table 4.1-5 below.

Table 4.1-5: Alternative 3a Effects on Vegetation and Wildlife

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---------------|------------------------------------|--|--------------------|--|---|
| 4.1-a | American River Erosion Contract 4A | <i>NEPA and CEQA:</i> Similar to the Proposed Action, Alternative 3a would include night-time effects on wildlife movement | VIS-2 | Less than significant with mitigation incorporated | Short-term moderate effects that are less than significant with mitigation incorporated |
| 4.1-b | American River Erosion Contract 4A | <i>NEPA and CEQA:</i> Similar to the Proposed Action, Alternative 3a could temporarily reduce local bird populations | BIRD-1 | Less than significant with mitigation incorporated | Short-term moderate effects that are less than significant with mitigation incorporated |

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---------------|------------------------------------|---|--------------------|--|---|
| 4.1-c | American River Erosion Contract 4A | <i>NEPA and CEQA:</i> Similar to the Proposed Action, Alternative 3a would include substantial riparian habitat impacts short-term and no feasible mitigation is available | VEG-1, VEG-2 | Short-term: Significant and unavoidable Long-term: less than significant with mitigation incorporated | Significant and unavoidable short-term; long-term, moderate effects that are less than significant with mitigation incorporated |
| 4.1-d | American River Erosion Contract 4A | <i>NEPA and CEQA:</i> Alternative 3a would avoid wetland impacts | N/A | No Impact | No Impact |
| 4.1-e | American River Erosion Contract 4A | <i>CEQA:</i> Similar to the Proposed Action, Alternative 3a would impact riparian habitat prioritized for protection in the American River Parkway Plan but would result in an overall increase in riparian and other high-priority habitats. | VEG-2 | Less than significant with mitigation incorporated | Negligible effects that are less than significant with mitigation incorporated |
| 4.1-f | American River Erosion Contract 4A | <i>CEQA:</i> Would not impact any conservation plans. | N/A | No Impact | No Impact |

Alternative 3b

Alternative 3b for the American River Erosion Contract 4A Project Component would be similar to the Proposed Action but would use a different permanent bike trail reroute. Instead of going under the railroad and reconnecting to the bike trail near Del Paso Blvd, the bike trail would head north following the railroad and reconnect to the bike trail just past the berm (Figure 3.5.3-4 in Chapter 3, "Description of Project Alternatives" of the SEIS/SEIR). The route would be slightly longer than the Proposed Action. Installing this route would require vegetation trimming, vegetation clearing, regrading, paving, and possible construction of a bridge. All other project components (American River Erosion Contracts 3B and 4B, Sacramento River Erosion Contract 3, MCP, SRMS, ARMS, and Piezometer Network) would have the same effects as the Proposed Action. Table 4.1-3 and Table 4.1-4 shows differences in vegetation impacts between alternatives. Impacts of Alternative 3b are summarized in Table 4.1-6.

Table 4.1-6: Alternative 3b Effects on Vegetation and Wildlife

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---------------|------------------------------------|--|--------------------|--|---|
| 4.1-a | American River Erosion Contract 4A | <i>NEPA and CEQA:</i> Similar to the Proposed Action, Alternative 3a would include night-time effects on wildlife movement | VIS-2 | Less than significant with mitigation incorporated | Short-term moderate effects that are less than significant with mitigation incorporated |
| 4.1-b | American River Erosion Contract 4A | <i>NEPA and CEQA:</i> Similar to the Proposed Action, Alternative 3b could temporarily reduce local bird populations | BIRD-1 | Less than significant with mitigation incorporated | Short-term moderate effects that are Less than significant with mitigation incorporated |
| 4.1-c | American River Erosion Contract 4A | <i>NEPA and CEQA:</i> Similar to the Proposed Action, Alternative 3b would include substantial riparian habitat impacts short-term and no feasible mitigation is available | VEG-1, VEG-2 | Short-term: Significant and unavoidable Long-term: Less than significant with mitigation incorporated | Significant and unavoidable short-term; long-term, moderate effects that are less than significant with mitigation incorporated |
| 4.1-d | American River Erosion Contract 4A | <i>NEPA and CEQA:</i> Similar to the Proposed Action, Alternative 3b would include substantial wetland impacts | WATERS-1 | Less than significant with mitigation incorporated | Short-term to medium-term, moderate effects that are less than significant with mitigation incorporated |
| 4.1-e | American River Erosion Contract 4A | <i>CEQA:</i> Similar to the Proposed Action, Alternative 3b would impact riparian habitat prioritized for protection in the American River Parkway Plan but would result in an overall increase in riparian and other high-priority habitats | VEG-2 | Less than significant with mitigation incorporated | Negligible effects that are less than significant with mitigation incorporated |
| 4.1-f | American River Erosion Contract 4A | <i>CEQA:</i> Would not impact any conservation plans | N/A | No Impact | No Impact |

Alternative 3c

Alternative 3c for the American River Erosion Contract 4A Project Component would change the permanent bike trail reroute to include building a bridge or adding fill and routing bikes through the wetland and around the berm (Figure 3.5.3-4 in Chapter 3, "Description of Project Alternatives" of the SEIS/SEIR). A larger area of the wetland would need to be filled for the new alignment. Installing this route would require vegetation trimming, vegetation clearing, regrading, paving, and possible construction of a bridge. All other project components (American River Erosion Contracts 3B and 4B, Sacramento River Erosion Contract 3, MCP, SRMS, ARMS, and Piezometer Network) would have the same effects as the Proposed Action.

Table 4.1-3 and Table 4.1-4 show differences in vegetation impacts between alternatives. Impacts of Alternative 3c are summarized in Table 4.1-7.

Table 4.1-7: Alternative 3c Effects on Vegetation and Wildlife

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---------------|------------------------------------|--|--------------------|--|--|
| 4.1-a | American River Erosion Contract 4A | <i>NEPA and CEQA:</i> Similar to the Proposed Action, Alternative 3c would include night-time effects on wildlife movement | VIS-2 | Less than significant with mitigation incorporated | Short-term moderate effects that are less than significant with mitigation incorporated |
| 4.1-b | American River Erosion Contract 4A | <i>NEPA and CEQA:</i> Similar to the Proposed Action, Alternative 3c could temporarily reduce local bird populations | BIRD-1 | Less than significant with mitigation incorporated | Short-term moderate effects that are Less than significant with mitigation incorporated |
| 4.1-c | American River Erosion Contract 4A | <i>NEPA and CEQA:</i> Similar to the Proposed Action, Alternative 3c would include substantial riparian habitat impacts short-term and no feasible mitigation is available | VEG-1, VEG-2 | Short-term: Significant and unavoidable Long-term: Less than significant with mitigation incorporated | Significant and unavoidable short-term; Long-term and Moderate effects that are less than significant with mitigation incorporated |
| 4.1-d | American River Erosion Contract 4A | <i>NEPA and CEQA:</i> Similar to the Proposed Action, Alternative 3c would include substantial wetland impacts | WATERS-1 | Less than significant with mitigation incorporated | Short-term to medium-term, moderate effects that are less than significant with mitigation incorporated |
| 4.1-e | American River Erosion Contract 4A | <i>CEQA:</i> Similar to the Proposed Action, Alternative 3c would impact riparian habitat prioritized for protection in the American River Parkway Plan but would result in an overall increase in riparian and other high-priority habitats | VEG-2 | Less than significant with mitigation incorporated | Negligible effects that are less than significant with mitigation incorporated |
| 4.1-f | American River Erosion Contract 4A | <i>CEQA:</i> Would not impact any conservation plans | N/A | No Impact | No Impact |

Alternative 3d

Alternative 3d for the American River Erosion Contract 4A Project Component would change the permanent bike trail route to a paved bike trail closer to the river along an existing off-road bike trail (Figure 3.5.3-4 in Chapter 3, "Description of Project Alternatives" of the SEIS/SEIR). This route would be longer than the Proposed Action. Installing this route would require some additional vegetation trimming, vegetation clearing, regrading, and paving. All other project

components (American River Erosion Contracts 3B and 4B, Sacramento River Erosion Contract 3, MCP, SRMS, ARMS, and Piezometer Network) would have the same effects as the Proposed Action. Table 4.1-3 and Table 4.1-4 show differences in vegetation impacts between alternatives. Impacts of Alternative 3d are summarized in Table 4.1-8.

Table 4.1-8: Alternative 3d Effects on Vegetation and Wildlife

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---------------|------------------------------------|---|--------------------|--|--|
| 4.1-a | American River Erosion Contract 4A | <i>NEPA and CEQA:</i> Similar to the Proposed Action, Alternative 3d would include night-time effects on wildlife movement | VIS-2 | Less than significant with mitigation incorporated | Short-term moderate effects that are less than significant with mitigation incorporated |
| 4.1-b | American River Erosion Contract 4A | <i>NEPA and CEQA:</i> Similar to the Proposed Action, Alternative 3d could temporarily reduce local bird populations | BIRD-1 | Less than significant with mitigation incorporated | Short-term moderate effects that are Less than significant with mitigation incorporated |
| 4.1-c | American River Erosion Contract 4A | Similar to the Proposed Action, Alternative 3d would include substantial riparian habitat impacts short-term and no feasible mitigation is available | VEG-1, VEG-2 | Short-term: Significant and unavoidable Long-term: Less than significant with mitigation incorporated | Significant and unavoidable short-term; Long-term and Moderate effects that are less than significant with mitigation incorporated |
| 4.1-d | American River Erosion Contract 4A | Similar to the Proposed Action, Alternative 3d would include substantial wetland impacts but mitigation is available. | WATERS-1 | Less than significant with mitigation incorporated | Short-term to medium-term, moderate effects that are less than significant with mitigation incorporated |
| 4.1-e | American River Erosion Contract 4A | <i>CEQA:</i> Similar to the Proposed Action, Alternative 3d would impact riparian habitat prioritized for protection in the American River Parkway Plan but would result in an overall increase in riparian and other high-priority habitats. | VEG-2 | Less than significant with mitigation incorporated | Negligible effects that are less than significant with mitigation incorporated |
| 4.1-f | American River Erosion Contract 4A | <i>CEQA:</i> Would not impact any conservation plans. | N/A | No Impact | No Impact |

Alternatives 4a and 4b (CEQA only)

Alternative 4a for the ARMS would retain an approximately 30-acre portion of the existing pond, and Alternative 4b would retain an approximately 20-acre portion of the pond. Under Alternative 4a and 4b, a berm with a top width of 30 feet would be constructed to retain the western or southern portion of the existing pond, and floodplain habitat (generally at elevations 2

to 10 feet) would be constructed on the eastern portion of the site, including a portion of the existing pond. Alternative 4a would result in impacts on the bald eagle nest onsite. Figure 3.7.1-1 in Chapter 3, "Description of Project Alternatives" of the SEIS/SEIR illustrates Alternative 4a and Figure 3.7.2-1 illustrates Alternative 4b. Relying on Alternative 4a or 4b would require additional mitigation be constructed elsewhere in the parkway, or that credits be purchased from an approved mitigation bank. All other project components (American River Erosion Contracts 3B, 4A, and 4B, Sacramento River Erosion Contract 3, MCP, SRMS, and Piezometer Network) would have the same effects as the Proposed Action. Table 4.1-3 and Table 4.1-4 shows differences in vegetation impacts between alternatives. Impacts of ARMS Alternatives 4a and 4b are summarized in Table 4.1-9.

Table 4.1-9: Alternative 4a and 4b Effects on Vegetation and Wildlife

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion |
|---------------|----------|--|--------------------|---|
| 4.1-a | ARMS | CEQA: Impacts on fish and wildlife migration and movement would be minimal and are not anticipated to affect use of migratory corridors or nursery sites | N/A | Less than significant |
| 4.1-b | ARMS | CEQA: Impacts on plant and wildlife habitats and populations would be minor in the short term and no effect for most species in the long term | N/A | Less than significant |
| 4.1-c | ARMS | CEQA: Similar to the Proposed Action, these alternatives would restore riparian habitat but would also retain freshwater habitat | N/A | Short-term: Less than significant Long-term: no effect |
| 4.1-d | ARMS | CEQA: Similar to the Proposed Action, these alternatives would restore floodplain channel habitat but would also retain freshwater habitat | WATERS-1 | Less than significant with mitigation incorporated |
| 4.1-e | ARMS | CEQA: Similar to the Proposed Action, Alternative 4a and 4b would impact riparian habitat prioritized for protection in the American River Parkway Plan but would result in an overall increase in riparian and other high-priority habitats | VEG-2 | Less than significant with mitigation incorporated |
| 4.1-f | ARMS | CEQA: Would not impact any conservation plans | N/A | No Impact |

Alternative 5a (Conservation bank credits)

Alternative 5a includes an alternative financial solution as opposed to constructing the SRMS. Conservation Bank Credits would be used for mitigation in lieu of the construction of SRMS. Instead, all remaining required mitigation credits would be purchased from USFWS- and/or NMFS-Approved Conservation Banks, whose service areas cover the ARCF project impacts. There would be no direct resource impacts from this action. The USFWS- and/or NMFS-Approved Conservation Banks are required to complete their own NEPA/CEQA analysis prior to operation.

Table 4.1-10. Alternative 5a Effects on Vegetation and Wildlife

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Significance Conclusion |
|--|--|---|--------------------|------------------------------|------------------------------|
| 4.1-a 4.1-b 4.1-c 4.1-d 4.1-e 4.1-f | Sacramento River Mitigation Site – Watermark Farms | NEPA and CEQA: No impact within the Project Site. Independent NEPA/CEQA would occur for the USFWS Approved Conservation Banks | N/A | No Impact | No Impact |

Alternative 5b (Watermark Farms)

Under Alternative 5b, the SRMS of the Proposed Action would be completed at Watermark Farms, located along the Sacramento River in Yolo County, from approximately River Mile 50.5 to River Mile 51.25. The site is characterized by agricultural and ruderal herbaceous habitat types. Similar to the Proposed Action, Alternative 5b would benefit vegetation and wildlife resources at Watermark Farms by restoring important shallow water and riparian habitats. Depending on the size and design of the mitigation area, the overall resulting increase in native habitats may be greater at Watermark Farms than under the Proposed Action because the SRMS supports existing riparian habitat. Because the goal of activities at the site would be restoration of native habitats suitable for sensitive species, it would not conflict with the Yolo Habitat Conservation Plan/Natural Community Conservation Plan. The Watermark Farms project would complete a project-level NEPA/CEQA analysis prior to implementation.

Table 4.1-11: Alternative 5b Effects on Vegetation and Wildlife

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---------------|---|---|--------------------|---|---|
| 4.1-a | Sacramento River Mitigation – Watermark Farms | <i>NEPA and CEQA:</i> Impacts on fish and wildlife corridors and movement would be minimal and are not anticipated to affect use of migratory corridors or nursery sites. | N/A | Short-term: Less than significant Long-term: No effect | Negligible short-term, no effect long-term |
| 4.1-b | Sacramento River Mitigation – Watermark Farms | <i>NEPA and CEQA:</i> Impacts on plant and wildlife habitats and populations would be minor in the short term and no effect for most species in the long term. | N/A | Short-term: Less than significant Long-term: No effect | Negligible short-term, no effect long-term |
| 4.1-c | Sacramento River Mitigation – Watermark Farms | <i>CEQA and NEPA:</i> Similar to the Proposed Action, this alternative would include the restoration of riparian habitat but less existing riparian vegetation is anticipated to be impacted. | N/A | Short-term: Less than significant Long-term: No effect | Negligible short-term, no effect long-term. |

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---------------|---|---|--------------------|--|---|
| 4.1-d | Sacramento River Mitigation – Watermark Farms | <i>CEQA and NEPA:</i> Similar to the Proposed Action, this alternative would include the restoration of floodplain channel habitat but impacts on existing aquatic habitat is anticipated to be less. | WATERS-1 | Less than significant with mitigation incorporated | Short-term, moderate effects that are less than significant with mitigation incorporated. |
| 4.1-e | Sacramento River Mitigation – Watermark Farms | <i>CEQA:</i> Few if any trees are anticipated to require removal and implementation is not anticipated to conflict with any Yolo County policies protecting biological resources. | N/A | No Impact | No impact |
| 4.1-f | Sacramento River Mitigation – Watermark Farms | <i>CEQA:</i> Implementing this alternative would generally support goals of the Yolo Habitat Conservation Plan/Natural Community Conservation Plan because native habitats would be restored for the purpose of species conservation. | N/A | Less than significant | Less than significant |

Alternative 5c (Sunset Pumps)

Alternative 5c combines three approaches to complete the Sacramento River Mitigation requirements including 1) Purchasing Delta smelt credits from an approved conservation bank 2) Funding a NMFS recovery plan project (Sunset Pumps) to remove a weir, allowing fish passage to benefit chinook steelhead and green sturgeon and 3) Funding the improvements at Sunset Pumps would increase water availability, which would then be directed to two local wildlife refuges, benefiting the Western Yellow Billed Cuckoo. The Sunset Pumps project is listed as high priority BOR, DWR, and USFWS, and is subject to separate NEPA/CEQA analysis prior to implementation. All activities related to 5c involve funding another project, therefore no additional impacts to vegetation and wildlife would result from this alternative.

Table 4.1-12. Alternative 5c Effects on Vegetation and Wildlife

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Significance Conclusion |
|--|--|--|---------------------------|-------------------------------------|-------------------------------------|
| 4.1-a 4.1-b 4.1-c 4.1-d 4.1-e 4.1-f | Sacramento River Mitigation Site – Watermark Farms | <i>NEPA and CEQA</i> : No impact within the Project Site. Independent NEPA/CEQA would occur for the USFWS Approved Conservation Banks and Sunset Pumps Project | N/A | No Impact | No Impact |

4.2 Aquatic Resources and Fisheries

This section focuses on analysis of aquatic resources and fisheries, including special-status fish. Vegetation and non-sensitive wildlife are addressed in Appendix B, Section 4.1 of this SEIS/SEIR, and special-status plant and wildlife species are addressed in Appendix B, Section 4.3.

Several native fish species present in the Sacramento and American Rivers are considered special-status species including four runs of Chinook Salmon, Steelhead, Green and White Sturgeon, Delta Smelt, Longfin Smelt, and Pacific Lamprey. Other native species present in the area include Sacramento Pikeminnow, Sacramento Splittail, Sacramento Sucker, Hardhead, California Roach, and Rainbow Trout and can be found throughout the study area in various habitats that include deep pools, riffles, side channels, swift-moving cool water, and slow-moving warm water habitats.

4.2.1 Existing Conditions/Affected Environment

Sacramento River and American River

As described in the ARCF GRR Final EIS/EIR (USACE 2016), the existing conditions and the affected environment for the Proposed Action in the Sacramento and American Rivers are summarized below. Important attributes of the aquatic habitat in the American and Sacramento Rivers are aquatic vegetation and shaded riverine aquatic (SRA) habitat. Aquatic vegetation is represented by floating, submerged, and emergent vegetation. Aquatic vegetation serves as cover and an invertebrate food production base for nearly all aquatic species. The percent of aquatic vegetation cover varies throughout the study area.

SRA is represented by overhead canopy cover. Overhanging SRA provides shade which is a form of cover important to the survival of many aquatic organisms, including fish. Overhanging vegetation moderates water temperatures, which is an important factor for various life stages of native fish species. The vegetation provides food and habitat for both terrestrial and aquatic invertebrates, which in turn serves as food for several fish species. Aquatic vegetation provides a diversity of microhabitats, which allows for high species diversity, abundance, and a food source for instream invertebrates, which in turn are eaten by many native fish species. Thus, a broad food base and extensive cover and habitat niches are supported by in-water cover. These values in turn create high fish diversity and abundance.

The existing overhead shade cover in the study area varies by location and along each waterway. The amount of SRA in the study area was calculated using aerial photography and determining which areas have overhanging vegetation and trees adjacent to the natural channel and which areas do not. Generally, greater shade cover occurs during summer when full tree canopies are present.

Throughout the program area watersheds, altered flow regimes, flood control, and bank protection efforts have reduced sediment transport, channel migration, and instream woody material (IWM) recruitment, and have isolated the channel from its floodplain. Historically the floodplain provided areas for riparian vegetation recruitment and for rearing of native and special-status fish species. Levees and armored banks prevent fish from accessing productive

floodplain habitats and limits nutrient exchange between the river and flooded riparian areas. The Lower American River is also a designated Wild and Scenic River under both the Federal and State Wild and Scenic Rivers Acts. The anadromous fisheries resources along the Lower American River are one of the designated values of the river under these acts.

Native fish with potential to occur in the portions of the Sacramento and American Rivers that would be impacted by the Proposed Action are listed below (Table 4.2-1). In general, native non-listed species utilize similar habitats and are affected by the same factors as listed native fish species, including lack of access to native spawning habitat and/or temperature and water quality degradation within their typical range. Numerous non-native fish species that occur in the Proposed Action areas are discussed in Table 16 in the ARCF GRR Final EIS/EIR.

Table 4.2-1. Native fish with potential to occur in Proposed Action areas in both the Sacramento and American Rivers (USACE 2016)

| Common Name | Scientific Name | Listing Status | Potential Occurrence at Sites |
|---|--|----------------------|-------------------------------|
| Green Sturgeon | <i>Acipenser medirostris</i> | FT | ARMS, SRMS, SR 3 |
| White Sturgeon | <i>Acipenser transmontanus</i> | SSC, State Candidate | ARMS, SRMS, SR 3 |
| Sacramento Sucker | <i>Catostomus occidentalis</i> | - | All sites |
| Prickly Sculpin | <i>Cottus asper</i> | - | All sites |
| Threespine Stickleback | <i>Gasterosteus aculeatus</i> | - | All sites |
| Delta Smelt | <i>Hypomesus transpacificus</i> | FT, SE | SRMS, SR 3 |
| Longfin Smelt | <i>Spirinchus thaleichthys</i> | FE, ST | SRMS, SR 3 |
| Tule Perch | <i>Hysterocarpus traski</i> | - | All sites |
| Lamprey | <i>Entophenus spp.</i> | SSC | All sites |
| Hitch | <i>Lavinia exilicauda</i> | SSC | All sites |
| California Roach | <i>Hesperoleucus¹ symmetricus</i> | SSC | All sites |
| Hardhead | <i>Mylopharodon conocephalus</i> | SSC | All sites |
| Steelhead– California Central Valley DPS ² | <i>Oncorhynchus mykiss</i> | FT | All sites |
| Chinook Salmon- Sacramento River Winter-Run | <i>Oncorhynchus tshawytscha</i> | Winter-run: FE, SE | All sites |
| Chinook Salmon- Central Valley Spring-Run | <i>O. tshawytscha</i> | FT, ST | All sites |
| Chinook Salmon- Central Valley Fall/Late-fall Run | <i>O. tshawytscha</i> | SSC | All sites |
| Sacramento Blackfish | <i>Orthodom micolepidotus</i> | - | All sites |
| Sacramento Splittail | <i>Pogonichthys macrolepidotus</i> | SSC | All sites |
| Sacramento Pikeminnow | <i>Ptychocheilus grandis</i> | - | All sites |
| Speckled Dace | <i>Rhinichthys osculus</i> | - | All sites |
| | | | |

Listing/Status Key:
FT: Federal Threatened

Sites Expected at Key:
ARMS: American River Mitigation Site

¹ Please note that this species genus has been reclassified since the completion of the ARCF GRR Final EIS/EIR. Previously the species shared the same genus as hitch (*Lavinia*) but has been reclassified to its own as of this report.

² DPS: Distinct Population Segment; a vertebrate population, or group of populations, that is discrete from other populations of the species and significant in relation to the entire species (NOAA 2022).

FE: Federal Endangered
ST: State Threatened
SE: State Endangered
SSC: California Species of Special Concern

SRMS: Sacramento River Mitigation Site
SR 3: Sacramento River Contract 3

The Sacramento River is used for rearing and as a migratory corridor for many native fish (Table 4.2-1) including salmonids, smelt, and sturgeon. The mainstem Sacramento within the project area is designated as Essential Fish Habitat (EFH) for Pacific Salmon, as well as critical habitat for several species. The Sacramento River Erosion Contract 3 site and Sacramento River Mitigation Site (SRMS) are within designated critical habitat for Sacramento River (SR) winter-run Chinook Salmon, Central Valley (CV) spring-run Chinook Salmon, California Central Valley (CCV) Steelhead, Southern Distinct Population Segment (sDPS) Green Sturgeon, and Delta Smelt. Longfin Smelt was recently listed by USFWS and does not yet have designated critical habitat, and they are present in the SRMS and SR 3 project areas. White Sturgeon have been designated as a candidate species for State listing and are also present in the project area.

The Lower American River up to Nimbus Dam is designated critical habitat for CCV Steelhead. Steelhead, fall-run/late fall-run Chinook Salmon, and many other native fish species are present throughout the Lower American River. Several fish species utilize the lower portion of the Lower American River when flow conditions back up water from the confluence with the Sacramento River. Because of this, sites closer to the confluence of the Sacramento River have the potential for different species than sites farther upstream. Critical habitat for sDPS Green Sturgeon extends up to approximately river mile (RM) 2 on the American River, CV spring-run critical habitat extends up to Watt Avenue (approximately RM 9.5), and SR winter-run critical habitat does not include any portion of the Lower American River, though both spring-run and winter-run have been encountered in rotary screw traps at RM 9.

The ARMS is located downstream of the SR-160 bridge and is the only American River site within designated critical habitat for sDPS of Green Sturgeon. American River Erosion Contract 3B North and South, and American River Erosion Contract 4A and 4B are located upstream of the SR-160 bridge and within critical habitat for CV spring-run Chinook and CCV Steelhead. In addition, work for both American River Erosion Contract 4A and 4B are located above the ordinary high water mark (OHWM).

The Lower American River is also home to fall-run/late fall-run Chinook Salmon, a species covered under EFH. The Nimbus Fish Hatchery at the base of Nimbus Dam produces fall-run Chinook Salmon and Steelhead, though the run of Steelhead used is an out of basin stock and is not protected in the Central Valley. In further support of their spawning efforts, recent gravel augmentations to the Lower American River have created better quality spawning habitat (GEI 2019). Salmonids that spawn upstream of the American River ARCF project sites can utilize their typical spawning habitat in the Lower American River below Nimbus Dam. The habitat is the upper portion of the Lower American River is used for juvenile rearing and juvenile emigration and will be unchanged by the project.

Historically, the Sacramento River winter-run Chinook Salmon Evolutionary Significant Unit (ESU) have not spawned in the American River. However, confirmed winter-run Chinook Salmon juveniles have been documented in rotary screw traps in the Lower American River (PSMFC 2014a,b; Snider et al 1998; Snider and Titus 2000, 2001). Juvenile winter-run Chinook

Salmon likely utilize the Lower American River as non-natal rearing habitat in this area between the months of December and April. Alternatively, while CV spring-run Chinook Salmon historically spawned in the American River, they no longer do so due to inaccessibility of spawning grounds upstream of the Nimbus and Folsom dams. However, confirmed CV spring-run Chinook Salmon juveniles have been documented in rotary screw traps in the Lower American River downstream of the Nimbus Dam, and likely also utilize the habitat for non-natal rearing (PSMFC 2014 a,b; Snider et al 1998; Snider and Titus 2000, 2001).

Magpie Creek Project

As described in the ARCF GRR Final EIS/EIR, existing conditions and the affected environment for the Proposed Action in the Magpie Creek Project (MCP) is as follows (USACE 2016):

- The East Side Tributaries provide fish spawning, rearing, and/or migratory habitat for a diverse number of native, nonnative, and special-status species (Table 16)³. Many of the nonnative resident fish species are more tolerant of warm water, low dissolved oxygen, and disturbed environments than native species as encountered in the East Side Tributaries during most of the year. In general, they are adapted to warm, slow-moving, and nutrient-rich waters...
- Due to lack of quality SRA habitat in the MCP and Dry/Robla Creek project areas it would be considered of minimal quality for native fish species.
- Analysis of total linear feet of SRA in the East Side Tributaries was not evaluated because no bank erosion protection is planned and there is minimal, if any, SRA associated with these reaches.

Because Magpie Creek was included generally in the “East Side Tributaries” group of project sites in the original ARCF GRR Final EIS/EIR, Magpie Creek’s specific suitability for special-status fish (specifically salmonids) was not described. Since that time further investigation was conducted and has been determined that the site is ill-suited for all native fish species (both listed and non-listed; see Table 4.2-1; ARCF GRR Final EIS/EIR Table 16) due to the managed flow regime (i.e., flood releases/pulses do not correspond with anadromous fish migration) and intense anthropogenic disturbance surrounding the MCP site. The National Marine Fisheries Service (NMFS) consulted on the Sacramento Area Flood Control Agency’s (SAFCA’s) “Magpie Creek Diversion Channel Enhancement Project” (June 15, 2005). NMFS concluded the project was not likely to adversely affect Sacramento River winter-run Chinook, CV spring-run Chinook, or CV Steelhead in Magpie Creek as the three species and their corresponding critical habitat were not present in the project area (which includes the site of the Proposed Action for Magpie Creek for this SEIS/SEIR; ICF 2018). In addition, NMFS concluded that EFH was not present in Magpie Creek and did not recommend any conservation measures (NMFS 2021).

³ USACE 2016, p. 132-133

4.2.2 Applicable Laws, Regulations, Policies, and Plans

Federal

Federal Endangered Species Act

Under the Federal Endangered Species Act (ESA; Title 16, Section 1531 and following sections of the U.S. Code [16 USC 1531 et seq.]), USFWS and NMFS have regulatory authority over species listed or proposed for Federal listing as threatened or endangered and over projects that may result in take of Federally listed species. In general, the ESA prohibits “take” of endangered or threatened fish and wildlife species and take of endangered or threatened plants in areas under Federal jurisdiction or in violation of State law.

The ESA defines take as, “...to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” “Harass” is further defined as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, and sheltering. “Harm” is further defined as an act which kills or injures wildlife. This may include significant habitat modification or degradation where it kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Section 7 of the ESA outlines procedures for Federal interagency cooperation to protect and conserve Federally listed species and designated critical habitat. Section 7(a)(2) requires Federal agencies to consult with USFWS and NMFS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species, or destroying or adversely modifying designated critical habitat. USACE consulted with USFWS and NMFS on the ARCF program and received Biological Opinions (BOs) from both agencies in 2021. All conditions of both BOs have been incorporated into project design and mitigation measures.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA) requires an agency to consult with USFWS and NMFS if the agency plans to conduct, license, or permit an activity involving the impoundment, diversion, deepening, control, or modification of a stream or body of water. The Act also requires consultation with the head of the state agency that administers wildlife resources in the affected state. The purpose of this process is to promote conservation of wildlife resources by preventing loss of and damage to such resources and to provide for the development and improvement of wildlife resources in connection with the agency action. USFWS prepared a Fish and Wildlife Coordination Act report for the ARCF 2016 Project (USFWS 2015), and recommendations from the Coordination Act Report have been incorporated into project design and mitigation measures.

Wild and Scenic Rivers Act

The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to preserve certain rivers with outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values in a free-flowing

condition for the enjoyment of present and future generations. The Act is notable for safeguarding the special character of these rivers, while also recognizing the potential for their appropriate use and development. It encourages river management that crosses political boundaries and promotes public participation in developing goals for river protection.

Rivers may be designated by Congress or, if certain requirements are met, the Secretary of the Interior. Each river is administered by either a Federal or State agency. Designated segments need not include the entire river and may include tributaries. For Federally administered rivers, the designated boundaries generally average one-quarter mile from either bank in the lower 48 states and one-half mile on rivers outside national parks in Alaska to protect river-related values.

Rivers are classified as wild, scenic, or recreational:

- Wild River Areas – Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.
- Scenic River Areas – Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
- Recreational River Areas – Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

Regardless of classification, each river in the National System is administered with the goal of protecting and enhancing the values that caused it to be designated. Designation neither prohibits development nor gives the Federal government control over private property. Recreation, agricultural practices, residential development, and other uses may continue. Protection of the river is provided through voluntary stewardship by landowners and river users and through regulation and programs of Federal, state, local, or tribal governments. In most cases, not all land within boundaries is, or will be, publicly owned, and the Act limits how much land the Federal government is allowed to acquire from willing sellers. Visitors to these rivers are cautioned to be aware of and respect private property rights.

The Act purposefully strives to balance dam and other construction at appropriate sections of rivers with permanent protection for some of the country's most outstanding free-flowing rivers. To accomplish this, it prohibits Federal support for actions such as the construction of dams or other instream activities that would harm the river's free-flowing condition, water quality, or outstanding resource values. However, designation does not affect existing water rights or the existing jurisdiction of states and the Federal government over waters as determined by established principles of law.

The Lower American River has been designated a “Recreational River” under both the National Wild and Scenic Rivers Act and the similar California Wild and Scenic Rivers Act. The Lower American River Watershed begins at Folsom Dam and flows 30 miles to its confluence with the Sacramento River near downtown Sacramento. This segment of the river includes the American

River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, and ARMS.

Clean Water Act Section 404

Section 404 of the Clean Water Act (CWA) requires a project proponent to obtain a permit from USACE before engaging in any activity that involves discharge of dredged or fill material into waters of the United States, including wetlands. On August 31, 2021, the U.S. District Court for the District of Arizona vacated and remanded the Navigable Waters Protection Rule in the case of the Pascua Yaqui Tribe v. the Environmental Protection Agency (EPA). Following the decision, EPA and USACE halted implementation of the Navigable Waters Protection Rule and are currently interpreting “waters of the United States” consistent with the pre-2015 regulations and associated guidelines and case law, including the Supreme Court decision *Rapanos v. United States*, 547 U.S. 715 (2006). On December 7, 2021, the EPA and USACE published the proposed rule to revise and restore the definitions of “waters of the United States” consistent with the 1986 regulations informed by Supreme Court case law.

Waters of the United States (with the exception of wetlands) are currently defined as territorial seas and waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide; interstate waters, including wetlands; other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce; impoundments of waters otherwise defined as waters of the United States; and wetlands adjacent to waters identified above. Wetlands are areas that are inundated or saturated by surface water or groundwater 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. During review of a project, USACE must ensure compliance with applicable Federal laws, including EPA’s Section 404(b)(1) Guidelines. USACE regulations require impacts on waters of the United States to be avoided and minimized to the maximum extent practicable, and that unavoidable impacts be compensated (33 CFR 320.4[r]). For wetlands, the U.S. Supreme Court in *Sackett v. EPA* (SCOTUS 2022) recently announced the continuous surface connection test, which requires direct adjacency between the waterbodies. USACE and EPA revised the definition of “Waters of the United States” in the Federal Register (September 8, 2023).

Clean Water Act Section 401

Under Section 401 of the CWA, an applicant for a Section 404 permit must obtain a certificate from the appropriate State agency stating that the intended dredging or filling activity is consistent with the State’s water quality standards and criteria. In California, the State Water Resources Control Board (SWRCB) delegates the authority to grant water quality certification to the nine Regional Water Quality Control Boards (RWQCBs); the CVRWQCB has jurisdiction over the San Joaquin Valley. The CVRWQCB issued a Clean Water Act Section 401 Water Quality Certification and Order in 2021 which contains avoidance and minimization measures and compensatory mitigation requirements (CVRWQCB 2021). If any of the ARCF 2016 Projects extend past the orders sunset date of July 12, 2026, USACE would be required to either amend its current permit or obtain a new permit from the CVRWQCB. Separate 401 Water

Quality Certifications would be obtained for offsite mitigation sites. In addition, a new National Pollutant Discharge Elimination System (NPDES) permit would be obtained for any dewatering that would occur at MCP and American River Erosion Contract 4A.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended (16 U.S.C. 1801 et seq.) established:

- A fishery conservation zone between the territorial seas of the United States and 200 nautical miles offshore;
- An exclusive U.S. fishery management authority over fish within the fishery conservation zone (excluding highly migratory species);
- Regulations for foreign fishing within the fishery conservation zone through international fishery agreements, permits, and import prohibitions; and
- National standards for fishery conservation and management and eight regional fishery management councils apply those national standards in fishery management plans.

Congress enacted the 1996 amendments to the Act, known as the Sustainable Fisheries Act (P.L. 104-297), to address the substantially reduced fish stocks that declined as a result of direct and indirect habitat loss. The Sustainable Fisheries Act requires agencies consultation with NMFS concerning actions that may adversely impact EFH.

In 2007, the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 was signed. It mandates the use of annual catch limits and accountability measures to end overfishing, provides for fishery management by a limited access program, and calls for increased international cooperation (Bureau of Ocean Energy Management No Date). NMFS performed consultation under the MSA in conjunction with their Biological Opinion (BO) issued in 2021 (NMFS 2021), and EFH recommendations have been incorporated into project design and mitigation measures.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act; California Water Code Section 13000 et seq.) requires that each of the State's nine RWQCBs prepare and periodically update basin plans for water quality control. Each basin plan sets forth water quality standards for surface water and groundwater and actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. RWQCB jurisdiction includes Federally protected waters and areas that meet the definition of "waters of the state." Waters of the state include all surface water and groundwater, including saline waters, within the State's boundaries. The RWQCBs have discretion to take jurisdiction over areas not Federally regulated under Section 401, provided they meet the definition of waters of the State. Mitigation requiring no net loss of wetlands functions and values of waters of the State is typically required by the RWQCB.

California Endangered Species Act (CESA)

CESA ([CFGF]2050 et seq.) directs State agencies not to approve projects that would jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of a species. Furthermore, CESA states that CDFW, together with DWR and any State lead agency, must develop reasonable and prudent alternatives consistent with conserving the species, while maintaining the project purpose to the greatest extent possible. Take of State-listed species incidental to otherwise lawful activities requires a permit, pursuant to Section 2081(b) of CESA. Project-related impacts of the authorized take must be minimized and fully mitigated, and adequate funding must be in place to implement mitigation measures and monitor compliance and effectiveness. Mitigation can include land acquisition, permanent protection and management, and/or funding in perpetuity of compensatory lands.

California Wild and Scenic Rivers Act

The California Wild and Scenic Rivers Act of 1972 (PRC Section 5093.545h) was put in place to preserve certain rivers that have extraordinary recreational, scenic, fishery or wildlife values. The Lower American River between Nimbus Dam and where the American River intersects with the Sacramento River has been designated under this Act as a recreational river for its extraordinary anadromous fishery resource and recreational values. The act applies to the parts of the Proposed Action along the American River, specifically all areas disturbed by implementation of the Proposed Action within the Parkway associated with American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, and ARMS.

Local

City of Sacramento General Plan

The City of Sacramento 2035 General Plan Environmental Resources Element contains the following fisheries-related goals and policies relevant to the Proposed Action (City of Sacramento 2015):

Goal ER 2.1 Natural and Open Space Protection: Protect and enhance open space, natural areas, and significant wildlife and vegetation in the city as integral parts of a sustainable environment within a larger regional ecosystem.

- **Policy ER 2.1.4: Retain Habitat Areas.** The City shall retain plant and wildlife habitat areas where there are known sensitive resources (e.g., sensitive habitats, special-status, threatened, endangered, candidate species, and species of concern). Particular attention shall be focused on retaining habitat areas that are contiguous with other existing natural areas and/or wildlife movement corridors.
- **Policy ER 2.1.5: Riparian Habitat Integrity.** The City shall preserve the ecological integrity of creek corridors, canals, and drainage ditches that support riparian resources by preserving native plants and, to the extent feasible, removing invasive nonnative plants. If not feasible, adverse impacts on riparian habitat shall be mitigated by the preservation and/or restoration of this habitat in compliance with State and Federal regulations or at a minimum 1:1 ratio, in perpetuity.

