Appendix B. CEQA Environmental Checklist

Project Information

1. Project title:	Lower American River Anadromous Fish Habitat Restoration Project
2. Lead agency name and address:	City of Sacramento 915 I Street Sacramento, CA 95814
3. Contact person and phone number:	Lilly Allen, (916) 808-1993
4. Project location:	Sacramento County, California
5. Project sponsor's name and address:	U.S. Department of the Interior, Bureau of Reclamation, Mid-Pacific Region 2800 Cottage Way Sacramento, CA 95825 Sacramento Water Forum 1330 21st Street Sacramento, CA 95811
6. General plan designation:	Natural Preserve, Recreation
7. Zoning:	PC Parkway Corridor
8. Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)	The project includes a continuation of spawning gravel augmentation, floodplain and side channel creation/enhancement, and instream habitat structure placement at up to 10 sites repeatedly in the Lower American River between RM 23 and RM 13 that was initiated in 2008 and would be implemented between 2019 and 2034 to comply with the Central Valley Project Improvement Act and related Biological Opinions. Several but not all sites would be restored each year although restoration would not occur in years when funding is unavailable. Biological and physical monitoring are key components of the project.
9. Surrounding land uses and setting: Briefly describe the project's surroundings:	The project is located in the American River Parkway in an area designated for recreation and natural preserve. The Parkway is surrounded by suburban and urban residential areas to the north and south.
10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)	U.S. Department of the Interior, Bureau of Reclamation; U.S. Army Corps of Engineers; Central Valley Flood Protection Board; California Department of Fish and Wildlife; Central Valley Regional Water Quality Control Board, Sacramento Area Flood Control Agency
11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code (PRC) Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?	The City is consulting with tribes which have requested consultation and notification pursuant to PRC Section 21080.3.1.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐	Aesthetics	☐	Agriculture and Forestry Resources	☐	Air Quality
☐	Biological Resources	☐	Cultural Resources	☐	Energy
☐	Geology and Soils	☐	Greenhouse Gas Emissions	☐	Hazards and Hazardous Materials
☐	Hydrology and Water Quality	☐	Land Use and Planning	☐	Mineral Resources
☐	Noise	☐	Population and Housing	☐	Public Services
☐	Recreation	☐	Transportation	☐	Tribal Cultural Resources
☐	Utilities and Service Systems	☐	Wildfire	☐	Mandatory Findings of Significance
				☒	None with Mitigation

Determination (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

6-14-19
Date

Thomas R. Gohring
Print Name

Executive Director
Title

Sacramento City / County Office of Metropolitan Water Planning
Agency

Evaluation of Environmental Impacts

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts. Operations and maintenance impacts of the proposed project are routine, minimal, and essentially the same as current operations and maintenance of the American River Parkway (Parkway). There is no potential for a significant impact to any resource category from project operations and maintenance of the existing and proposed facilities.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required. “Beneficial impact” is also identified where appropriate to provide full disclosure of any benefits from implementing the proposed project.

4) "Less-than-Significant Impact with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less-than-Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less-than-significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063[c][3][D]). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.

   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) Mitigation Measures. For effects that are a "Less-than-Significant Impact with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

   In the case of the proposed project, the U.S. Department of the Interior, Bureau of Reclamation (Reclamation) has previously completed several Environmental Assessments and Supplemental Environmental Assessments in compliance with the National Environmental Policy Act (NEPA). Where appropriate, this analysis is incorporated by reference, summarized, and used to support conclusions on project impacts under CEQA.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and

   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

   Significance thresholds are identified for certain resources, but others are not explicitly identified because there is clearly no impact or the checklist question itself serves as the significance threshold.

1.1 Aesthetics

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
AESTHETICS.					
Except as provided in PRC Section 21099, **would the project:**					
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) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒	☐

1.1.1 Environmental Setting

The American River Parkway (Parkway) is an open space greenbelt which extends from Nimbus Dam to the American River's confluence with the Sacramento River. Many areas along the north and south sides of the river have been affected by past gold mining and/or gravel borrow activities and these areas exhibit extensive dredge piles of gravel and cobble-sized material with riparian, wetland, woodland, and upland vegetation of various densities occupying floodplain, bank, and instream gravel bar areas. Topography in the Parkway varies from steep banks to wide, more broadly-sloping or flat meander areas.

The Parkway's open spaces and natural resources provide visitors with a highly-valued natural setting in the midst of a developed urban area. The American River Parkway Plan (Parkway Plan) (Sacramento County 2008) specifies management for many uses, including: viewing the clean, transparent waters of the American River at various flow levels; fish, wildlife and associated habitat; river recreation such as rafting, fishing, hiking, and biking; viewing geology and landforms; and many other uses with minimal urban or ambient noise and light. The land uses in the Parkway are defined in the Parkway Plan.