- **Policy ER 2.1.6: Wetland Protection.** The City shall preserve and protect wetland resources including creeks, rivers, ponds, marshes, vernal pools, and other seasonal wetlands, to the extent feasible. If not feasible, the mitigation of all adverse impacts on wetland resources shall be required in compliance with State and Federal regulations protecting wetland resources, and if applicable, threatened or endangered species. Additionally, the City shall require either on- or off-site permanent preservation of an equivalent amount of wetland habitat to ensure no-net-loss of value and/or function.
- **Policy ER 2.1.9: Wildlife Corridors.** The City shall preserve, protect, and avoid impacts to natural, undisturbed habitats that provides movement corridors for sensitive wildlife species. If corridors are adversely affected, damaged habitat shall, be replaced with habitat of equivalent value or enhanced to enable the continued movement of species.
- **Policy ER 2.1.10: Habitat Assessments.** The City shall consider the potential impact on sensitive plants and wildlife for each project requiring discretionary approval. If site conditions are such that potential habitat for sensitive plant and/or wildlife species may be present, the City shall require habitat assessments, prepared by a qualified biologist, for sensitive plant and wildlife species. If the habitat assessment determines that suitable habitat for sensitive plant and/or wildlife species is present, then either (1) protocol-level surveys shall be conducted (where survey protocol has been established by a resource agency), or, in the absence of established survey protocol, a focused survey shall be conducted consistent with industry-recognized best practices; or (2) suitable habitat and presence of the species shall be assumed to occur within all potential habitat locations identified on the project site. Survey Reports shall be prepared and submitted to the City and the California Department of Fish and Wildlife (CDFW) or the United States Fish and Wildlife Service (USFWS) (depending on the species) for further consultation and development of avoidance and/or mitigation measures consistent with State and Federal law.
- **Policy ER 2.1.11: Agency Coordination.** The City shall coordinate with State and Federal resource agencies (e.g., California Department of Fish and Wildlife (CDFW), U.S. Army Corps of Engineers, and United States Fish and Wildlife Service (USFWS) to protect areas containing rare or endangered species of plants and animals.
- **Policy ER 2.1.14: Climate Change-related Habitat Shifts.** The City shall support the efforts of The Natomas Basin Conservancy and other habitat preserve managers to adaptively manage wildlife preserves to ensure adequate connectivity, habitat range, and diversity of topographic and climatic conditions are provided for species to move as climate shifts.
- **Policy ER 2.1.15: Climate Change-related Habitat Restoration and Enhancement.** The City shall support active habitat restoration and enhancement to reduce impact of climate change stressors and improve overall resilience of habitat within existing parks and open space in the city. The City shall support the efforts of Sacramento County to improve the resilience of habitat areas in the American River Parkway.

Sacramento County General Plan

The Sacramento County General Plan contains the following fisheries-related goals and policies relevant to the Proposed Action:

Conservation Element (Adopted December 1993, amended September 2017)

Goal: Preserve and manage natural habitats and their ecological functions throughout Sacramento County.

- **Policy CO-58:** Ensure no net loss of wetlands, riparian woodlands, and oak woodlands.
- **Policy CO-59:** Ensure mitigation occurs for any loss of or modification to the following types of acreage and habitat function:
 - vernal pools
 - wetlands
 - riparian
 - native vegetative habitat
 - special-status species habitat
- **Policy CO-61:** Mitigation should be consistent with Sacramento County-adopted habitat conservation plans.

Goal: Preserve, protect, and enhance natural open space functions of riparian, stream and river corridors.

- **Policy CO-88:** Where removal of riparian habitat is necessary for channel maintenance, it will be planned and mitigated to minimize unavoidable impacts upon biological resources.
- **Policy CO-89:** Protect, enhance and maintain riparian habitat in Sacramento County
- **Policy CO-90:** Increase riparian woodland, valley oak riparian woodland and riparian scrub habitat along select waterways within Sacramento County.
- **Policy CO-91:** Discourage introductions of invasive non-native aquatic plants and animals.
- **Policy CO-92:** Enhance and protect shaded riverine aquatic habitat along rivers and streams.
- **Policy CO-99:** Encourage habitat restoration and recreational opportunities as an integral part of bank and levee stabilization efforts.
- **Policy CO-101:** Stabilize the banks of rivers and streams in a manner that increases flood protection and increases riparian habitat functions.
- **Policy CO-105:** Channel modification projects shall be considered for approval by the Board of Supervisors only after conducting a noticed public hearing examining the full range of alternatives, relative costs and benefits, and environmental, economic, and social benefits.
 - **CO-105a.** Encourage flood management designs that respect the natural topography and vegetation of waterways while retaining flow and functional integrity. (Added 2016)
- **Policy CO-109:** Channel modifications should not prevent minimum water flows necessary to protect and enhance fish habitats, native riparian vegetation, water quality, or ground water recharge.

- **Policy CO-110:** Improvements in watercourses will be designed for low maintenance. Appropriate Manning's "n" ¹³ values will be used in design of the watercourses to reflect future vegetative growth (including mitigation plantings) associated with the low maintenance concept.
- **Policy CO-111:** Channel modifications shall retain wetland and riparian vegetation whenever possible or otherwise recreate the natural channel consistent with the historical ecological integrity of the stream or river.
- **Policy CO-112:** The use of concrete and impervious materials is discouraged where it is inconsistent with the existing adjacent watercourse and overall ecological function of the stream.
- **Policy CO-113:** Encourage revegetation of native plant species appropriate to natural substrate conditions and avoid introduction of nonindigenous species.
- **Policy CO-114:** Protect stream corridors to enhance water quality, provide public amenities, maintain flood control objectives, preserve, and enhance habitat, and offer recreational and educational opportunities.
- **Policy CO-121:** No grading, clearing, tree cutting, debris disposal or any other despoiling action shall be allowed in rivers and streams except for normal channel maintenance, restoration activities, and road crossings.
- **Policy CO-122:** River and stream maintenance should allow natural vegetation in and along the channel to assist in removal of nutrients, pollutants, and sediment and to increase bank stabilization, while minimizing impacts on conveyance.
- **Policy CO-123:** The use of native plant species shall be encouraged on revegetation plans.
- **Policy CO-124:** Maintain and manage rivers and streams to encourage special-status species.
- **Policy CO-125:** Restore concrete sections of rivers and streams to natural or naturalized channels, where feasible for increased flood or conveyance capacity and groundwater recharge.
- **Policy CO-127:** Protect, preserve, and restore migratory routes for anadromous species.
- **Policy CO-130:** Protect, enhance and restore riparian, in-channel and shaded riverine aquatic habitat for:
 - spawning and rearing of fish species, including native and recreational nonnative, non-invasive species, where they currently spawn;
 - potential areas where natural spawning could be sustainable; and
 - supporting other aquatic species

Open Space Element (Adopted December 1993, Amended September 2017)

Goal: Open space lands in Sacramento permanently protected through coordinated use of regulation, education, acquisition, density transfer and incentive programs.

- **Policy OS-1:** Actively plan to protect, as open space, areas of natural resource value, which may include but are not limited to wetlands preserves, riparian corridors, woodlands, and floodplains associated with riparian drainages.
- **Policy OS-2:** Maintain open space and natural areas that are interconnected and of sufficient size to protect biodiversity, accommodate wildlife movement and sustain ecosystems.

American River Parkway Plan 2008

The purpose of the Parkway Plan is to provide a guide to land use decisions affecting the Parkway (the area along the Lower American River from Folsom Lake, downstream to the American River's confluence with Sacramento River, including land owned/managed by Sacramento County Regional Parks or the State of California); specifically addressing its preservation, use, development and administration (County of Sacramento 2008). Policies relating to fisheries and fisheries-related resources within the American River Parkway Plan are as follows:

Aquatic Communities Policies:

- **Policy 3.7:** The parkway shall be managed to preserve, protect and/or restore riparian and in-channel habitat necessary for spawning and rearing of fish species, including native Chinook Salmon (fall-run), Steelhead, and Sacramento splittail, and recreational non-native striped bass and American shad. Priority shall be on providing diversity and complexity of habitat, consistent with recreational safety needs.
- **Policy 3.8:** It is the intent of this plan that available water provide adequate seasonal river flows and water temperatures to achieve and maintain viable populations and life stages of Federal or state listed species, such as the CV Steelhead. In addition, species of primary concern include: naturally spawning Chinook Salmon (fall-run) and Sacramento splittail; non-native American shad and striped bass; and their macroinvertebrate food sources in the Lower American River.
- **Policy 3.9:** Responsible local and state agencies shall, and Federal agencies should, discourage introductions of invasive non-native aquatic plants and animals.
- **Policy 3.10:** In-stream woody material shall be managed to provide fish habitat in the Lower American River consistent with recreational safety needs.
- **Policy 3.11:** Agencies managing the parkway shall identify, enhance and protect:
 - areas where maintaining riparian vegetation will benefit the aquatic and terrestrial resources;
 - current shaded riverine aquatic habitat; and

- other areas that can support a shaded riverine aquatic habitat, as time and resources permit, especially as associated with flood control or Federally/State mandated species protection projects.
- **Policy 3.12:** In order to reduce stranding and predation of anadromous fish, minor grading and dredging should be conducted to provide positive drainage from floodplain ponds to the low flow channel of the American River.

American River Parkway Natural Resources Management Plan

The American River Parkway Natural Resources Management Plan (NRMP) is intended to provide relevant and defensible information to Sacramento County Regional Parks (SCRP) for making informed decisions for managing, maintaining, and enhancing Parkway resources (SCRP et al 2023). In general, the NRMP provides an understanding of existing Parkway resources, the effects of disturbances such as flood, fire, invasive species, and human impacts, as well as opportunities for protections and enhancements (SCRP et al 2023). The NRMP advises resource management for promoting healthy ecosystems and resource protections, while balancing concurrent Parkway goals of flood control, recreational opportunities, and public safety (SCRP et al 2023).

While monitoring may be conducted by others, it is the responsibility of SCRCP to coordinate and integrate any monitoring efforts into the monitoring and reporting associated with the NRMP (SCRCP et al 2023). Because the ARMS fall under the umbrella of the NRMP and its goals, SCRCP is an appropriate entity to plan, manage, delegate, and/or coordinate the monitoring of the onsite ARMS success as per requirements for other standard conservation or mitigation bank easements. Appendix D of the NRMP includes a comprehensive monitoring plan that may be used for this purpose (SCRCP et al 2023).

4.2.3 Analysis of Environmental Effects

Analysis Methodology

An analysis of effects from implementation of the Proposed Action was conducted on fisheries and fisheries-related resources. The analysis focuses on evaluating impacts with the potential to adversely affect special-status species and their habitats and other habitats considered sensitive by Federal, State, or local agencies. This evaluation considers temporary and permanent habitat loss and disturbance and potential for direct or indirect injury or death of individuals. Impact conclusions consider the habitat quality, impact extent, impact duration, and impact intensity (e.g., level of harm, injury/loss, or degradation suffered by the resource).

The method of analysis for fish and aquatics impacts was adopted from the 2021 NMFS and USFWS BOs for consistency. Impacts to aquatic habitat were determined to be all area below the OHWM where work activities are occurring. Area of impact is calculated across the slope of the bank (full surface area). After the total area of habitat disturbance is calculated, it is then categorized into short-term or long-term effects. Short-term impacts are those that include vegetation removal or ground disturbance that is expected to be functional habitat again within 8 years. Effects from mature vegetation removal are expected to last up to 8 years, which aligns with the vegetation monitoring requirements from USFWS and NMFS. This timeline would allow regrowth of woody vegetation that provides SRA habitat.

From NMFS 2021: *“In coordination with USFWS (whose BO also included riparian mitigation), and after discussions with the Corps, impacts to NMFS species are calculated from the OHWM and below for the purposes of calculating mitigation amounts. While NMFS analyzes all the likely effects of the project (whether above or below the OHWM), it is expected that by calculating the area of impact from the full rock placement (including rock placed at depths that would not generally be utilized by salmonids), that the calculation will be appropriate to provide an estimate of mitigation acreage for the Corps proposed compensation. If at any time this assumption proves to be inaccurate in determining the extent of effects, reinitiation will be required. Another decision between multiple potential analytical methods for this BOs analysis is in regards to the calculation of area of impact. For all impacts on banks/levees, NMFS considers the full measure of the actual acreage of impacts measured across the full slope where these effects are occurring.”*

Basis of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G and Section 15065 of the State CEQA Guidelines, as amended. These thresholds, and the impact analysis that follows, also take into consideration the significance of an action in terms of: the setting of the proposed action; short- and long-term effects of the proposed action; both beneficial and adverse effects; direct and indirect effects of the proposed action on public health and safety; the context and intensity of impacts; and effects that would violate Federal, State, Tribal, or local law protecting the environment, as required under NEPA (40 CFR 1508.1(g)). Implementing the project would have a significant impact on aquatic resources and fisheries if it would result in any of the following:

- a. Result in 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, USFWS, or NMFS.
- b. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors; impede the use of native wildlife nursery sites; substantially reduce the habitat of a fish population; or cause a fish population to drop below self-sustaining levels.

Effects Analysis

No Action Alternative

The No Action Alternative for this SEIS/SEIR is Alternative 2, the authorized project from the 2016 GRR Final EIS/EIR (USACE 2016, p. 45-58). Alternative 2 included all the levee improvements discussed in Alternative 1 of the 2016 GRR Final EIS/EIR (USACE 2016, p. 31-45); however the extent of the levee raises along the Sacramento River were significantly less due to the widening of the Sacramento Weir and Bypass included in Alternative 2.

As described in the ARCF GRR Final EIS/EIR, this SEIS/SEIR's No Action Alternative authorized the following impacts in the American River, Sacramento River, and Magpie Creek (USACE 2016, p. 45-46):

“Instead of implementing the majority of levee raises included in Alternative 1...The levees along the American River... and Magpie Creek, are planned to be improved to address identified seepage, stability, erosion, and height concerns through the methods described under Alternative 1 of the 2016 GRR Final EIS/EIR. The levees along the Sacramento River are planned to be improved to address identified seepage, stability, and erosion concerns though the measures described under Alternative 1 of the 2016 GRR Final EIS/EIR⁴. Due to environmental, real estate, and hydraulic constraints within the American River North and South basins, the majority of the levees are planned be improved within the existing levee footprint to the extent practicable.”

Section 3.7.4 of the ARCF GRR Final EIS/EIR (USACE 2016) analyzes the environmental effects of the No Action Alternative on fisheries for this ARCF Comprehensive SEIS/SEIR. In summary, these environmental effects related to fisheries at the erosion protection sites along the Sacramento and American Rivers. (MCP, American River Erosion Contract 3B North and South, and Sacramento River Erosion Contract 3) include those described in Appendix B Table 4.2-2. Fisheries impacts related to improvements at the ARMS, and Sacramento River Mitigation Site (SRMS) [Grand Island] were not included in the No Action Alternative.

Table 4.2-2. Summarized Environmental Effects of the No Action Alternative on Fisheries and Fisheries-related Resources

| Site | Project Action | Environmental Effect on Fisheries | Level of Significance According to ARCF GRR Final EIS/EIR |
|---------------------------------------|---|---|--|
| American River, Sacramento River | Rock placement | Disturb native resident pelagic fish via increase in noise, water turbulence, and turbidity; Native fish using nearshore habitat for cover would be displaced and vulnerable to predation | Less than significant, with Best Management Practices (BMPs) and mitigation incorporated |
| American River, Sacramento River | Rock Placement | Loss of natural bank and SRA habitat due to placement of rock along the levee slope causing loss of cover and prey resources for fish. | Less than significant, with BMPs and mitigation incorporated |
| American River, Sacramento River | General construction | Disturbance of soils may increase sedimentation, suspended sediments (short term), and turbidity (short term) of nearshore aquatic habitat | Less than significant, with BMPs and mitigation incorporated |
| American River, Sacramento River, MCP | General Ground-Disturbing Activities | Could potentially cause erosion/soil disturbance, leading to an increase in sedimentation and turbidity; however, creation of planting berms to provide shade and instream woody material elements of SRA habitat would not cause existing conditions to worsen | Less than significant with BMPs incorporated |
| American River, Sacramento River, MCP | General Ground-Disturbing Activities | Water quality impacts on fish physiology, behavior, habitat, and invertebrate prey resources | Less than significant with BMPs incorporated ⁵ |
| MCP | Cutoff wall and flood wall construction | Potential loss of SRA habitat | Less than significant, with mitigation incorporated |

⁴ USACE 2016, p. 36

⁵ Water Quality Section 3.5 of ARCF GRR Final EIS/EIR

Proposed Action

The below section provides a walkthrough of the Proposed Action, which is the design refinements to the 2016 GRR project, as well as site by site CEQA and NEPA determinations (when applicable). The “No Action Alternative” is the action as described in the 2016 GRR FEIS/EIR.

The Proposed Action (Alternative 2) in this SEIS/SEIR (Proposed Project under CEQA) consists of Design Refinements to the authorized ARCF 2016 project, including the Magpie Creek Project (MCP), American River Erosion Contracts 3B, 4A, and 4B, Sacramento River Erosion Contract 3, ARMS, SRMS, and Piezometer Network. Project alternatives (Alternative 3, 4, 5 and 6) include alternative designs and/or approaches for implementing the American River Erosion Contract 4A bike trail routes, alternatives that would retain a portion of the existing ARMS man-made pond (CEQA-only) and SRMS alternatives including mitigation credits and alternative site locations.

The American and Sacramento River erosion contracts and MCP are described and evaluated at a project-level of detail. The ARMS, SRMS, American River Erosion Contract 4B, and Piezometer Network are described and analyzed at a programmatic level of detail as the selected sites for these actions are still early in the planning phase and substantial information is not currently available to accurately describe impacts at a project level of analysis.

4.2-a Result in 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, USFWS, or NMFS and

4.2-b Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors; impede the use of native wildlife nursery sites; substantially reduce the habitat of a fish population; or cause a fish population to drop below self-sustaining levels.

CEQA Impact Conclusion: Less than Significant with Mitigation Incorporated

NEPA Impact Conclusion: Short-term to Medium-term and Moderate Effects and Long-term and Minor Effects that are Less than Significant with Mitigation Incorporated.

Table 4.2-3. Summary of Fisheries Habitat Impacts from 2016 GRR and Proposed Action Design Refinements.

| Type of Habitat | Proposed Action Impact | Design Refinements Impact* |
|------------------------------------|------------------------|----------------------------|
| Magpie Creek | None | None |
| American River 3B and 4B | 24.0 acres | 7.86 acres |
| American River 4A | None | None |
| Sac River 3 Delta Smelt | 12.4 acres | 0.40 acre |
| Sac River 3 Salmonids and Sturgeon | 28.7 acres | 1.00 acre |

| Type of Habitat | Proposed Action Impact | Design Refinements Impact* |
|-----------------|------------------------|--------------------------------|
| ARMS | Not described in 2016 | To be determined during design |
| SRMS | Not described in 2016 | To be determined during design |

*Design Refinement Impacts reflect the increase of the effects since the original 2016 analysis

Magpie Creek Project, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): No Impact.

Construction of the MCP and the piezometer network would not have an adverse effect on native fish, including candidate, sensitive, or special-status species due to a lack of species presence, lack of habitat, a heavily disturbed surrounding, and degraded channel. Magpie Creek is not within designated critical habitat or EFH. Previous consultation with regulatory agencies has indicated that no special-status or non-listed native species are habitually present within Magpie Creek (ICF 2018); any potential for these species to occur would only be under high-flow conditions and any native species are not expected to reside long-term in the Proposed Action area at the Magpie Creek location.

Habitat at the MCP is of very low quality and is highly unlikely to support native fish species (ICF 2018), especially salmonids that are dependent on colder and reliable water flow during their migratory periods. The channel itself largely consists of concrete banks and substrate with limited areas containing natural bed. Magpie Creek is primarily driven by stormwater runoff and only contains a fully connected and wetted channel during and after storm events. Any fish established or present at the MCP are likely nonnative, as the degraded conditions would not support native fish survival and reproduction and would therefore not require any protective measures for conservation. SRA habitat was not quantified in Magpie Creek in the ARCF GRR Final EIS/EIR but was assumed to be low both in quantity and quality due to the general very poor habitat value of the Creek (USACE 2016). Therefore, no impact would occur to native, candidate, sensitive, or special-status species or their habitats from the construction of the MCP and there is anticipated to be no impact on native fish movement.

Piezometer installation would occur above the OHWM and would include very limited ground disturbance and would have no impact on aquatic environments and species.

Construction of these components of the Proposed Action would not substantially reduce native fish habitat or populations; there would be no impact.

NEPA Impact Conclusion (Design Refinements): No Impact.

The CEQA impact discussion above also applies to NEPA. The design refinements are anticipated to have no new impact on native fish populations and movement, including special-status species, because existing habitat quality is very poor and unlikely to support native fish populations, and no special-status species occur in the creek.

American River Erosion Contract 3B North and South, and American River Erosion Contract 4B

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated.

American River Erosion Contract 3B North and South includes a different method of erosion protection than was described in the ARCF GRR Final EIS/EIR but would be implemented at similar locations. In addition, the American River Erosion Contract 4B would include velocity work (fluvial erosion protection activities) and tree scour work (which includes activities preventing scouring around trees). However, velocity and tree scour work would occur above the OHWM and would therefore have no impact on native fish species. American River Erosion Contract 3B North and South would disrupt native fish during the construction of erosion protection improvements, including rock placement and IWM installation. Construction activities would temporarily disturb native, resident, and migratory fish by increasing noise, water turbulence, and turbidity, causing them to move away from the area of rock placement and put them at a slightly increased risk of predation.

Construction of bank protection would disturb soils and lead to increased turbidity in the nearshore aquatic habitat, which may cause benthic invertebrates currently inhabiting rock surfaces/crevices that are prey for native fish, to be buried or otherwise displaced. However, rock placement (described below), would functionally replace this habitat and the impact to benthic invertebrate prey species would be temporary and less than significant, especially given the high rate of invertebrate reproduction. The increase in suspended solids and turbidity would generally be short term. Sedimentation and turbidity increases may affect fish physiology, behavior, and habitat. Fish could also be affected by accidental spill of hazardous material during construction. These impacts could result in a substantial adverse effect on fish movement and health.

Placement of rock riprap below the OHWM may adversely affect fish that occur in the river, including winter-run Chinook Salmon, CV Steelhead, and CV spring- and fall-run Chinook Salmon due to: (1) incidental take during construction; (2) fragmentation of existing natural bank habitats due to the placement of revetment and IWM; and (3) the potential loss of long-term fluvial functioning necessary for the development and renewal of SRA habitat along the bank. Impacts to SRA and other salmonid habitat from construction of the American River Erosion Contract 3B North and South are quantified in Appendix B Table 4.2-3.

Table 4.2-4. American River Erosion Contract 3B North and South Fisheries Habitat Impacts.

| Type of Habitat | Proposed Action Impact | Design Refinements Impact |
|-------------------------|------------------------|---------------------------|
| Shaded Riverine Aquatic | 24.0 acres | 7.86 acres |

A temporary loss of SRA habitat and disturbance of instream habitat would occur and could result in a significant temporary impact, but over the long term, the erosion protection sites would support higher quality SRA habitat than under existing conditions, resulting in a beneficial long-term effect.

Because the project site is designed to recover in the long term and provide improved habitat for fish species, the project would not conflict with the river's outstandingly remarkable anadromous fishery values under the National Wild and Scenic Rivers Act and would not be in conflict with the American River Parkway Plan. Work windows and construction BMPs determined in the

NMFS and USFWS BOs would be imposed to reduce disturbance during construction, and compensatory mitigation would be implemented to replace lost habitat value. Short-term impacts in particular could still result in potentially significant.

The following mitigation measures have been identified to address impacts.

Mitigation Measure FISH-1: Use the Fish Habitat Assessment and Simulation (FHA) Model to Ground Truth Effects and Mitigation.

Project effects for fish and their associated mitigation will be calculated using the methods outlined in the 2021 NMFS BO, or updated to be consistent with any new NMFS BO should the 2021 version be reinitiated. The FHA model (NMFS 2024) was developed in coordination with NMFS. FHA is a publicly available model for estimating effects on levee protection projects and determining habitat mitigation measures for salmonid, sturgeon, and other fish species in the Sacramento River Basin. The FHA model may be utilized to ground truth the effects of levee protection and any habitat mitigation measures for the ARCF 2016 Project. Data output from this model will be used to improve analysis, design, and mitigation on future bank protection sites.

Timing: Model approved March 2024

Responsibility: Project Partners

Mitigation Measure FISH-2: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat.

Project Partners will implement the following avoidance, minimization, and compensation measures:

1. For identified designated critical habitat of listed fish species, where feasible, all efforts will be made to compensate for impacts where they have occurred, or at mitigation sites nearby in the Sacramento or American River Basins. Effects on designated critical habitat, SRA habitat, and instream components combined, and the compensation value of replacement habitat will be informed by the methods outlined in NMFS and USFWS BOs.
2. USACE will compensate for habitat losses either by constructing off-site mitigation sites, purchase of credits at a NMFS-approved conservation bank, or by implementing a combination of the two, in coordination with NMFS and USFWS. USACE will compensate for lost habitat using the mitigation ratios identified in the NMFS and USFWS BOs. On-site created SRA habitat acreage will also be counted toward offsetting lost SRA habitat.
3. As described in the Habitat Mitigation, Monitoring, and Adaptive Management Plan (Appendix I of the ARCF GRR Final EIS/EIR), compensation sites will be monitored, and vegetation will be replaced as necessary based on performance standards described in the plan.

Timing: Before, during, and after construction

Responsibility: Project Partners

Mitigation Measure FISH-3: Implement Measures to Avoid and Minimize Effects on Listed Fish Species.

To avoid and minimize effects on listed fish species, the following measures will be implemented by the Project Partners:

1. In-water construction activities (all activities below the OHWM including placement of rock revetment) will be limited to the work window of July 1 through October 31. The in-water work window (as it applies to the Sacramento River, American River, and Magpie Creek only) could be extended to November 15 with NMFS approval. In addition, NMFS approved an earlier start date of June 1 for earlier contracts that are already under construction, and NMFS would possibly approve this earlier start date for American River Erosion Contract 3B North and South on a case-by-case basis.
2. Erosion control measures, or BMPs, will be implemented, including a SWPPP and Water Pollution Control Plan, to minimize the entry of soil or sediment into the American and Sacramento Rivers. BMPs will be installed, monitored for effectiveness, and maintained throughout construction operations to minimize effects on Federally listed fish and their designated critical habitat. Maintenance will include daily inspections of all heavy equipment for leaks.
3. USACE will stockpile construction materials, such as portable equipment, vehicles, and supplies, at designated construction staging areas and barges.
4. USACE will stockpile all liquid chemicals and supplies at a designated impermeable membrane fuel and refueling station with a 110% containment system (container with 10% extra capacity).
5. USACE will limit site access to the smallest area possible to minimize disturbance.
6. USACE will minimize ground and vegetation disturbance during project construction, and clearly mark project limits, including the boundaries of designated equipment staging areas; ingress and egress corridors; stockpile areas for spoils disposal, soil, and materials; and equipment exclusion zones.
7. USACE and construction contractors will observe a 15-mile-per-hour speed limit or less (depending on constraints placed on the project for other natural resources analyzed as part of the Proposed Action) within construction areas for all project-related vehicles, except on County roads and on State and Federal highways.
8. USACE will secure or remove litter and debris from the project daily. Such materials or waste will be deposited at an appropriate disposal or storage site.
9. USACE will immediately (within 24 hours) clean up and report any spills of hazardous materials to the USFWS, NMFS, and California Department of Fish and

Wildlife (CDFW). Any such spills, and the success of the efforts to clean them up, shall also be reported in post-construction compliance reports.

10. USACE will screen any water pump intakes prior to project activities, such as irrigation or dewatering, to maintain an approach velocity of 0.2 feet per second or less when working in areas that may support Federally listed fish species.
11. USACE will participate in an existing Interagency Working Group to coordinate stakeholder input into future flood risk reduction actions associated with the ARCF 2016 Project.
12. USACE will coordinate with NMFS during pre-construction engineering and design as future flood risk reduction actions are designed to ensure that conservation measures are incorporated to the extent practicable and feasible, and projects are designed to maximize ecological benefits.
13. USACE will implement a Habitat Mitigation, Monitoring, and Adaptive Management Plan (HMMAMP) with an overall goal of ensuring that the conservation measures achieve a high level of ecological function and value. The HMMAMP will include:
 - a. Specific goals, objectives, and performance standards and a clear strategy for maintaining all project conservation elements for the life of the project.
 - b. Measures to be monitored by USACE for 10 years after construction. USACE will update its O&M manual to ensure that the HMMAMP is adopted by the local sponsor to ensure that the goals and objectives of the conservation measures are met for the life of the project.
 - c. Specific goals and objectives and a clear strategy for achieving full compensation for all project-related effects on listed fish species.
 - d. The HMMAMP shall include a compensatory mitigation accounting plan to ensure the tracking of compensatory measures associated with future ARCF GRR projects as described in the Proposed Action.
 - e. USACE will include, as part of the HMMAMP, a Riparian Corridor Improvement Plan as part of the project, with the overall goal of maximizing the ecological function and value of the existing levee system in the Sacramento metropolitan area.
14. USACE will continue to coordinate with NMFS during all phases of construction, implementation, and monitoring by hosting annual meetings and issuing annual reports throughout the construction period as described in the HMMAMP.
15. USACE will seek to avoid and minimize adverse construction effects on listed species and their critical habitat to the extent feasible and will implement on-site and off-site compensation actions as necessary.
16. For identified designated critical habitat, where feasible, all efforts will be made to compensate for effects where they have occurred or in close proximity. USACE will

- develop and implement a compensatory mitigation accounting plan and associated monitoring and adaptive management plans for on-site mitigation efforts to ensure the tracking of compensatory measures associated with implementation of the Proposed Action. Monitoring for the establishment of riparian tree and shrub species within shaded riparian aquatic habitat is expected to last approximately 8/10 years, not to exceed 10 years. Establishment success will be based on criteria determined on a site-by-site basis with NMFS. Once the monitoring period is complete, all vegetation maintenance and monitoring will transfer and be the responsibility of the non-Federal sponsor and local maintaining agency. USACE will continue to coordinate with NMFS during all phases of construction, implementation, and monitoring by hosting meetings and issuing annual reports throughout the construction period.
17. USACE will minimize the removal of existing riparian vegetation and IWM to the maximum extent practicable. Where appropriate, removed IWM will be anchored back into place, or if not feasible, new IWM will be anchored in place.
 18. USACE will consider varying the elevation of planting benches and IWM to accommodate a wide variety of water years and ensure there is ample shoreline habitat in different flow scenarios.
 19. USACE will minimize the removal of existing vegetation during project-related activities. If needed, removed or disturbed vegetation will be replaced with native riparian vegetation. USACE will also ensure that the planting of native vegetation will occur as described in the HMMAMP. All plantings must be provided with the appropriate amount of water to ensure successful establishment.
 20. USACE will provide a copy of the BOs, or similar documentation, to the prime contractor, making the prime contractor responsible for implementing all requirements and obligations included in the documents and for educating and informing all other contractors involved in the project as to the requirements of the BOs. A notification that contractors have been supplied with this information will be provided to NMFS. A NMFS-approved Worker Environmental Awareness Training Program for construction personnel will be conducted by the NMFS-approved biologist for all construction workers before initiating construction activities. The program will provide workers with information on their responsibilities with regard to Federally listed fish, their critical habitat, an overview of the life-history of all the species, information on take prohibitions, protections afforded these animals under ESA, and an explanation of the relevant terms and conditions of the issued BO. Written documentation of the training will be submitted to NMFS within 30 days of the completion of training.
 21. USACE will designate a NMFS-approved biologist as the point-of-contact for any contractor who might incidentally take a living, or find a dead, injured, or entrapped threatened or endangered species. This representative will be identified to the employees and contractors during all employee education programs. If lethal take is to occur on any ESA-listed species, USACE and NMFS will be contacted immediately.

22. USACE will avoid adverse effects from nighttime construction activities. USACE will use the minimal amount of lighting necessary to safely and effectively illuminate the work areas. USACE will shield and focus lights on work areas and away from the water surface (e.g., Sacramento River), to the maximum extent practicable.
23. USACE will monitor turbidity during in-water work activities to ensure levels stay below the allowable thresholds (turbidity measures 1,000 feet downstream of the extent of the site is not to exceed double the upstream of site turbidity measurement). Work will stop if the threshold is exceeded, until turbidity decreases below the threshold and/or activities creating turbidity are altered to reduce turbidity to allowable thresholds.
24. USACE will continue to conduct a tagging and monitoring program for previously tagged Green Sturgeon at ARCF 2016 Project sites pre-construction, during construction, and post-construction on the Sacramento River. USACE will conduct telemetry monitoring of Green Sturgeon for 3 years post-construction within the ARCF action area. Monitoring results will be reported annually. This is in coordination with the Green Sturgeon Habitat Mitigation Monitoring Plan. USACE will also conduct telemetry monitoring upstream and downstream of the American River confluence. Monitoring would not be required above the confluence in the American River, as previous and on-going monitoring studies and literature citations have shown no Green Sturgeon documented migrating up the American River. USACE will continue to work in close collaboration with other State and Federal research agencies and academia institutions. This collaboration will assist in the further findings of impacts associated with USACE projects and impacts to other listed species as they are being monitored by other research partners.
25. USACE will identify all habitats containing, or with a substantial possibility of containing, listed terrestrial, wetland, aquatic, and/or plant species in the potentially affected project areas. The project will minimize effects by modifying engineering design to avoid potential effects.
26. USACE will install IWM along all projects associated with the ARCF GRR at 40-80 percent shoreline coverage at all seasonal water surface elevations in coordination with the Interagency Working Group or the Bank Protection Working Group, where site engineering allows. The purpose is to maximize the refugia and rearing habitats for juvenile fish.
27. USACE will develop a Vegetation Design Deviation for each site in consultation with NMFS to allow for the protection of existing vegetation in place and the planting of new low-risk vegetation on the lower slope of the levee system.
28. USACE will provide NMFS a detailed O&M plan for all aspects of the Proposed Action, to ensure all sites are properly managed and the Vegetation Design Deviation allowing vegetation to remain is followed. This plan shall be incorporated into the O&M manual for each site to ensure vegetation removal does not occur in the future.

29. USACE will provide NMFS a Long-Term Management Plan outlining the maintenance of all on-site and off-site mitigation. The plan will include performance goals, monitoring plans, replanting plans, and adaptive management plan for how mitigation will be addressed if the mitigation site fails.
30. USACE will provide NMFS with a site-specific project description prior to advertising for construction contracts at any sites. The project description will include a design at or beyond the 65 percent level, anticipated impacts, and proposed mitigation ratios for the site. NMFS must provide written approval that the site is consistent with the 2021 Biological Opinion for the ARCF GRR prior to construction, NMFS will respond within 14 days of receiving site-specific documents.
31. USACE will submit a report to NMFS of any incidental take that occurs as part of the Proposed Action. This report will be submitted no later than December 31 of each reporting cycle.

Timing: Before, during, and after construction

Responsibility: Project Partners

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Prior to the start of earthmoving activities, the Project Partners will obtain coverage under the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) stormwater permit for general construction activity (Order 2022-0057-DWQ), including preparing and submitting a project-specific SWPPP at the time the Notice of Intent to discharge is filed. The SWPPP shall identify and specify the following:

- the use of an effective combination of robust erosion and sediment control BMPs and construction techniques that shall reduce the potential for runoff and the release, mobilization, and exposure of pollutants, including legacy sources of mercury from project-related construction sites. These may include but would not be limited to temporary erosion control and soil stabilization measures, sedimentation ponds, inlet protection, perforated riser pipes, check dams, and silt fences;
- the implementation of approved local plans, non-stormwater management controls, permanent post-construction BMPs, and inspection and maintenance responsibilities;
- the pollutants that are likely to be used during construction that could be present in stormwater drainage and non-stormwater discharges, including fuels, lubricants, and other types of materials used for equipment operation;
- the means of waste disposal;

- spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills;
- personnel training requirements and procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP; and
- the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP.

Where applicable, BMPs identified in the SWPPP will be in place throughout all site work, construction/demolition activities, and will be used in all subsequent site development activities. BMPs may include, but are not limited to, such measures as those listed below:

- work window- conduct earthwork during low-flow periods;
- to the extent possible, stage construction equipment and materials on the landside of the levee in areas that have already been disturbed;
- minimize ground and vegetation disturbance during project construction by establishing designated equipment staging areas, ingress and egress corridors, spoils disposal and soil stockpile areas, and equipment exclusion zones prior to the commencement of any grading operations;
- stockpile soil on the landside of the levee reaches, and install sediment barriers (e.g., silt fences, fiber rolls, and straw bales) around the base of stockpiles to intercept runoff and sediment during storm events. If stockpiling soil on the landside of the levee is not feasible, a waterside soil stockpiling location above the OHWM will be coordinated with the appropriate agencies, such as NMFS, CVRWQCB, and USFWS (if applicable). If necessary, cover stockpiles with geotextile fabric to provide further protection against wind and water erosion;
- install sediment barriers on graded or otherwise disturbed slopes as needed to prevent sediment from leaving the project site and entering nearby surface waters;
- install plant materials to stabilize cut and fill slopes and other disturbed areas once construction is complete. Plant materials will include an erosion control native seed mixture or shrub and tree container stock. Temporary structural BMPs, such as sediment barriers, erosion control blankets, mulch, and mulch tackifier, will be installed as needed to stabilize disturbed areas until vegetation becomes established;
- conduct water quality tests to measure increases in turbidity and sedimentation caused by construction activities. Specifically, where natural turbidity is between 0 and 5 NTUs, increases shall not exceed 1 NTU; where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20%; where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs; and where natural turbidity is greater than 100 NTUs, increases shall not exceed 10%. If turbidity is found to exceed these

standards, cease construction activities until filtration or construction BMPs can be demonstrated to effectively prevent sediment discharge above standards; and

- a copy of the approved SWPPP shall be maintained and available at all times on the construction site.

Project Partners will also prepare and implement a Spill Prevention, Control, and Countermeasure Plan (SPCCP). A SPCCP is intended to prevent any discharge of oil into navigable water or adjoining shorelines. The contractor will develop and implement a SPCCP to minimize the potential for adverse effects from spills of hazardous, toxic, or petroleum substances during construction and operation activities. The SPCCP will be completed before any construction activities begin. Implementation of this measure will comply with state and Federal water quality regulations. The SPCCP will describe spill sources and spill pathways in addition to the actions that will be taken in the event of a spill (e.g., an oil spill from engine refueling will be immediately cleaned up with oil absorbents). The SPCCP will outline descriptions of containments facilities and practices such as doubled-walled tanks, containment berms, emergency shut-offs, drip pans, fueling procedures, and spill response kits. It will also describe how and when employees are trained in proper handling procedures and spill prevention and response procedures.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal

No net loss of riparian habitats will be achieved through impact avoidance, minimization, and compensatory mitigation. Impacts on sensitive natural communities that result in the removal of vegetation shall be mitigated at a minimum 2:1 ratio. Mitigation can include onsite restoration, offsite habitat creation, in-lieu fee payment, and/or purchase of mitigation credits from a resource agency approved mitigation bank. Mitigation as required in accordance with the 2015 ARCF GRR Fish and Wildlife Coordination Act Report or the Endangered Species Act consultation with USFWS and NMFS, depending on the type of habitat, may be applied to satisfy the no net loss of riparian habitat performance standard.

Timing: Before, during, and after construction

Responsibility: Project Partners

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site

Final project designs will be refined to reduce impacts on vegetation and wildlife to the extent feasible. Refinements implemented to reduce riparian habitat losses will include reducing the impact footprint, constructing bank protection rather than launchable rock trench whenever feasible, and designing and constructing planting benches. Where practicable, trees will be retained in locations where the bank protection and planting benches are constructed. Trees will be protected in place along the natural channel during

rock placement. Additional plantings will be installed on the newly constructed benches to provide habitat for fish and avian species. The planting benches will be used where feasible to minimize impacts on fish and wildlife species. Where feasible, soil-filled revetment will be used to allow plantings and erosion protection features like launchable trench to be buried to allow plantings. The on-site habitat will be created in accordance with the ARCF GRR Habitat Mitigation, Monitoring, and Adaptive Management Plan, which includes conceptual mitigation proposals, performance standards, and adaptive management tasks.

All areas to be avoided during construction activities will be fenced and/or flagged as close to construction limits as feasible. Where possible, protective fencing or flagging shall be installed 5 feet beyond the tree canopy dripline boundary of each tree or tree group, referred to as the protected tree zone. Contractors and subcontractors shall avoid heavy equipment operation, grading, and excavation in the protected tree zones, to the greatest extent practicable. Heavy equipment operation, grading, and excavation activities in the protected tree zone shall be overseen by a qualified arborist/ecologist. The contractor shall maintain the fencing or flagging to always keep it identifiable. Fencing and flagging shall be removed only after all construction activities are complete.

An annual pre-construction meeting shall be held between all contractors and subcontractors (e.g., grading, tree removal/pruning, and builders) and a qualified arborist/biologist. The meeting shall focus on instructing the contractors and subcontractors on tree protection practices and answering any questions. All equipment operators and spotters, assistants, or those directing operators from the ground, shall provide written acknowledgement of receiving tree protection training. This training shall include information on the location and marking of protected tree zones, the necessity of preventing damage, and the discussion of work practices that shall accomplish these tasks.

Contractors and subcontractors shall take care when moving construction equipment or supplies near protected trees, paying special attention to overhead vegetation. Contractors and subcontractors shall ensure that damage to the trees shall be avoided when transporting or moving construction materials and working around the tree (even outside of the fenced protected zone). Contractors and subcontractors shall flag aboveground tree parts with potential for damage (e.g., low limbs, scaffold branches, and trunks) with high-visibility flagging, such as fluorescent red or orange. If contact with the tree crown is unavoidable, conflicting branches may be pruned under supervision of a qualified arborist/ecologist. The contractor or subcontractor shall not prune protected trees until all construction is completed unless standard pruning will reduce conflict between canopy and equipment. All pruning shall be conducted under supervision of a qualified arborist, or their representative.

A qualified arborist/ecologist shall inspect the preserved protected trees adjacent to grading and construction activity prior to initiation of construction activities, during construction activities within tree protection zones, and prior to removal of tree protection zone fencing/flagging at the end of construction. A report summarizing site conditions, observations, tree health, and recommendations for minimizing tree damage

shall be submitted to the Project Partners by the qualified arborist/ecologist following each inspection.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures FISH-1, FISH-2, FISH-3, GEO-1, VEG-1 and VEG-2 which were previously adopted for the ARCF 2016 Project, would reduce impacts from significant construction, SRA, and salmonid habitat effects, as well as effects on native fish populations and movements, associated with implementation of the Proposed Action at American River Erosion Contract 3B North and South to less than significant. Existing methods outlined in the NMFS and USFWS BOs would be used to determine the extent of project effects. Work windows and construction BMPs determined in the BOs would be imposed to reduce disturbance during construction, and compensatory mitigation would be implemented to replace lost habitat value.

NEPA Impact Conclusion (Design Refinements): Short-term to Medium-Term and Moderate effects that are Less than Significant with Mitigation Incorporated.

The CEQA impact discussion above also applies to the NEPA design refinements. Appendix B Table 4.2-3 presents the acreage of change for the design refinements. The impacts of the design refinements would therefore be similar to those identified in the ARCF GRR Final EIS/EIR.

American River Erosion Contract 4A

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated.

Improvements at American River Erosion Contract 4A would be implemented above the OHWM in the American River floodplain. Although the Proposed Action would include construction of a berm and a substantial bike trail reroute, these improvements would be constructed in an area that is extensively disturbed by the SR-160 bridge, a railroad trestle, existing recreational facilities and substantial areas of informal encampments. The existing floodplain habitat is dominated by ruderal herbaceous/grassland and riparian forest/scrub, with some wetland areas. Improved areas including paved and unpaved roads and trails are also present.

Construction of this component of the Proposed Action would occur entirely above the OHWM, and the improvements included in the Proposed Action (new berm and relocated bike trail) would not change the nature or quality of critical habitat available to CV Steelhead, fall-run and spring-run Chinook Salmon, and other native fish during high-flow events. Parts of the bike trail reroute may need to be raised which would alter the topography of the area. There is active coordination with NMFS on this issue and a more detailed analysis on the extent of impacts to potential fish stranding would be included in the new Biological Opinion. If it is determined in the new Biological Opinion that there would be significant fish stranding, the Biological Opinion would outline measures that would be incorporated to reduce impacts to a less-than-significant level. At present, there is no substantial evidence that there would be any stranding of special-status fish species from American River Erosion Contract 4A. Related, indirect impacts that could impact fish habitat or water quality could be potentially significant.

The following mitigation measures have been identified to address these impacts.

Mitigation Measure FISH-1: Use the Fish Habitat Assessment and Simulation (FHAST) Model to Ground Truth Effects and Mitigation.

Please refer to Impact 4.2-a and b, Project Components: American River Erosion Contract 3B North and South, and American River Erosion Contract 4B for the full text of this mitigation measure.

Timing: Model approved March 2024

Responsibility: Project Partners

Mitigation Measure FISH-2: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat.

Please refer to Impact 4.2-a and b, Project Components: American River Erosion Contract 3B North and South, and American River Erosion Contract 4B for the full text of this mitigation measure.

Timing: Before, during, and after construction

Responsibility: Project Partners

Mitigation Measure FISH-3: Implement Measures to Avoid and Minimize Effects on Listed Fish Species.

Please refer to Impact 4.2-a and b, Project Components: American River Erosion Contract 3B North and South, and American River Erosion Contract 4B for the full text of this mitigation measure.

Timing: Before, during, and after construction

Responsibility: Project Partners

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Please refer to Impact 4.2-a and b, Project Components: American River Erosion Contract 3B North and South, and American River Erosion Contract 4B for the full text of this mitigation measure.

Timing: During construction

Responsibility: Project Partners

Implementing Mitigation Measures FISH-1, FISH-2, FISH-3, and GEO-1 would minimize these impacts to a less-than-significant level. Additional requirements in a new upcoming Biological Opinion from NMFS would further reduce impacts.

NEPA Impact Conclusion (Design Refinements): Short-term and Long-term, Moderate Effects that are Less than Significant with Mitigation.

The ARCF GRR Final EIS/EIR did not include berms or new bike trail alignments in this area. Therefore, the impact under NEPA would be similar to the CEQA impact discussion above. Implementation of measures in the new upcoming Biological Opinion would reduce possible impacts from raised topography to a less-than-significant level.

Sacramento River Erosion Contract 3

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated.

The Sacramento River Erosion Contract 3 includes a different method of erosion protection but implemented at similar locations to the ARCF GRR Final EIS/EIR. The Sacramento River Erosion Contract 3 would disrupt native fish during the construction of erosion protection improvements, including rock placement and IWM installation. Construction activities would temporarily increase local noise and turbidity, causing fish to move away from the area that might be providing habitat and protective cover. As some species and life stages use near-shore habitat for protective cover, the noise and turbidity increases may cause individuals to move away from shore and into the river channel, increasing their predation risk. Construction of bank protection would disturb soils and lead to increased turbidity in the nearshore aquatic habitat, which may cause benthic invertebrates currently inhabiting rock surfaces/crevices and are prey for native fish, to be buried or otherwise displaced. However, rock placement (described below), would functionally replace this habitat and the impact to benthic invertebrate prey species would be temporary and less than significant, especially given the high rate of invertebrate reproduction. The increase in suspended solids and turbidity would generally be short term. Sedimentation and turbidity increases may affect fish physiology, behavior, and habitat. Fish could also be affected by accidental spill of hazardous material during construction. These impacts could result in a substantial adverse effect on fish movement and health; consequently, these impacts would be significant.

Sacramento River Erosion Contract 3 may adversely affect winter-run Chinook Salmon, CV Steelhead, CV spring- and fall-run Chinook Salmon, southern distinct population segment (sDPS) of North American Green Sturgeon, and Delta Smelt due to: (1) incidental take during construction; (2) fragmentation of existing natural bank habitats due to the placement of revetment and IWM; and (3) the potential loss of long-term fluvial functioning necessary for the development and renewal of SRA habitat along the bank. These impacts would be significant.

Impacts to Delta Smelt were calculated according to the USFWS BO (2021). Effects to Delta Smelt are presented in Table 4.2-4. The impact to Delta Smelt habitat would result from the placement of material below the mean higher high tide or OHWM, whichever is at a higher

elevation. The placement of rock into nearshore habitats has the potential to convert vegetated shorelines suitable for spawning and rearing to rock. The impact on Delta Smelt would be significant.

Impacts to salmonids and Green Sturgeon habitat are presented in Table 4.2-3. The impact to salmonids and Green Sturgeon would be due to the placement of rock below the mean higher high tide or OHWM, whichever is at a higher elevation. Nearshore areas in the Delta are typically used by these species for juvenile rearing, foraging, and predator evasion. The placement of rock into nearshore habitats has the potential to permanently degrade the quality of this habitat. This impact would be significant.

Table 4.2-5. Sacramento River Erosion Contract 3 Fisheries Habitat Impacts.

| Fish Species | Proposed Action Impact | Design Refinements Impact |
|------------------------------|-------------------------------|----------------------------------|
| Delta and Longfin Smelt | 12.4 acres | 0.40 acre |
| Salmonids and Green Sturgeon | 28.7 acres | 1.00 acre |

The following mitigation measures have been identified to address these impacts.

Mitigation Measure FISH-1: Use the Fish Habitat Assessment and Simulation (FHASt) Model to Ground Truth Effects and Mitigation.

Please refer to Impact 4.2-a and b, Project Components: American River Erosion Contract 3B North and South, and American River Erosion Contract 4B for the full text of this mitigation measure.

Timing: Model approved March 2024

Responsibility: Project Partners

Mitigation Measure FISH-2: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat.

Please refer to Impact 4.2-a and b, Project Components: American River Erosion Contract 3B North and South, and American River Erosion Contract 4B for the full text of this mitigation measure.

Timing: Before, during, and after construction

Responsibility: Project Partners

Mitigation Measure FISH-3: Implement Measures to Avoid and Minimize Effects on Listed Fish Species.

Please refer to Impact 4.2-a and b, Project Components: American River Erosion Contract 3B North and South, and American River Erosion Contract 4B for the full text of this mitigation measure.

Timing: Before, during, and after construction

Responsibility: Project Partners

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Please refer to Impact 4.2-a and b, Project Components: American River Erosion Contract 3B North and South, and American River Erosion Contract 4B for the full text of this mitigation measure.

Timing: During construction

Responsibility: Project Partners

Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters.

In compliance with the CWA, the Project Partners would compensate for fill of State and Federally protected waters to ensure no net loss of functions and values of jurisdictional waters at a minimum 1:1 ratio. Mitigation for permanent impact on aquatic resources shall be provided at a minimum 1:1 ratio. Mitigation can include onsite restoration, in-lieu fee payment, or purchase of mitigation credits at a resource agency approved mitigation bank. Mitigation as required in regulatory permits issued through USFWS, NMFS, and/or the Regional Water Quality Control Board may be applied to meet the performance standard of a minimum 1:1 ratio to ensure no net loss of functions and values of jurisdiction waters.

Water quality certification pursuant to Section 401 of the CWA would be obtained from the Central Valley RWQCB before starting project activities subject to Section 401. Any measures determined necessary during the permitting processes would be implemented, such that there is no net loss of functions and values of jurisdictional waters.

If compensation is provided through permittee-responsible mitigation with additional NEPA and/or CEQA documentation, a mitigation plan would be developed to detail appropriate compensation measures determined through consultation with USACE and Central Valley RWQCB. These measures would include methods for implementation, success criteria, monitoring and reporting protocols, and contingency measures to be implemented if the initial mitigation fails.

Timing: Before and after construction

Responsibility: Project Partners

Mitigation Measure WQ-1: Obtain Appropriate Discharge and Dewatering Permit and Implement Provisions for Dewatering

Please refer to Impact 4.2-a and b, Project Components: American River Erosion Contract 3B North and South, and American River Erosion Contract 4B for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures FISH-1, FISH-2, FISH-3, and GEO-1, the significant construction-related and long-term impacts on fish habitat, including that of special-status species, associated with the implementation of the Proposed Action for the Sacramento River Erosion improvements, would be reduced to less than significant. Existing methods outlined in the NMFS and USFWS BOs would be used to further determine the extent of project effects. Work windows and construction BMPs determined in the BOs would be imposed to further reduce disturbance during construction, and compensatory mitigation would be implemented to replace any lost habitat value.

NEPA Impact Conclusion (Design Refinements): Short-term and Moderate and Long-Term and Minor Effects that are Less than Significant with Mitigation Incorporated.

The CEQA impact discussion above also applies to the NEPA design refinements. The impacts of the design refinements are generally related to the footprint of improvements and would therefore be similar to those identified in the ARCF GRR Final EIS/EIR. Appendix B Table 4.2-4 presents the acreage of change for the design refinements.

American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated.

The ARMS includes creation of habitat as compensatory mitigation for impacts of the ARCF 2016 Project along the American River. Habitat would include Valley Elderberry Longhorn Beetle (VELB), riparian habitat suitable for Western Yellow-billed Cuckoo, and aquatic and inundated riparian habitat suitable for salmonids that may include CV Steelhead and fall-run Chinook Salmon.

Construction of the ARMS would include in-water work below the OHWM in the American River as well as the existing pond located at the ARMS. The pond is currently isolated from the main American River channel and is not accessible to special-status species. Construction would be staged to accomplish as much work as possible prior to breaching the berm on the American River to ensure minimal risk to special-status fish species. Any pre-breach/connection work occurring on the landside portion of the embankment of the pond would have no impact on special-status or other native fish species present within the American River. However, any actions below the OHWM on the American River could potentially cause turbidity and effects on

fish similar to those described above for American River Erosion Contracts. Although alteration of the riverbank and habitat creation could result in loss of SRA habitat and salmonid habitat, the restorative components of this portion of the Proposed Action would result in a net gain of SRA and salmonid habitat. The total acres of mitigation created here would be refined in further analyses. The current design has an estimated 66 acres of new salmonid habitat below the OHWM.

The ARMS would change the conditions in the American River floodplain that would include planting additional riparian vegetation and creating channels and aquatic habitat identified by NMFS and USFWS as acceptable compensatory mitigation for listed fish species. The ARMS would increase the amount and quality of fish habitat when restoration is completed and vegetation is established, thus maintaining the ARMS compliance with the American River Parkway Plan. The ARMS would connect an existing inactive mining pit to the American River during all flow conditions. The ARMS would therefore reduce the future potential for fish stranding. Fisheries impacts for the ARMS during construction would be potentially significant dependent on conditions and presence of fish near the breach location while berm breaching is occurring. Habitat impacts to salmonids habitat are presented in Table 4.2-6.

Table 4.2-6. ARMS Fisheries Habitat Impacts.

| Species | Proposed Action Impact | Design Refinements Impact |
|-----------|------------------------|---------------------------|
| Salmonids | Not described in 2016 | Less than 1 acre |

The following mitigation measures have been identified to address this impact.

Mitigation Measure FISH-3: Implement Measures to Avoid and Minimize Effects on Listed Fish Species.

Please refer to Impact 4.2-a and b, Project Components: American River Erosion Contract 3B North and South, and American River Erosion Contract 4B for the full text of this mitigation measure.

Timing: Before, during, and after construction

Responsibility: Project Partners

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Please refer to Impact 4.2-a and b, Project Components: American River Erosion Contract 3B North and South, and American River Erosion Contract 4B for the full text of this mitigation measure.

Timing: During construction

Responsibility: Project Partners

Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters.

Please refer to Impact 4.2-a and b, Project Components: American River Erosion Contract 3B North and South, and American River Erosion Contract 4B for the full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Mitigation Measure WQ-1: Obtain Appropriate Discharge and Dewatering Permit and Implement Provisions for Dewatering

Please refer to Impact 4.2-a and b, Project Components: American River Erosion Contract 3B North and South, and American River Erosion Contract 4B for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures FISH-3, GEO-1, WATERS-1, and WQ-1 (Appendix B 3.4 Water Quality) would reduce significant impacts to less than significant. Existing methods outlined in the NMFS and USFWS BOs also would be used to determine the extent of project effects. Work windows and construction BMPs determined in the BOs would be imposed to further reduce disturbance during construction, and compensatory mitigation would be implemented to replace lost habitat value.

NEPA Impact Conclusion (Design Refinements): Short-term and Moderate and Long-term and Minor Effects that are Less than Significant with Mitigation Incorporated.

Construction of compensatory mitigation at the ARMS is not included in the ARCF GRR Final EIS/EIR. Therefore, the CEQA impact discussion above also applies to the NEPA design refinements for this project component. This impact would be less than significant.

Sacramento River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

The SRMS includes creation of habitat as compensatory mitigation for impacts of the ARCF 2016 Project along the Sacramento River. Habitat improvements would be similar to those described above for the ARMS. Any pre-breach/connection work occurring on the landside portion of the embankment would have no impact on special-status or other native fish species present in the adjacent waters. Fisheries impacts for the SRMS during construction would be potentially significant dependent on conditions and presence of fish near the breach location while berm breaching is occurring. Construction of these improvements would include in-water

work below the OWHM in the Sacramento River, Steamboat Slough, and Cache Slough, potentially causing turbidity and effects on fish similar to those described above for Sacramento River Erosion Contract 3. Turbidity may cause benthic invertebrates currently inhabiting rock surfaces/crevices and that provide prey resources to native fish, to be buried or otherwise displaced. Habitat impacts to Delta Smelt, salmonids, and Green Sturgeon habitat are presented in Table 4.2-7.

Table 4.2-7. SRMS Fisheries Habitat Impacts.

| Species | Proposed Action Impact | Design Refinements Impact |
|------------------------------|------------------------|---------------------------|
| Delta Smelt | Not described in 2016 | less than 2 acres |
| Salmonids and Green Sturgeon | Not described in 2016 | less than 2 acres |

The SRMS would include berm breaches and construction in areas that are currently not floodplain or fisheries habitat and would increase the amount and quality of fish habitat when construction is completed, and vegetation is established. This portion of the SRMS would not cause any negative impacts to prey availability and would instead improve accessible foraging habitat for native fish. Fisheries impacts for this project component during construction would be potentially significant. The following mitigation measures have been identified to address this impact.

Mitigation Measure FISH-3: Implement Measures to Avoid and Minimize Effects on Listed Fish Species.

Please refer to Impact 4.2-a and b, Project Components: American River Erosion Contract 3B North and South, and American River Erosion Contract 4B for the full text of this mitigation measure.

Timing: Before, during, and after construction.

Responsibility: Project Partners

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Please refer to Impact 4.2-a and b, Project Components: American River Erosion Contract 3B North and South, and American River Erosion Contract 4B for the full text of this mitigation measure.

Timing: During construction

Responsibility: Project Partners

Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters, Including Wetlands.

Please refer to Impact 4.2-a and b, Project Components: American River Erosion Contract 3B North and South, and American River Erosion Contract 4B for the full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Mitigation Measure WQ-1: Obtain Appropriate Discharge and Dewatering Permit and Implement Provisions for Dewatering

Please refer to Impact 4.2-a and b, Project Components: American River Erosion Contract 3B North and South, and American River Erosion Contract 4B for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures FISH-3, GEO-1, WATERS-1 and WQ-1 (Appendix B 3.4 Water Quality) would reduce significant impacts to less than significant. Existing methods outlined in the NMFS and USFWS BOs would be used to further determine the extent of project effects. Work windows and construction BMPs determined in the BOs would be imposed to further reduce disturbance during construction, and compensatory mitigation would be implemented to replace lost habitat value.

NEPA Impact Conclusion (Design Refinements): Short-term and Minor Effects that are Less than Significant with Mitigation Incorporated

Construction of compensatory mitigation at the SRMS is not included in the ARCF GRR Final EIS/EIR. Therefore, the CEQA impacts discussion above also applies to the NEPA design refinements for this project component. This impact would be less than significant.

Alternatives Comparison

Alternatives 3a through 3d

Alternatives 3a through 3d would change the location and type of improvements for the American River Erosion Contract 4A project component. All other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B Sacramento River Erosion Contract 3, MCP, SRMS, and ARMS) would be unchanged. Alternative 3a and 3b would alter project elements that are located above the OHWM of the American River and would not directly alter fish habitat. The permanent bike trail reroute for Alternative 3d and temporary bike trail reroute for Alternative 3c would include 0.2 acres of work below the OHWM. There would only be a small amount of area on the outskirts of the bike trail that would be below the OHWM. This impact would be less than significant.

Implementation of Mitigation Measures FISH-1, FISH-2, FISH-3, and GEO-1 would further reduce these impacts on native fish populations and movement, including special-status species.

Similar to the Proposed Action Alternatives 3b and 3d would require altering the topography in the floodplain for the bike trail. The change in topography could increase the risk of fish stranding in the area and a more detailed analysis would be incorporated in the new NMFS BO. The NMFS BO would list measures that must be implemented if it is determined that there is a significant impact to fish stranding. Implementation of any measures for fish stranding associated with LAR C4A that are put in a new NMFS BO would reduce impacts associated with fish stranding to less-than-significant levels. Alternatives 3a and 3c would not require raised bike trail reroutes, so unlike the Proposed Action, there is no risk of fish stranding. Alternative 3a effects to aquatic resources would be less than the Proposed Action. Alternative 3b effects to aquatic resources and fisheries would be similar to the Proposed Action, while Alternatives 3c and 3d adverse effects would be greater than the Proposed Action.

Table 4.2-8. Alternative 3a Effects on Aquatic Resources and Fisheries

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|-----------------|------------------------------------|---|--------------------|------------------------------|----------------------------|
| 4.2-a and 4.2-b | American River Erosion Contract 4A | Since work for Alternative 3a is on the landside of the levee, there would be no risk to fish habitat or of fish stranding. | N/A | No Impact | No Impact |

Table 4.2-9. Alternative 3b, 3c, 3d Effects on Aquatic Resources and Fisheries

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|-----------------|------------------------------------|---|--|---------------------------------------|--|
| 4.2-a and 4.2-b | American River Erosion Contract 4A | Alternative 3b. Impacts would be the same as the Proposed Action. | Measures in the New NMFS Biological Opinion | Less than Significant with Mitigation | Short-term and Long-term Moderate Effects that are Less than Significant with Mitigation |
| 4.2-a and 4.2-b | American River Erosion Contract 4A | Unlike the Proposed Action, Alternative 3c may require a temporary detour that would impact 0.2 acres below the OHWM. The temporary detour would not require raising the bike trail, so there would not be a risk for fish stranding. | FISH-1, FISH-2, FISH-3, GEO-1, | Less than Significant with Mitigation | Short-term and Moderate Effects that are Less than Significant with Mitigation |
| 4.2-a and 4.2-b | American River Erosion Contract 4A | Unlike the Proposed Action, Alternative 3c would impact 0.2 acres below the OHWM in order to build the bike trail reroute. The bike trail could need to be raised, which would increase the risk of fish stranding in the area. . | FISH-1, FISH-2, FISH-3, GEO-1, Measures in the New NMFS Biological Opinion | Less than Significant with Mitigation | Short-term and Long-term Moderate Effects that are Less than Significant |

Alternatives 4a and 4b (CEQA Only)

Alternatives 4a and 4b include alternative designs for improvements to the ARMS. Both designs would include creation of floodplain habitat that may be utilized by number aquatic and semi-aquatic species, including juvenile salmonids. All other project components (MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B American River Erosion Contract 4A, Sacramento River Erosion Contract 3, and SRMS) would have the same effects. Alternative 4a would construct a berm to retain the approximate 30-acre western portion of the existing inactive mining pit as a pond on the ARMS, and Alternative 4b would retain an approximately 20-acre portion as a pond. Alternative 4a would include approximately 51 acres of floodplain habitat below elevation 24.

Under Alternative 4b, a berm would be constructed to retain the approximate 20-acre southern portion of the existing inactive mining pit as a pond on the ARMS, and floodplain habitat (generally at elevations 2 to 10 feet) would be constructed on the eastern portion of the site, including a portion of the man-made pond. Alternative 4b would include approximately 54 acres of floodplain habitat below elevation 24 as well. In addition, Alternative 4b would create approximately 47 acres of salmonid habitat, in addition to meeting mitigation needs for other terrestrial wildlife species. Figure 3.7.1-1 in Chapter 3, "Description of Project Alternatives" of the SEIS/SEIR illustrates Alternative 4a and Figure 3.7.2-1 illustrates Alternative 4b.

Unlike the ARMS, Alternatives 4a and 4b would not remove the existing stranding hazard posed by the man-made pond, and the existing risk of stranding fish in the retained portion of the pond as water recedes across the floodplain following high-water events would remain. Consequently, the presence of the pond at the completed restoration site reduces the overall habitat mitigation value of the project in regard to salmonids, as the potential stranding of fish in the pond as water recedes creates a population "sink" (recurring loss of individuals in a population due to a single cause). This impact would be potentially significant. Implementation of Mitigation Measures VEG-1, VEG-2, FISH-1, FISH-2, FISH-3, GEO-1, WATERS-1, and WQ-1 would reduce this potential impact to less than significant with mitigation incorporated.

Table 4.2-10. Alternative 4a and 4b Effects on Aquatic Resources and Fisheries

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion |
|-----------------|----------|---|---|--|
| 4.2-a and 4.2-b | ARMS | Alternative 4 (a and b) would retain a portion of a man-made pond as a pond on the ARMS. This change would not reduce the existing risk of stranding fish as water receded across the floodplain following high-water events. | VEG-1, VEG-2, FISH-1, FISH-2, FISH-3, GEO-1, WATERS-1, WQ-1 | Less than significant with mitigation incorporated |

Alternative 5a (Conservation Bank Credits)

Alternative 5a includes an alternative financial solution as opposed to constructing the SRMS. Instead, all remaining required mitigation would be purchased as credits from USFWS-Approved Conservation Banks, whose service areas cover the ARCF project impacts. There would be no direct resource impacts from the purchase of conservation bank credits. The USFWS Approved Conservation Bank would have completed an independent NEPA/CEQA analysis. All other

project components (MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B American River Erosion Contract 4A, Sacramento River Erosion Contract 3, and ARMS) would have the same effects compared to the Proposed Action. It is expected that there would be no impact.

Table 4.2-11. Alternative 5a Effects on Aquatic Resources and Fisheries

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|-----------------|----------|--|--------------------|------------------------------|----------------------------|
| 4.2-a and 4.2-b | SRMS | No impact within the Project Site. Independent NEPA/CEQA would occur for the USFWS Approved Conservation Banks | N/A | No impact | No impact |

Alternative 5b (Watermark Farms)

Under Alternative 5b, the SRMS portion would be completed at Watermark Farms, located along the Sacramento River in Yolo County, from approximately RM 50.5 to RM 51.25. The site is characterized by agricultural and ruderal herbaceous habitat types. This site is in private ownership and would need to be purchased and comprehensively surveyed for sensitive biological resources before being utilized for ARCF mitigation. There would be in-water work occurring below the OHWM on the Sacramento River (and consequent turbidity and other impacts on native fish species described for the Sacramento River Erosion Improvements) such that there would be a potentially significant impact. Any negative impacts for Alternative 5b would be reduced to less than significant with the implementation of Mitigation Measures FISH-3 and GEO-1. Similar to the SRMS, Alternative 5b would benefit aquatic resources and fisheries at Watermark Farms by restoring important shallow water and SRA habitats. This would result in overall similar effects to aquatic resources and fisheries compared to the Proposed Action.

Table 4.2-12. Alternative 5b Effects

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Significance Conclusion |
|-----------------|----------|--|---|---|--|
| 4.2-a and 4.2-b | SRMS | Results in long term increase in aquatic habitat and benefit to special-status and other native fish species through the creation of shallow water and SRA habitat similar to the Proposed Action. | VEG-1, VEG-2, FISH-1 FISH-2 FISH-3 GEO-1 WATERS-1 WQ-1 | Short-term less than significant with mitigation incorporated; long-term beneficial | Short-term and moderate effects that are less than significant with mitigation incorporated; long-term and minor effects that are less than significant. |

Alternative 5c (Sunset Pumps)

Alternative 5c combines three approaches to complete the Sacramento River Mitigation requirements 1) Purchasing Delta smelt credits from an approved conservation bank; 2); Funding a NMFS recovery plan project (Sunset Pumps) to remove a weir, allowing fish passage to benefit chinook steelhead and green sturgeon; and 3) Funding the improvements at Sunset Pumps would

increase water availability, which would then be directed to two local wildlife refuges, benefiting the Western Yellow Billed Cuckoo. The Sunset Pumps project is listed as high priority BOR, DWR, and USFWS, and is subject to separate NEPA/CEQA analysis prior to implementation. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. All activities related to 5c involve funding another project, therefore no additional impacts to aquatic resources and fisheries would result from this alternative.

Table 4.2-13. Alternative 5c Effects

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|----------------|----------|--|--------------------|------------------------------|----------------------------|
| 4.2-a and 4.2b | SRMS | No impact within the Project Site. Independent NEPA/CEQA would occur for the USFWS Approved Conservation Banks and Sunset Pumps project. | N/A | No Impact | No Impact |

4.3 Special-status Species

This section focuses on analysis of special-status plants and wildlife. Vegetation and non-special-status wildlife are addressed in Appendix B, Section 4.1, and special-status fish are addressed in Appendix B, Section 4.2. For this analysis, special-status species are defined by the following codes:

- Listed, proposed, or candidates for listing under the Federal Endangered Species Act (50 Code of Federal Regulations § 17.11 – listed; 61 FR 7591 – candidates).
- Listed or proposed for listing under the California Endangered Species Act (Fish and Game Code (FGC) §1992 Section 2050 et seq.; 14 California Code of Regulations (CCR) § 670.1 et seq.).
- Designated as Species of Special Concern by CDFW.
- Designated as Fully Protected by CDFW (FGC §§ 3511, 4700, 5050, and 5515).
- Species that meet the definition of rare or endangered under California Environmental Quality Act (CEQA) (14 CCR § 15380) including California Rare Plant Rank 1B, 2, and 4.

4.3.1 Existing Conditions/Affected Environment

Special-status species evaluated for potential to occur in the study area for the Proposed Action were identified based on review of current USFWS species lists (USFWS 2023), resource databases and other information available from NMFS (NMFS 2021) California Natural Diversity Database (CNDDDB) occurrences (CDFW 2023), and the California Native Plant Society (CNPS) online inventory (CNPS 2023). Please refer to Appendix D, “Biological Resources Mapping and Data,” of the SEIS/SEIR for the complete species lists. Additional species addressed in the environmental analysis for projects in the vicinity or in local or State conservation planning efforts were also considered (SRCSD 2014). The CNDDDB search yielded occurrences of a total of 72 special-status plants and animals within the US Geological Survey 9-quad search area (Taylor Monument, Rio Linda, Sacramento West, Sacramento East, Carmichael, Clarksburg, Florin, Isleton, Rio Vista); 64 of these species have been documented within 5 miles of the study area.

USACE has reinitiated consultation on the ARCF project under ESA Section 7. In 2021, USFWS and NMFS issued an amended BO for the ARCF project (USFWS 2021, NMFS 2021). Since the issuance of the May 12, 2021, NMFS biological opinion (BO # WCRO-2020-03082), the ARCF program has identified additional mitigation option(s) to be further studied and evaluated. A new Programmatic Biological Assessment (BA) has been drafted to address future mitigation projects that will occur within the allowable ARCF mitigation areas. USACE has reinitiated consultation with USFWS under the ESA for the MCP, ARMS, and SRMS. Appendix L contains the updated 2025 BOs from NMFS and USFWS.

This project was coordinated with USFWS under the Fish and Wildlife Coordination Act. The mitigation measures presented reflect the recommendations presented in the resulting 2015 Coordination Act Report (CAR), and has been coordinated with USFWS, NMFS, and CDFW.

Table 4.3-1 provides a comprehensive list of the special-status species considered in this analysis. Additional species included on the species lists were dismissed from consideration because they have no potential to occur in the Project Area, based on basic habitat requirements such as elevational range. Species on the list were assessed on the basis of habitat requirements and distribution relative to the location of and vegetation communities occurring in and around the Project Area, which are described in Appendix B, Section 4.1, “Vegetation and Wildlife.” Discussion of existing conditions for special-status species focuses on the erosion control and mitigation sites. The “Potential to Occur” categories are defined as follows:

None: The Project Area does not provide habitat and occurs outside of the known extant geographic and/or elevation range for the species.

Unlikely: The Project Area provides only limited and low-quality habitat for a particular species and the known range for a particular species may be outside of the Project Area.

Likely: The Project Area and/or immediate vicinity provides suitable habitat for a particular species.

Present: The species (or evidence of its presence) was observed during biological resources surveys conducted within the Project Area.

Table 4.3-1. Special-status Species with the Potential to Occur in the Project Area

| Species Type | Common Name | Scientific Name | Status (Federal/State/Other) | Habitat | Potential for Occurrence |
|--------------|-----------------------------------|--|------------------------------|---|--|
| Invertebrate | Crotch's bumble bee | <i>Bombus crotchii</i> | --/C/-- | Open grasslands and scrub habitat in California with available underground nesting habitat in fossorial animal burrows. | Likely. Annual grassland and scrub habitats are available and several commonly visited flower species may occur in the Project Area. |
| Invertebrate | Monarch butterfly | <i>Danaus plexippus</i> | C/--/-- | California overwintering population can be found in Northern California year-round, wintering on coast and breeding inland, including in the Central Valley. Occurs in a variety of habitats with suitable nectar plants. Requires milkweed for egg laying and larval feeding; overwinters in coastal wind-protected groves of large trees (USFWS 2020a). | Likely. Adults may feed on suitable nectar plants and breed in the Project Area if host plants are present. No CNDDB records within the Project Area (CDFW 2023), though this species is not well-represented in the CNDDB and monarchs have been observed throughout the greater Sacramento area (iNaturalist 2023, Western Monarch Milkweed Mapper 2023). |
| Invertebrate | Valley elderberry longhorn beetle | <i>Desmocerus californicus dimorphus</i> | T/--/-- | Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant. | Present. This species has been documented at numerous locations along the Parkway; elderberry shrubs are present within the project footprint at project sites, except MCP and Sacramento River Erosion Contract 3. |
| Invertebrate | Vernal pool fairy shrimp | <i>Branchinecta lynchi</i> | T/--/-- | Vernal pools and other suitable seasonal wetlands. | Present. Numerous seasonal wetlands present at MCP and known to occur at McClellan West Nature Area; observed at MCP during 2018 vernal pool branchiopod surveys. |
| Invertebrate | Vernal pool tadpole shrimp | <i>Lepidurus packardii</i> | E/--/-- | Vernal pools and other suitable seasonal wetlands. | Likely. Not captured during 2018 vernal pool branchiopod surveys at MCP, but seasonal wetlands that may provide suitable habitat are present and the species is known to occur at McClellan West Nature Area. |
| Amphibian | California tiger salamander | <i>Ambystoma californiense</i> | T/T/-- | Breeds in small ponds, lakes, or vernal pools in grasslands and oak woodlands; rodent burrows, rock crevices, and fallen logs in upland habitats provide cover for adults and for summer dormancy. | None. Species was not observed or captured during 2018 and 2020 vernal pool branchiopod surveys at MCP and is not known to occur within 5 miles of the project area. Potentially suitable aquatic habitat in the Project Area is surrounded by development (which would restrict movement into the Project Area) and there is no connection to other habitat or populations. |

| Species Type | Common Name | Scientific Name | Status (Federal/State/Other) | Habitat | Potential for Occurrence |
|--------------|---------------------------|----------------------------------|------------------------------|--|---|
| Reptile | Giant garter snake | <i>Thamnophis gigas</i> | T/T/-- | Sloughs, canals, low-gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter. | Unlikely. Limited suitable aquatic and upland habitat present at the SRMS, and species has been recently documented in this portion of the Sacramento-San Joaquin Delta. Other project locations lack suitable habitat and/or are outside the current distribution of the species. |
| Reptile | Northwestern pond turtle | <i>Actinemys marmorata</i> | PT/SSC/-- | Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests. | Present. Suitable habitat present at SRMS and the ARMS. Observed upstream of the LAR project area during 2018 surveys and iNaturalist includes occurrences in American River Erosion Contract 3B and 4B areas. |
| Bird | American peregrine falcon | <i>Falco peregrinus anatum</i> | --/FP/-- | Nests and roosts on protected ledges of high cliffs and artificial structures, usually adjacent to lakes, rivers, or marshes that support large prey populations. | Likely. Foraging habitat only. Documented nests in the region include the US Davis Medical Center in Sacramento and south of SRMS on the State Route 12 drawbridge in Rio Vista. |
| Bird | American white pelican | <i>Pelecanus erythrorhynchos</i> | --/SSC/-- | In California, nests almost exclusively in large lakes in the Klamath Basin region. On migration and over winter, occurs across much of the state in open wetlands and sheltered bays and lagoons. | Likely. Foraging habitat only. Commonly observed in the Sacramento area but does not nest in the region. Suitable foraging habitat present at ARMS and SRMS. |
| Bird | Bald eagle | <i>Haliaeetus leucocephalus</i> | --/E, FP/-- | In western North America, nests and roosts in trees typically within 1 mile of a lake, reservoir, stream, or the ocean. | Present. Project Area provides suitable foraging habitat and nested successfully at ARMS in 2023 and 2024. |
| Bird | Bank swallow | <i>Riparia riparia</i> | --/T/-- | Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam. | Likely. Foraging habitat only. Formerly nested on south bank of LAR across from American River Erosion Contract 4A site but has not nested at this location since it was rip-rapped in 1986. More recently active nest colonies are known from 6-8 miles upstream of American River Erosion Contract 3B. No bank nesting habitat currently present in the Project Area but may use the Project Area for foraging. |

| Species Type | Common Name | Scientific Name | Status (Federal/State/Other) | Habitat | Potential for Occurrence |
|--------------|---------------------------|--|------------------------------|--|---|
| Bird | California black rail | <i>Laterallus jamaicensis coturniculus</i> | --/T, FP/-- | Tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations. | Unlikely. Limited suitable nesting and foraging habitat at SRMS. |
| Bird | California Ridgway's rail | <i>Rallus obsoletus obsoletus</i> | E/E, FP/-- | Herbaceous wetlands in saltwater and brackish marshes traversed by tidal sloughs. | None. Region outside of species' known range and the Project Area lacks suitable habitat. |
| Bird | Golden eagle | <i>Aquila chrysaetos</i> | --/FP/-- | Nest on cliffs and escarpments or in tall trees overlooking open country. Forages in annual grasslands, chaparral, and oak woodlands with plentiful medium and large-sized mammals. | Unlikely. Foraging habitat only. May occur occasionally, but no suitable nesting habitat in the Project Area. |
| Bird | Grasshopper sparrow | <i>Ammodramus savannarum</i> | --/SSC/-- | Dry, dense grasslands with a variety of grasses and tall forbs and scattered shrubs. | Unlikely. SRMS provides marginal quality habitat. No CNDDB occurrences within 5 miles; iNaturalist occurrences in the region are primarily from foothill grasslands and the Yolo Basin. |
| Bird | Least Bell's vireo | <i>Vireo bellii pusillus</i> | E/E/-- | Summer resident in riparian habitats in Southern California. Previously known to occur throughout the Central Valley. Typically nest in willow or scrub habitat adjacent to waterways. | Unlikely. Willow riparian habitat in the Project Area provides marginally suitable habitat but the only recent known occurrence within 10 miles of the Project Area is from the Yolo Basin Wildlife Area. |
| Bird | Northern harrier | <i>Circus cyaneus</i> | --/SSC/-- | Nests and forages in grasslands, meadows, marshes, and seasonal and agricultural wetlands. | Likely. Limited suitable nesting and foraging habitat is present in the Project Area but SRMS provides higher-quality habitat. No CNDDB occurrences within 5 miles, but this species is not well-represented in the CNDDB; iNaturalist occurrences known from the American River Parkway and near SRMS. |
| Bird | Purple martin | <i>Progne subis</i> | --/SSC/-- | Nests in abandoned woodpecker holes in oaks, cottonwoods, and other deciduous trees in a variety of wooded and riparian habitats. Also nests in vertical drainage holes under elevated freeways and highway bridges. | Likely. Foraging habitat only. Known to nest in bridge and overpass structures within 1 mile of American River Erosion Contract 3B North and South and Contract 4A sites; species does not nest in trees in the region. |

| Species Type | Common Name | Scientific Name | Status (Federal/State/Other) | Habitat | Potential for Occurrence |
|--------------|-----------------------------------|--|------------------------------|--|---|
| Bird | Song sparrow (Modesto population) | <i>Melospiza melodia</i> | --/SSC/-- | Associated with freshwater marshes dominated by tules and cattails and riparian willow thickets. Also nests in riparian forests with blackberry understory and along vegetated irrigation canals and levees. | Likely. Known occurrences at the SRMS. |
| Bird | Swainson's hawk | <i>Buteo swainsoni</i> | --/T/-- | Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields. | Likely. Occurs throughout the lower Sacramento Valley with known nesting observations on the American and Sacramento Rivers in the immediate vicinity of the Project Area. |
| Bird | Tricolored blackbird | <i>Agelaius tricolor</i> | --/T/-- | Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grain fields; habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony. | Unlikely. Suitable nesting and foraging habitat at SRMS. |
| Bird | Western burrowing owl | <i>Athene cunicularia ssp. hypogaea</i> | --/SSC/-- | Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows. | Likely. Marginally suitable habitat occurs in open areas at project sites. The species is unlikely to occur at American River erosion sites, ARMS, or ARMS based on relatively poor habitat and lack of recent documented occurrences in the vicinity. MCP has higher potential to support the species, based on better habitat quality on and surrounding portions of the site and recent occurrences in the vicinity. |
| Bird | Western yellow-billed cuckoo | <i>Coccyzus americanus ssp. occidentalis</i> | T/E/-- | Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley-oak riparian habitats where scrub jays are abundant. | Unlikely. Foraging habitat only. Project Area is not within species current breeding distribution. No occurrence records within the Project Area, but a migrant individual was detected along the lower American River in 2019 and the species could very occasionally use riparian areas along the American and Sacramento Rivers as stopover habitat during migration. |
| Bird | White-tailed kite | <i>Elanus leucurus</i> | --/FP/-- | Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging. | Likely. Suitable nesting and foraging habitat present at all project sites. Species observed at the Sacramento River Erosion Contract 3 site in 2022. |