The goal of the Parkway Plan is to provide, protect, and enhance a continuous open space greenbelt along the Lower American River (LAR) for public use. Human developments and facilities are prohibited in the "Open Space Preserve Areas," except as necessary to protect the public health, safety, and welfare, or for the purposes of habitat restoration.

The LAR is designated as a "Recreational" river by the Secretary of the Interior under the National Wild and Scenic Rivers Act (designated 1981) and is given the same designation by the State under the California Wild and Scenic Rivers Act (designated 1972).

1.1.2 Discussion

a) Have a substantial adverse effect on a scenic vista?

No Impact. There are no designated scenic vistas in the project area. Therefore, there would be no impact.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

No Impact. There are no State scenic highways in the project vicinity. There would be no impact.

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

Less-than-Significant Impact. The entire project area is zoned as PC – Parkway Corridor Zoned Area by Sacramento County (Sacramento County 2019). This zone is combined with the basic zone in areas on which uses may affect the aesthetics of the Parkway; these include zones for recreation and natural preserve. This combining zone has been established to limit uses that visually impact the Parkway and contains special development standards for structures and buildings, as well as use permit requirements. Project construction would be periodic and temporary (up to 6 weeks at any one site in any given year) and therefore compatible with the zoning regulations.

In-river spawning gravel placement, side channel excavation, and habitat structure placement would require the use of large construction equipment within and adjacent to the river but would be limited to a maximum of three restoration sites per year which represent a small portion of the total Parkway area. Furthermore, construction and equipment use would be only 4-6 weeks at each location. After work is completed at the various restoration sites, the visual character of these reaches would be consistent with existing conditions along the Parkway and LAR, where visitors see a meandering main channel, side channels, gravel bars, vegetated and unvegetated banks, upland and riparian vegetation at various life stages (including downed logs and rootwads), and the fish and wildlife species that use the Parkway and LAR as habitat. At borrow sites, the visual character would be similar before and after removal of material; the visual environment in these locations is characterized by large piles or mounds of gravel, and vegetation typical of disturbed areas.

As described on page 23 in the 2008 Environmental Assessment (2008 EA) prepared by the Bureau of Reclamation (Reclamation 2008) and in Appendix C, "National Park Service Wild and Scenic Rivers Evaluation," to the 2008 EA (National Park Service [NPS] 2008), and incorporated by reference, the NPS has concurred that the project conducted in 2008 through 2013 would not have a direct and adverse effect on the values for which the river was designated as a Wild and Scenic River. In 2018, NPS again concurred that the project described in the 2008 EA would not have a direct and adverse effect (NPS 2018). A similar concurrence is expected for the proposed action for 2019 through 2032 since the

proposed action is very similar to the previous LAR restoration efforts. This impact would be less than significant.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Impact. None of the project activities would include construction of temporary or permanent buildings or other facilities that would require permanent lighting, and therefore no new long-term sources of light or glare would be created by the project. Furthermore, all construction work would be conducted during the hours specified in the City of Sacramento (City) and County of Sacramento (County) ordinances, and therefore nighttime lighting for construction activities would not be required. Thus, there would be no impact.

1.2 Agriculture and Forestry Resources

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
AGRICULTURE AND FORESTRY RESOURCES.					
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. **Would the project:**					
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC Section 12220(g)), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒	☐
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☒	☐	☐
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐	☐

1.2.1 Environmental Setting

As discussed and analyzed in the 2008 EA (page 22), and incorporated by reference, the proposed project borrow and restoration sites are located in land use areas designated for recreation and natural preserve by the Sacramento County General Plan (Sacramento County 2011), and the Folsom Lake State

Recreation Area & Folsom Powerhouse State Historic Park General Plan/Resource Management Plan (2010).

1.2.2 Discussion

a-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; conflict with existing zoning for agricultural use, or a Williamson Act contract; or conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

No Impact. There are no lands designated as Prime, Unique, or Farmland of Statewide Importance nor are there any Williamson Act contracted lands within the project area (California Department of Conservation 2015, 2019). The entire project area is zoned as PC – Parkway Corridor Zoned Area by Sacramento County (Sacramento County 2019). There would be no impact.

d, e) Result in the loss of forest land or conversion of forest land to non-forest use or 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?

Less-than-Significant Impact. No agricultural or production uses exist in the project vicinity. There would be no conversion or loss of agricultural lands as a result of the project.