| Species Type | Common Name | Scientific Name | Status (Federal/State/Other) | Habitat | Potential for Occurrence |
|--------------|-------------------------|--------------------------------------|------------------------------|--|--|
| Bird | Yellow-breasted chat | <i>Icteria virens</i> | --/SSC/-- | Nests in dense riparian habitats dominated by willows, alders, Oregon ash, tall weeds, blackberry vines, and grapevines. | Unlikely. Marginally suitable foraging habitat present, but the Project Area is outside the species breeding range and documented occurrences of migrants in the project vicinity are uncommon. |
| Bird | Yellow-headed blackbird | <i>Xanthocephalus xanthocephalus</i> | --/SSC/-- | Nest in marshes with tall emergent vegetation, such as tules or cattails, generally in open areas and edges over relatively deep water. Breeding marshes often on edges of deep water bodies such as lakes, reservoirs, and or larger ponds. | Unlikely. Limited suitable nesting and foraging habitat present at SRMS. No CNDDDB occurrences within 5 miles and iNaturalist occurrences in the region are primarily from the Yolo Basin where large expanses of marsh habitat occur. |
| Bird | Yellow warbler | <i>Setophaga petechia</i> | --/SSC/-- | Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral; may also use oaks, conifers, and urban areas near stream courses. | Likely. Suitable foraging habitat present at all the project sites and migrants are likely common, but the Project Area is outside the current breeding range of the species. |
| Mammal | American badger | <i>Taxidea taxus</i> | --/SSC/-- | Occurs in a wide variety of open, arid habitats but is most commonly associated with grasslands, savannas, mountain meadows, and open areas of desert scrub; principal habitat requirements appear to be sufficient food (burrowing rodents), friable soils, and relatively open, uncultivated ground. | Unlikely. The potential exists for this species to use the American River Parkway. Although no signs of presence were observed, there were small fossorial mammal burrows and ground squirrel activity. There are two known occurrences within 5 miles; however, the most recent sighting was from 1991. |
| Mammal | Pallid bat | <i>Antrozous pallidus</i> | --/SSC/-- | Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts. | Likely. This species may roost in trees, buildings, and bridges in the Project Area; however, roosting is not reported by the CNDDDB within 5 miles of the Project Area or within the nine-quadrangle area that includes the Project Area. |
| Mammal | Western red bat | <i>Lasiurus blossevillei</i> | --/SSC/-- | Found primarily in riparian and wooded habitats. Occurs at least seasonally in urban areas. Day roosts in trees within the foliage. Found in fruit orchards and sycamore riparian habitats in the Central Valley. | Likely. This species may roost in mixed oak woodland and riparian forest habitats in the Project Area; however, roosting is not reported by the CNDDDB within 5 miles of the Project Area or within the nine-quadrangle area that includes the Project Area. |

| Species Type | Common Name | Scientific Name | Status (Federal/State/ Other) | Habitat | Potential for Occurrence |
|--------------|--------------------------|---|-------------------------------|--|--|
| Plant | Big scale balsamroot | <i>Balsamorhiza macrolepis</i> | –/–/ CRPR 1B.2 | Fields and rocky hillsides, below 5,100 feet; grassland, foothill woodland | Unlikely. Potential habitat present at MCP, but not found during 2023 protocol surveys. |
| Plant | Bristly sedge | <i>Carex comosa</i> | –/–/CRPR 2B.2 | Coastal prairie, lake margins of marshes and swamps, and grassland. Elevation: 0–2,050 feet. | Likely. Suitable habitat present at ARMS and SRMS. |
| Plant | Boggs Lake hedge hyssop | <i>Gratiola heterosepala</i> | –/E/CRPR 1B.2 | Clay soils in marshes and swamps along lake margins and vernal pools | Unlikely. Potential habitat present at MCP, though no observations 2023 protocol surveys. |
| Plant | Bolander's water hemlock | <i>Cicuta maculata</i> var. <i>bolanderi</i> | --/–/CRPR 2B.1 | Marshes and swamps near coast in fresh or brackish water. Elevation: 0–656 feet. | Likely. Suitable habitat present at SRMS. |
| Plant | Delta mudwort | <i>Limosella australis</i> | --/–/CRPR 2B.1 | Muddy or sandy intertidal flats and marshes, streambanks in riparian scrub; generally, at sea level. | Likely. Suitable habitat at SRMS and recorded observations on islands in the Delta along the Sacramento River below Rio Vista. |
| Plant | Delta tule pea | <i>Lathyrus jepsonii</i> var. <i>jepsonii</i> | --/–/CRPR 1B.2 | Freshwater and brackish marshes and swamps | Present. Occurs at the SRMS. Also recorded observations on islands in the Delta along the Sacramento River below Courtland. |
| Plant | Dwarf downingia | <i>Downingia pusilla</i> | –/–/ CRPR 2.2 | Mesic areas in valley and foothill grassland, seasonal wetlands, vernal pools | Unlikely. Potential habitat present at MCP, though no observations during 2023 protocol surveys. |
| Plant | Ferris' milk-vetch | <i>Astragalus tener</i> var. <i>ferrisiae</i> | –/–/CRPR 1B.1 | Seasonally wet areas in meadows and seeps, subalkaline flats in valley and foothill grassland | Unlikely. Occurs in alkaline soils, which are not present in the project site, but are adjacent to ARMS and MCP; not observed during 2023 protocol surveys at MCP. |
| Plant | Legenere | <i>Legenere limosa</i> | --/–/CRPR 1B.1 | Vernal pools; 1–880 meters | Unlikely. Observed near MCP in 1997, but not observed during 2023 protocol surveys. |
| Plant | Mason's lilaeopsis | <i>Lilaeopsis masonii</i> | --/R/CRPR 1B.1 | Riparian scrub, brackish or freshwater marshes and swamps; below 30 feet | Likely. Suitable habitat at SRMS; recorded observations on islands in the Delta along the Sacramento River near SRMS. |
| Plant | Pappose tarplant | <i>Centromadia parryi</i> ssp. <i>parryi</i> | –/–/CRPR 1B.2 | Often in alkaline soils in chaparral, coastal prairie, meadows, seeps, coastal salt marshes and swamps, and vernal mesic grassland. Elevation: 0–1,380 feet. | Likely. Suitable habitat present at SRMS. |
| Plant | Saline clover | <i>Trifolium hydrophilum</i> | –/–/CRPR 1B.2 | Salt marsh, mesic alkaline areas in valley and foothill grasslands, vernal pools, marshes and swamps | Likely. Potential habitat at SRMS. |

| Species Type | Common Name | Scientific Name | Status (Federal/State/Other) | Habitat | Potential for Occurrence |
|--------------|-------------------------|--|------------------------------|--|--|
| Plant | Sanford's arrowhead | <i>Sagittaria sanfordii</i> | --/--/CRPR 1B.2 | Freshwater marshes, sloughs, canals, and other slow-moving water habitats; below 2,132 feet | Likely. Three populations observed outside Lower American River Erosion Contract 3B during 2022 surveys; suitable habitat present at the SRMS. |
| Plant | San Joaquin spearscale | <i>Extriplex joaquinana</i> | --/--/CRPR 1B.2 | Alkaline soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland; 3-2400 feet | Unlikely. Marginal habitat present near ARMS. |
| Plant | Side-flowering skullcap | <i>Scutellaria lateriflora</i> | --/--/CRPR 2B.2 | Marshes and swamps, Meadows and seeps (mesic) | Likely. Suitable habitat present at SRMS. |
| Plant | Stinkbells | <i>Fritillaria agrestis</i> | --/--/CRPR 4.2 | Clay, sometimes serpentine soils in chaparral, cismontane woodland, pinyon-juniper woodland, valley and foothill grassland; 30-4500 feet | Unlikely. Observed near MCP in 1997, but not observed during 2023 protocol surveys. |
| Plant | Suisun Marsh aster | <i>Symphyotrichum lentum</i> | --/--/CRPR 1B.2 | Brackish and freshwater marshes and swamps; below 10 feet | Present. Recorded observations at the SRMS site. |
| Plant | Valley brodiaea | <i>Brodiaea rosea</i> | --/--/CRPR 4.2 | Silty, sandy and gravelly loam soils; valley and foothill grasslands along swales; vernal pools. 10-335 meters. Grows in grasslands on old alluvial terraces that have developed a perched water table, in vernal pool landscapes. | Unlikely. Not found in vernal pools during 2023 protocol surveys at MCP. Vernal pool landscapes and hydrology not present elsewhere. |
| Plant | Watershield | <i>Brasenia schreberi</i> | --/--/CRPR 2B.3 | Freshwater marshes; 30–2,200 meters | Likely. Suitable habitat present at SRMS. |
| Plant | Woolly rose-mallow | <i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i> | --/--/CRPR 1B.2 | Freshwater marshes, swamps, wetted riverbanks, low peat islands within sloughs, Delta, riprap on levee slopes. | Likely. Suitable habitat present at ARMS and SRMS; recorded observations near the SRMS and near Sacramento River Erosion Contract 3B. |

Note:

Status Codes: Federal/State/Other

Federal

E = listed as endangered under the Federal Endangered Species Act.

T = listed as threatened under the Federal Endangered Species Act.

PT = Proposed to be listed as threatened under the Federal Endangered Species Act.

C = candidate species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.

SC = listed as species of concern

-- = no listing.

State

E = listed as endangered under the California Endangered Species Act.

T = listed as threatened under the California Endangered Species Act.

C = Candidate for listing under the California Endangered Species Act receiving the same legal protection afforded to an endangered or threatened species.

FP = fully protected under the California Fish and Game Code.

R = state listed as rare

SSC = species of special concern in California.

-- = no listing.

Other

Special-status plants with potential to occur at one or more of the project sites. Plants are ranked according to the California Native Plant Society's California Rare Plant Rank (CRPR):

Rank 1A = Plants presumed extirpated in California and either rare or extinct elsewhere; Rank 1B = Plants rare, threatened, or endangered in California and elsewhere; Rank 2B =

Plants rare, threatened, or endangered in California, but more common elsewhere; Rank 4 = .

An extension reflecting the level of threat to each species is appended to each rarity category as follows:

.1—Seriously endangered in California

.2—Fairly endangered in California

.3—Not very endangered in California

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Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

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Western Milkweed and Monarch and Milkweed Occurrence Database. 2024. Data accessed from the Western Monarch Milkweed Mapper, a project by the Xerces Society, U.S. Fish and Wildlife Service, Idaho Department of Fish and Game, and Washington Department of Fish and Wildlife. Available online: www.monarchmilkweedmapper.org. Accessed: August 2024.

Special-status Wildlife Species

Twenty-four special-status wildlife species have been documented or were determined to have potential to occur in the Project Area. Thirteen of the species are Federally and/or State-listed as threatened or endangered, or proposed or candidates for listing; each of these is discussed further below. The remaining are California Species of Special Concern or Fully Protected under the California Fish and Game Code.

Crotch's Bumblebee

Crotch's bumble bee is a candidate for State listing as endangered. These bees require foraging, nesting, and overwintering habitats. Primary land cover types that provide the three habitat requirements are grassland, chaparral, and scrub (i.e., open habitats); oak woodland, riparian, wetlands, and agricultural areas can also provide foraging habitat, and drier sites within these habitats can provide nesting or overwintering habitat. Crotch's bumblebee lives in colonies that are annual, with all individuals except new queens dying each fall. The nesting biology is poorly known, though known nests have been found in abandoned rodent burrows. Bumble bee queens overwinter in cavities below the ground or in loose soil and leaf litter and occasionally in other refugia such as wood piles or rock walls and emerge in early spring (The Xerces Society 2018).

Monarch Butterfly

Monarch butterfly is a candidate for Federal listing as threatened or endangered. Candidate species receive no statutory protection under the ESA. However, USFWS encourages cooperative conservation efforts for these species because they are, by definition, species that may warrant future protection under the ESA. This species is dependent on milkweed host plants for development of eggs, larvae, and pupae. Monarch butterflies in this region are known to overwinter in coastal woodlands and breed in the Central Valley. There are no CNDDDB occurrences for this species in Sacramento County, though there are other observations of individuals in the area (iNaturalist 2023b, Journey North 2023, Western Monarch Milkweed Mapper 2023), and adult monarchs were observed at SRMS during 2023 biological surveys. The project sites support plant species, such as willows, likely to provide nectar habitat for monarch butterfly. Milkweed was observed in the northeast portion of the ARMS during biological surveys conducted in February 2024, but was not observed during June 2023 botanical surveys at MCP and the American River Erosion Contract sites, or during September 2023 reconnaissance-level surveys at SRMS.

Valley Elderberry Longhorn Beetle

Section 3.8.1 (page 149) of the ARCF GRR Final EIS/FEIR describes the ecology of valley elderberry longhorn beetle (VELB), a Federally listed threatened species, in the Project Area. Updated occurrence information is presented below.

Focused surveys of elderberry shrubs (*Sambucus* sp.) were conducted in accordance with the USFWS 2017 *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (2017 VELB Framework). This guidance document superseded the 1999 *Conservation Guidelines for Valley Elderberry Longhorn Beetle* (USFWS 2019). Global Positioning System (GPS) point locations and data with sub-meter accuracy were taken for elderberry shrubs with stems measuring 1 inch or greater in diameter at ground level. Visual estimates of shrub height and

maximum diameter (canopy) were recorded to produce the total acre of elderberry canopy on site. All shrubs within the Project limits are located in riparian habitat.

Surveys were conducted in 2017 and 2020 to evaluate potential impacts of the American River Erosion Contracts on VELB (Environmental Science Associates 2022). There are approximately 2.2 acres of elderberry shrubs within the American River Erosion Contract 3B North and South and 4B project areas, and a 0.3 acre at American River Erosion Contracts 4A project area. At the ARMS, surveys conducted by professional biologists in February 2024 documented 12 elderberry shrubs along the property boundary, concentrated in the southeast corner; the mitigation site has been designed to avoid removal of all but three of these shrubs.

Elderberry shrubs exist along the Sacramento River, though in much lower densities than along the American River. There are no elderberry shrubs within the Sacramento River Erosion Contract 3 project site. There are no elderberry shrubs present at the Magpie Creek Project (MCP). The SRMS has approximately 1.1 acres of elderberry shrubs, both continuous stands and individual shrubs in the northern portion of the site, with most stands possessing stems with exit holes at the base, indicating potential presence of VELB (Coast Ridge Ecology 2021). The southern portion of SRMS includes an approximately 34.9-acre area of grassland, scrub, and woodland in which elderberry shrubs occur (GEI 2023b).

In addition to mitigating direct impacts on elderberry shrubs, the 2017 VELB Framework focuses on maintaining the connectivity of riparian habitats. Not only do riparian habitats provide habitat used by VELB for mating, foraging, and dispersal, but studies have shown that healthy riparian habitats increase elderberry recruitment and health. The 2017 VELB Framework states (pages 7–8):

Because the elderberry is the sole host plant of the VELB, any activities that adversely impact the elderberry shrub may also adversely impact the VELB. Adverse impacts to elderberry shrubs can occur either at a habitat scale or at an individual shrub scale. Activities that reduce the suitability of an area for elderberry plants or elderberry recruitment and increase fragmentation may have adverse impacts to mating, foraging, and dispersal of VELB. The patchy nature of VELB habitat and habitat use makes the species particularly susceptible to adverse impacts from habitat fragmentation.

Occupied clusters of elderberry stems in the Parkway are approximately 25 to 50 meters (82 to 164 feet) apart (Talley, Wright, & Holyoak 2006). Therefore, the area within 25 meters of the shrubs is considered a zone of riparian habitat where elderberry plants could be recruited to provide habitat that could be easily reached by VELB, if they were to occupy existing elderberry plants. Thus, surveys also determined the presence of suitable habitat for identified elderberry shrubs.

The method used to estimate the maximum impact area to VELB for the 2015 Biological Assessments associated with the ARCF 2016 Project was based on the USFWS 1999 *Conservation Guidelines for the Valley Elderberry Longhorn Beetle*, using stem counts. In October 2019, USFWS met with Project Partners and agreed to update the VELB methodology to the 2017 VELB. Moving forward impacts and mitigation are based on acreages not individual

shrubs and stems and would be in accordance with the applicable biological opinion and amendment(s), if any.

Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

The vernal pool fairy shrimp is listed as threatened and the vernal pool tadpole shrimp is listed as endangered under the ESA. Vernal pool fairy and tadpole shrimp live in vernal pools and swales and other seasonal wetlands that provide similar habitat characteristics. Seasonal wetlands in and around the MCP provide suitable habitat for vernal pool fairy shrimp and larger, deeper seasonal wetlands provide suitable habitat for vernal pool tadpole shrimp. Vernal pool fairy shrimp and California fairy shrimp (a common fairy shrimp) were observed in some of the seasonal wetlands within the project area during 2018 vernal pool branchiopod surveys (ICF 2018). The vernal pool fairy shrimp is also known to occur at the adjacent McClellan West Nature Area.

Northwestern Pond Turtle

Northwestern pond turtle is proposed for Federal listing as threatened and is a California Species of Special Concern. These turtles require aquatic and terrestrial habitats that are connected to each other. As habitat generalists, northwestern pond turtles occur in a broad range of permanent and ephemeral aquatic water bodies, such as flowing rivers and streams, lakes, ponds, reservoirs, settling ponds, marshes, vernal pools, and irrigation ditches. Preferred aquatic conditions are those with abundant basking sites, underwater shelter sites (undercut banks, submerged vegetation, mud, rocks, and logs), and standing or slow-moving water. Pond turtle nesting habitat is typically characterized by sparse, short grasses and forbs and little or no canopy cover.

Females excavate nests between late April and August in compact, dry soils located approximately 10-1,300 feet from water. Northwestern pond turtles experience brumation, a state of little to no activity that occurs during the cooler months of the year, generally in upland locations above OHWM and/or beyond the riparian zone (USFWS 2023c). All sites within the Project Area provide suitable aquatic and upland habitat for pond turtle, with the most extensive and highest-quality habitat occurring at American River Erosion Contract 3B, ARMS, and SRMS. Intensive turtle surveys and monitoring, including basking surveys, nesting surveys, and mark-recapture trapping have occurred since 2020 at Bushy Lake, approximately 2.5 miles upstream of ARMS and 1 mile upstream of Contract 3B (CSU Sacramento et al. 2024). These surveys documented turtles (non-native and unknown species) emerging from brumation on February 27 in 2021 and February 11 in 2022; data specific to pond turtle are not available. A total of 13 pond turtle nests (all predated) were identified in 2021-2023; nests were reportedly located an average of approximately 200 feet and maximum of 500 feet from water.

Giant Garter Snake

The giant garter snake is listed as threatened under both ESA and CESA. The giant garter snake is the largest garter snake, reaching a maximum total length of at least 64 inches. Dorsal background coloration varies from brownish to olive with a checkered pattern of black spots, separated by a yellow dorsal stripe and two light colored lateral stripes (USFWS 2015). Giant garter snakes typically breed in March and April, and live young are born from late July to early September (USFWS 2015). The giant garter snake inhabits marshes, sloughs, ponds, small lakes, low gradient streams, agricultural wetlands (including irrigation canals and rice fields), and adjacent uplands. Essential habitat components consist of 1) freshwater aquatic habitat with

protective emergent vegetation cover where snakes can forage, 2) upland habitat near the aquatic habitat that can be used for thermoregulation and summer shelter (i.e., burrows), and 3) upland refugia outside flood waters that can serve as winter hibernacula (USFWS 2015).

Ideal giant garter snake aquatic habitat exhibits the following characteristics.

- Water present from March through November.
- Slow moving or static water flow with mud substrate.
- Presence of emergent and bankside vegetation that provides cover from predators and may serve in thermoregulation.
- Absence of a continuous canopy of riparian vegetation.
- Available prey in the form of small amphibians and small fish.
- Thermoregulation (basking) sites with supportive vegetation such as folded tule clumps immediately adjacent to escape cover.
- Absence of large predatory fish.
- Absence of recurrent flooding, or, where flooding is probable, the presence of upland refugia.

Although the giant garter snake is predominately an aquatic species, incidental observations and radio telemetry studies have shown that the snake can be found in upland areas near the aquatic habitat component during the active spring and summer seasons. Upland habitat (land that is not typically inundated during the active season and is adjacent to the aquatic habitat of the giant garter snake) is used for basking to regulate body temperature, for cover, and as a retreat into mammal burrows and crevices in the soil during ecdysis (shedding of skin) or to avoid predation. Giant garter snakes have been observed using burrows for refuge in the summer as much as 164 feet away from the marsh edge. Important qualities of upland habitat have been found by researchers (USFWS 2015) to include the following characteristics.

- Availability of bankside vegetative cover, typically tule (*Scirpus* sp.) or cattail (*Typha* sp.), for screening from predators.
- Availability of more permanent shelter, such as bankside cracks or crevices, holes, or small mammal burrows.
- Free of poor grazing management practices (such as overgrazed areas).

During the colder winter months, giant garter snakes spend their time in a lethargic state. During this period, giant garter snakes over-winter in locations such as mammal burrows along canal banks and marsh locations, or riprap along a railroad grade near a marsh or roads. Giant garter snakes typically do not over-winter where flooding occurs in channels with rapidly moving water, such as the Sutter Bypass. Over-wintering snakes use burrows as far as 656 to 820 feet from the edge of summer aquatic habitat (USFWS 2015).

The shoreline at the SRMS provides some suitable aquatic habitat for the giant garter snake with emergent vegetation and refugia including downed logs (Coast Ridge Ecology 2021, GEI 2023b) and adjacent upland areas for winter hibernacula. Giant garter snake has been documented at several locations in the Delta region, including at Liberty Island northwest of SRMS and along the San Joaquin River on Twitchell and Sherman Islands downstream of SRMS (CDFW 2023). However, documented occurrences in the vicinity are infrequent and the local population is likely relatively small. In addition, giant garter snakes prefer freshwater marshes, while the water near SRMS can be brackish when river flows are low. Therefore, this species is unlikely to occur at the SRMS.

California Black Rail

California black rail is listed as threatened under CESA and fully protected under the California Fish and Game Code (CFGF). This species is resident in saline, brackish, and fresh emergent wetlands. California black rails primarily occur in tidal salt marshes of the northern San Francisco Bay region, but smaller scattered populations occur elsewhere in San Francisco Bay, the outer coast of Marin County, the Sacramento-San Joaquin Delta, foothills of the Sierra Nevada, and in the Colorado River area. No occurrences are known from within 5 miles of the Project Area, but the species is very secretive and rarely documented without focused surveys. Bullrush marsh vegetation along the outer perimeter of SRMS provides potentially suitable but very limited habitat for California black rail. Manolis (1978) found 95% of black rails in marshes dominated by either *Salicornia* or *Scirpus*, and during the breeding season, rails are primarily associated with mature, higher elevation marshes dominated by these genera (Evens et al. 1991). Black rails were found to prefer marshlands with unrestricted tidal influence, though they require high (damp ground and shallow water) marshes with little annual and/or daily fluctuations in water levels. Habitat at SRMS is subject to daily tidal influences but occurs in a narrow corridor that provides very little habitat at a high marsh elevation, due to the relatively steep transition from the river/slough channels to the exterior island levee. California black rail occurrences in vicinity of SRMS are from in-channel islands in large rivers and sloughs and marshes at the upper reaches of much narrower channels. Individuals that have been documented along the edges of wide channels occur in large, wide (e.g., 500 feet) patches of marsh habitat. Bullrush marsh at SRMS, in contrast, is generally less than 100 feet wide. SRMS is very unlikely to provide suitable nesting habitat for California black rail or support a resident population, though dispersing individuals may occasionally occur on the site.

Bald Eagle

Bald eagle is listed as endangered under CESA and fully protected under the CFGF. Bald eagles are Federally protected under the Bald and Golden Eagle Protection Act of 1940 (BGEPA), as amended (16 U.S.C. 668-668d). Breeding habitat most commonly includes areas close to rivers, lakes, reservoirs, or other bodies of water that provide adequate food sources. During winter, bald eagles roost in large trees or other sheltered sites, typically near water, and communal roost sites are commonly used by two or more individuals. A bald eagle pair has nested successfully at ARMS in 2023 and 2024; the nest is located in a large sycamore tree between the existing pond and the American River.

Swainson's Hawk

Swainson's hawk is State-listed as threatened. Section 3.8.1 (pages 151–152) of the ARCF GRR Final EIS/FEIR describes the ecology of this species in the Project Area. Updated occurrence information is presented below.

The CNDDDB includes 143 Swainson's hawk observations within 5 miles of the Project Area, including near all project locations (CDFW 2023). In 2017, a nest with two nestlings near Northgate Boulevard was identified approximately 2 miles downstream of American River Erosion Contract 3A in the Parkway and another nest was identified in 2007 near the ARMS at Camp Pollock (CDFW 2023). In addition, Project Partners have observed a nest just upstream of Howe Avenue, and a potential nesting pair was observed in May 2019 by a DWR survey team just downstream of Watt Avenue, approximately 1.4 miles east of American River Erosion Contract 3A. In 2022, an active Swainson's hawk nest was observed during the construction of SREL Contract 3 approximately 2 miles upstream of Sacramento River Erosion Contract 3.

The large trees in the riparian corridor within the Project Area and adjacent parks provide suitable nesting sites and annual grasslands and nearby parks provide suitable foraging habitat.

Western Yellow-Billed Cuckoo

Western yellow-billed cuckoo is Federally-listed as threatened and State-listed as endangered. Section 3.8.1 (page 151) of the ARCF GRR Final EIS/FEIR describes the ecology of this species in the Project Area. In May 2017 the USFWS received a petition to delist the Western distinct population segment (DPS) of the yellow-billed cuckoo. Based on the USFWS review of the petition it was determined in June of 2018 that substantial scientific or commercially available data indicating the delisting was provided and that further review of the potential delisting was warranted. However, in September of 2020, it was determined that delisting was not warranted. The Western DPS yellow-billed cuckoo is currently under 5-year review. For the most recent assessment of the species range-wide status please refer to the October 3, 2014, *Determination of Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (Coccyzus americanus occidentalis)* (79 FR 59991). On April 21, 2021, the USFWS issued a final rule designating critical habitat for the western yellow-billed cuckoo (86 FR 20798). The Project Area is outside the designated critical habitat.

Until very recently, the CNDDDB's last documented occurrence of western yellow-billed cuckoo in the vicinity of the Project Area is from the late 1800s. However, on July 27, 2019, a cuckoo vocalization was documented approximately 4 miles upstream of LAR Contract 3A on a heavily forested island in the American River. A single vocalization was heard but no additional information was gathered. Based on habitat quality, this may have been a transient bird moving through from breeding sites along the Sacramento River.

The Project Area provides marginal remnant riparian habitat that may be used for stopover, foraging, or dispersal. The Project Area does not have potential to support nesting because the only extant western yellow-billed cuckoo breeding population in northern California is along the Sacramento River approximately 50 miles north of the Project Area (USFWS 2020b).

Bank Swallow

The bank swallow is State-listed as threatened. It is a neotropical migrant that arrives in California in May and breeds before returning to South America in late July or August. Bank swallows inhabit primarily riparian and lowland habitats with vertical banks, bluffs, and cliffs where they dig holes for nesting in sandy or fine-textured soil (CDFG 1999). The species' range in California is estimated to have been reduced by 50 percent since 1900. Bank swallow was formerly more common as a breeder in California. Now, only approximately 110–120 colonies remain in the state. Approximately 75 percent of the current breeding population in California occurs along the banks of the Sacramento and Feather Rivers in the northern Central Valley (CDFG 1999).

Historically, a population of nesting bank swallows, was documented at American River Erosion Contract 3A. The most recent record from CNDDDB for this location was from 1986, but CNDDDB noted that the site has since been ripped and habitat no longer exists. There is a record from 2000 from Brannan Island, 4 miles southwest of the SRMS. Although nesting habitat in the survey area is limited, as the banks are mostly covered in dense vegetation, there is high-quality foraging habitat that bank swallows may use.

Tricolored Blackbird

The tricolored blackbird is listed as a threatened species under CESA. Historically, most California colonies have been located in the Sacramento and San Joaquin Valleys, but habitat loss has reduced breeding considerably in this area in recent years. Tricolored blackbirds have three basic requirements for selecting their breeding colonies: open accessible water; a protected nesting substrate, including either flooded vegetation or thorny/spiny vegetation; and a suitable foraging space providing adequate insect prey within a few miles of the nesting colony. Suitable breeding habitats within the Central Valley have been found to include emergent marsh areas with tules or cattail and upland habitats consisting of thistle, nettle, blackberry, wheat, and other shrubby upland substrates (Meese 2006). Foraging habitats in all seasons include annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields (e.g., large tracts of alfalfa with continuous mowing schedules and recently tilled fields), cattle feedlots, and dairies. Tricolored blackbirds also occasionally forage in riparian scrub habitats and along marsh borders (Beedy et al. 2018). No extant nest colonies are documented in the CNDDDB within 5 miles of the Project Area (CDFW 2023), despite numerous reported colonies in Sacramento, Solano, and Yolo counties. There are very few occurrences in the Delta region, but access in this region is relatively poor and survey coverage is likely sparse. SRMS provides marginally suitable nesting and foraging habitat for tricolored blackbird and there is low potential for the species to occur there.

Special-status Plant Species

Fourteen special-status plants are known or were determined to have potential to occur at one or more of the project sites. All the species have a California Rare Plant Rank of 1B (rare or endangered in California and elsewhere) or 2B (rare or endangered in California, but more common elsewhere). None of the species with potential to occur in the Project Area is Federally listed, but Mason's lilaeopsis is State-listed as rare and a List 1B.1 species. It is a perennial rhizomatous herb that blooms from April through November. Mason's lilaeopsis occurs in

riparian scrub and brackish and freshwater marshes and swamps. The species is primarily restricted to the Sacramento-San Joaquin Delta and is known only from Alameda, Contra Costa, Marin, Napa, Sacramento, San Joaquin, Solano, and Yolo counties. Potentially suitable habitat for Mason's lilaeopsis in the Project Area is limited to SRMS.

Designated Critical Habitat

USFWS defines the term "critical habitat" in the Federal Endangered Species Act as a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat has been designated for the following regionally occurring species: western yellow-billed cuckoo, California red-legged frog, California tiger salamander, VELB, conservancy fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, Sacramento Orcutt grass, and slender Orcutt grass. Designated critical habitat for the VELB is adjacent to the American River Erosion Contract 4A project footprint, on the north bank of the American River between the American River Bike Trail and State Highway 160. It will not be impacted by the projects construction.

4.3.2 Applicable Laws, Regulations, Policies, and Plans

Section 3.6 (pages 144 and 145) of the ARCF GRR Final EIS/EIR presents Federal and State laws governing special-status species. Chapter 5 of the ARCF GRR Final EIS/EIR summarizes the environmental laws and regulations that apply to the ARCF 2016 Project. Updated information on relevant laws and regulations is provided below.

Federal

Endangered Species Act

On June 4, 2021, the USFWS and NMFS announced a plan to improve and strengthen the Endangered Species Act (ESA) with a set of proposed actions that follow Executive Order 13990 (Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis). On June 22, 2023, three proposed rules were announced to revise regulations for interagency cooperation, reinstate a protection option for species listed as threatened under ESA. These ESA policy changes will not affect the application of the ESA to the Proposed Action.

Pursuant to the ESA, USFWS and NMFS have regulatory authority over Federally listed species. Under the ESA, a permit to "take" a listed species is required for any Federal action that may harm an individual of that species. Section 7 of the ESA prohibits Federal agencies from authorizing, funding, or carrying out activities that are likely to jeopardize the continued existence of a listed species or destroy or adversely modify its critical habitat. By consulting with USFWS and NMFS before initiating projects, agencies review their actions to determine if those actions could adversely affect listed species or their habitat. Through consultation, USFWS and NMFS work with Federal agencies to help design their programs and projects to conserve listed and proposed species. Because a number of listed species are potentially affected by Federal activities, USFWS and NMFS coordination with other Federal agencies is important to species conservation and may help prevent the need to list candidate species.

The USFWS is the administering agency for this authority regarding non-marine species and NMFS is the administering agency for marine fish species. A list of threatened and endangered

species that may be affected by the Proposed Action was obtained from USFWS in 2023 (Included at the end of this appendix). USACE formally consulted with USFWS on the ARCF Project and received a Biological Opinion (BO) on September 11, 2015 (08ESMF00-2014-F-0518). USACE completed a reinitiation for this BO with USFWS March 2021 (08ESMF00-2014-F-0518-R003). USACE formally consulted with NMFS on the ARCF Project and received a Biological Opinion on September 9, 2015 (WCR-2014-1377). USACE completed a reinitiation for this BO with NMFS in May 2021 (WCRO-2020-03082). USACE is required to reinitiate formal consultation with USFWS and/or NMFS if effects on listed species will vary from what was provided at the time of formal consultation. USACE continues to update USFWS and NMFS on impacts and mitigation for covered species associated with implementing ARCF Project actions. Appendix L contains the updated 2024 BAs and BOs received in 2025; consultations were based upon new effects resulting from design refinements since the 2021 BOs.

Migratory Bird Treaty Act

The MBTA as amended (16 USC 703 et seq.), implements domestically a series of international treaties that provide for migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds; the act provides that it is unlawful, except as permitted by regulations, “to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird ...” (16 USC 703). This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs. The current list of species protected by the MBTA includes several hundred species and essentially includes all native birds. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and personal property.

Bald and Golden Eagle Protection Act

The USFWS adopted new amendments to policies regarding implications of the Bald and Golden Eagle Protection Act; however, these changes do not substantially change the application of NEPA to proposed plan (USFWS 2019). The Bald and Golden Eagle Protection Act, 16 U.S.C. §§ 668-668c, provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the take, possession, and commerce of such birds.

Invasive Species Regulation – Executive Order 13112

EO 13112 directs Federal agencies to take actions to prevent the introduction of invasive species, provide for control of invasive species, and minimize the economic, ecological, and human health impacts that invasive species cause. EO 13112 also calls for the restoration of native plants and tree species.

State

California Endangered Species Act

The California Endangered Species Act (CESA) requires non-Federal agencies to consider the potential adverse effects on State-listed species.

California Fish and Game Code

Section 3503 of the California Fish and Game Code (CFGF) states that it is unlawful to take, possess, or needlessly destroy the nests of eggs of any bird. Section 3503.3 states that it is unlawful to take, possess, or destroy any raptors, including nests or eggs.

Section 3513 of the CFGF states that it is unlawful to take or possess any migratory nongame bird, as designated in the Federal MBTA (16 USC 703 et seq.) before January 1, 2017; any additional migratory nongame bird designated in the MBTA after that date; or any part of a migratory nongame bird described in Fish and Game Code Section 3513, except as provided by rules and regulations adopted by the U.S. Secretary of the Interior under the MBTA, unless those rules or regulations are inconsistent with the Fish and Game Code.

California Native Plant Protection Act

The Native Plant Protection Act (NPPA) was enacted in 1977 and allows the Fish and Game Commission to designate plants as rare or endangered. There are 64 species, subspecies, and varieties of plants that are protected as rare under the NPPA. The NPPA prohibits take of endangered or rare native plants but includes some exceptions for agricultural and nursery operations; emergencies; and after properly notifying CDFW for vegetation removal from canals, roads, and other sites, changes in land use, and in certain other situations.

Assembly Bill 454

California Assembly Bill 454, signed in 2019, ensures the protection of migratory birds, regardless of reinterpretations of the MBTA made by the U.S Department of the Interior.

Local

Sacramento County General Plan of 2005 to 2030, Conservation Element

The General Plan is a set of goals, objectives, policies, implementation measures and maps that form a blueprint for physical development in the unincorporated County. The plan addresses important community issues such as new growth, housing needs and environmental protection. Its policies are instrumental in planning infrastructure to accommodate future growth. The State mandates that the County's General Plan include a Conservation Element, which will enable the County to analyze its resources and determine policies for their use and conservation (Sacramento County 2017).

American River Natural Resource Management Plan

The Sacramento County Board of Supervisors approved the American River Parkway Natural Resources Management Plan on February 28, 2023. “The NRMP was prepared as a guidance document for management of the natural resources of the American River Parkway. The NRMP is framed by and supplements the American River Parkway Plan (ARPP), which is the state and Federal Wild and Scenic River management plan, to ensure that the American River Parkway's (Parkway) resources, its environmental quality and natural values are protected. The NRMP management activities represent a coordinated and cooperative effort that incorporates feedback from local stakeholders and agencies with jurisdiction within the Parkway” (Sacramento County 2023).

American River Parkway Plan

The 2008 American River Parkway Plan is the City and County of Sacramento's management plan for the LAR and was adopted by the City and County of Sacramento, and by the State Legislature through the Urban American River Parkway Preservation Act, Public Resources Code Section 5840. It is a policy document that provides guidance for land use decisions affecting the American River Parkway, specifically for its preservation, use, development, and administration. The Plan's purpose is to ensure preservation of the naturalistic environment while providing limited development to facilitate human enjoyment of the Parkway. The Parkway Plan also acts as the management plan for the Federal and State Wild and Scenic Rivers Acts. See Appendix B, Section 2.4 "Land Use and Prime and Unique Farmland" for a discussion regarding the Proposed Actions consistency with the American River Parkway Plan, as well as policies outlined in the American River Parkway Plan that apply to the Proposed Action.

4.3.3 Analysis of Environmental Effects

Analysis Methodology

This analysis generally uses the same methodology described in Section 3.8.2 (pages 162–163) of the ARCF GRR Final EIS/FEIR. Impacts on special-status plants and wildlife in the Project Area were evaluated based on data collected from biological resources surveys conducted in 2019 – 2024 and from other resources such as the following:

- Aerial imagery.
- A list of special-status plant and wildlife species with potential to occur in or in the vicinity of the Project Area that was compiled from a nine-quadrangle search of the CNDDDB (CDFW 2023).
- A USFWS species list for the Project Area generated using the online Information for Planning and Consultation (IPaC) database (USFWS 2023).
- A list of special-status plant species with potential to occur in or in the vicinity of the Project Area that was compiled from a 18-quadrangle (Taylor Monument, Rio Linda, Citrus Heights, Sacramento West, Sacramento East, Carmichael, Clarksburg, Florin, Elk Grove, Dozier, Liberty Island, Courtland, Birds Landing, Isleton, Rio Vista, Antioch North, Jersey Island, Bouldin Island) search of the California Native Plant Society (CNPS) Rare Plant Inventory search of the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Plants of California (CNPS 2023).
- Literature regarding the biological resources of the region.
- Coordination with USFWS.
- Calculations of habitat impacts, based on habitat mapping, tree surveys, and project design. Estimates of vegetation loss/conversion at each project site and information on tree removal and protection are provided in Appendix B, Section 4.1, "Vegetation and Wildlife."

For this analysis, the CEQA Proposed Action and NEPA Design Refinements were determined to have a significant impact on special-status species if Project activities will have a substantial

adverse effect, either directly or through habitat modification, on any species identified as candidate, sensitive, or special-status in local or regional plans or policies, or regulations, or by CDFW or USFWS. Species that are not currently listed under the State or Federal Endangered Species Acts as rare, threatened, or endangered, but that can be shown to meet the criteria for such listing, were also considered special-status species (CEQA Guidelines Section 15380[d]). Impacts on special-status species were evaluated based on anticipated construction activities and changes to habitat types after construction of the Project.

Only species determined to have potential to occur at a given site are discussed in the relevant effects analysis section. California Species of Special Concern that do not breed in the Project Area and only have potential to occur seasonally as migrants or non-breeding individuals (e.g., American white pelican, American peregrine falcon, golden eagle, yellow warbler, yellow-breasted chat) are not discussed below because potential adverse effects on these species from project implementation would be minor and would not result in a substantial adverse effect.

Basis of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G and Section 15065 of the State CEQA Guidelines, as amended. These thresholds, and the impact analysis that follows, also take into consideration the significance of an action in terms of: the setting of the proposed action; short- and long-term effects of the proposed action; both beneficial and adverse effects; direct and indirect effects of the proposed action on public health and safety; the context and intensity of impacts; and effects that would violate Federal, State, Tribal, or local law protecting the environment, as required under NEPA (40 CFR 1508.1(g)). The Proposed Action was determined to result in a significant impact related to special-status species if it would do either of the following:

- a. Result in 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;
- b. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan¹ as addressed in Appendix B, Section 4.1, “Vegetation and Wildlife.”

Types of Effects

For the purposes of this analysis, short-term impacts are those that are offset within 10 years and long-term impacts are those occurring beyond 10 years. This timeframe was selected based on the framework provided in the 2021 NMFS BO wherein establishment of riparian tree and shrub species within riparian habitat was projected to take 8/10 years, because this is the typical timeframe required for habitat to reach a level of maturity and vigor to be self-sustaining in the long-term. The use of an 8/10-year short term impact period is more conservative than the approach taken by NMFS, in that the 2021 BO pertaining to Federally listed fish species effects

¹ Identical to Basis of Significance 4.1-b addressed in Appendix B, Section 4.1, “Vegetation and Wildlife” and not repeated in this section.

considered short term-effects as those only occurring during construction and long-term effects as those resulting from the presence of Program features.

The following Program-related activities have been identified as activities that could result in direct and indirect effects on special-status species in the study area. The effects could directly result from program implementation, or indirectly result from the program.

Direct Effects

- Ground disturbance and/or loss of vegetation (including trees), as a result of grading, excavating, trenching, placement of rock slope protection, and paving activities during construction.
- Loss of erosional processes that refresh and create bank swallow nesting habitat.
- Temporary stockpiling and side-casting of soil, construction materials, or other construction wastes.
- Soil compaction, dust, and water runoff from the construction site.
- Construction-related noise (from equipment).
- Degradation of water quality in drainages and wetlands, resulting from construction runoff containing petroleum products or sediment.

Indirect Effects

- Permanent alteration of light levels.
- Alteration of hydrology.
- Causing damage through toxicity associated with application of herbicides, insecticides, and rodenticides.
- Disturbance of habitat as a result of introducing pet and human disturbance (including potential trash dumping).
- Increasing habitat for native competitors or predators.
- Introducing invasive nonnative species.

Effects Analysis

No Action Alternative

The No Action Alternative is the buildout of the authorized project, the Recommended Plan from the ARCF GRR Final EIS/EIR (see Section 3.4 of the SEIS/SEIR for detailed description). Mitigation sites, such as the ARMS and the SRMS would not be built, and site conditions at those locations would remain as they are now. The ARMS would remain a former gravel mine. As a depleted mine site, the area is subject to State of California Surface Mining and Reclamation Act (SMARA). SMARA requires that former mines be “reclaimed to a usable condition which is readily adaptable for alternate land uses” (SMARA, Public Resources Code,

Sections 2710-2796). Under SMARA, the site should be reclaimed to include the removal of hazards and hazardous materials, site contouring, and restoration (SAFCA 2008). In addition, the SRMS would remain an active Dredged Material Placement Site managed by USACE. However, USACE would still be required to mitigate for ARCF 2016 Project habitat impacts by other means, such as purchasing mitigation bank credits or constructing mitigation sites elsewhere.

The No Action Alternative is Alternative 2 from the ARCF Final EIS/EIR. Thus, detailed impacts to special-status species are described in the ARCF Final EIS/EIR in Appendix B, Section 3.8 “Special Status Species” beginning on page 144, along with the Record of Decision. Based on the ARCF Final EIS/EIR analysis of Alternative 2, the No Action Alternative would result in unavoidable permanent impacts to 0.25 acre of vernal pools; 3,292 stems (70 acres) of elderberry shrub habitat utilized by Valley Elderberry Longhorn Beetle; 150 acres of riparian habitat typically utilized by the Western Yellow-billed Cuckoo, Swainson’s hawk, white-tailed kite, and purple martin; 2.5 acres of grassland utilized by burrowing owl; 15 acres of aquatic habitat typically utilized by the Giant Garter Snake; and 30 acres of upland habitat typically utilized by the Giant Garter Snake. The project would result in unavoidable temporary impacts to 75 acres of upland habitat typically utilized by the Giant Garter Snake during aestivation (or dormancy). It is important to note that the ARCF GRR Final EIS/EIR did not describe impacts to all the species listed above in Table 4.3-1. The effects to these species under the No Action Alternative would be consistent with those described under the Proposed Action.

Mitigation measures listed in section 3.8.6 of the ARCF GRR Final EIS/EIR would be implemented to minimize the impacts as much as feasible, though there would still be unavoidable impacts to biological resources. To mitigate for these unavoidable impacts, USACE would purchase credits at an approved mitigation bank equivalent to restoring habitat to 0.5 acre of vernal pools, 42 acres of shallow water habitat, 32 acres of aquatic spawning habitat, 45 acres of aquatic habitat for Giant Garter Snake, and 90 acres of upland habitat for the Giant Garter Snake. At locations on- and off-site of the study area, USACE would restore 301.2 acres of riparian habitat, 70.89 acres of elderberry shrubs, and 75 acres of upland habitat for the Giant Garter Snake.

Proposed Action

4.3-a Result in 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, USFWS, or NMFS.

CEQA Significance Conclusion: Less than Significant with Mitigation Incorporated

NEPA Significance Conclusion: Short-term Significant, unavoidable; Long-term, Minor effects that are Less than Significant with Mitigation Incorporated.

Refer to Table 4.3-2 and Table 4.3-3 for the amount of impact to species listed under the Federal Endangered Species Act for each project component and alternative under the CEQA Proposed Action and the NEPA Design Refinements, respectively.

American River Erosion Contract 3B North and South, American River Erosion Contracts 4A and 4B, American River Mitigation Site, Sacramento River Erosion Contract 3, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated.

NEPA Impact Conclusion (Design Refinements): Short-term Significant, unavoidable; Long-term and Minor effects that are Less than Significant with Mitigation Incorporated.

The proposed piezometer network would be installed on the levee crown and/or near the landside levee toe within the authorized footprint of the ARCF GRR Final EIS/EIR. The exact locations of the piezometers are not yet determined. This heavily disturbed, compacted soil is poor habitat for special-status plant species and has low potential to support most special-status wildlife species. In addition, the piezometers are small, the range of boring size is expected to be between 6 to 12 inches in diameter, and, thus, the amount of disturbance in an already disturbed environment is low. Biological surveys of the specific piezometer locations would be completed before installation to confirm potential for impacts on special-status species is minimal and adjust piezometer locations, if needed, to avoid or minimize potential impacts. For example, piezometer siting would avoid known elderberry shrub locations, but a survey would be conducted to confirm avoidance. Because piezometer locations are not known at this time, potential for impacts on individual special-status species is not addressed specifically below. However, given the disturbed nature of the typical anticipated locations, very small impact footprint, and implementation of pre-installation surveys, potential for a substantial adverse effect is very low and impacts would be less than significant.

Table 4.3-2. Estimated Impacts to Special Status Plants and Animals – CEQA Proposed Action²

| Location | Cuckoo / Riparian (above OHW and Minus VELB*) (acres) | Cuckoo / Riparian (below OHW)* (acres) | VELB With Buffer* (acres, except for GRR) | VELB Canopy* (acres) | GGs* (acres) | Vernal Pools (acres) |
|---|--|--|--|--|-----------------------------|-------------------------|
| GRR Assumption | 150.00 | 150.00 | 3,292 stems | 3,292 stems | 15 Aquatic & 105 Uplands | 0.25 |
| American River Erosion Contract 3B North and South | 2.0 | 6.25 | 10.50 | 2.0 | - | - |
| American River Erosion Contract 4A – Proposed Action | 1.80 | - | 2.49 | 0.07 | - | - |
| American River Erosion Contract 4A - Alt 3a | 0.06 | - | 0.15 | - | - | - |
| American River Erosion Contract 4A - Alt 3b | 2.78 | - | 3.11 | 0.09 | - | - |
| American River Erosion Contract 4A - Alt 3c | Street Detour: 1.90 Parkway Detour: 1.79 | Street Detour: - Parkway Detour: 0.22 | Street Detour: 1.16 Parkway Detour: 13.52 | Street Detour: 0.07 Parkway Detour: 1.27 | - | - |
| American River Erosion Contract 4A - Alt 3d | 0.98 | 0.22 | 12.91 | 1.25 | - | - |
| American River Erosion Contract 4B | 0.45 | - | 1.13 | 0.04 | - | - |
| Sacramento River Erosion Contract 3 | 1.0 | 0.2 | 12.92 | 1.24 | - | - |
| Magpie Creek Project (MCP) | - | - | - | - | - | 0.40 |

* Habitat Impacted (acres)

² Current programmatic level designs for ARMS and SRMS cannot provide quantitative data for species impacts. Detailed impacts to habitat will be disclosed in the Final SEIS/SEIR.

Table 4.3-3. Estimated Impacts to Special Status Plants and Animals – NEPA Design Refinements³

| Location | Cuckoo / Riparian (above OHW and Minus VELB* (acres) | Cuckoo / Riparian (below OHW)* (acres) | VELB With Buffer* (acres, except for GRR) | VELB Canopy* (acres) | GGs* (acres) | Vernal Pools (acres) |
|---|--|--|--|---|--------------------------|----------------------|
| GRR Assumption | 150.00 | 150.00 | 3,292 stems | 3,292 stems | 15 Aquatic & 105 Uplands | 0.25 |
| American River Erosion Contract 3B North and South | - | 1.9 | 0.9 | 0.1 | - | - |
| American River Erosion Contract 4A – Proposed Action | 1.80 | - | 2.49 | 0.07 | - | - |
| American River Erosion Contract 4A - Alt 3a | 0.06 | - | 0.15 | 0.0 | - | - |
| American River Erosion Contract 4A - Alt 3b | 2.78 | - | 3.11 | 0.09 | - | - |
| American River Erosion Contract 4A - Alt 3c | Street Detour: 1.90 Parkway Detour: 1.79 | Street Detour: - Parkway Detour: 0.22 | Street Detour: 1.16 Parkway Detour: 13.52 | Street Detour: 0.07 Parkway Detour: 1.27 | - | - |
| American River Erosion Contract 4A - Alt 3d | 0.98 | 0.22 | 12.91 | 1.25 | - | - |
| American River Erosion Contract 4B | 0.06 | - | 0.04 | - | - | - |
| Sacramento River Erosion Contract 3 | 0.01 | 0.02 | - | - | - | - |
| Magpie Creek Project | - | - | - | - | - | 0.40 |

* Habitat Impacted (acres)

³ Current programmatic level designs for ARMS and SRMS cannot provide quantitative data for species impacts. Detailed impacts to habitat will be disclosed in the Final SEIS/SEIR.

Crotch's Bumble Bee (CEQA only)

At ARMS overall cover of grassland-type habitats is projected to decrease, habitat value for the bumblebee, monarch, and VELB would increase with the implementation of the Proposed Action. In the existing condition, the valley and foothill grassland community is highly disturbed from historical site activities, is dominated by non-native and invasive species, and lacks the plant diversity typically required to support these species. The post-project condition would include a diverse assemblage of plant species for pollinators (HDR 2023).

Direct impacts of construction could include mortality of individuals or nests from activities such as vegetation removal and materials staging, or from construction equipment traffic. Vegetation removal could also result in a reduction of foraging habitat. Therefore, this impact would be significant. The following mitigation measures have been identified to address this impact.

Mitigation Measure BEE-1: Implement Measures to Avoid and Minimize Effects on Crotch's Bumble Bee.

To avoid and minimize effects on Crotch's bumble bee, the Project Partners will implement the following measures:

- A qualified biologist knowledgeable about the biology, habitat use, plant use, and identification of Crotch's bumble bee (and identification of similar bumble bee species) shall conduct a habitat assessment before project activities commence to determine if floral resources used by Crotch's bumble bee for nectar and/or pollen and potential nesting sites are present in the Project Area. The biologist shall conduct a site visit during the colony active period (generally April through August) to observe potential floral resources, nesting sites, and overwintering refugia, and assess the diversity and percent cover of blooming plants and general plant diversity.
- Prior to project-related ground-disturbing activities and/or activities involving removal of vegetation or debris (excluding pruning, limb removal, and overhead trimming), the qualified biologist shall conduct a single visual survey during the colony active period (generally April 1 through August 31) in areas identified as suitable habitat. Surveys shall occur no more than 14 days prior to ground-disturbing and/or vegetation removal activities. A new survey shall be conducted at the beginning of the survey period in each year that project activities (including operations and maintenance) involving ground disturbance or vegetation removal will occur unless such activities commence prior to April. Surveys shall be conducted in accordance with 2023 CDFW Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species. Surveys shall include visual encounters only, with identification aided by photographs. Surveyors shall not capture or handle bumble bees unless authorized by CDFW. Bumble bees may only be netted, chilled, and photographed for identification purposes if the biologist is authorized by a Memorandum of Understanding in accordance with CFGC Section 2081(a).
- If Crotch's bumble bee adults are detected during the habitat assessment or surveys described above, or incidentally later in the season, a biological monitor shall monitor project activities involving ground disturbance or vegetation removal in the areas the

adults were observed until the adults are no longer present onsite. A 25- foot no-work buffer shall be implemented around Crotch's bumble bees not nesting within the area. Biological monitoring shall continue until the individual leaves the area on its own.

- If a Crotch's bumble bee nest is detected, a 50- foot no-disturbance buffer shall be implemented around the nest until a qualified biologist determines the nest is no longer active. A biological monitor shall monitor the nest long enough to determine the buffer is effective in protecting the nest (i.e., the nest is not getting disturbed, and the contractor is aware of the prohibited work area). The buffer shall be increased if observations indicate a larger buffer is warranted. The buffer shall only be reduced if a qualified biologist determines a smaller buffer distance will be adequate to avoid nest disturbance.
- If foraging Crotch's bumble bees are present but a nest has not been found, floral resources and other vegetation in the project area may be carefully removed, under guidance of a qualified biologist. Floral resources shall be removed with a biological monitor present and with hand-held tools, such as weed-whackers. Vegetation removal shall occur during suitable weather conditions for bees to be flying.
- If Crotch's bumble bee activity continues at a location after floral resources have been removed, a nest may be present and a second focused survey for active nests shall be conducted.

Timing: Before and during construction

Responsibility: Non-Federal Partners

Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal.

No net loss of riparian habitats will be achieved through impact avoidance, minimization, and compensatory mitigation. Impacts on sensitive natural communities that result in the removal of vegetation shall be mitigated at a minimum 2:1 ratio. Mitigation can include onsite restoration, offsite habitat creation, in-lieu fee payment, and/or purchase of mitigation credits from a resource agency approved mitigation bank. Mitigation as required in accordance with the 2015 ARCF GRR Fish and Wildlife Coordination Act Report or the Endangered Species Act consultation with USFWS and NMFS, depending on the type of habitat, may be applied to satisfy the no net loss of riparian habitat performance standard.

Timing: Before, during, and after construction

Responsibility: Project Partners

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Final project designs will be refined to reduce impacts on vegetation and wildlife to the extent feasible. Refinements implemented to reduce riparian habitat losses will include reducing the impact footprint, constructing bank protection rather than launchable rock

trench whenever feasible, and designing and constructing planting benches. Where practicable, trees will be retained in locations where the bank protection and planting benches are constructed. Trees will be protected in place along the natural channel during rock placement. Additional plantings will be installed on the newly constructed benches to provide habitat for fish and avian species. The planting benches will be used where feasible to minimize impacts on fish and wildlife species. Where feasible, soil-filled revetment will be used to allow plantings and erosion protection features like launchable trench to be buried to allow plantings. The on-site habitat will be created in accordance with the ARCF GRR Habitat Mitigation, Monitoring, and Adaptive Management Plan, which includes conceptual mitigation proposals, performance standards, and adaptive management tasks.

All areas to be avoided during construction activities will be fenced and/or flagged as close to construction limits as feasible. Where possible, protective fencing or flagging shall be installed 5 feet beyond the tree canopy dripline boundary of each tree or tree group, referred to as the protected tree zone. Contractors and subcontractors shall avoid heavy equipment operation, grading, and excavation in the protected tree zones, to the greatest extent practicable. Heavy equipment operation, grading, and excavation activities in the protected tree zone shall be overseen by a qualified arborist/ecologist. The contractor shall maintain the fencing or flagging to always keep it identifiable. Fencing and flagging shall be removed only after all construction activities are complete.

An annual pre-construction meeting shall be held between all contractors and subcontractors (e.g., grading, tree removal/pruning, and builders) and a qualified arborist/biologist. The meeting shall focus on instructing the contractors and subcontractors on tree protection practices and answering any questions. All equipment operators and spotters, assistants, or those directing operators from the ground, shall provide written acknowledgement of receiving tree protection training. This training shall include information on the location and marking of protected tree zones, the necessity of preventing damage, and the discussion of work practices that shall accomplish these tasks.

Contractors and subcontractors shall take care when moving construction equipment or supplies near protected trees, paying special attention to overhead vegetation. Contractors and subcontractors shall ensure that damage to the trees shall be avoided when transporting or moving construction materials and working around the tree (even outside of the fenced protected zone). Contractors and subcontractors shall flag aboveground tree parts with potential for damage (e.g., low limbs, scaffold branches, and trunks) with high-visibility flagging, such as fluorescent red or orange. If contact with the tree crown is unavoidable, conflicting branches may be pruned under supervision of a qualified arborist/ecologist. The contractor or subcontractor shall not prune protected trees until all construction is completed unless standard pruning will reduce conflict between canopy and equipment. All pruning shall be conducted under supervision of a qualified arborist, or their representative.

A qualified arborist/ecologist shall inspect the preserved protected trees adjacent to grading and construction activity prior to initiation of construction activities, during

construction activities within tree protection zones, and prior to removal of tree protection zone fencing/flagging at the end of construction. A report summarizing site conditions, observations, tree health, and recommendations for minimizing tree damage shall be submitted to the Project Partners by the qualified arborist/ecologist following each inspection.

Timing: Before and during construction

Responsibility: Project Partners

Implementing of Mitigation Measure BEE-1, identified for Crotch's bumble bee, and Mitigation Measures VEG-1 and VEG-2, which were previously adopted for the ARCF 2016 Project, would reduce significant impacts from construction on mortality of individuals, and reduction of foraging habitat because surveys would be conducted to identify individuals and active nests on and near the project sites, buffers would be implemented to minimize potential for injury or mortality of individuals and avoid nest disturbance, vegetation removal would be minimized, and compensatory mitigation would be implemented to offset unavoidable vegetation removal.

O&M activities after construction would likely be consistent with existing O&M practices (except as described in Mitigation Measure BEE-1 regarding rodent abatement), so any impacts also would likely be consistent with existing conditions. In addition, these activities would be intermittent, and the resulting impacts would be temporary and less than significant.

Monarch butterfly

The Project Area provides suitable foraging habitat for monarch butterfly and could support milkweed, though milkweed has only been observed in a small portion of ARMS. Construction of the project would result in a loss of habitat due to loss of nectar vegetation and potential host plants for the Monarch butterfly. Similar to previous discussions, O&M activities associated with mowing and the application of herbicides could directly affect monarch butterflies. These impacts would be potentially significant.

Construction of mitigation areas would result in the creation of a greater amount of habitat, since pollinator-specific species to be included in the area would not be subject to pesticide drift, compared to those currently present on the levee slopes. However, there would still be a temporary period before mitigation areas are established where the impacts would remain significant. The following mitigation measures have been identified to address this impact.

Mitigation Measure MONARCH-1: Implement Measures to Avoid and Minimize Effects on Monarch Butterfly.

To avoid and minimize effects on monarch butterfly, the Project Partners will implement the following measures, where feasible, for construction and O&M activities that occur within 100 feet of milkweed plants (*Asclepias* spp.) to avoid or minimize disturbances and impacts to monarch butterflies:

- Before construction activities a qualified biologist will conduct preconstruction surveys for milkweed (*Asclepias* spp.). Flag and fence existing milkweed patches,

when feasible, and avoid mowing or removing them, during the monarch breeding season in the Central Valley from March 15 to October 31 (Xerces Society 2018), to conserve milkweed plants and avoid causing direct mortality to immature stages of monarchs.

- A 2-foot buffer will be maintained around milkweed plants during project construction to protect breeding habitat.
- Include USFWS recommended pollinator plants into mitigation site planting plans, when possible. Pollinator plants may need to be introduced into mitigation site planting plans after invasive and exotic weeds have been controlled. Several years of weed control efforts may be necessary to reach a satisfactory level of control prior to planting pollinator plants.
- All newly planted milkweed will be regionally native and preferably of the same species removed.

Mowing

- Train mower operators to recognize milkweed plants and important native nectar plants to reduce accidental mowing.
- Do not cut or mow milkweed during the monarch breeding season in the Central Valley from March 15 to October 31 (Xerces Society 2018)
- Limit mowing to no more than twice per year. Generally, fall mowing after the first frost is ideal to avoid mowing floral resources and host. In mitigation sites mowing limits may be delayed until exotic and invasive weeds are sufficiently controlled. This may take several years of intensive weed control.
- If mowing must occur during monarch breeding season, delay mowing to as late as possible (late summer or early fall) to provide a longer period for monarch caterpillars to develop and extend availability of nectar plants to monarchs and other pollinators into the late summer.

Weed Control

- No herbicide application will take place within 50 feet of occupied monarch habitat (including milkweed) when monarchs are present (adults or larvae), generally March 15 through October 31. If herbicide application must occur within 50 feet of occupied monarch habitat, then application will only be conducted using targeted spraying, cut stump, and wiping by a Service-approved biologist and will be no closer than 2 feet.
- Actively unoccupied growing milkweed will be avoided by a minimum of 2 feet during the application of herbicides (target spray, cut stump, wiping and wicking). Herbicide application within 50 feet of a milkweed plant will be conducted spray equipment equipped with low-pressure fan type nozzles to reduce the risk of drift.

- No broadleaf selective herbicide application will take place within 100 feet of occupied monarch habitat when wind speeds exceed 10 mph, or temperatures exceed 85°F to minimize potential for drift and volatilization.
- No persistent or pre-emergent herbicides will be used within 100 feet of milkweed or other occupied monarch habitats (e.g., roosting sites).
- Milkweed numbers and species will be assessed in project areas where impacts to milkweed may occur due to activities such as ATV access and herbicide application.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measures MONARCH-1, VEG-1, and VEG-2 would reduce significant impact related to potential destruction of feeding and breeding habitat and mortality of individuals because surveys would be conducted to identify breeding adults and milkweed on project sites, buffers would be implemented to minimize potential for breeding disturbance, vegetation removal would be minimized, and compensatory mitigation would be implemented to offset unavoidable vegetation removal. Furthermore, the inclusion of pollinator species within mitigations areas would assist the species in the long run, and with implementation of Mitigation Measures VEG-1 and VEG-2, would result in a long-term effect that would likely be beneficial.

Valley Elderberry Longhorn Beetle

Construction would directly affect VELB habitat (Table 4.3-2). These areas include elderberry shrubs and the riparian vegetation within 50 meters (165 feet) of an elderberry shrub, which is considered VELB habitat. Mitigation sites would be designed to include a diverse assemblage of herbaceous, shrub, and canopy species; combined with long-term monitoring and maintenance activities designed to promote population expansions for VELB (HDR 2023). Overall, the impact of this loss of Federally listed species habitat would be significant.

Within the American River project sites, O&M by the American River Flood Control District planned as part of the Proposed Action could require the trimming of elderberry shrubs as described in Section 3.8.4 (page 165) of the ARCF GRR Final EIS/EIR. Trimming consists of cutting overhanging branches along the levee slopes on both the landside and waterside. Some shrubs may be located adjacent to the levee with branches hanging over the levee maintenance road. Up to a third of a shrub would be trimmed in a single season. Trimming would occur between November 1 and March 15. This loss of VELB habitat would be significant.

The following mitigation measure has been identified to address impacts.

Mitigation Measure VELB-1: Implement Current USFWS Avoidance, Minimization, and Compensation Measures for Valley Elderberry Longhorn Beetle.

The mitigation for O&M impacts will be offset by developing off-site mitigation sites designed in accordance with the 2017 VELB Framework (USFWS 2017). In addition, each year the local maintaining agencies will document the amount of VELB habitat trimmed and report that number to USACE to ensure compliance with the USFWS Biological Opinion (BO). If the local maintaining agencies need to exceed the amount of VELB habitat which needs to be trimmed or affected due to routine maintenance, then they will request USACE reinitiate consultation on the USFWS BO for those actions.

The Project Partners will implement the following measures in accordance with the Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (USFWS 2017) to reduce effects on valley elderberry longhorn beetle:

- Fencing. All areas to be avoided during construction activities will be fenced and/or flagged as close to construction limits as feasible.
- Avoidance area. To the extent feasible, activities that may damage or kill an elderberry shrub (e.g., trenching, paving, etc.) will be avoided within 20 feet from the drip-line of the shrub, depending on the type of activity.
- Worker education. A qualified biologist will provide training for all contractors, work crews, and any onsite personnel on the status of valley elderberry longhorn beetle, its host plant and habitat, the need to avoid damaging elderberry shrubs, and the possible penalties for noncompliance.
- Construction monitoring. A qualified biologist will monitor the work area at appropriate intervals to assure that all avoidance and minimization measures are implemented.
- Timing. To the extent feasible, activities within 165 feet of an elderberry shrub will be conducted outside of the valley elderberry longhorn beetle flight season (March to July).
- Trimming. To the extent feasible, elderberry shrub trimming will occur between November and February and avoid the removal of any branches or stems greater than or equal to 1-inch in diameter.

- **Chemical Usage.** Herbicides will not be used within the drip-line, and insecticides will not be used within 100 feet of an elderberry shrub. All chemicals will be applied using a backpack sprayer or similar direct application method.
- **Mowing.** Weed removal with machinery within the drip-line of elderberry shrubs will be limited to the season when adults are not active (August to February) and will avoid damaging the shrub.
- **Transplanting.** To the extent feasible, elderberry shrubs will be transplanted when the shrubs are dormant (November through the first 2 weeks in February) and after they have lost their leaves. Exit-hole surveys will be completed immediately before transplanting. A qualified biologist will be on-site for the duration of transplanting activities to assure compliance with avoidance and minimization measures and other conservation measures.
- **Compensation.** Effects will be compensated at ratios ranging from 1:1 to 3:1, depending on the compensation approach and circumstances of the affected shrubs. Affected area will be re-vegetated with appropriate native plants. Mitigation can include onsite restoration, in-lieu fee payment, off-site mitigation and/or purchase of mitigation credits from a resource agency approved mitigation bank. Mitigation as required in accordance with the Endangered Species Act consultation with USFWS, may be applied to satisfy the compensation standard.

Timing: Before and during, and after construction

Responsibility: Before and during Construction Project Partners; During O&M Phase Non-Federal Partners

Implementing Mitigation Measure VELB-1 would reduce significant impacts related to removing and trimming elderberry shrubs that provide habitat for VELB to less than significant because elderberry shrubs retained on the project sites would be protected to minimize accidental damage, vegetation management would be conducted in a way that minimizes adverse impacts, elderberry shrubs would be transplanted consistent with established USFWS protocols, and compensatory mitigation would be implemented to offset any unavoidable impacts. Additionally, focused surveys of elderberry shrubs were conducted in 2022 to evaluate potential impacts of Sacramento River Erosion Contract 3. There are no elderberry shrubs present within this area. However, to minimize and offset the impacts of project components implemented on the American River and O&M trimming, NFS would implement Mitigation Measure VELB-1, which has been updated from that previously adopted for the 2016 ARCF Project.

Northwestern Pond Turtle (CEQA only)

Northwestern pond turtle has potential to occur in the construction footprint at the American River and Sacramento River Erosion Contract sites and at ARMS, with the most extensive areas of potential habitat and greatest potential for project impacts at American River Erosion Contract 3B and ARMS. Construction equipment operating in areas occupied by northwestern pond turtle could strike turtles that are nesting, basking, or traversing upland habitat, resulting in injury or mortality of these animals. Northwestern pond turtles in nests may also be crushed or entombed.

In addition, turtles in aquatic habitat could be displaced by construction disturbance and stranded by dewatering. Fuel, oil, other petroleum products, and other chemicals used during construction could be accidentally introduced into aquatic habitat; in sufficient concentrations, these contaminants would be toxic to northwestern pond turtles and their prey species. These would be significant impacts.

O&M activities, including vegetation management along the levees, could involve mowing and trimming of small trees and shrubs using hand tools or machinery. Such activities could incidentally collapse burrows or crush nests on the ground, potentially affecting northwestern pond turtle individuals or their habitat. Pond turtles could be killed or injured by mower blades when they are above ground (e.g., during periods of cooler temperatures, such as early mornings) and unable to leave areas being maintained because of their relative lack of mobility. Mowing equipment could crush or expose a buried northwestern pond turtle nest, potentially resulting in nest failure. This would be a significant impact.

The following mitigation measures have been identified to address this impact.

Mitigation Measure TURTLE-1: Implement Measures to Protect Northwestern Pond Turtle

The mitigation measure previously identified for northwestern Pond turtle and adopted for the ARCF 2016 Project has been augmented to address nesting sites. The Project Partners will implement the following measures, to avoid and minimize effects on northwestern Pond turtle:

- Ground disturbance (including vegetation removal) in suitable upland habitat within 500 feet of aquatic habitat for northwestern pond turtle will be minimized, to greatest extent feasible. The target period for vegetation removal in these areas will be mid-April to mid-May) when potential for turtle strikes and direct impacts are lowest, if practical with combined seasonal limitations on construction (e.g., nesting birds, VELB, flood season, etc.).
- The following measures may be implemented, where feasible, to minimize potential for heavy equipment to destroy northwestern pond turtle nests and to encounter hatchling turtles.
 - Placing artificial ground cover that prevents female turtles from excavating nests in most likely nesting areas where construction activities will occur before the following hatchling turtle emergence period.
 - Fencing most likely nesting areas to exclude access by female turtles and/or enclose hatchlings after emergence. If active nests and hatchlings may be present, the fenced area will be inspected daily by a qualified biologist and hatchling turtles will be captured and relocated to suitable habitat at a pre-determined location.
- A qualified biologist will conduct preconstruction surveys.

- A qualified biologist will be present during initial ground disturbance and in-water work to search for western pond turtles and minimize encounters with heavy equipment.
- If northwestern pond turtles or nests are observed on land within the construction footprint during project activities, work will stop within approximately 200 feet of the turtle, and a qualified biologist will be notified immediately. If possible, the turtle will be allowed to leave on its own and the qualified biologist will remain in the area until the biologist deems his or her presence no longer necessary to ensure that the turtle is not harmed. Alternatively, with prior CDFW approval, the qualified biologist may capture and relocate the turtle unharmed to suitable habitat at a pre-determined location.
- If a northwestern pond turtle nest is unintentionally uncovered during project activities, work will stop in the vicinity of the nest and will appropriate next steps, depending on the circumstances, will be determined by a qualified biologist. These may include fencing and buffering the nest and/or rescue, rehabilitation, and relocation of affected turtles.

Timing: Before and during construction

Responsibility: Non-Federal Project Partners

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Prior to the start of earthmoving activities, the Project Partners will obtain coverage under the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) stormwater permit for general construction activity (Order 2022-0057-DWQ), including preparing and submitting a project-specific SWPPP at the time the Notice of Intent to discharge is filed. The SWPPP shall identify and specify the following:

- the use of an effective combination of robust erosion and sediment control bmps and construction techniques that shall reduce the potential for runoff and the release, mobilization, and exposure of pollutants, including legacy sources of mercury from project-related construction sites. These may include but would not be limited to temporary erosion control and soil stabilization measures, sedimentation ponds, inlet protection, perforated riser pipes, check dams, and silt fences;
- The implementation of approved local plans, non-stormwater management controls, permanent post-construction bmps, and inspection and maintenance responsibilities;
- The pollutants that are likely to be used during construction that could be present in stormwater drainage and non-stormwater discharges, including fuels, lubricants, and other types of materials used for equipment operation;
- The means of waste disposal;

- Spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills;
- Personnel training requirements and procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for bmps specified in the SWPPP; and
- The appropriate personnel responsible for supervisory duties related to implementation of the SWPPP.

Where applicable, BMPs identified in the SWPPP will be in place throughout all site work, construction/demolition activities, and will be used in all subsequent site development activities. BMPs may include, but are not limited to, such measures as those listed below:

- Work window- conduct earthwork during low-flow periods;
- To the extent possible, stage construction equipment and materials on the landside of the levee in areas that have already been disturbed;
- Minimize ground and vegetation disturbance during project construction by establishing designated equipment staging areas, ingress and egress corridors, spoils disposal and soil stockpile areas, and equipment exclusion zones prior to the commencement of any grading operations;
- Stockpile soil on the landside of the levee reaches, and install sediment barriers (e.g., silt fences, fiber rolls, and straw bales) around the base of stockpiles to intercept runoff and sediment during storm events. If stockpiling soil on the landside of the levee is not feasible, a waterside soil stockpiling location above the ohwm will be coordinated with the appropriate agencies, such as nmfs, cvrwqcb, and usfws (if applicable). If necessary, cover stockpiles with geotextile fabric to provide further protection against wind and water erosion;
- Install sediment barriers on graded or otherwise disturbed slopes as needed to prevent sediment from leaving the project site and entering nearby surface waters;
- Install plant materials to stabilize cut and fill slopes and other disturbed areas once construction is complete. Plant materials will include an erosion control native seed mixture or shrub and tree container stock. Temporary structural bmps, such as sediment barriers, erosion control blankets, mulch, and mulch tackifier, will be installed as needed to stabilize disturbed areas until vegetation becomes established;
- Conduct water quality tests to measure increases in turbidity and sedimentation caused by construction activities. Specifically, where natural turbidity is between 0 and 5 ntus, increases shall not exceed 1 ntu; where natural turbidity is between 5 and 50 ntus, increases shall not exceed 20%; where natural turbidity is between 50 and 100 ntus, increases shall not exceed 10 ntus; and where natural turbidity is greater than 100 ntus, increases shall not exceed 10%. If turbidity is found to exceed these

standards, cease construction activities until filtration or construction bmps can be demonstrated to effectively prevent sediment discharge above standards; and

- A copy of the approved swppp shall be maintained and available at all times on the construction site.

Project Partners will also prepare and implement a Spill Prevention, Control, and Countermeasure Plan (SPCCP). A SPCCP is intended to prevent any discharge of oil into navigable water or adjoining shorelines. The contractor will develop and implement a SPCCP to minimize the potential for adverse effects from spills of hazardous, toxic, or petroleum substances during construction and operation activities. The SPCCP will be completed before any construction activities begin. Implementation of this measure will comply with state and Federal water quality regulations. The SPCCP will describe spill sources and spill pathways in addition to the actions that will be taken in the event of a spill (e.g., an oil spill from engine refueling will be immediately cleaned up with oil absorbents). The SPCCP will outline descriptions of containments facilities and practices such as doubled-walled tanks, containment berms, emergency shut-offs, drip pans, fueling procedures, and spill response kits. It will also describe how and when employees are trained in proper handling procedures and spill prevention and response procedures.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure WQ-1: Obtain Appropriate Discharge and Dewatering Permit and Implement Provisions for Dewatering.

Before discharging any dewatered effluent to surface water, USACE and its Partners will obtain a Limited Threat General Order (LTGO) from the CVRWQCB. The LTGO will include water quality monitoring to adhere to the effluent and receiving water quality criteria outlined in the permit, which is typically based on the CVRWQCB Basin Plan. As part of the permit, the permittee will design and implement measures as necessary to meet the discharge limits identified in the relevant permit. For example, if dewatering is needed during the construction of a cutoff wall, the dewatering permit would require treatment or proper disposal of the water prior to discharge if it is contaminated. These measures will represent the best available technology that is economically achievable to achieve maximum sediment removal.

Measures could include retaining dewatering effluent until particulate matter has settled before it is discharged, use of infiltration areas, and other BMPs. Final selection of water quality control measures will be subject to approval by the CVRWQCB. USACE will verify that coverage under the appropriate NPDES permit has been obtained before allowing dewatering activities to begin. USACE or its authorized agent will perform routine inspections of the construction area to verify that the water quality control measures are properly implemented and maintained. USACE will notify its contractors and Project Partners immediately if there is a non-compliance issue and compliance will be required and met.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters, Including Wetlands.

In compliance with the CWA, the Project Partners would compensate for fill of State and Federally protected waters to ensure no net loss of functions and values of jurisdictional waters at a minimum 1:1 ratio. Mitigation for permanent impact on aquatic resources shall be provided at a minimum 1:1 ratio. Mitigation can include onsite restoration, in-lieu fee payment, or purchase of mitigation credits at a resource agency approved mitigation bank. Mitigation as required in regulatory permits issued through USFWS, NMFS, and/or the Regional Water Quality Control Board may be applied to meet the performance standard of a minimum 1:1 ratio to ensure no net loss of functions and values of jurisdiction waters.

Water quality certification pursuant to Section 401 of the CWA would be obtained from the Central Valley RWQCB before starting project activities subject to Section 401. Any measures determined necessary during the permitting processes would be implemented, such that there is no net loss of functions and values of jurisdictional waters.

If compensation is provided through permittee-responsible mitigation with additional NEPA and/or CEQA documentation, a mitigation plan would be developed to detail appropriate compensation measures determined through consultation with USACE and Central Valley RWQCB. These measures would include methods for implementation, success criteria, monitoring and reporting protocols, and contingency measures to be implemented if the initial mitigation fails.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measure TURTLE-1, adapted from the measure previously adopted for ARCF 2016 Project, and GEO-1, WQ-1, and WATERS-1, which also were previously adopted for the ARCF 2016 Project would reduce significant impacts related to potential pond turtle mortality because measures would be implemented to avoid and minimize potential for construction equipment to encounter pond turtles, biological monitoring would be conducted to minimize impacts on individuals found in the construction footprint, and measures would be implemented to minimize degradation of aquatic habitat during construction, as well as during O&M-related impacts.

Bank Swallow (CEQA only)

Bank swallows historically nested along the Lower American River, recorded as recently as 1986 (CDFW 2023), and continue to forage in the area. However, no active nest colonies are known near any of the project sites, due to degradation of habitat suitability from dense vegetation and riprap cover on the banks. Individuals were spotted perching within 3 miles of the LAR project

sites as recently as 2021 (iNaturalist 2023a) and are known to occur regularly throughout the region, but suitable nesting sites are very limited. As a result, impacts on bank swallow are considered less than significant. However, the following mitigation measure has been identified to further reduce this impact.

Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds.

Project Partners will implement the following measures to minimize potential effects on active nests of Swainson's hawk, white-tailed kite, bank swallow, purple martin, and other migratory birds:

- Before on-site project activities begin each year, all construction personnel will participate in a worker environmental awareness program. A qualified biologist will inform all construction personnel about the life history of Swainson's hawk and other nesting birds and the importance of nest sites.
- Tree and shrub removal and other clearing, grading, and construction activities that remove vegetation will not be conducted during the nesting season (generally February 15 to August 31, depending on the species and environmental conditions for any given year) to the maximum extent feasible.
- If vegetation removal will occur during the nesting season, surveys will be conducted to identify active bird nests and measures will be implemented to avoid and minimize impacts on active nests. For special-status species, a survey will also be conducted for active nests within 500 feet of construction activities. For all other migratory birds, the survey will cover active nests within 100 feet of construction activities. All surveys will be completed using the latest techniques and protocols. If the biologist determines that the area surveyed does not contain any active nests, construction activities, including removing or pruning trees and shrubs, can commence.
- For any active bird nest found, regardless of the season, a protective buffer will be established and implemented until the nest is no longer active. The size of the buffer will be determined based on the species, nest stage, type, and intensity of project disturbance in the nest vicinity, presence of visual buffers, and other variables that may affect susceptibility of the nest to disturbance. A qualified biologist will monitor the nest during project activities to confirm effectiveness of the buffer and adjust the buffer as needed to ensure project activities do not adversely affect behavior of adults or young.
- For bald eagle, the typical maximum buffer distance between a bald eagle nest and construction activities is 660 feet (USFWS, 2007). If any bald eagle nests are discovered during the field surveys, regardless of whether a nest is classified as active, inactive/alternate, or abandoned, the Project will comply with the National Bald Eagle Management Guidelines (USFWS 2007).
- For bank swallow, if avoidance of bank swallow nests is not feasible, design measures to minimize impacts, including reducing the construction footprint to protect the upper bank from encroachment, will be considered. If nesting habitat is

directly impacted, mitigation will include removal of existing rock at a former bank protection site, acquisition of a permanent easement, and/or participation in a conservation easement on an appropriate landform.

- For purple martin and white-tailed kite, a survey will also be conducted for active nests within 500 feet of construction activities. These surveys could be conducted concurrent with Swainson's hawk surveys, so long as one survey is conducted no more than 48 hours from the initiation of construction activities. If the biologist determines that the area surveyed does not contain any active nests, construction activities, including removing or pruning trees and shrubs, can commence.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measure BIRD-1, which was previously adopted for the 2016 ARCF Project, including pre-construction surveys, training of construction crews, and avoidance buffers if nesting birds are located, the impact on bank swallow from construction activities would serve to provide assurances that nesting colonies, if they re-establish, would be avoided during construction.

O&M activities after construction would be consistent with existing O&M practices, so any impacts also would likely be consistent with existing conditions. In addition, these activities would be short term, would not affect nesting habitat, and the resulting impacts would be temporary and less than significant.

Bald Eagle

Bald eagles breed near rivers and open water and an active nest at ARMS has been occupied since 2023. Construction activities within 330 feet of this nest would primarily be limited to construction access, with a small area of low riparian floodplain restoration; these and more disruptive activities elsewhere within 660 feet of the nest would be subject to seasonal restrictions to avoid impacts during the nesting period. These distances are based on USFWS 2007 *National Bald Eagle Management Guidelines*. The current design completely avoids direct impacts to the existing nest tree. This species has an extremely high nest site fidelity, such that they have been documented using the same nests year after year. As a result, impacts on the bald eagle nest tree are less than significant.

Construction activities at ARMS are anticipated to take place over multiple construction seasons (anticipated 3 seasons), which would occur during the bald eagle nesting season and result in impacts on foraging habitat and nest success that could be potentially significant. To understand the potential effects of the project on the bald eagle pair, USACE met with USFWS on March 22, 2023. In that meeting, USFWS indicated that construction activities could occur within 660 feet of the nest, during the bald eagle nesting season (late December – early July), with receipt of a disturbance permit from USFWS prior to construction. However, avoidance and minimization of permanent impacts and recreational access features within 330 feet of the nest, were encouraged.

Bald eagles are extremely opportunistic when acquiring prey during the nesting season and may recover fish stranded by fluctuating river flows; exploit salmonid spawning runs and other fish species as they move from lakes and reservoirs into tributary streams; retrieving carrion or moribund fish post-spawn from inland reservoirs; capturing waterfowl during flightless periods; collecting road-killed mammals; and raiding waterbird colonies (Jackman and Jenkins 2004). The American River and Sacramento River appear to be the predominant foraging habitats for this nesting pair, based on field observations over multiple site visits by Certified Wildlife Biologist. Foraging activity in the existing mining pit/pond has not been observed; however, waterfowl do exhibit a predator avoidance response to eagle presence when rafting in the pond during the early winter months (December – February) and may be a temporal food source for the eagle pair at ARMS. In the post-construction condition, ARMS would provide a mosaic of tidal wetland and riparian habitats that are projected to provide higher quality bald eagle foraging habitat than in the current condition.

The post-construction condition would support more than 16 acres of open water and transitional tidal wetland habitat designed to be inundated throughout most of the year; even at the lowest water levels in late Fall, approximately 12 acres would remain tidally inundated. In mid-December through April, the inundated area would expand to approximately 50 acres, including riparian scrub vegetation surrounding the open water area. The increases shoreline complexity, combined with availability of exposed tidal flats during the later part of the nesting season (May – July), are anticipated to increase overall foraging value for the eagle nesting pair in the post-construction condition at ARMS (Watson 2002, Watson et al. 1991) and would not have an adverse impact on foraging in the American or Sacramento Rivers; therefore, implementing mitigation actions at ARMS is not anticipated to have a substantial adverse effect on bald eagle foraging habitat availability and this impact would be less than significant.

O&M activities after construction would be consistent with existing O&M practices, so any impacts associated with O&M would also be similar to existing conditions. O&M activities after construction would involve activities, such as, mowing, grading, erosion control, encroachment management, herbicide application, rodent control, tree trimming and the removal of woody vegetation from the canal. Application of herbicides would be limited and is not expected to appreciably affect habitat conditions bald eagle (i.e., no loss of nesting trees). O&M would involve limited vegetation trimming and management to facilitate visual inspections of the levee. This vegetation trimming is expected to focus largely on shrubs and small, short trees whose presence may be concealing levee erosion issues. Therefore, vegetation management during O&M activities is not anticipated to affect large trees that represent suitable nesting habitat for bald eagle. Because these activities would be short term and the resulting impacts would be temporary, impacts of O&M would be less than significant.

ARMS property is currently owned by SAFCA but not yet accessible to the general public. Public access would continue to be restricted through the mitigation establishment period (up to 10 years), after which public access would be allowed. This increase in public use of the site would likely be the greatest overall impact on the nesting and foraging success of the existing eagle pair during nesting season at ARMS post-establishment. Although impacts are less than significant, the following mitigation measures would further reduce impacts.

Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing mitigation measures identified for impacts on riparian habitat (VEG-1 and VEG-2) and nesting birds (BIRD-1), all of which were previously adopted for the ARCF 2016 Project, there would be no net loss of eagle nesting habitat and the impact on bald eagle from construction-related activities would be reduced to a less-than-significant level. VEG-1 required replanted of impacted vegetation that once established can provide foraging and perching for bald eagles, VEG-2 requires fencing of protected areas keeping construction activities away from the nest, BIRD-1 requires work to be done outside of the nesting season, with seasonal and ongoing observation of active nests, The nesting pair of bald eagles would have 5 to 10 years to adjust to the changed landscape and maintenance activities before the general public is granted full access to the mitigation site. However, the long-term effects of human encroachment on the nest is significant and unavoidable.

Burrowing Owl

During their nesting period (February 1 through August 31) and throughout the year, burrowing owls could use mammal burrows in grasslands that are present in and adjacent to portions of the Project Area. The species has not been observed during surveys conducted at the project sites and is unlikely to occur at American/Sacramento River Erosion Contract sites or ARMS, based on poor habitat conditions (e.g., limited burrows, tall weedy vegetation) and lack of recent documented occurrences in the vicinity. However, if present, ground disturbance (excavation and backfilling) could result in direct mortality or injury of burrowing owls within natural burrows and similar artificial features. Burrows could be disturbed or destroyed during construction, and burrowing owls in areas adjacent to construction could be disturbed, potentially resulting in burrow (including nest) abandonment. These would be significant impacts. Most of the

potentially suitable habitat at American River Erosion Contract 4A is within staging and construction access areas where there is flexibility to avoid active burrows. However, if an active burrow is present within the footprint of project features that cannot be altered to avoid the burrow, it may be necessary to destroy an active burrow, which would be a significant impact. The following mitigation measure has been identified to address this impact.

Mitigation Measure BUOW-1: Implement Measures to Protect Burrowing Owl.

The Project Partners will implement the following measures to reduce effects on burrowing owl:

- Prior to the implementation of construction, surveys will be conducted to determine the presence of burrows or signs of burrowing owl at project sites that provide suitable habitat. A habitat assessment and any proceeding surveys will be conducted in accordance with Appendix D of the Staff Report on Burrowing Owl Mitigation (CDFG 2012).
- If burrowing owls are observed, coordination with the California Department of Fish and Wildlife (CDFW) will be initiated regarding impact avoidance and minimization measures to be implemented. At a minimum, these measures will include implementing protective buffers around occupied burrows during the duration of the breeding/juvenile rearing season and biological monitoring of active burrows, per the 2012 Staff Report on Burrowing Owl Mitigation, to ensure that construction activities do not result in adverse effects on nesting burrowing owls. To the extent feasible, destruction of occupied burrows will also be avoided outside the nesting season.
- If burrows known to be occupied at least seasonally by burrowing owls are within the project footprint and burrow destruction cannot be avoided, an exclusion plan will be developed and implemented in coordination with CDFW. Exclusion will not be conducted during the breeding season, unless a qualified biologist verifies through noninvasive means that either (1) the birds have not begun egg laying or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival.
- If exclusion is conducted, each occupied burrow that is destroyed will be replaced with at least one artificial burrow on a suitable portion of the project site that will not be subject to project impacts or O&M activities that could adversely affect burrowing owl. Artificial burrows will be installed within 330 feet of the destroyed occupied burrow(s) and within suitable foraging habitat. Monitoring will be conducted to determine if artificial burrows are occupied followed exclusion from and destruction of the occupied burrow.
- If occupied or suitable burrows are present, all on-site construction personnel will be instructed on the potential presence of burrowing owls, identification of these owls and their habitat, and the importance of minimizing impacts on burrowing owls and their habitat.

Timing: Before and during construction

Responsibility: Project Partners

Implementing BUOW-1 would require focused surveys to identify suitable habitat and active burrows, avoidance buffers to avoid active burrows, and compensatory mitigation (if needed to compensate for habitat loss at sites that support active burrows)

O&M activities after construction would be consistent with existing O&M practices, so any impacts also would likely be consistent with existing conditions. Ongoing rodent control could limit the availability of small-mammal burrows often used by burrowing owl. However, because rodent control would be limited to areas where such burrows could threaten the integrity of the levee system, such actions are not expected to substantially reduce the availability of suitable burrows for burrowing owl. Mowing tall vegetation also improves foraging habitat conditions and accessibility to burrows. Therefore, because O&M activities would be short term and the resulting impacts would be temporary, impacts of O&M would be less than significant.

Least Bell's Vireo

The least Bell's vireo is one of four subspecies of Bell's vireo and is the only subspecies that breeds entirely in California and northern Baja California. A riparian obligate, the historical distribution of least Bell's vireo extended from coastal southern California through the San Joaquin and Sacramento valleys as far north as Tehama County near Red Bluff. Currently small populations remain in southern Inyo, southern San Bernardino, Riverside, San Diego, Orange, Los Angeles, Ventura, and Santa Barbara Counties. Though individuals are occasionally spotted within 10 miles of the project area. During 2010-2013, least Bell's vireo surveys were conducted in the Putah Creek Sinks located in the Yolo Bypass Wildlife Area (Whisler 2013, 2015), approximately 3 miles west of the Proposed Project Area. They require riparian thickets, often of dense willows, with a well-developed understory either near water or in dry portions of river bottoms. They nest along margins of bushes and forage low to the ground.

The project sites are unlikely to support nesting least Bell's vireo because the riparian corridor is narrow and patchy, and most sites are subject to human disturbance. However, construction of American River Erosion Contract 3B North and South and American River Erosion Contracts 4A and 4B improvements would result in the loss of riparian habitat (Table 4.3-2) that could be used by migrant individuals. This loss of habitat would be less than significant impact. However, the following mitigation measures would further reduce impacts.

Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures VEG-1 and VEG-2, which were previously adopted for the ARCF 2016 Project, the impact would be reduced to a less-than-significant level.

O&M activities after construction would be consistent with existing O&M practices, so any impacts also would likely be consistent with existing conditions. Vegetation management during O&M activities is not anticipated to have a substantial adverse effect overall and impacts of O&M on Least Bell's Vireo would be less than significant.

Purple Martin

Purple martins inhabit riparian forest and woodland areas and nest in tree cavities or crevices of cliffs. This species is also known to use infrastructure such as bridge and overpasses (e.g., weep holes) or other manmade structures (e.g., lamp posts, traffic lights, birdhouses) for nesting. By removing riparian woodland, the Project could continue to fragment suitable habitat for this species. Noise from heavy construction machinery could prompt nest abandonment and subsequent failure of nests in and near construction activity areas. Vegetation removal could also result in direct take of purple martins if any are nesting in the trees targeted for removal. This impact would be less than significant. However, the following mitigation measures would further reduce impacts.

Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measure BIRD-1 and restoration of riparian habitat in accordance with Mitigation Measures VEG-1 and VEG-2, all of which were previously adopted for the ARCF 2016 Project, the impact of construction on purple martin would be reduced to a less-than-significant level.

O&M activities after construction would be consistent with existing O&M practices, so any impacts also would likely be consistent with existing conditions. The application of herbicides could indirectly affect purple martins by wilting or killing vegetation that contributes to the production of their prey (i.e., insects). Vegetation management during O&M activities would not likely affect nesting habitat for purple martin because it would not target the large trees (more specifically, large trees with cavities) used by this species. Mowing noise may temporarily disturb purple martins, but the activity would be only sporadic and short term. These relatively minor impacts would be less than significant.

Swainson's Hawk

As described in Section 3.8.4 of the ARCF GRR Final EIS/EIR, the project sites provide suitable roosting and nesting habitat for Swainson's hawk, but no known active or recently active nest trees would be removed. Long-term effects on Swainson's hawk nesting habitat could result from riparian habitat removal required during project implementation. Although the removal of riparian trees would be offset through compensatory plantings, there would be a temporal loss of habitat until the newly planted trees mature enough to be suitable for Swainson's hawk nesting. However, suitable nest trees would remain on or near the project sites and this temporal loss is unlikely to have a substantial adverse effect on Swainson's hawk.

Before the start of construction, pre-construction surveys would be conducted following the Swainson's Hawk Technical Advisory Committee Guidance (Swainson's Hawk Technical Advisory Committee 2000). Should surveys indicate that nesting Swainson's hawk are present, the potential would exist for short-term, temporary impacts during construction from dust, noise, and vibration. Swainson's hawk nest failure resulting from project activities would be a significant impact.

O&M activities after construction would be consistent with existing O&M practices, so any impacts associated with O&M would also be similar to existing conditions. O&M activities after construction would involve activities, such as, mowing, grading, erosion control, encroachment management, herbicide application, rodent control, tree trimming and the removal of woody vegetation from the canal. Rodent control would be limited to preventing rodents from burrowing and undermining the levee; therefore, rodent control actions are not expected to appreciably reduce the prey base for Swainson's hawk. Mowing on the project sites may also increase the visibility of prey, thereby enhancing foraging efficiency for Swainson's hawk.

Application of herbicides would be limited and is not expected to appreciably affect habitat conditions for Swainson's hawk (i.e., no loss of nesting trees or loss of grassland foraging habitat). O&M would involve limited vegetation trimming and management to facilitate visual inspections of the levee. This vegetation trimming is expected to focus largely on shrubs and small, short trees whose presence may be concealing levee erosion issues. Therefore, vegetation management during O&M activities is not anticipated to affect large trees that represent suitable nesting habitat for Swainson's hawk. Because these activities would be short term, and the resulting impacts would be temporary, impacts of O&M would be less than significant.

The compensatory mitigation proposed to address loss of riparian habitat would also compensate for the loss of Swainson's hawk nesting habitat. Potential nesting habitat would be reduced temporarily because there would be a lag time between when trees would be removed or trimmed during Project construction and when the replacement trees would be mature enough to support raptor nesting, but there would be a net increase in quality riparian habitat present once the mitigation plantings become established. Although impacts would be less than significant, the following mitigation measures would further reduce impacts.

Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing mitigation measures identified for impacts on riparian habitat (Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal and Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site) and nesting birds (Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds), the impact on Swainson's hawk from construction-related activities, including nesting habitat removal would be reduced to a less-than-significant level. These measures were previously adopted for the ARCF 2016 Project.

Western Yellow-Billed Cuckoo

As described in the Proposed Action effects discussion in Section 3.8.4 (page 167) of the ARCF GRR Final EIS/EIR, the project sites are unlikely to support nesting western yellow-billed cuckoos because the riparian corridor is narrow and patchy, and most sites are subject to human disturbance. In addition, the species no longer nests along the American River and the remnant Sacramento River nesting population is approximately 50 miles north. However, construction of American River Erosion Contract 3B North and South and American River Erosion Contracts 4A and 4B improvements would result in the loss of riparian habitat (Table 4.3-2) that could be used by migrant individuals. This loss of habitat would be a less than significant impact. However, the following mitigation measures would further reduce impacts.

Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures VEG-1 and VEG-2, which were previously adopted for the ARCF 2016 Project, the impact would be reduced even further.

O&M activities after construction would be consistent with existing O&M practices, so any impacts also would likely be consistent with existing conditions. Vegetation management during O&M activities is not anticipated to have a substantial adverse effect overall and impacts of O&M on western yellow-billed cuckoo would be less than significant.

White-tailed Kite

The Project Area contains numerous large riparian trees that provide suitable nesting conditions for white-tailed kite. Noise from heavy construction machinery could prompt nest abandonment and subsequent failure of nests in and near construction activity areas. Vegetation removal could also result in direct take of active white-tailed kite nests and would reduce the number of potentially available nest trees until replacement plantings mature enough to provide suitable nest sites. Loss of an active nest would be a significant impact, but the temporal reduction in suitable nest trees is unlikely to have a substantial adverse effect because many suitable nest trees would remain available on and near the project sites.

The following mitigation measures have been identified to address impacts.

Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures VEG-1 and VEG-2 would reduce the impact on riparian nesting habitat to a less-than-significant level. Implementation of Mitigation Measure BIRD-1 would reduce the impact on nesting white-tailed kites to a less-than-significant level. These measures were previously adopted for the ARCF 2016 Project.

O&M activities after construction would be consistent with existing O&M practices, so any impacts also would likely be consistent with existing conditions. Vegetation management during O&M activities is not anticipated to affect large trees, limiting the potential for such activities to affect nesting habitat for white-tailed kite. Therefore, because O&M activities would be short term and the resulting impacts would be temporary, impacts of O&M would be less than significant.

Northern Harrier (CEQA-only)

Northern harrier occurs primarily in lowlands throughout much of California and the Central Valley supports most of the state's breeding birds. This species nests and forages in a variety of open habitats, including marsh, wet meadows, borders of lakes, rivers, and streams, grasslands, weedy fields, and some agricultural crops. Harriers nest on the ground in dense, often tall vegetation in relatively undisturbed areas. Grassland at Lower American River Erosion Contract 4B and ARMS provides suitable foraging habitat and may also provide suitable nesting habitat, though this species likely occurs in relatively low numbers in this portion of the Project Area due to the nearby urban environment that harriers typically avoid. Project implementation would reduce the amount of potentially suitable nesting and foraging habitat but given the marginal quality of the habitat and likely low number of individuals that use it, this would not have a substantial adverse effect on the species. However, if present during construction activities, active nests could be destroyed or disturbed, potentially resulting in nest failure. Therefore, this is a significant impact. The following mitigation measure has been identified to address this impact.

Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measure BIRD-1 would reduce this impact to a less-than-significant level by avoiding nests to the extent possible and minimizing impacts such as with the use of construction surveys and buffers.

American Badger (CEQA only)

American badger inhabits grasslands and riparian habitats. Potential impacts on American badger include mortality, injury, displacement, and harassment, along with permanent and temporary loss of habitat. During construction under the Proposed Action, badgers would be at risk of direct impacts such as vehicle strikes, along with impacts from loss of habitat, increased risks of predation loss, and disruption of behavioral patterns. Heavy machinery operating in the Proposed Action Area could compact the soil, making the ground less suitable for digging for badgers and their primary prey species. Construction-related badger mortality would be a less than significant impact. However, the following mitigation measure would further reduce impacts.

Mitigation Measure BADGER-1: Implement Measures to Avoid and Minimize Effects on American Badger.

The Non-Federal Partners will implement the following measures to avoid and minimize effects on American badger.

- The Non-Federal Partners will conduct pre-construction clearance surveys for American badgers. These surveys will be conducted within 14 days of the start of any

ground-disturbing activity. If no potential American badger dens are present, no further mitigation is necessary.

- If a potential American badger den is discovered but deemed inactive, the qualified biologist will excavate the den during the initial clearance survey to prevent badgers from reoccupying the den during the construction period.
- If found to be present, occupied badger dens will be flagged and ground disturbing activities will be avoided within 50 feet of an occupied den. Maternity dens will be avoided during pup-rearing season (February 15 through July 1) and a minimum 200-foot buffer will be established.
- If avoidance of a non-maternity den is not feasible, badgers will be relocated by carefully evacuating the burrow (either by hand or using mechanized equipment, under the direct supervision of a qualified biologist) before or after the rearing season (February 15 through July 1). Any relocation of badgers will be coordinated with CDFW.

Timing: Before and during construction

Responsibility: Non-Federal Partners

Implementation of Mitigation Measure BADGER-1, which was previously adopted for the ARCF 2016 Project, would reduce this impact to a less-than-significant level by reducing potential badger mortality because surveys would be conducted to identify badger dens, re-occupation of inactive dens would be prevented, disturbance of active dens would be minimized, disturbance of maternity dens would be avoided.

O&M activities are expected to have only minor effects on habitat conditions for American badger. No widespread soil compaction is anticipated, and rodent control would result in only limited ground disturbance. Mowing work along the levees may displace badgers, but this effect would only be temporary because the activity would be temporary. Overall, the effect of O&M on American badger would be less than significant.

Pallid Bat (CEQA only)

Construction activities could disturb riparian forest, which provides potential roosting habitat for pallid bat. The period of construction activities would overlap the bat maternity season (generally May 1 to August 31). Tree removal in riparian habitat could adversely affect breeding and non-breeding pallid bats by causing the loss of established roosts and potential roosting habitat. Construction activities near bridges crossing the American River could also disturb pallid bat if they were occupying any of the bridges. General construction-related disturbance, including exposure to noise, vibration, and dust, could adversely affect breeding and non-breeding bats. This would be a significant impact. Permanent loss of roosting habitat would be a significant impact, but the temporal reduction in suitable sites is unlikely to have a substantial adverse effect because many suitable nest trees would remain available on and near the project sites. The following mitigation measures have been identified to address this impact.

Mitigation Measure BAT-1: Implement Measures to Protect Maternity Roosts of Special-Status Bats.

The Non-Federal Partners will implement the following measures to avoid and minimize effects on special-status bats:

- Wherever feasible, USACE will conduct construction activities outside of the pupping season for bats (generally April 1 to August 31).
- Project Partners or their designated environmental personnel will identify trees slated for removal that contain suitable bat roosting habitat. Trees indicated for removal that are not identified as suitable bat habitat can be removed using normal methods.
- Live trees that are indicated to contain roosting habitat shall be removed in a two-phase process. The first day, under the supervision of the biological monitor, remove limbs and branches that do not contain cavities, cracks, crevices, or deep bark fissures that can provide roosting habitat. On the second day remove the remainder of tree by gently lowering the tree to the ground, under the supervision of the biological monitor and leave material undisturbed for 48 hours. If it is not feasible to remove a tree using the two-phased approach, limbs containing habitat features should be removed and gently lowered to the ground in a location where they are not likely to be crushed or disturbed by the felling of the tree and left undisturbed for the next 48 hours.
- Standing dead trees or snags with habitat features should be removed over a single day by gently lowering the tree or snag to the ground. The tree or snag should be left undisturbed on the site for the next 48 hours.
- For trees containing suitable bat roosting habitat that will be trimmed, trimming shall be conducted in the presence of a biological monitor. If trimming results in the removal of vegetation that contains potential bat habitat, vegetation should be gently lowered to the ground and left near the tree for 48 hours prior to removal, if feasible. If the vegetation cannot be left for 48 hours, the biological monitor shall survey the vegetation for presence of bats. If any bats are found within the vegetation, the vegetation must be left for 48 hours.
- If removal of trees must occur during the bat pupping season, within 30 days of tree removal activities, all trees to be removed will be surveyed by a qualified biological monitor for the presence of features that may function as special-status bat maternity roosting habitat. Trees that do not contain potential special-status maternity roosting habitat may be removed. For trees that contain suitable special-status bat maternity roosting habitat, surveys for active maternity roosts shall be conducted by the designated biological monitor in trees designated for removal. The surveys shall be conducted from dusk until dark.
- If any special-status species bat maternity roost is located, appropriate buffers must be established by clearly marking the buffer area. The buffer area must be a minimum of 100 feet outside the tree containing the maternity roost. No contract activities shall

commence within the buffer areas until the end of pupping season (September 1) or the biological monitor confirms that the maternity roost is no longer active.

- If construction activities must occur within the buffer, the biological monitor must monitor activities either continuously or periodically during the work, which will be determined by the biological monitor. The biological monitor will be empowered to stop activities that, in their opinion, may cause roost failure. If construction activities are stopped, the biological monitor will inform USACE, and activities will only resume in the buffer if the biologist determines they will not cause roost failure.

Timing: Before and during construction.

Responsibility: Non-Federal Partners.

Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measure BAT-1, previously adopted for the ARCF 2016 Project, the impact of construction on this species would be reduced to a less-than-significant level, and restoration of riparian habitat in accordance with Mitigation Measures VEG-1 and VEG-2, also previously adopted for the ARCF 2016 Project, would reduce impacts associated with long-term habitat loss to less than significant.

O&M activities, specifically trimming or removal of woody vegetation along the levees, could indirectly and directly affect colonies of roosting pallid bats by resulting in the loss or modification of habitat. However, such management of woody vegetation is largely expected to avoid the mature riparian trees where bats are most likely to be present, minimizing the potential for O&M activities to affect roosting pallid bats. The O&M activities associated with application of herbicides could indirectly affect pallid bats by wilting or killing vegetation that contributes to the production of their prey (i.e., insects). However, the application of herbicides would be highly localized and would focus on helping to eradicate unwanted weedy plants in the Proposed Action Area. Thus, the application of herbicides as part of O&M for the Proposed Action is not anticipated to appreciably affect the supply of prey for pallid bat. The impact of O&M on pallid bat would be less than significant. The following mitigation measures have been identified to address this impact.

Western Red Bat (CEQA only)

Western red bats may establish day roosts in the foliage of large cottonwood, oak, and willow trees in the Proposed Action Area, and maternal roosts may occur in large well-developed stands of riparian habitat. Tree removal in riparian habitat could affect western red bats if they are present. General construction-related disturbance, including exposure to noise, vibration, and dust, could adversely affect breeding and non-breeding bats. This would be a significant impact.

Mitigation Measure BAT-1: Implement Measures to Protect Maternity Roosts of Special-Status Bats.

The Project Partners will implement the following measures to avoid and minimize effects on special-status bats:

- Wherever feasible, USACE will conduct construction activities outside of the pupping season for bats (generally April 1 to August 31).
- Project Partners or their designated environmental personnel will identify trees slated for removal that contain suitable bat roosting habitat. Trees indicated for removal that are not identified as suitable bat habitat can be removed using normal methods.
- Live trees that are indicated to contain roosting habitat shall be removed in a two-phase process. The first day, under the supervision of the biological monitor, remove limbs and branches that do not contain cavities, cracks, crevices, or deep bark fissures that can provide roosting habitat. On the second day remove the remainder of tree by gently lowering the tree to the ground, under the supervision of the biological monitor and leave material undisturbed for 48 hours. If it is not feasible to remove a tree using the two-phased approach, limbs containing habitat features should be removed and gently lowered to the ground in a location where they are not likely to be crushed or disturbed by the felling of the tree and left undisturbed for the next 48 hours.
- Standing dead trees or snags with habitat features should be removed over a single day by gently lowering the tree or snag to the ground. The tree or snag should be left undisturbed on the site for the next 48 hours.
- For trees containing suitable bat roosting habitat that will be trimmed, trimming shall be conducted in the presence of a biological monitor. If trimming results in the removal of vegetation that contains potential bat habitat, vegetation should be gently lowered to the ground and left near the tree for 48 hours prior to removal, if feasible. If the vegetation cannot be left for 48 hours, the biological monitor shall survey the vegetation for presence of bats. If any bats are found within the vegetation, the vegetation must be left for 48 hours.
- If removal of trees must occur during the bat pupping season, within 30 days of tree removal activities, all trees to be removed will be surveyed by a qualified biological monitor for the presence of features that may function as special-status bat maternity roosting habitat. Trees that do not contain potential special-status maternity roosting habitat may be removed. For trees that contain suitable special-status bat maternity

roosting habitat, surveys for active maternity roosts shall be conducted by the designated biological monitor in trees designated for removal. The surveys shall be conducted from dusk until dark.

- If any special-status species bat maternity roost is located, appropriate buffers must be established by clearly marking the buffer area. The buffer area must be a minimum of 100 feet outside the tree containing the maternity roost. No contract activities shall commence within the buffer areas until the end of pupping season (September 1) or the biological monitor confirms that the maternity roost is no longer active.
- If construction activities must occur within the buffer, the biological monitor must monitor activities either continuously or periodically during the work, which will be determined by the biological monitor. The biological monitor will be empowered to stop activities that, in their opinion, may cause roost failure. If construction activities are stopped, the biological monitor will inform USACE, and activities will only resume in the buffer if the biologist determines they will not cause roost failure.

Timing: Before and during construction.

Responsibility: Non-Federal Project Partners.

Mitigation Measure VEG-1: Compensate for Riparian Habitat Removal.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure VEG-2: Retain, Protect, and Plant Trees On-Site.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measure BAT-1 would reduce construction impacts on this species such as potential mortality of roosting pallid bats and western red bats because surveys would be conducted to identify suitable bat roost trees, measures would be implemented to minimize bat mortality during tree removal, disturbance of maternity roosts would be avoided, removal of suitable roosting habitat would be minimized, and unavoidable removal would be compensated. Additionally, restoration of riparian habitat in accordance with Mitigation Measures VEG-1 and VEG-2, which were previously adopted for the ARCF 2016 Project, would reduce impacts associated with habitat loss to less than significant.

O&M activities, specifically trimming or removal of woody vegetation along the levees, could indirectly and directly affect colonies of roosting bats by resulting in the loss or modification of habitat. However, such management of woody vegetation is largely expected to avoid the mature

riparian trees where bats are most likely to be present, minimizing the potential for O&M activities to affect roosting bats. Other potential effects of O&M under the Proposed Action on western bat are the same as those described previously for pallid bat. These impacts would be less than significant.

Special-status Plants (CEQA only)

Four special-status plants have been documented or determined to have potential to occur at one or more of the American River erosion sites, Sacramento River Erosion Contract 3, and ARMS: bristly sedge, pappose tarplant, Sanford's arrowhead, and woolly rose-mallow. None of these species has been documented in or immediately adjacent to the construction footprint. However, if found to occur, plants could be destroyed by construction equipment, trampled by construction personnel, or otherwise impacted by construction activities, resulting in damage to or mortality of the plants. This would be a significant impact. The following mitigation measure has been identified to address this impact.

Mitigation Measure PLANT-1: Implement Measures to Protect Special-Status Plants

The Non-Federal Partners will implement the following measures, to avoid and minimize effects on special-status plants:

- Preconstruction surveys will be conducted by a qualified botanist in suitable habitat to determine the presence of any special-status plants. Surveys will be conducted at an appropriate time of year during which the species are likely to be detected, which will likely be during the blooming period.
- The botanists will conduct a floristic survey that follows the CDFW botanical survey guidelines (California Department of Fish and Wildlife 2018). All plant species observed will be identified to the level necessary to determine whether they qualify as special-status plants or are plant species with unusual or significant range extensions.
- If special-status plant species are found during preconstruction surveys, Project Partners will redesign or modify proposed project components, if necessary, to avoid indirect or direct effects on special-status plants to the extent feasible.
- If the plants are found during construction the habitat will be marked or fenced as an avoidance area during construction. A buffer of 25 feet will be established. If a buffer of 25 feet is not possible, the next maximum possible distance will be fenced off as a buffer.
- If direct impacts cannot be avoided, the plants (including their root balls or rhizomes if applicable) may be transplanted to an appropriate location under the supervision of a qualified biologist or landscape architect, if the species is known to transplant effectively. The qualified biologist or landscape architect will coordinate with CDFW regarding transplantation techniques and locations prior to implementation of transplantation efforts.

| | |
|------------------------|--------------------------------|
| Timing: | Before and during construction |
| Responsibility: | Non-Federal Partners |

Implementing Mitigation Measure PLANT-1, which augments the measure previously adopted for the ARCF 2016 Project, would reduce this impact to a less-than-significant level because surveys would be conducted to identify special-status plant population on the project sites, measures would be implemented to avoid and minimize disturbance of on-site populations, and individuals of species suitable for transplantation would be transplanted.

O&M activities after construction would involve activities, such as, mowing, grading, erosion control, encroachment management, herbicide application, rodent control, tree trimming and the removal of woody vegetation from the canal. Rodent control and mowing activities would increase the potential for special-status plants to be unintentionally trampled, crushed, or removed by maintenance workers and equipment. O&M would involve limited vegetation trimming and management to facilitate visual inspections of the levee; this activity would have the same potential for special-status plants to accidentally be damaged or killed as under current O&M activities. Overspray from herbicide applications may result in even accidental mortality of non-target plants, including special-status species. However, the application of herbicides would be highly localized, and herbicides would not be sprayed near the known populations on or adjacent to the project sites. Thus, the application of herbicides as part of O&M for the Proposed Action is not anticipated to affect special-status plants. The impact of O&M on special-status plants would be less than significant.

Magpie Creek Project

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated.

NEPA Impact Conclusion (Design Refinements): Short-term and Moderate; Long-term and Minor effects that are Less than Significant with Mitigation Incorporated.

The Design Refinements would have a greater impact on special-status species than stated in the ARCF GRR Final EIS/EIR. The MCP design has changed significantly since the ARCF GRR Final EIS/EIR, and increased vegetation removal would increase impacts to special-status species. The impact discussions below apply to both the CEQA Proposed Action and to NEPA design refinements.

Crotch's Bumble Bee (CEQA only)

The impact analysis from “American River Erosion Contract 3B North and South, American River Erosion Contracts 4A and 4B, ARMS, Sacramento River Erosion Contract 3, and Piezometer Network” is applicable to the MCP. Construction of the MCP of the Proposed Action would result in impacts on suitable habitat and could result in mortality of Crotch’s bumble bee. This would be a significant impact. Impacts of O&M activities would be less than significant for the reasons discussed in the impact analysis above. With implementation of Mitigation Measures BEE-1, VEG-1, and VEG-2, which were previously adopted for the ARCF 2016 Project, significant impacts on this species would be reduced to a less-than-significant level.

Monarch butterfly

Effect would be the same as stated previously for American River Erosion Contract 3B North and South, American River Erosion Contracts 4A and 4B, ARMS, Sacramento River Erosion Contract 3, and the Piezometer Network. Construction of the MCP of the Proposed Action would result in impacts on suitable habitat and could result in mortality of monarch butterfly. This would be a significant impact. Impacts of O&M activities would be less than significant for the reasons discussed in the impact analysis above. With implementation of the new Mitigation Measure MONARCH-1 and Mitigation Measures VEG-1 and VEG-2, which were previously adopted for the ARCF 2016 Project, significant impacts on this species would be reduced to a less-than-significant level.

Vernal Pool Fairy Shrimp and Tadpole Shrimp

There is a seasonal wetland east of Raley Boulevard and a seasonal wetland west of the Sacramento Northern Bike Trail that provide suitable habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp would be affected by MCP construction. The realignment of Magpie Creek and maintenance road construction on the right bank would permanently impact both seasonal wetlands and vernal pools. The installation of culverts at the bike trail would also permanently impact a seasonal wetland. However, topography and hydrology of the remaining portions of these wetlands are not anticipated to be affected and they would continue to provide suitable habitat for these species. Nonetheless, the permanent impact of wetlands and potentially vernal pool fairy shrimp and tadpole shrimp would be significant. Estimated vernal pool impacts from the 2016 GRR FEIS/EIR were 0.25 acres; because impacts have exceeded that with addition of the design refinements (see Table 4.3-2), USACE has consulted with USFWS on this increased impact in the 2024 BA, Appendix L.

The following mitigation measures have been identified to address this impact.

Mitigation Measure SHRIMP-1: Implement Measures to Avoid and Minimize Effects on Vernal Pool Fairy Shrimp and Tadpole Shrimp.

The following measures, from the 2004 Biological Opinion from the Magpie Creek Flood Control Project as stated on page 185 of the ARCF GRR Final EIS/EIR, will be implemented to avoid and minimize impacts to vernal pool fairy shrimp and vernal pool tadpole shrimp in the vicinity of the Magpie Creek Project construction area.

- Preservation component: For every acre of habitat directly or indirectly affected, at least two vernal pool credits will be dedicated within a Service-approved ecosystem preservation bank or, based on Service evaluation of site-specific conservation values, three acres of vernal pool habitat may be preserved on the project site or another nonbank site as approved by the Service.
- Creation component: For every acre of habitat directly affected, at least one vernal pool creation credit will be dedicated within a Service-approved habitat creation bank or, based on Service evaluation of site-specific conservation values, two acres of vernal pool habitat will be created and monitored on the project site or another non-bank site as approved by the Service.

- Listed vernal pool crustacean habitat and associated uplands utilized as on-site compensation will be protected from adverse effects and managed in perpetuity or until the Corps, the applicant, and the Service agree on a process to exchange such areas for credits within a Service-approved conservation banking system. Off-site conservation at a Service-approved non-bank location will be protected and managed in perpetuity through a Service approved conservation easement, Service-approved management plan, and a sufficient endowment fund to manage the site in perpetuity in accordance with the management plan.
- If habitat is avoided (preserved) on site, then a Service-approved biologist (monitor) will inspect any construction-related activities at the proposed project site to ensure that no unnecessary take of listed species or destruction of their habitat occurs. The biologist will have the authority to stop all activities that may result in such take or destruction until appropriate corrective measures have been completed. The biologist also will be required to immediately report any unauthorized impacts to the Service and the California Department of Fish and Game.
- Adequate fencing will be placed and maintained around any avoided (preserved) vernal pool habitat to prevent impacts from vehicles.
- All on-site construction personnel will receive instruction regarding the presence of listed species and the importance of avoiding impacts to these species and their habitat.
- The applicant will ensure that activities that are inconsistent with the maintenance of the suitability of remaining habitat and associated on-site watershed are prohibited. This includes, but is not limited to: (i) alteration of existing topography or any other alteration or uses for any purposes, including the exploration for or development of mineral extraction; (ii) placement of any new structures on these parcels; (iii) dumping, burning, and/or burying of rubbish, garbage, or any other wastes or fill materials; (iv) building of any new roads or trails; (v) killing, removal, alteration, or replacement of any existing native vegetation; (vi) placement of storm water drains; (vii) fire protection activities not required to protect existing structures at the project site; and (viii) use of pesticides or other toxic chemicals.
- Prior to any earth-moving activities at the proposed project site, the Project Partners shall purchase vernal pool preservation credits within a Service-approved ecosystem preservation bank or fund account.

Timing: Before construction.

Responsibility: Project Partners.

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction.

Responsibility: USACE

Mitigation Measure WQ-1: Obtain Appropriate Discharge and Dewatering Permit and Implement Provisions for Dewatering.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters, Including Wetlands.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and after construction

Responsibility: Project Partners

Implementing Mitigation Measures SHRIMP-1, GEO-1, WQ-1, and WATERS-1, which were previously adopted for the 2016 ARCF Project, would reduce this impact to less than significant because measures would be implemented to avoid and minimize impacts on habitat for these species and compensatory mitigation would be implemented to offset unavoidable impacts.

O&M activities after construction would involve activities such as mowing, and the removal of woody vegetation from the canal. Mowing is unlikely to impact vernal pool fairy shrimp or vernal pool tadpole shrimp. The impact of O&M on these species would be less than significant.

Northwestern Pond Turtle

The impact analysis from “American River Erosion Contract 3B North and South, American River Erosion Contracts 4A and 4B, ARMS, Sacramento River Erosion Contract 3, and Piezometer Network” is applicable to the MCP. Construction of the MCP of the Proposed Action could result in mortality of northwestern pond turtle. This would be a significant impact. Impacts of O&M activities would be less than significant for the reasons discussed in the impact analysis above. With implementation of Mitigation Measure TURTLE-1, significant impacts on this species would be reduced to a less-than-significant level.

Burrowing Owl (CEQA only)

MCP has the highest likelihood to support burrowing owl, although none have been documented at the site during previous surveys. As described above in the American River Erosion Contract 3B North and South, American River Erosion Contracts 4A and 4B, ARMS, Sacramento River Erosion Contract 3, and Piezometer Network impact analysis, construction-related ground disturbance could result in direct mortality or injury of burrowing owls. Active burrows could be

disturbed or destroyed during construction, and burrowing owls in areas adjacent to construction could be disturbed, potentially resulting in burrow (including nest) abandonment. Most of the potentially suitable habitat at MCP is within staging and construction access areas where there is flexibility to avoid active burrows. However, if an occupied burrow is present within the footprint of project features that cannot be altered to avoid the burrow, it may be necessary to destroy an occupied burrow, which would be a significant impact.

If burrowing owls are present at MCP, they are unlikely to be substantially affected by the small amount of grassland loss that would result from the levee extension, canal widening, and maintenance road construction. This loss would be minor with this project reach and would not result in a significant impact on burrowing owl, if present at the site. Impacts of O&M activities also would be less than significant for the reasons discussed above.

With implementation of Mitigation Measure BUOW-1, significant impacts on this species would be reduced to a less-than-significant level.

Swainson's Hawk, White-Tailed Kite, and Northern Harrier

The analysis from “American River Erosion Contract 3B North and South, American River Erosion Contracts 4A and 4B, ARMS, Sacramento River Erosion Contract 3” above is applicable to the MCP. Construction of the MCP of the Proposed Action would result in removal of a very small amount of suitable nesting habitat, which would not have a substantial adverse effect on these species. It could, however, result in loss or disturbance of active nests, which would be a significant impact. With implementation of Mitigation Measure BIRD-1, this impact would be reduced to a less-than-significant level.

Special-status Plants (CEQA only)

Special-status plant species were not identified during protocol-level early- and late-season field surveys in 2023, although all target species would have been identifiable based on flowering phenology at the time of the field survey. Based on the review of existing documentation and observations made during the field survey, special-status plant species that were evaluated are likely absent from the MCP, and there were no indications of the presence of these species in areas that could not be surveyed due to access or other limitations (GEI 2023). In addition, an April 2018 survey for the Magpie Creek Floodplain Conservation Project did not observe any special-status plant species (ICF 2018). Therefore, implementing the MCP portion of the Proposed Action is unlikely to impact any special-status plant populations, and this impact is less than significant.

Because protocol floristic surveys are typically considered valid for 2-3 years and MCP construction is expected to occur in 2028, Mitigation Measure PLANT-1 would be implemented before construction begins to confirm special-status plants would not be affected and further minimize impacts in the unlikely event they are found.

Sacramento River Mitigation Site (SRMS)

The analysis above for American River Erosion Contract 3B North and South, American River Erosion Contracts 4A and 4B, ARMS, Sacramento River Erosion Contract 3 is applicable to

Sacramento River Mitigation site. However, the following additional species are also analyzed due to the site's location in the Sacramento-San Joaquin Delta. Planning-level biological surveys were completed in September 2023 (GEI 2023b). Protocol-level surveys would be conducted as needed to inform site design before being utilized for ARCF mitigation.

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated.

NEPA Impact Conclusion (Design Refinements): Short-term Significant and Unavoidable; and Long-term and Minor effects that are Less than Significant with Mitigation Incorporated.

The NEPA Design Refinements for the Sacramento River Mitigation site would be identical to the Proposed Action because the 2016 FEIS/FEIR did not include analysis for mitigation sites. Therefore, impacts described below apply to both the CEQA Proposed Action and the NEPA Design Refinements.

Monarch butterfly

Effects would be similar to those described for American River Erosion Contract 3B North and South, American River Erosion Contracts 4A and 4B, ARMS, Sacramento River Erosion Contract 3, Piezometer Network. Injury or mortality of monarchs during mitigation actions would be significant. Implementation of Mitigation Measure MONARCH-1 would reduce impacts to a less-than-significant level.

Valley Elderberry Longhorn Beetle

Effects would be similar to those described for American River Erosion Contract 3B North and South, American River Erosion Contracts 4A and 4B, ARMS, Sacramento River Erosion Contract 3, Piezometer Network. VELB habitat on the site includes the elderberry shrubs and the riparian habitat within 50 meters (165 feet), which is considered VELB habitat. The impact of this loss of Federally listed species habitat and potential loss of individuals would be significant. The impact would be reduced to a less-than-significant level with implementation of Mitigation Measure VELB-1.

Northwestern Pond Turtle

Effects would be similar to those described for American River Erosion Contract 3B North and South, American River Erosion Contracts 4A and 4B, ARMS, Sacramento River Erosion Contract 3, Piezometer Network. Injury or mortality of northwestern pond turtle during mitigation actions would be significant. Implementing Mitigation Measure TURTLE-1 would reduce impacts to a less-than-significant level.

California black rail (CEQA only)

Potentially suitable California black rail habitat at SRMS is limited to a narrow band of bullrush marsh on the inland exterior that is unsuitable for nesting and unlikely to support a resident population. Species occurrence at the site is likely limited to occasion dispersing individuals. Construction activities have very low potential to disturb and potentially displace a very small

number of individuals and are unlikely to result in injury or mortality of California black rail. In the unlikely event individuals are present during project construction, they could be disturbed by construction activities and potentially displaced to similar habitat elsewhere along the shore of Grand Island, or more likely to the much larger and more suitable habitat area immediately across the channel to the south. This potential impact would be less than significant. In addition, implementing SRMS would result in a substantial increase in the amount and quality of habitat for California black rail and would have a long-term beneficial impact.

Song sparrow – "Modesto" population (CEQA only)

The "Modesto" population of song sparrow resides in the northcentral portion of the Central Valley, with the highest densities in the Butte Sink area of the Sacramento Valley and in the Sacramento–San Joaquin River Delta. Associated with freshwater marshes dominated by tules and cattails and riparian willow thickets, they also nest in riparian forests with blackberry understory and along vegetated irrigation canals and levees. There are five CNDDDB occurrences within 5 miles of the SRMS and there is suitable nesting habitat within the project site. Project implementation would result in a short-term adverse effect on habitat but there would likely be a long-term increase in amount and quality of habitat for this species. If song sparrows occur onsite, active nests could be destroyed or disturbed during restoration and maintenance activities, potentially resulting in nest failure. This would be a significant impact. Implementing Mitigation Measure BIRD-1 would reduce this potential impact to a less-than-significant level.

Tricolored blackbird (CEQA only)

Project implementation would result in a short-term adverse effect on habitat for tricolored blackbird but there would likely be a long-term increase in amount and quality of habitat for this species. Though there are no CNDDDB occurrences within 5 miles of SRMS, if tricolored blackbirds do occur onsite, active nests could be destroyed or disturbed during restoration and maintenance activities, potentially resulting in nest failure. This could be a significant impact. The following mitigation measure has been identified to address this impact.

Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measure BIRD-1 would reduce this impact to a less-than-significant level.

Northern Harrier (CEQA only)

The analysis from "American River Erosion Contract 3B North and South, American River Erosion Contracts 4A and 4B, ARMS, Sacramento River Erosion Contract 3" above is applicable to SRMA. Construction activities would convert some suitable nesting and foraging habitat, but at least a portion of this area would likely remain suitable for nesting and the limited extent of

permanent loss would not have a substantial adverse effect on the species. Loss or disturbance of active nests, however, would be a significant impact. Implementing Mitigation Measure BIRD-1, this impact would be reduced to a less-than-significant level.

Giant Garter Snake (GGS)

There are giant garter snake observation records south of the SRMS as well as north of the SRMS within Walnut Creek and along the Sacramento River near Cortland and north of Hood. The bulrush marsh along the western and southern shoreline provides some suitable aquatic habitat for the giant garter snake and refugia including downed logs. However, the giant garter snake prefers slower moving water and "is not found in or around larger rivers due to the presence of predators" (USFWS 2023b). Based on these factors, the giant garter snake is unlikely to occur at SRMS. However, if present, construction activities could introduce pollutants into potentially suitable aquatic habitat for giant garter snake (e.g., via erosion, sedimentation, or accidental spills of construction materials). Construction activities could also result in displacement, injury, or mortality of GGS. These would be significant impacts. The following mitigation measure have been identified to address this impact.

Mitigation Measure GGS-1: Implement Measures to Avoid, Minimize and Compensate Impacts on Giant Garter Snake.

If the project is implemented, USACE will implement the following measures to minimize effects on giant garter snakes and habitat that occurs within 200 feet of any construction activity. These measures are based on USFWS guidelines for restoration and standard avoidance measures included as appendices in USFWS (1997):

- Unless approved otherwise by USFWS, construction will be initiated only during the giant garter snakes' active period (May 1–October 1, when they are able to move away from disturbance).
- Construction personnel will participate in USFWS-approved worker environmental awareness program.
- Giant garter snake survey will be conducted 24 hours prior to construction in potential habitat. Should there be any interruption in work for greater than 2 weeks, a biologist will survey the project area again no later than 24 hours prior to the restart of work.
- Giant garter snakes encountered during construction activities will be allowed to move away from construction activities on their own.
- Movement of heavy equipment to and from the construction site will be restricted to established roadways. Stockpiling of construction materials will be restricted to designated staging areas, which will be located more than 200 feet away from giant garter snake aquatic habitat.

- Giant garter snake habitat within 200 feet of construction activities will be designated as an environmentally sensitive area and delineated with signs or appropriate fencing. This area will be avoided by all construction personnel.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction.

Responsibility: Project Partners

Implementing Mitigation Measure GGS-1 (from the 2021 Sacramento Weir Widening Project EIS/EIR) and Mitigation Measure GEO-1 would avoid encounters with GGS and reduce significant direct effects on giant garter snake to a less-than-significant level by minimizing any temporary impacts. The long-term impact would be beneficial because protection of the site and re-establishing emergent vegetation and refugia would have long-term ecological benefits to many species, including the giant garter snake.

Special-status plants (CEQA only)

Delta tule pea and Suisun marsh aster have known occurrences within the project site, and Mason's lilaeopsis and woolly rose-mallow have been documented in the near vicinity. Bristly sedge, Bolander's water-hemlock, Delta mudwort, saline clover, Sanford's arrowhead, side-flowering skullcap, and watershield also have the potential to occur on-site, but there are no known observations in the vicinity. If special-status plants are present, they could be removed or crushed by construction equipment or trampled by construction personnel, resulting in damage to or mortality of the plants. The final design would avoid special-status plant species to the greatest extent possible. However, ground disturbance for mitigation site construction may necessitate removal of these plants to support the highest quality habitat design. This would be a significant impact. The following mitigation measure has been identified to address this impact.

Mitigation Measure PLANT-1: Implement Measures to Protect Special-Status Plants

Please refer to Impact 4.3-a above for full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Non-Federal Project Partners

Implementation of Mitigation Measure PLANT-1 would reduce this impact to a less-than-significant level.

Alternatives Comparison

The following alternatives are evaluated based on changes to the proposed action only. Significance conclusions and effects determinations for all other project components would remain unchanged. Impact number 4.3-b is identical to Basis of Significance 4.1-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” and is addressed in Appendix B, Section 4.1, “Vegetation and Wildlife,” and not repeated in this section.

Alternative 3a

Under Alternative 3a for the American River Erosion Contracts 4A Project Component, instead of a waterside berm, a landside berm would be built between the levee and the State Route 160 bridge piers (Figure 3.5.3-4 in Chapter 3, "Description of Project Alternatives" in the SEIS/SEIR). All other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, MCP, SRMS, and ARMS) would have the same effects as the Proposed Action, though there would be less riparian and VELB habitat impacted (See Table 4.3-2).

Table 4.3-4. Alternative 3a Effects

| Impact Number | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---------------|------------------------------------|--|---|---|--|
| 4.3-a | American River Erosion Contract 4A | <i>NEPA and CEQA:</i> Similar to the Proposed Action, Alternative 3a would include significant impacts to special-status species | VEG-1, VEG-2, GEO-1, WQ-1, PLANT-1, BEE-1, VELB-1, TURTLE-1, BUOW-1, BIRD-1, BAT-1, BADGER-1, MONARCH-1 | Short-term: Significant and Unavoidable Long-term: Less than Significant with Mitigation | Short-term: Significant and Unavoidable Long-term: Minor effects that are Less than Significant with Mitigation |

Alternative 3b

Alternative 3b for the American River Erosion Contract 4A Project Component would be similar to the Proposed Action but would use a different permanent bike trail reroute. Instead of going under the railroad and reconnecting to the bike trail near Del Paso Blvd, the bike trail would head north following the railroad and reconnect to the bike trail just past the berm (Figure 3.5.3-4 in Chapter 3, "Description of Project Alternatives" in the SEIS/SEIR). The route would be slightly longer than the Proposed Action.

Compared to the Proposed Action and other Alternatives, the route would be similar to the current bike trail route, only the alignment would be adjusted to go around the berm. Installing this route would require vegetation trimming, vegetation clearing, regrading, paving, and possible construction of a bridge. This would have the same effects as the Proposed Action, though there would be more riparian and VELB habitat impacted (See Table 4.3-2).

Table 4.3-5. Alternative 3b Effects

| Impact Number | Location | Discussion | Mitigation Measure | Significance Conclusion | NEPA Effects Alternatives |
|---------------|--|--|---|---|--|
| 4.3-a | American River Erosion Contracts 4A and 4B | <i>NEPA and CEQA:</i> Similar to the Proposed Action, Alternative 3b would include significant impacts to special-status species | VEG-1, VEG-2, GEO-1, WQ-1, PLANT-1, BEE-1, VELB-1, TURTLE-1, BUOW-1, BIRD-1, BAT-1, BADGER-1, MONARCH-1 | Short-term: Significant and Unavoidable Long-term: Less than Significant with Mitigation | Short-term: Significant and Unavoidable Long-term: Minor effects that are Less than Significant with Mitigation |

Alternative 3c

Alternative 3c for the American River Erosion Contract 4A Project Component would change the permanent bike trail reroute to include building a bridge or adding fill and routing bikes through the wetland and around the berm (Figure 3.5.3-4 in Chapter 3, "Description of Project Alternatives" in the SEIS/SEIR). All other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, MCP, SRMS, and ARMS) would have the same effects as the Proposed Action.

The Alternative 3c route would be similar to the current bike trail route, but the alignment would be adjusted to go around the berm. A larger area of the wetland would need to be filled for the new alignment. Installing this route would require vegetation trimming, vegetation clearing, regrading, paving, and possible construction of a bridge. Mitigation Measures GEO-1 "Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices," WATERS-1 "Compensate for Fill of State and Federally Protected Waters," and WQ-1 "Obtain Appropriate Discharge and Dewatering Permit and Implement Provisions for Dewatering" would be implemented to ensure water quality impacts to the remaining wetland are mitigated. The amount of impact on riparian and VELB habitat would be greater or less than the Proposed Action, depending on the location of the detour (See Table 4.3-2).

Table 4.3-6. Alternative 3c Effects

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Significance Conclusion |
|---------------|------------------------------------|--|---|---|--|
| 4.3-a | American River Erosion Contract 4A | <i>NEPA and CEQA:</i> Similar to the Proposed Action, Alternative 3c would include significant impacts to special-status species | VEG-1, VEG-2, GEO-1, WATERS-1, WQ-1, PLANT-1, BEE-1, VELB-1, TURTLE-1, BUOW-1, BIRD-1, BAT-1, BADGER-1, MONARCH-1 | Short-term: Significant and Unavoidable Long-term: Less than Significant with Mitigation | Short-term: Significant Long-term: Minor effects that are Less than Significant with Mitigation |

Alternative 3d

Alternative 3d for the American River Erosion Contract 4A Project Component would change the permanent bike trail route to a paved bike trail closer to the river along an existing off-road bike trail (Figure 3.5.3-4 in Chapter 3, "Description of Project Alternatives" in the SEIS/SEIR).

All other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, MCP, SMRS, and ARMS) would have the same effects as the Proposed Action, though there would be less riparian, but much greater VELB habitat impacts (See Table 4.3-2).

This route would be longer than the Proposed Action. Installing this route would require some additional vegetation trimming, vegetation clearing, regrading, and paving.

Table 4.3-7. Alternative 3d Effects

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Significance Conclusion |
|-------------------------|------------------------------------|--|---|---|--|
| 4.3-a | American River Erosion Contract 4A | <i>NEPA and CEQA:</i> Similar to the Proposed Action, Alternative 3d would include significant impacts to special-status species | VEG-1, VEG-2, GEO-1, WQ-1, PLANT-1, BEE-1, VELB-1, TURTLE-1, BUOW-1, BIRD-1, BAT-1, BADGER-1, MONARCH-1 | Short-term: Significant and Unavoidable Long-term: Less than Significant with Mitigation | Short-term: Significant and Unavoidable Long-term: Minor effects that are Less than Significant with Mitigation |

Alternative 4a and 4b (CEQA only)

Alternative 4a for the ARMS would retain an approximately 30-acre portion of the existing pond, and Alternative 4b would retain an approximately 20-acre portion of the pond. All other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, MCP, SRMS, and ARMS) would have the same effects as the Proposed Action.

Under Alternatives 4a and 4b, a berm with a top width of 30 feet would be constructed to retain the western or southern portion of the existing pond, and floodplain habitat (generally at elevations 2 to 10 feet) would be constructed on the eastern portion of the site, including a portion of the existing pond. The remnant pond would be approximately 30 acres in Alternative 4a, and this alternative would include a reduced area of floodplain habitat below elevation 24. In Alternative 4b, the pond would be approximately 20 acres, with corresponding reduction in floodplain habitat acreage. Retain a portion of or the full extent of the existing pond would reduce the amount of floodplain mitigation, however, it would have the same effect as the Proposed Action.

Table 4.3-8. Alternative 4a and 4b Effects (CEQA Only)

| Impact Number and Title | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion |
|-------------------------|--------------------------------|--|---|---|
| 4.3-a | American River Mitigation Site | Similar to the Proposed Action, results in the creation of shallow water and riparian habitat for several Federally protected species, which mitigates a significant impact to less than significant in the long term. Short-term construction impacts would be significant and unavoidable. The remnant pond would retain habitat used seasonally by several species. | VEG-1, VEG-2, GEO-1, WQ-1, WATERS-1, PLANT-1, VELB-1, BEE-1, TURTLE-1, BIRD-1, BAT-1, BADGER-1, MONARCH-1 | Short-term: Significant and Unavoidable Long-term: Less than Significant with Mitigation |

Alternative 5a

Alternative 5a includes an alternative financial solution as opposed to constructing the SRMS.

Instead, all remaining required mitigation credits from USFWS-Approved Conservation Banks, whose service areas cover the ARCF project impacts. There would be no direct resource impacts from this action. The USFWS-Approved Conservation Bank would have completed an independent NEPA/CEQA analysis. All other project components (MCP, American River Erosion Contract 3B North and South, American River Erosion Contracts 4A and 4B, SRMS, and ARMS) would have the same effects as the Proposed Action.

Table 4.3-9. Alternative 5a Effects

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Significance Conclusion |
|---------------|--|---|--------------------|------------------------------|------------------------------|
| 4.3-a | Sacramento River Mitigation Site – Watermark Farms | NEPA and CEQA: No impact within the Project Site. Independent NEPA/CEQA would occur for the USFWS-Approved Conservation Banks | N/A | No Impact | No Impact |

Alternative 5b

Under Alternative 5b, the Sacramento River Mitigation portion of the Proposed Action would be completed at Watermark Farms, located along the Sacramento River in Yolo County, from approximately River Mile 50.5 to River Mile 51.25. The site is characterized by agricultural and ruderal herbaceous habitat types. This site is in private ownership and would need to be purchased and comprehensively surveyed for sensitive biological resources before being used for ARCF mitigation. Similar to the Proposed Action, Alternative 5b would mitigate long-term impacts to special-status plants and wildlife at Watermark Farms by restoring important shallow water and riparian habitats. Depending on the size and design of the mitigation area, the overall resulting increase in native habitats may be greater at Watermark Farms than under the Proposed Action because the SRMS supports existing habitat for special-status species.

Table 4.3-10. Alternative 5b Effects

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---------------|--|--|---|---|--|
| 4.3-a | Sacramento River Mitigation Site – Watermark Farms | <i>NEPA and CEQA:</i> Similar to the Proposed Action, results in the creation of shallow water and riparian habitat for several Federally protected species, which mitigates a significant impact to less than significant in the long term. | VEG-1, VEG-2, GEO-1, WQ-1, PLANT-1, VELB-1, BEE-1, TURTLE-1, BIRD-1, BAT-1, BADGER-1, MONARCH-1 | Short-term: Significant and Unavoidable Long-term: Less than Significant | Short-term Significant and Unavoidable Long-term: No Net Effect |

Alternative 5c

Alternative 5c combines three approaches to complete the Sacramento River Mitigation requirements including 1) Purchasing Delta smelt credits from an approved conservation bank 2) Funding a NMFS recovery plan project (Sunset Pumps) to remove a weir, allowing fish passage to benefit chinook steelhead and green sturgeon and 3) Funding the improvements at Sunset Pumps would increase water availability, which would then be directed to two local wildlife refuges, benefiting the Western Yellow Billed Cuckoo. The Sunset Pumps project is listed as high priority BOR, DWR, and USFWS, and is subject to separate NEPA/CEQA analysis prior to implementation. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. All activities related to 5c involve funding another project, therefore no additional impacts to special status species would result from this alternative.

Table 4.3-11. Alternative 5c Effects

| Impact Number | Location | Discussion | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---------------|--|--|--------------------|------------------------------|----------------------------|
| 4.3-a | Sacramento River Mitigation Site – Watermark Farms | <i>NEPA and CEQA:</i> No impact within the Project Site. Independent NEPA/CEQA would occur for the USFWS-Approved Conservation Banks and Sunset Pumps Project. | N/A | No Impact | No effect |

5.1 Cultural and Tribal Cultural Resources

5.1.1 Existing Conditions/Affected Environment

“Cultural resources” include precontact and historic-era archaeological sites; architectural properties such as buildings, bridges, dams, and related infrastructure; and resources of importance to Native Americans, such as traditional cultural properties, sacred sites, and Tribal cultural resources. The cultural resources environmental and regulatory frameworks described in Section 3.9 of the ARCF GRR Final EIS/FEIR are generally applicable to the analysis in this SEIS/SEIR and will not be repeated in detail here.

The existing conditions/affected environment for cultural resources comprise the area of potential effects (APE) within which significant precontact, ethnographic, and/or historic-era resources could be affected by ARCF project elements. The cultural setting within the APE consists of precontact and ethnographic contexts, including land use in the distant and more recent past by Native American populations, and historic-era contexts related to the activities of Euro-American explorers, missionaries, miners, farmers, and ranchers, and their interactions with indigenous people.

The cultural resources APE was determined by USACE, the lead Federal agency, and is described in the ARCF GRR Final EIS/FEIR and the Section 106 programmatic agreement (PA) with the California State Historic Preservation Officer (SHPO), which was executed on September 10, 2015. The PA was included in the ARCF GRR Final EIS/FEIR as Appendix C. By definition (36 C.F.R. § 800.16[d]), the APE comprises “the geographic areas or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.” “Historic properties” are cultural resources that are included in, or eligible for inclusion in, the National Register of Historic Places (NRHP).

Under CEQA, “historical resources” are resources listed in, or determined to be eligible for listing in the California Register of Historical Resources (CRHR). However, the fact that a resource is not listed in, or determined to be eligible for listing in the CRHR, or not included in a local register of historical resources, or not deemed significant pursuant to criteria set forth in PRC 5024.1(g), shall not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1. (Public Resource Code [PRC] 21084.1 and State CEQA Guidelines Section 15064.5)

“Tribal cultural resources” are defined as: (1) sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a Tribe that are listed, or determined to be eligible for listing, in the national or state register of historical resources, or listed in a local register of historic resources; or (2) resources that the lead [CEQA] agency determines, at its discretion, are Tribal cultural resources (PRC 21074).

American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, Magpie Creek Project (MCP), and the Piezometer Network project elements are within the geographic extent of the APE delineated in the ARCF GRR Final EIS/FEIR (see Section 3.9.1: Figure 14). The American River Mitigation Site (ARMS) also is within the APE as delineated in the ARCF GRR

Final EIS/FEIR, although the mitigation work proposed for this area was not described in that document. The Sacramento River Mitigation Site (SRMS) was not included in the ARCF GRR Final EIS/FEIR and is outside of the previously established ARCF APE.

The APE for the SRMS is located at the southwestern tip of Grand Island, at the confluence of Steamboat Slough, Cache Slough, and the Sacramento River. The APE currently comprises an active Dredged Material Placement Site (DMPS) managed by USACE. Areas adjacent to the APE are characterized by agricultural land on the SRMS and nearby river-related activity areas along Steamboat Slough and the Sacramento River, including marinas, resorts, and fishing access points.

Known and Anticipated Cultural Resources

Sacramento River Mitigation Site

A records search through the Northern California Information Center, the California Inventory of Historic Resources, and the Historic Property Data File for Sacramento County indicate that, prior to 2018, one survey had been conducted within the proposed SRMS APE. Additionally, four other surveys had occurred within a half-mile radius of that area. The prior survey within the APE was conducted in 1976, as part of the Sacramento Deep Water Ship Channel Project from Collinsville to Sacramento (Ross 2018:5-6). One cultural resource was identified during the Deep Water Ship Channel survey, in the vicinity of Lake Washington, several miles north of Grand Island (Seldomridge and Smith-Madsen 1976).

No cultural resources have previously been documented within the SRMS APE (Ross 2018:5). There is one recorded resource within a half-mile radius of the APE: an unknown underwater feature approximately 60 feet long in Steamboat Slough, identified in 2009 using side scan sonar (Panamerican Consultants 2009). In 2018, pedestrian surveys and limited subsurface testing (three shovel probes) were conducted by Albion (Ross 2018:22) immediately northeast of the SRMS APE, with negative results.

While no cultural resources have been identified, to date, in the SRMS APE, this area has not been subject to intensive archaeological or built environment surveys since the 1970s. The requirements for conducting adequate historic properties identification efforts have evolved since then, as has the recognition of what constitutes appropriate engagement with potentially interested Native American Tribes (Tribes). As provided for under the PA, when the SRMS has reached a sufficient level of design to understand the extent and nature of ground disturbing activities in the APE, USACE will conduct additional identification efforts, evaluate any potential historic properties in the APE, and mitigate adverse effect, if needed, through consultation with the SHPO, Tribes, and other consulting parties.

2016 American River Common Features Area of Potential Effects

Cultural resources identified in the APE from the ARCF GRR Final EIS/FEIR are listed by individual project component in Tables 5.1-1 through 5.1-5, below.

Table 5.1-1. Magpie Creek Project

| Resource Type | Resource ID | Name | NRHP/CHRP Eligible |
|-----------------------|----------------------------|---|--------------------|
| Archaeological - None | N/A | N/A | N/A |
| Built Environment | P-34-000646/CA-SAC-000522H | Sacramento Northern Bike Trail/Robla Creek Bridge | No |
| Built Environment | P-34-000746/CA-SAC-571H | Sacramento Northern Railway segment | No |

Table 5.1-2. American River Erosion Contract 3B North and South, and American River Erosion Contract 4B

| Resource Type | Resource ID | Name | NRHP/CHRP Eligible |
|-----------------------|-------------------------|----------------------------|--------------------|
| Archaeological – None | N/A | N/A | N/A |
| Built Environment | P-34-000509/CA-SAC-482H | American River North Levee | No |
| Built Environment | P-34-000508/CA-SAC-481H | American River South Levee | No |

Table 5.1-3. American River Erosion Contract 4A

| Resource Type | Resource ID | Name | Status Code NRHP/CHRP Eligible |
|-----------------------|----------------------------|---|--------------------------------|
| Archaeological - none | N/A | N/A | N/A |
| Built Environment | P-34-000491/CA-SAC-000464 | Western Pacific Railroad | No |
| Built Environment | P-34-000508/CA-SAC-000481H | American River North Bank Levee | No |
| Built Environment | P-34-000742/CA-SAC-000570 | Del Paso Boulevard | No |
| Built Environment | P-34-001663 | North Sacramento Freeway segment, State Route (SR)160 | No |
| Built Environment | P-34-005698 | American River Culvert no. 1 | No |

Table 5.1-4. Sacramento River Erosion Contract 3

| Resource Type | Resource ID | Name | NRHP/CHRP Eligible |
|-------------------|-------------------------|----------------------|--------------------|
| Archaeological | P-34-005257/CA-SAC-1253 | N/A | Yes |
| Archaeological | P-34-005225 | Sacramento River TCL | Assumed Eligible |
| Built Environment | P-34-002143 | SREL Levee Unit 115 | Yes |

Table 5.1-5. American River Mitigation Site (ARMS)

| Resource Type | Resource ID | Name | NRHP/CHRP Eligible |
|-------------------|-----------------------|----------------|---|
| Archaeological | P-34-00058/CA-SAC-31 | N/A | Yes, listed |
| Archaeological | P-34-00059/CA-SAC-32 | N/A | Not evaluated |
| Archaeological | P-34-00333 | N/A | Combined with P-34-00343 |
| Archaeological | P-34-00343/CA-SAC-316 | N/A | Not evaluated, combined with P-34-00333 |
| Built Environment | N/A | Urrutia Marina | No |

5.1.2 Cultural Context

The precontact, ethnographic, and historic settings for the MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, and the ARMS are described in the ARCF GRR Final EIS/FEIR. While the precontact, ethnographic, and historic settings for the SRMS are somewhat similar to those described in the ARCF GRR Final EIS/FEIR, there are some notable differences related to its location further south of the previously described project elements, in the Sacramento-San Joaquin River Delta. The cultural resources existing conditions/affected environment (i.e., cultural context) for the SRMS is discussed below.

Sacramento River Mitigation Site

The SRMS is located on the southwestern point of Grand Island in the Sacramento-San Joaquin River Delta region. The island is bounded by Steamboat Slough, Cache Slough, and the Sacramento River, and sits at an elevation ranging from -15 feet below sea level to 10 feet above sea level. Today, the island is primarily agricultural land, with multiple fields, orchards, vineyards, small farms and residences, a monastery, and two event centers/wedding venues. An earthen levee system and primary roadway largely surround the perimeter of the Island; a series of subsidiary roads and drainage ditches crisscross its interior (Ross 2018; Google Maps 2023).

The following information regarding the precontact, ethnographic, and historic contexts for the SRMS comes primarily from a recent cultural resources inventory (Ross 2018) prepared for an erosion repair project in the immediate vicinity of the SRMS APE; additional content derives from Volume 8 of the Handbook of North American Indians (Levy 1978 citing Merriam 1968). In this context, the term “precontact” refers to the time period prior to the incursion of Europeans, Euro-Americans, and other non-indigenous people into the region.

Precontact Context. The early precontact context for the Sacramento-San Joaquin Delta largely follows cultural sequences developed for the Central California region, as described in the 2016 ARCF GRR Final EIS/FEIR. These sequences were developed and refined by archaeologists based on differences and changes in settlement patterns, subsistence practices, artifact types, and burial customs observed through archaeological investigation. The Central California taxonomic sequences include the Early Period (2050 BC-500 BC), the Middle Period (500 BC–AD 700), and the Middle Late/Late Periods (AD 700 – AD 1800), typically referred to, respectively, as the Windmiller Pattern, Berkeley Pattern, and Augustine Pattern (Ross 2018).

As documented by Bennyhoff (in Hughes 1994), during the Middle Period, “Meganos” cultural traits, thought to have emerged along the southeast margin of the San Francisco Bay, spread inland to the interior valleys of the northern Diablo Range and lower San Joaquin River sloughs. The Meganos cultural aspect was viewed by Bennyhoff (see Hughes 1994:82) as “a hybrid of a Windmiller population intermarrying with Berkeley neighbors.” Meganos traits include both extended and flexed burials lacking specific compass orientation and very few grave associated artifacts. These traits were interpreted by Bennyhoff (1994) as indicative of semi-sedentary settlements and increased seasonal movement of villages, a change from earlier, more sedentary practices. By the end of the Middle Period, the San Joaquin River delta appears to have become the cultural center for Meganos “culture” (Ross 2018:10).

Ethnographic Context. The SRMS is located at the interface of Bay Miwok and Plains Miwok territories (Levy 1978: Figure 1). Evidence from archaeological and linguistic studies suggests Miwok speakers arrived in the Sacramento-San Joaquin Delta/Suisun Bay area about 2,000 years ago, possibly displacing Hokan speakers (Moratto 1984). Bay and Plains Miwok lived near other groups including the Yokuts to the southeast, the Patwin to the north, the Nisenan to the northeast, and the Costanoan-Ohlone to the south and west (Ross 2018:10).

At the time of Euro-American arrival, Miwok people relied upon annual cycles of hunting, gathering, and fishing for food, personal goods, and trade items. “Tribelets” were the predominant political unit among the Miwok, each having distinct boundaries that were generally recognized and respected by neighboring groups. Settlements typically ranged between 20 and 300 persons, with the larger villages found along the rivers and bay (Ross 2018).

The lives and livelihoods of the Bay and Plains Miwok were permanently altered when Spanish missionaries arrived in the San Francisco Bay area, which took place decades before the inland spread of other Euro-American populations. The biggest disruptions occurred with the establishment of two nearby Franciscan missions, San Francisco de Asís (1776) and Mission San José (1797), and the subsequent missionization of the local Native American population (Ross 2018:11). Missionization led to the forced removal of Miwok communities from their traditional lands and the prohibition of their cultural practices.

Ethnographic maps indicate that, in the early- to mid-1800s, two Plains Miwok Tribelets – Anizumne and Quenemsia – were situated on or in very close proximity to Grand Island (Levy 1978: Figure 1). Mission baptismal records document that 244 Native Americans from the Anizumne tribelet and 185 Native Americans from the Quenemsia Tribelet were baptized between 1812-1825 and 1811-1828, respectively (Ibid. citing Merriam 1968). As described by Levy (1978: 400), “many Bay Miwok and Plains Miwok Tribelets disappeared through the combined effects of removal of the population to the missions and epidemics, which killed many thousands of persons in the central valley in the first half of the nineteenth century.”

Historic Context. Spanish and Mexican expeditions, followed by American fur trappers, visited the Delta region in the late 18th and early 19th centuries (Simons 2009). In the early 1810s, a Scottish sailor reportedly abandoned his ship in San Francisco, traveled to and married a Plains Miwok woman on Grand Island, where they subsequently lived and had several children. During the Mexican Period (1822-1846), the Mexican Governor granted land for the establishment of ranchos in the vicinity of Grand Island, but none on the island itself (Ross 2018:11).

Substantial European settlement of the Delta region did not occur until the American Period, beginning in the early 1850s. This was largely due to inaccessibility, seasonal flooding of the area, and Native American resistance. Around 1850, Commodore Cadwalder Ringgold noted woodcutters and gardeners living and working on the Steamboat Slough side of Grand Island, near the future locations of Walker and Howard Landings (Ross 2018:11). By the late 1850s and early 1860s, Grand Island was seeing more permanent Euro-American settlement. This was due, in large part, to the implementation of land reclamation practices, involving construction of artificial levees to create a series of islands from the Delta marshland (Manieri 1993).

Prior to the influx of Euro-Americans, Grand Island had a series of natural earthen levees surrounding its tidal wetland interior, which formed the basis for construction of artificial levees beginning at the north end of the island in the early 1850s (Simons 2009). Twelve miles of levee (three feet high, 13 feet wide at the base, and three feet wide at the crown) was built in 1852-1853 by Chinese, Hawaiian, and Native American laborers under the supervision of settler Reuben Kercheval. By the late 1850s, the levee was expanded to eighteen miles long (Ross 2018:11).

In 1861, Grand Island landowners established Reclamation District No. 3 to formalize the process of levee construction and maintenance. By the 1870s, most of the island had been cleared for farming and a six- to eight-foot-high levee existed around the island's perimeter. In the 1890s, the levees on Grand Island were enlarged, again, and complemented by a forty-foot-wide canal to drain water to a pump on the island's lower end (Ross 2018:11-12).

Agricultural development accompanied land reclamation on Grand Island. Early Delta farming focused largely on pears and asparagus. The wealth generated by pear orchards, maintained largely by Chinese and Japanese tenant farmers, supported a lavish lifestyle for the wealthiest Grand Island landowners. Many constructed substantial country houses on the island, including the 24,000 square foot, 58-room Italian Renaissance styled villa built by Louis William Meyers in 1920, which today operates as the Grand Island Mansion wedding and events center. The Libby, McNeill and Libby Cannery, built on Grand Island in 1910 to process Delta-grown asparagus, was another profitable venture. Pear and asparagus production declined during the 1920s due to crop disease and declining soil fertility (Ross 2018:12).

Other popular Delta crops during the late 19th and early 20th centuries were potatoes, corn, celery, onions, sugar beets, and beans. By the 1950s, grains crops such as barley, wheat, and corn predominated, reflecting shifts in the market and increased agricultural mechanization. The 1940s and 1950s also saw a transition from tenant farmers to large corporate-owned farms, with the labor force shifting from Asian Americans to Mexican and Filipino migrants living in communal dormitories (Ross 2018:12).

Travel and the shipment of goods through the Delta from the 1850s to 1910s was largely by steamboats, barges, and ferries, with Steamboat Slough the primary route between Sacramento and Rio Vista (Simons 2009). Commercial water transportation declined in the area following the First World War, as automobiles gained in popularity. Railroads were introduced into the Delta in the early 20th century, to facilitate the shipment of agricultural products, but no rail lines extended on to the Grand Island. Similar to water transportation, railroads were gradually replaced by roads and motor vehicles. In 1920, the "Victory Highway" (now SR160) was constructed, linking the Grand Island to Sacramento and the Bay Area (Ross 2018:12).

Specific to the historic context of the SRMS APE, the 1852 Ringgold chart of the Sacramento River shows the SRMS was marshy, partly wooded, and known at that time as Point Lartan. By 1894, a map of Sacramento County soil use depicts the APE as under cultivation. The 1910 USGS topographic map of Rio Vista shows the established levee and road system on the island, plus two or three possible farm buildings in the vicinity of the APE. A 1937 aerial photo shows levees and levee roads, trees and shrubs on the water- and land-side levee slopes, adjacent

agricultural fields, but no visible farm buildings or other structures in the APE – conditions similar to the current landscape (Ross 2018:12).

Native American Consultation under CEQA

- As the CEQA lead agency, CVFPB will continue to consult with culturally affiliated Native American Tribes under the Central Valley Flood Protection Board's Tribal Coordination Policy. Native American Tribes and interested parties were contacted as early as May 4, 2011, regarding the development of the PA (Programmatic Agreement) and were provided with general information about the ARCF 2016 Project as described in the ARCF GRR Final EIS/EIR.
- DWR sent Tribal engagement letters for each of the Supplemental EIRs including: American River Erosion Contract 1, 2, and 3A; Sacramento River East Levee Contract 1, 2, 3, and 4; Sacramento River Erosion Contract 1, 2, and 4; and the Sacramento Weir Widening Project. Appropriate state agencies are coordinating with Yocha Dehe Wintun Nation on the Sacramento Weir Widening Project.
- DWR and CVFPB sent a tribal engagement letter for the Comprehensive SEIS/SEIR in December 2023. This includes the Magpie Creek Project; American River Erosion Contract 3B, 4A, and 4B; Sacramento River Erosion Contract 3; American River Mitigation Site; Sacramento River Mitigation Site; and the Piezometer Network.

5.1.3 Applicable Laws, Regulations, Policies, and Plans

Applicable Federal laws and regulations related to cultural resources, and the status of compliance with those laws and regulations, are described in Section 3.9 and Section 5.1 of the ARCF GRR Final EIS/FEIR. There have been no changes to the applicable Federal cultural resources laws or regulations since finalization of that document in 2016. There have been some changes to state regulations regarding cultural resources since 2016, discussed below. Additionally, the ARCF GRR Final EIS/FEIR did not discuss any local policies or plans related to cultural resources. Currently applicable local plans also are discussed below.

Federal

National Historic Preservation Act of 1966, as amended (NHPA)

Section 106 of the NHPA (54 USC § 306108) requires Federal agencies to take into account the effects of their undertakings on historic properties, through a process described at 36 CFR Part 800. Historic properties are cultural resources that are included in, or eligible for inclusion in, the National Register of Historic Places (NRHP).

National Register of Historic Places (NRHP)

The criteria used to evaluate the significance of cultural resources, to determine their eligibility for inclusion on the NRHP, is described at 36 CFR § 60.4.

State

California Environmental Quality Act

The California Environmental Quality Act (CEQA) of 1970 (PRC 21000) offers directives regarding impacts on historical resources and unique archaeological resources. The State CEQA Guidelines (California Code of Regulations [CCR] 15000) defines a “historical resource” to include more than one category of resources. The first category is “resource(s) listed or eligible for listing on the California Register of Historical Resources (CRHR).” (CCR Section 15064.5[a][1]; see also California PRC Sections 5024.1 and 21084.1.) A historical resource may be eligible for inclusion in the CRHR, as determined by the State Historical Resources Commission or the lead agency if it meets significance criteria.

Public Resources Code 5024 and 5024.5

The California State legislature enacted PRC § 5024 and 5024.5 as part of an effort to establish a state program to preserve historical resources. These sections of the code require state agencies to take a number of actions to ensure the preservation of state-owned historical resources under their jurisdictions.

California Register of Historic Resources

The CRHR was designed by the State Historical Resources Commission for use by state and local agencies, private groups, and citizens to identify, evaluate, register, and protect California’s historical resources. The CRHR program encourages public recognition of architectural, historical, archaeological, and cultural significance, identifies historical resources for state and local planning purposes, determines eligibility for state historic preservation grant funding, and gives certain protections under CEQA.

Discovery of Human Remains-Public Resources Code 5097.9 and California Health and Safety Code 7050.5

PRC 5097.9 provides protection from interference with Native American religion or damage to cemeteries or places of worship. It also established the Native American Heritage Commission. California Health and Safety Code 7050.5 provides protection to Native American burials, remains, and associated grave artifacts in the even they are discovered in any location other than a designated cemetery. It also provides procedures if a County Coroner should determine that identified human remains are Native American in origin or may be Native American in origin.

California Natural Resources Agency Tribal Coordination Policy

The California Natural Resources Agency adopted the California Natural Resource Agency Final Tribal Coordination Policy on November 20, 2012, which was developed in response to Governor Brown’s September 19, 2011, Executive Order B-10-11. The 2012 California Natural Resource Agency Final Tribal Coordination Policy has been adopted and implemented by the CVFPB. CVFPB will continue to conduct consultation and engagement with Native American Tribes and Tribal communities, in accordance with this Policy. The purpose of the Policy is to ensure effective, meaningful, and mutually beneficial government-to-government consultation, communication, and coordination between CVFPB, Tribes, and Tribal communities relative to activities under CVFPB's jurisdiction that may affect Tribal communities.

5.1.4 Analysis of Environmental Effects

Analysis Methodology

National Environmental Policy Act

USACE uses findings of effect arrived at through compliance with Section 106 of the NHPA to assess effects to cultural resources under NEPA and to mitigate for adverse effects under both laws. More precisely, any adverse effect determination arrived at through the Section 106 process is considered equivalent to a significant impact under NEPA, which is mitigated through treatments identified through Section 106 compliance.

USACE executed a Section 106 programmatic agreement (PA) with the California State Historic Preservation Officer (SHPO) on September 10, 2015, which was included with the ARCF GRR Final EIS/EIR as Appendix C. The execution and implementation of the terms of the PA constitute compliance with Section 106 of the NHPA and, by extension, with NEPA.

The PA allows USACE to phase the Section 106 process as ARCF project elements are refined, changed, or added during the pre-construction engineering and design process. It also acknowledges that adverse effects on historic properties are expected to result from ARCF project construction and describes the process USACE follows to identify and evaluate historic properties, and to resolve adverse effects to historic properties, during project implementation. USACE has followed the PA, as stipulated, for ARCF construction activities completed to date, and would continue to follow the PA process and stipulations for all future ARCF phases.

California Environmental Quality Act

The thresholds for determining the significance of impacts under CEQA are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. These thresholds, and the impact analysis that follows, also take into consideration the significance of an action in terms of its context and its intensity (severity) as required under NEPA (40 CFR 1508.27).

Basis of Significance

National Environmental Policy Act

As described in Section 3.9 of the ARCF GRR Final EIS/FEIR, and mentioned above, any adverse effects on cultural resources that are listed, or eligible for listing, in the NRHP (i.e., historic properties) are considered significant impacts under NEPA. As defined in 36 CFR 800.5, Assessment of Adverse Effects, effects are determined to be adverse if they:

- Alter, directly or indirectly, any of the characteristics of a cultural resource that qualify that resource for the NRHP so that the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association is diminished.
- Cause a substantial adverse change in the significance of a historic property through the physical demolition, destruction, relocation, or alteration of the historic property or its immediate surroundings such that the significance of the resource would be materially impaired.

California Environmental Quality Act

The alternatives under consideration would result in a significant impact related to cultural or Tribal cultural resources if they would do any of the following:

- a. Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5 of the CEQA Guidelines;
- b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5 of the CEQA Guidelines;
- c. Disturb any human remains, including those interred outside of dedicated cemeteries;
- d. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:
 - i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
 - ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.

During ongoing consultation between the Project Partners and Tribes, sensitive areas and materials have been identified. These areas and materials are conservatively assumed to be potential Tribal cultural resources (TCRs) for the purpose of CEQA analysis.

Effects Not Discussed in Detail

All effects to cultural resources not previously disclosed are discussed below.

Effects Analysis

No Action Alternative

Under the NEPA No Action alternative, only the components described in the ARCF GRR Final EIS/EIR (and previously prepared supplemental NEPA documents) would be built. The ARMS and SRMS would not be constructed, and site conditions in those locations would remain as they are now. The proposed refinements to MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, and Sacramento River Erosion Contract 3 would not occur and, in general, effects to cultural resources would be as previously disclosed. It should be noted, however, that much of the work described in the ARCF GRR Final EIS/EIR involves tree and vegetation removal using heavy equipment in order to construct the flood risk reduction projects. The effects on cultural resources from vegetation removal using heavy equipment were not previously analyzed in the ARCF GRR Final EIS/EIR.

For American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, and Sacramento River Erosion Contract 3 project areas, where recreational use is high, the ground disturbance associated with the removal of trees and vegetation introduces the potential for Significant and Unavoidable impacts to cultural resources that may become exposed by this work. The vegetation removal and ground surface disturbance could expose currently obscured cultural resources, if present on or under the ground, making them more visible to recreational users. This introduces the risk of the looting, damage, or destruction of significant cultural resources, which would be a potentially significant impact. Archaeological and Tribal monitoring of vegetation removal activities and treating any adverse effects resulting from post-review discoveries pursuant to the PA, would serve to mitigate these types of potential impacts to a less-than-significant level.

Proposed Action Alternative

5.1-N Alter NRHP-listed Resources or Cause a Substantial Adverse Change in the Significance of a Historic Property. (NEPA-only)

NEPA Impact Conclusion: Less than Significant with Mitigation Incorporated

Magpie Creek Project, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, ARMS

NEPA Impact Conclusion (Design Refinements): Less than Significant with Mitigation Incorporated.

The MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, and ARMS involves design refinements and new project elements. The proposed action also includes the addition of the SRMS and the Piezometer Network Project. The ground-disturbing construction activities associated with all these project elements have the potential to cause Significant and Unavoidable impacts to cultural resources.

The MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River 4A, Sacramento River Erosion Contract 3, ARMS, and the Piezometer Network are all within the geographic extent of the APE previously delineated in the ARCF GRR Final EIS/EIR (see Section 3.9.1: Figure 14). As such, the cultural contexts, expected cultural resource types, culturally affiliated Tribes (Section 3.9.1), and anticipated effects to historic properties (Section 3.9.4) as described in the ARCF GRR Final EIS/EIR are still applicable. Any new effects posed by refined or new project elements would be identified and mitigated pursuant to the requirements of the Section 106 PA, as previously disclosed.

More specifically, Section 3.9.6 of the ARCF GRR Final EIS/EIR states that “Under NEPA and the NHPA, any significant effect that would result from the implementation of Alternatives 1 or 2 [i.e., within the ARCF APE] would be reduced to less than significant, as adverse effects would be resolved by implementing stipulations in the PA. Mitigation for these impacts would be proposed in accordance with the PA.” Pursuant to the PA, USACE has and would continue to

consult on all ARCF design refinements and proposed project changes with the SHPO, Tribes, and other consulting parties as stipulated therein.

In particular, as sufficient design information becomes available, USACE would conduct additional historic properties identification efforts, if needed; evaluate the historical significance and integrity of any identified properties; determine the effects of new or refined project elements on historic properties; and resolve any adverse effects/significant impacts in consultation with the SHPO, Tribes, and other consulting parties. Any adverse effects/significant impacts to cultural resources would be mitigated through implementation of the stipulations in the PA, which include adhering to requirements specified in the PA's associated Historic Properties Management Plan (HPMP) and any tiering Historic Properties Treatment Plan (HPTP).

Sacramento River Mitigation Site

NEPA Impact Conclusion (Design Refinements): Less than Significant with Mitigation Incorporated

The ARCF GRR Final EIS/EIR did not analyze the potential impacts of including the SRMS. Construction of the SRMS would require ground disturbance within areas that have the potential for buried or obscured cultural resources. Therefore, it is possible that the act of excavation for installing irrigation, plantings, and other project elements could cause Significant and Unavoidable impacts to cultural resources. Based on the known cultural context for the SRMS APE, this could include potentially significant impacts to precontact and historic-era archaeological resources.

The SRMS does not fall within the existing APE covered under the PA. As such, USACE is required to consult with the SHPO, Tribes, and other consulting parties under the stipulations of the PA regarding the inclusion of the SRMS APE and the potential effects of the SRMS on historic properties within that APE. When sufficient levels of design are reached to understand the locations and extent of ground disturbance within the SRMS APE, USACE would complete historic properties identification efforts, with input from the SHPO and additional Tribes as needed; evaluate the historical significance and integrity of any identified properties; determine the effects of environmental mitigation site construction on historic properties; and resolve any adverse effects/significant impacts in consultation with the SHPO, Tribes, and other consulting parties. As with other components and phases of the ARCF, any significant impacts would be mitigated to less than significant through the implementation of the stipulations of the PA and its tiering management and treatment plans.

Piezometer Network

NEPA Impact Conclusion (Design Refinements): Less than Significant with Mitigation Incorporated

To better evaluate the performance of the ARCF 2016 project and provide real time data to system managers, USACE is proposing to install piezometers along the existing levees within the authorized footprint of the ARCF GRR Final EIS/EIR. The purpose of this action is to construct

the piezometer network that would provide telemetric data gathering on water levels throughout the project area. All the sites that would receive Piezometers are already included in the ARCF GRR Final EIS/FEIR, however the installation of a piezometer network was not analyzed in the ARCF GRR Final EIS/EIR. Approximately 100 piezometers would be installed at various locations along each levee with piezometers on both the levee crown and near the landside levee toe. The precise number of Piezometer installations at a specific site is not known, however, they would be distributed between all the ARCF project reaches, and some areas may have higher concentrations of piezometers than other areas.

Although the installation of a piezometer network was not analyzed in the ARCF GRR Final EIS/EIR, the proposed action is within the geographic extent of the APE previously delineated in the ARCF GRR Final EIS/EIR (see Section 3.9.1: Figure 14). As such, the cultural contexts, expected cultural resource types, culturally affiliated Tribes (Section 3.9.1), and anticipated effects to historic properties (Section 3.9.4) as described in the ARCF GRR Final EIS/EIR are still applicable. As with other components and phases of the ARCF, any new yet undiscovered significant impacts would be mitigated to less than significant through the implementation of the stipulations of the PA and its tiering management and treatment plans.

5.1-a Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5.

CEQA Impact Conclusion: Less than Significant

Magpie Creek Project, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, ARMS, and SRMS

CEQA Impact Conclusion (Entire Proposed Action): No Impact

No significant built environment resources are in the APE for these project components and, therefore, no historical resources are present for the purposes of CEQA. The Proposed Action would have no impact.

Sacramento River Erosion Contract 3, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant

One historic-era built environment resource, SREL Levee Unit 115 (P-34-002143), is present in the Sacramento River Erosion Contract 3 APE. This resource has been re-evaluated and is not eligible for the NRHP. The Sacramento River Erosion Contract 3 and the Piezometer Network would include ground-disturbing activities and disturbance to levee soil during construction of the erosion protection improvements and piezometer network. The levee would retain its integrity and character-defining features (its overall design and form) and, therefore, impacts from the Sacramento River Erosion Contract 3 and Piezometer Network would result in a less-than-significant impact.

5.1-b Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5.

CEQA Impact Conclusion: Significant and Unavoidable

Magpie Creek Project, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

There are no known archaeological resources identified in MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Contract 4A project sites. There is the possibility, however, that project-related ground-disturbing activities may encounter previously unidentified archaeological resources. This potential impact would be potentially significant. The following mitigation measures have been identified to address this impact.

Mitigation Measure CR-1: Resolve Adverse Effects through Programmatic Agreement and Historic Properties Treatment Plan (HPTP).

For Historic Properties which will be adversely affected by implementation of the MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Contract 4A, (pending concurrence of eligibility and finding of effect in the ARCF PA consultation process), USACE will consult with the SHPO and interested Native American Tribes in accordance with the ARCF PA and associated HPMP to develop a HPTP. The HPTP will specify measures that will be implemented to resolve the adverse effects to the Historic Properties and will constitute mitigation for the effects to these resources. USACE will implement the terms described in the HPTP.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-2: Prepare an Archaeological Discovery Plan and an Archaeological Monitoring Plan.

In accordance with the procedures described in Section 9.2 of the ARCF HPMP, a discovery plan will be prepared by USACE and included in the construction contractor's specifications. The discovery plan will specify what actions are required to be taken by the contractor in the event of an archaeological discovery and describe what actions USACE may take in the event of a discovery.

In accordance with the procedures described in Section 9.3.9 of the ARCF HPMP, an archaeological monitoring plan will be developed for the MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Contract 4A. This plan will identify the locations of known Historic Properties as well as sensitive areas designated for archaeological monitoring and will include methods and procedures for monitoring and the procedures to be followed in the event of a discovery of archaeological materials.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-3: Conduct Cultural Resources Awareness Training.

In accordance with the procedures described in Section 9.1 of the ARCF HPMP, USACE will require the contractor to provide a cultural resources and Tribal cultural resources sensitivity and awareness training program for all personnel involved in project construction, including field consultants and construction workers. The training will be developed in coordination with an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archaeology (36 CFR Part 61), as well as culturally affiliated Native American Tribes. USACE may invite Native American representatives from interested culturally affiliated Native American Tribes to participate. The training will be conducted before any project-related construction activities begin in the APE and will include relevant information regarding sensitive cultural resources and Tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating Federal and State laws and regulations.

The training will also describe appropriate avoidance and impact minimization measures for cultural resources and Tribal cultural resources that could be located in the APE and will outline what to do and who to contact if any potential cultural resources or Tribal cultural resources are encountered. The training will emphasize the requirement for confidentiality and culturally appropriate treatment of any discovery of significance to Native Americans and will discuss appropriate behaviors and responsive actions, consistent with Native American tribal values.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-4: Implement Procedures for Inadvertent Discovery of Cultural Material.

If an inadvertent discovery of cultural materials (e.g., unusual amounts of shell, animal bone, any human remains, bottle glass, ceramics, and building remains); Tribal cultural resources; sacred sites; or landscapes is made at any time during project-related construction activities, the Project Partners and other interested parties, will develop appropriate protection and avoidance measures where feasible. These procedures will be developed in accordance with the ARCF PA and HPMP, which specifies procedures for post-review discoveries. Additional measures, such as development of HPTPs prepared in accordance with the PA and HPMP, may be necessary if avoidance or protection is not possible.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-5: In the Event that Tribal Cultural Resources are Discovered Prior to or During Construction, Implement Procedures to Evaluate Tribal Cultural Resources and Implement Avoidance and Minimization Measures to Avoid Significant Adverse Effects.

California Native American Tribes that are traditionally and culturally affiliated with the geographic area in which the project is located may have expertise concerning their Tribal cultural resources (California PRC Section 21080.3.1). As was done during SEIR preparation, culturally affiliated Tribes will be further consulted concerning Tribal cultural resources that may be impacted, if these types of resources are discovered prior to or during construction. Further consultation with culturally affiliated Tribes will focus on identifying measures to avoid or minimize impacts on any such resources discovered during construction. If Tribal cultural resources are identified in the APE prior to or during construction, the following performance standards will be met before proceeding with construction and associated activities that may result in damage to or destruction of Tribal cultural resources:

- Each identified Tribal Cultural Resource will be evaluated for CRHR eligibility through application of established eligibility criteria (CCR 15064.636), in consultation with interested Native American Tribes.
- If a Tribal Cultural Resource is determined to be eligible for listing in the CRHR, the Project Partners will avoid damaging the Tribal Cultural Resource in accordance with California PRC Section 21084.3, if feasible. If CVFPB determines that the project will cause a substantial adverse change to a Tribal Cultural Resource and measures are not otherwise identified in the consultation process, the following are examples of mitigation steps capable of avoiding or substantially lessening potential significant impacts to a Tribal Cultural Resource or alternatives that will avoid significant impacts to a Tribal Cultural Resource. These measures will be considered to avoid or minimize significant adverse impacts:
 - i. Avoid and preserve resources in place, including, but not limited to, planning construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
 - ii. Treat the resource with culturally appropriate dignity, taking into account the Tribal cultural values and meaning of the resource, including, but not limited to, the following:
 - a. Protect the cultural character and integrity of the resource.
 - b. Protect the traditional use of the resource.
 - c. Protect the confidentiality of the resource.
 - d. Establish permanent conservation easements or other interests in real estate, with culturally appropriate management criteria for the purposes of preserving or using the resources or places.

- e. Protect the resource.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures CR-1, CR-2, CR-3, CR-4, and CR-5, which were previously adopted for the 2016 ARCF Project, would reduce this potential impact to a less-than-significant level by implementing the PA, including discovery plan, archaeological monitoring, awareness training for construction workers, and steps to address inadvertent discovery of materials.

Sacramento River Erosion Contract 3, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated

There are two resources identified in the Sacramento River Erosion Contract 3 APE: P-34-005257/CA-SAC-1253 which has been found NRHP-eligible; and P-34-005225, the Sacramento River Tribal Landscape, which is assumed NRHP-eligible.

Project-related ground-disturbing activities associated with the Sacramento River Erosion Contract 3 or installing the Piezometer Network may impact P-34-005257/CA-SAC-1253 as well as any previously unidentified resources that may be discovered. This impact would be potentially significant. The following mitigation measures have been identified to address this impact.

Mitigation Measure CR-1: Resolve Adverse Effects through Programmatic Agreement and Historic Properties Treatment Plan (HPTP).

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-2: Prepare an Archaeological Discovery Plan and an Archaeological Monitoring Plan.

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-3: Conduct Cultural Resources Awareness Training.

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-4: Implement Procedures for Inadvertent Discovery of Cultural Material.

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-5: In the Event that Tribal Cultural Resources are Discovered Prior to or During Construction, Implement Procedures to Evaluate Tribal Cultural Resources and Implement Avoidance and Minimization Measures to Avoid Significant Adverse Effects.

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures CR-1, CR-2, CR-3, CR-4, and CR-5, which were previously adopted for the ARCF 2016 Project, would require that if archaeological resources or Tribal cultural resources (TCRs) are discovered prior to or during project-related construction activities, appropriate treatment and protection measures must be implemented, and would reduce potential impacts to a less-than-significant level.

P-34-5225 the Sacramento River Tribal Landscape, while large in extent, is essentially restricted to the natural landscape of the Sacramento River, of which there is none in the APE. Therefore, the project would have no impact on this resource.

American River Mitigation Site

CEQA Impact Conclusion (Entire Proposed Action): Significant and Unavoidable

There are three archaeological resources that have been identified in ARMS, one of which is listed in the NRHP (P-34-00058/CA-SAC-31), the other two resources are unevaluated.

P-34-00058/CA-SAC-31 is located in an area where ground disturbance during implementation of the ARMS is likely to significantly impact the resource.

With mitigation in accordance with the PA, impacts would be reduced, but not to a less-than-significant level. Even with appropriate treatment of potential resources, the impact on this resource would remain significant and unavoidable.

P-34-00059/CA-SAC-32 and P-34-00333/P-34-00343/CA-SAC-316 were identified within the APE by the records search. They were not identified during the archaeological pedestrian survey, likely because of the large amount of previous ground disturbance that has occurred throughout the ARMS APE. Both resources have likely been destroyed, at least partially, and remnants of each site have also likely been spread throughout the APE and buried under imported fill material. Most project components in the ARMS APE would not impact any buried remnants of the resources if they still existed, but it is possible that components that would have deep ground-disturbance may encounter remnants of these resources. Other previously unidentified resources could also be encountered. This impact would be potentially significant.

Implementing Mitigation Measures CR-1, CR-2, CR-3, CR-4, and CR-5, which were previously adopted by the ARCF 2016 Project, would require that if archaeological resources or TCRs are discovered prior to or during project-related construction activities, appropriate treatment and protection measures must be implemented. Implementing these measures would reduce potential impacts, but the impact on these resources would remain significant and unavoidable.

Mitigation Measure CR-1: Resolve Adverse Effects through Programmatic Agreement and Historic Properties Treatment Plan (HPTP).

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-2: Prepare an Archaeological Discovery Plan and an Archaeological Monitoring Plan.

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-3: Conduct Cultural Resources Awareness Training.

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-4: Implement Procedures for Inadvertent Discovery of Cultural Material.

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-5: In the Event that Tribal Cultural Resources are Discovered Prior to or During Construction, Implement Procedures to Evaluate Tribal Cultural Resources and Implement Avoidance and Minimization Measures to Avoid Significant Adverse Effects.

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

5.1-c Disturb any human remains, including those interred outside of dedicated cemeteries.

CEQA Impact Conclusion: Less than Significant with Mitigation Incorporated

Magpie Creek Project, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, ARMS, SRMS, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated.

Human remains have been found in the previously established APE and it is possible that additional human remains would be encountered during project construction. This impact would

be potentially significant. The following mitigation measure has been identified to address this impact.

Mitigation Measure CR-6: Implement Procedures for Inadvertent Discovery of Human Remains.

To minimize adverse effects from encountering human remains during construction, the Project Partners will implement the following measures:

In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, the Project Partners will immediately halt potentially damaging excavation in the area of the burial and notify the Sacramento County Coroner and a professional archaeologist to determine the nature of the remains. The coroner is required to examine all discoveries of human remains within 48-hours of receiving notice of a discovery on private or State lands (California Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, the coroner must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (California Health and Safety Code Section 7050[c]). After the coroner's findings have been made, the archaeologist and the NAHC-designated Most Likely Descendent (MLD), in consultation with the landowner, will determine the ultimate treatment and disposition of the remains.

Upon the discovery of Native American human remains, the Project Partners will require that all construction work must stop within 100 feet of the discovery until consultation with the MLD has taken place. The MLD will have 48-hours to complete a site inspection and make recommendations to the landowner after being granted access to the site. A range of possible treatments for the remains, including nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment may be discussed. California PRC Section 5097.98(b)(2) suggests that the concerned parties may mutually agree to extend discussions beyond the initial 48-hours to allow for the discovery of additional remains. The following is a list of site protection measures that the Project Partners shall employ:

- record the site with the NAHC or the appropriate Information Center, and
- record a document with the county in which the property is located.

If agreed to by the MLD and the landowner, CVFPB or CVFPB's authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. If the NAHC is unable to identify an MLD, or if the MLD fails to make a recommendation within 48-hours after being granted access to the site, CVFPB or CVFPB's authorized representative may also reinter the remains in a location not subject to further disturbance. If CVFPB rejects the recommendation of the MLD and mediation by the NAHC fails to provide measures acceptable to CVFPB, CVFPB will implement mitigation for the protection of the burial remains. Construction work in the vicinity of the burials will not resume until the mitigation is completed.

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|------------------------|--------------------------------|
| Timing: | Before and during construction |
| Responsibility: | Project Partners |

Implementing Mitigation Measure CR-6, which was previously adopted for the ARCF 2016 Project, would reduce potential impacts to a less-than-significant level by requiring that work be stopped if human remains are encountered, and that human remains be identified and reburied appropriately. Additionally, Mitigation Measure CR-6 would reduce potential impacts by implementing State regulations that specifically deal with the discovery of human remains and particularly the remains belonging to Native American Tribes.

5.1-d Cause a substantial adverse change in the significance of a Tribal Cultural Resource. (CEQA Only)

The evaluation of TCRs is a CEQA responsibility only. NEPA considered TCRs only if they are also Historic Properties under Section 106 of the NHPA.

CEQA Impact Conclusion: Significant and Unavoidable

Magpie Creek Project, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, SRMS, Piezometer Network

CEQA Impact Conclusion (Entire Proposed Action): Less than Significant with Mitigation Incorporated.

Much of the APE is considered to be highly sensitive for Native American Tribes; the APE includes several areas that have been specifically identified as sensitive by Tribes during previous consultation. CVFPB is conservatively treating these areas and sensitive materials that have previously been identified by Tribes as potential TCRs for the purpose of CEQA analysis. Construction of these project refinements could have a significant impact on TCRs. The following mitigation measures have been identified to address this impact.

Mitigation Measure CR-1: Resolve Adverse Effects through Programmatic Agreement and Historic Properties Treatment Plan (HPTP).

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

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|------------------------|--------------------------------|
| Timing: | Before and during construction |
| Responsibility: | Project Partners |

Mitigation Measure CR-2: Prepare an Archaeological Discovery Plan and an Archaeological Monitoring Plan.

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-3: Conduct Cultural Resources Awareness Training.

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-4: Implement Procedures for Inadvertent Discovery of Cultural Material.

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-5: In the Event that Tribal Cultural Resources are Discovered Prior to or During Construction, Implement Procedures to Evaluate Tribal Cultural Resources and Implement Avoidance and Minimization Measures to Avoid Significant Adverse Effects.

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures CR-1, CR-2, CR-3, CR-4 and CR-5, which were previously adopted for the ARCF 2016 Project, would mitigate potential impacts to TCRs to a less-than-significant level by implementing appropriate treatment and protection measures. In addition, these measures require consultation regarding treatment with Native American Tribes.

American River Mitigation

CEQA Impact Conclusion (Entire Proposed Action): Significant and Unavoidable.

The ARMS is in an area considered highly sensitive for Native American Tribes. There are three known archaeological resources on site that are assumed to also qualify as TCRs. Constructing the ARMS could have a significant impact on TCRs. The following mitigation measures have been identified to address this impact.

Mitigation Measure CR-1: Resolve Adverse Effects through Programmatic Agreement and Historic Properties Treatment Plan (HPTP).

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-2: Prepare an Archaeological Discovery Plan and an Archaeological Monitoring Plan.

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-3: Conduct Cultural Resources Awareness Training.

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-4: Implement Procedures for Inadvertent Discovery of Cultural Material.

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-5: In the Event that Tribal Cultural Resources are Discovered Prior to or During Construction, Implement Procedures to Evaluate Tribal Cultural Resources and Implement Avoidance and Minimization Measures to Avoid Significant Adverse Effects.

Please refer to Impact 5.1-b, Project Components: MCP, American River Erosion Contract 3B North and South, American River Erosion Contract 4B, and American River Erosion Contract 4A for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Mitigation Measure CR-6: Implement Procedures for Inadvertent Discovery of Human Remains.

Please refer to Impact 5.1-c for the full text of this mitigation measure.

Timing: Before and during construction

Responsibility: Project Partners

Implementing Mitigation Measures CR-1, CR-2, CR-3, CR-4, CR-5 and CR-6, which were previously adopted for the ARCF 2016 Project, would reduce potential impacts to TCRs by requiring that if archaeological resources or TCRs are discovered prior to or during project-related construction activities, appropriate treatment and protection measures must be implemented, and implementing state regulations regarding human remains. In addition, these measures require consultation regarding treatment with Native American Tribes. Nevertheless, the effects on these TCRs would remain significant and unavoidable as no other feasible mitigation is available.

Alternatives Comparison

Alternatives 3a, 3b, 3c, and 3d

Alternatives 3a, 3b, 3c, and 3d include alternative designs for improvements to the American River Erosion Contract 4A. All alternatives would be constrained within the construction buffer limits of American River Erosion Contract 4A and are within the previously established cultural resources APE. Spatial constraints for these alternatives include the SR160 bridge to the northwest, the existing levee to the north and the American River to the south. All other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B, Sacramento River Erosion Contract 3, MCP, SRMS, ARMS, Piezometer Network) would remain unchanged.

Alternative 3a would be similar to the American River Erosion Contract 4A, but instead of a waterside berm, a landside berm would be built between the levee and the SR160 bridge piers. The material and equipment needed for this work would be similar or slightly less than the

Proposed Action. Alternative 3a would require real estate acquisition of UPRR property but would not impact the UPRR line or trestle directly.

Alternative 3b would be similar to the American River Erosion Contract 4A, but would require a differing permanent bike trail reroute. The route following the railroad would be slightly longer than the American River Erosion Contract 4A and would require some vegetation trimming, clearing, regrading and paving.

Alternative 3c would be similar to the American River Erosion Contract 4A but would change the permanent bike trail reroute to include building a bridge or adding fill and routing bikes through the wetland and around the berm. Installing this route would require vegetation trimming, vegetation clearing, regrading, paving and possible construction of a bridge. This alternative would require temporary closure of the bike trail and require temporary detours.

Alternative 3d would be similar to the American River Erosion Contract 4A, except that the permanent bike trail route would be a paved bike trail closer to the river along an existing off-road bike trail. Installing this route would require some vegetation trimming, vegetation clearing, regrading, and paving.

None of these alternatives would change effects to cultural resources and TCRs when compared to the American River Erosion Contract 4A. There are no previously recorded resources within the areas of the American River Parkway or the surrounding lands that are part of these proposed alternatives, except for the UPRR Railroad Trestle which is also within the footprint of the American River Erosion Contract 4A. When compared to the No Action Alternative, however, all of these alternatives would increase the potential impacts to unidentified, buried cultural resources within this area. This is particularly true of Alternative 3b, which includes lands that are not actively being eroded by natural causes and are not commonly utilized by recreationalists. As such, Alternative 3b would create ground disturbance and introduce potential recreational impacts to cultural resources, if they are present. Therefore, impacts to unidentified buried cultural resources would be potentially significant. Any such impacts would be mitigated through measures identified in the Section 106 PA (and codified for CEQA purposes as Mitigation Measures CR-1, CR-2, CR-3, CR-4, CR-5, and CR-6) and subsequent consultation pursuant to that agreement. These measures would reduce these impacts to less than significant.

Table 5.1-6. Alternative 3a, 3b, 3c, 3d Effects on Cultural and Tribal Resources

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|-------------------|---|--------------------|------------------------------|--|
| 5.1-N Alter NRHP-listed Resources or Cause a Substantial Adverse Change in the Significance of a Historic Property. | American River 4A | These alternatives would increase the potential impacts to unidentified, buried cultural resources. | Implement PA | N/A | Less than Significant with Mitigation Incorporated |

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|-------------------|---|------------------------------------|--|----------------------------|
| 5.1-a Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5. | American River 4A | These alternatives would have no impact, similar to the Proposed Action | N/A | No Impact | N/A |
| 5.1-b Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5. | American River 4A | These alternatives would have a potentially significant impact related to the potential to encounter unidentified buried resources, greater than the Proposed Action. | CR-1, CR-2, CR-3, CR-4, CR-5 | Less than Significant with Mitigation Incorporated | N/A |
| 5.1-c Disturb any human remains, including those interred outside of dedicated cemeteries. | American River 4A | These alternatives would have a potentially significant impact related to the potential to encounter human remains, similar to the Proposed Action, | CR-6 | Less than Significant with Mitigation Incorporated | N/A |
| 5.1-d Cause a substantial adverse change in the significance of a Tribal cultural resource. | American River 4A | These alternatives would have a significant impact related to the potential to adversely affect a Tribal cultural resource, similar to the Proposed Action. | CR-1, CR-2, CR-3, CR-4, CR-5, CR-6 | Less than Significant with Mitigation Incorporated | N/A |

Alternative 4a (CEQA-Only)

Alternative 4a would change the ARMS by retaining the western portion of the existing man-made pond. Alternative 4a would potentially reduce or avoid effects on one archaeological site and TCR (P-34-00058/CA-SAC-31) because ground disturbance in the vicinity of this resource would be reduced compared to the ARMS, but would potentially affect other resources (P-34-00059/CA-SAC-32 and P-34-00333/P-34-00343/CA-SAC-316) similarly to the potential impacts of the ARMS. Other cultural resources impacts would be similar to those described for the ARMS. Implementing Alternative 4a would have significant and unavoidable impacts on cultural resources as there is no feasible mitigation available except Mitigation Measures CR-1 – CR-6. These potential impacts would be reduced, however, compared to the ARMS for the Proposed Action due to the potential to reduce or avoid effects on one known site.

Table 5.1-7. Alternative 4a Effects on Cultural and Tribal Resources

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion |
|--|----------|---|--------------------|------------------------------|
| 5.1-a Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5. | ARMS | Alternative 4a would have no impact, similar to the Proposed Action | N/A | No Impact |

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion |
|---|----------|--|------------------------------------|------------------------------|
| 5.1-b Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5. | ARMS | Alternative 4a would potentially reduce or avoid effects on one archaeological site but nevertheless have a potentially significant impact related to the potential to affect other known resources or to encounter unidentified buried resources. Impacts would be less than the Proposed Action. | CR-1, CR-2, CR-3, CR-4, CR-5 | Significant and Unavoidable |
| 5.1-c Disturb any human remains, including those interred outside of dedicated cemeteries. | ARMS | Alternative 4a would have a potentially significant impact related to the potential to encounter human remains, reduced compared to the Proposed Action because work would avoid one sensitive area, | CR-6 | Significant and Unavoidable |
| 5.1-d Cause a substantial adverse change in the significance of a Tribal cultural resource. | ARMS | Alternative 4a would potentially reduce or avoid effects on one TCR but nevertheless have a potentially significant impact. Impacts would be less than the Proposed Action. | CR-1, CR-2, CR-3, CR-4, CR-5, CR-6 | Significant and Unavoidable |

Alternative 4b (CEQA-Only)

Alternative 4b would change the ARMS by retaining the southern portion of the existing pond. Alternative 4b would have similar effects on one archaeological site and TCR (P-34-00058/CA-SAC-31). Ground disturbance in the vicinity of this resource would be similar to the ARMS, but this alternative would have potentially increased effects on other resources (P-34-00059/CA-SAC-32 and P-34-00333/P-34-00343/CA-SAC-316) compared to the ARMS because additional areas on the northern portion of the site would be disturbed. Other cultural resources impacts would be similar to those described for the ARMS. Implementing Alternative 4b would potentially have significant and unavoidable effects on cultural resources as there is no feasible mitigation available except Mitigation Measures CR-1 – CR-6. These potential impacts may be greater than the effects of the ARMS for the Proposed Action due to the potential for greater effects on two known sites.

Table 5.1-8. Alternative 4b Effects on Cultural and Tribal Resources

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion |
|--|----------|---|--------------------|------------------------------|
| 5.1-a Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5. | ARMS | Alternative 4b would have no impact, similar to the Proposed Action | N/A | No Impact |

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion |
|---|----------|--|-----------------------------------|------------------------------|
| 5.1-b Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5. | ARMS | Alternative 4b would potentially increase effects on archaeological resources and have a potentially significant impact related to the potential to affect other known resources or to encounter unidentified buried resources. Impacts would be greater than the Proposed Action. | CR-1, CR-2, CR-3, CR-4, CR-5 | Significant and Unavoidable |
| 5.1-c Disturb any human remains, including those interred outside of dedicated cemeteries. | ARMS | Alternative 4a would have a potentially significant impact related to the potential to encounter human remains, similar to the Proposed Action, | CR-6 | Significant and Unavoidable |
| 5.1-d Cause a substantial adverse change in the significance of a Tribal cultural resource. | ARMS | Alternative 4a would potentially increase effects on TCRs and have a potentially significant impact, similar to the Proposed Action. | CR-1, CR-2, CR-3, CR-4, CR-5 CR-6 | Significant and Unavoidable |

Alternative 5a

Alternative 5a includes an alternative financial solution as opposed to constructing the SRMS. This alternative includes the purchase of all remaining, required mitigation credits from Service Approved Conservation Banks, whose service areas cover the ARCF project impacts. There would be no additional resources impacts compared to the Proposed Action. All other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, ARMS, Piezometer Network and MCP) would have the same effects as described for the Proposed Action.

Table 5.1-9. Alternative 5a, 5c Effects on Cultural and Tribal Resources

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|-------------------|---|--------------------|------------------------------|----------------------------|
| 5.1-N Alter NRHP-listed Resources or Cause a Substantial Adverse Change in the Significance of a Historic Property. | American River 4A | These alternatives would not construct the SRMS and there would be no impact. | N/A | N/A | No Impact |
| 5.1-a Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5. | American River 4A | These alternatives would not construct the SRMS and there would be no impact | N/A | No Impact | N/A |

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|-------------------|--|--------------------|------------------------------|----------------------------|
| 5.1-b Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5. | American River 4A | These alternatives would not construct the SRMS and there would be no impact | N/A | No Impact | N/A |
| 5.1-c Disturb any human remains, including those interred outside of dedicated cemeteries. | American River 4A | These alternatives would not construct the SRMS and there would be no impact | N/A | No Impact | N/A |
| 5.1-d Cause a substantial adverse change in the significance of a Tribal cultural resource. | American River 4A | These alternatives would not construct the SRMS and there would be no impact | N/A | No Impact | N/A |

Alternative 5b

Alternative 5b would complete the SRMS needs by constructing a mitigation site at Watermark Farms. This alternative would replace the SRMS and remove the potential for adverse effects to cultural resources at the SRMS. All other project components (American River Erosion Contract 3B North and South, American River Erosion Contract 4B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, ARMS, Piezometer Network and MCP) would have the same effects.

Watermark Farms is privately owned and located within Sacramento County, from Sacramento River Mile 50.5 to River Mile 51.25, and includes the waterside of the levee to landside toe, and adjacent existing farmland. Watermark Farms is on the right bank of the Sacramento River across from the Pocket neighborhood and can be accessed from South River Road. This alternative is conceptual only, but could involve restoring approximately 227 acres of riverine and floodplain habitat by breaching the existing levee and creating a new setback levee and secondary channel. This floodplain and shallow-water habitat would provide suitable habitat for salmonid species, green sturgeon and Delta smelt.

Watermark Farms is across the river from and outside of the current APE for Section 106 compliance. Given its proximity to the APE, the Alternative 5b cultural setting likely is similar to that described in the ARCF GRR Final EIS/EIR, with some potential differences related to the principal Native American group or groups utilizing the area prior to Euro-American intrusion. Additionally, there are obvious differences in current agricultural-based land use practices at Watermark Farms, and other adjacent lands on the right bank of the Sacramento River, relative to the high-density suburban development just across the river.

At present, there is insufficient information on the existence of, and potential for, cultural resources and Tribal cultural resources within the Watermark Farms prospective mitigation site to assess how the impacts of this alternative would compare to the SRMS. However, the ground disturbance required to breach the existing levee, build a setback levee, and construct a secondary channel could result in significant impacts to historic properties and other cultural resources, assuming their presence in this area. Consequently, there is the potential for significant impacts to historic properties and other cultural resources. If Alternative 5b were to move beyond the conceptual stage, USACE would follow PA requirements to revise the APE, identify and evaluate historic properties, and resolve any adverse effects to historic properties, as needed. Mitigation Measures CR-1, CR-2, CR-3, CR-4, CR-5, and CR-6 would be implemented if resources were encountered and these impacts would be reduced to less than significant with mitigation incorporated.

Table 5.1-10. Alternative 3a, 3b, 3c, 3d Effects on Cultural and Tribal Resources

| Impact Number and Title | Location | Discussion and Effect Conclusion without Mitigation | Mitigation Measure | CEQA Significance Conclusion | NEPA Effects Determination |
|---|------------------------|---|-----------------------------------|--|--|
| 5.1-N Alter NRHP-listed Resources or Cause a Substantial Adverse Change in the Significance of a Historic Property. | SRMS (Watermark Farms) | This alternative would have a potentially significant effect on cultural resources | Implement PA | N/A | Less than Significant with Mitigation Incorporated |
| 5.1-a Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5. | SRMS (Watermark Farms) | This alternative could impact one or more historic resources. This impact would be potentially significant. | CR-1, CR-2, CR-3, CR-4, CR-5 | Less than Significant with Mitigation Incorporated | N/A |
| 5.1-b Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5. | SRMS (Watermark Farms) | This alternative would have a potentially significant impact related to the potential to encounter unidentified buried resources. | CR-1, CR-2, CR-3, CR-4, CR-5 | Less than Significant with Mitigation Incorporated | N/A |
| 5.1-c Disturb any human remains, including those interred outside of dedicated cemeteries. | SRMS (Watermark Farms) | This alternative would have a potentially significant impact related to the potential to encounter human remains, | CR-6 | Less than Significant with Mitigation Incorporated | N/A |
| 5.1-d Cause a substantial adverse change in the significance of a Tribal cultural resource. | SRMS (Watermark Farms) | This alternative would have a significant impact related to the potential to adversely affect a Tribal cultural resource. | CR-1, CR-2, CR-3, CR-4, CR-5 CR-6 | Less than Significant with Mitigation Incorporated | N/A |

Alternative 5c (Sunset Pumps)

Alternative 5c combines three approaches to complete the Sacramento River Mitigation requirements including 1) Purchasing Delta smelt credits from an approved conservation bank 2) Funding a NMFS recovery plan project (Sunset Pumps) to remove a weir, allowing fish passage to benefit chinook steelhead and green sturgeon and 3) Funding the improvements at Sunset Pumps would increase water availability, which would then be directed to two local wildlife refuges, benefiting the Western Yellow Billed Cuckoo. The Sunset Pumps project is listed as high priority BOR, DWR, and USFWS, and is subject to separate NEPA/CEQA analysis prior to implementation. All other project components (MCP, American River Erosion Contract 3B, American River Erosion Contract 4A, Sacramento River Erosion Contract 3, ARMS, and the Piezometer Network) would have the same effects as the Proposed Action. All activities related to 5c involve funding another project, therefore no additional impacts to cultural materials would result from this alternative.