However, portions of the Parkway and project site may qualify as forestlands under Public Resources Code (PRC), Section 12220 since these areas may "support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits." During construction of the side channels, up to 20 trees per site may need to be removed although all trees would be avoided to the extent feasible. The Parkway is a dynamic riverine environment, and continual recruitment and disposition of riparian and floodplain trees and other vegetation is a part of the natural cycle as the river meanders throughout the Parkway. The removal of up to 20 trees per site over the 15 years of the project would not convert forest land to a non-forest use and would be a less-than-significant impact.

1.3 Air Quality

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied on to make the following determinations. **Would the project:**					
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?	☐	☐	☐	☒	☐

1.3.1 Environmental Setting

The project site is located within the Sacramento Valley Air Basin (SVAB). The project site is located in Sacramento County, under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD).

As required by the Federal Clean Air Act (FCAA) passed in 1970, the U.S. Environmental Protection Agency (EPA) has identified six criteria air pollutants that are pervasive in urban environments and for which state and national health-based ambient air quality standards have been established. EPA calls these pollutants "criteria air pollutants" because the agency has regulated them by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. Ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM), and lead are the six criteria air pollutants. Notably, PM is measured in two size ranges: PM_{10} for particles less than 10 microns in diameter, and $PM_{2.5}$ for particles less than 2.5 microns in diameter. SVAB is currently designated as nonattainment for the State and Federal ambient air quality standards for ground-level ozone (O_3), as well as for the Federal standards for $PM_{2.5}$ (SMAQMD 2019a, 2019b).

1.3.2 Discussion

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less-than-Significant Impact. This impact is determined based on whether the proposed project would conflict with or obstruct implementation of an applicable air quality action plan and/or applicable portions of the State Implementation Plan, which would lead to increases in the frequency or severity of existing air quality violations. SMAQMD is responsible for establishing and enforcing local air quality

rules and regulations that address the requirements of Federal and State air quality laws in Sacramento County. SMAQMD is also responsible for implementing strategies for air quality improvement and recommending mitigation measures for new growth and development. SMAQMD has identified specific criteria pollutant thresholds to assist lead agencies in determining air quality impacts for projects located in Sacramento County. These thresholds are shown in **Table 1.3-1**.

Table 1.3-1 Air Quality Thresholds of Significance

	O_3 Precursor Emissions		
Emission Type	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Construction	85 pounds per day	Fugitive dust BACT/BMPs and 80 pounds per day, 14.6 tons per year	Fugitive dust BACT/BMPs and 82 pounds per day, 15 tons per year

Notes: O_3 = ozone, NOx = nitrogen oxide, PM_{10} = particulate matter less than 10 microns in diameter, $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter.
Source: Sacramento Metropolitan Air Quality Management District 2015

The proposed project includes only construction-phase emissions associated with placing gravel at augmentation sites and the side channel improvements, including borrow of gravel material and transport of this material to the gravel augmentation sites. As specified by the description of the Proposed Action, all construction equipment would use Best Available Control Technology (BACT) and implement dust control Best Management Practices (BMPs) in accordance with current SMAQMD guidance. As discussed under item b) below and summarized in **Table 1.3-2**, project emissions would be below SMAQMD thresholds of significance without any mitigation. This impact would be less than significant.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard?

Less-than-Significant Impact. Construction emissions are considered short-term and temporary, but they have the potential to represent a significant impact with respect to air quality. Construction of the proposed project would temporarily generate emissions of reactive organic gases (ROG), NO_X, CO, PM_{10}, and $PM_{2.5}$. Emissions of ozone precursors (e.g., ROG and NO_X) are generated primarily by on-road mobile sources (i.e., delivery vehicles, haul trucks, construction worker vehicles) and off-road construction equipment. The level of emissions generated varies as a function of vehicle trips per day for worker commute trips and haul truck trips, and the types and number of heavy-duty, off-road equipment used and their respective intensity and frequency of operation.

Fugitive PM dust is one of the pollutants of greatest concern with respect to construction activities. Construction-related fugitive PM dust emissions 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. Soil excavation and swale grading activities would be the primary source of fugitive PM dust emissions from construction activities. Movement of off-road construction equipment and work trucks on unpaved roads can also generate fugitive PM dust emissions.

Construction-related exhaust emissions were modeled using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2, which was the most currently available version at the time of this

analysis. CalEEMod allows the user to enter project-specific construction information, such as the types, number, and horsepower of construction equipment, and the number and length of off-site motor vehicle trips. Construction-related emissions for the proposed project were estimated for construction worker commutes, haul trucks, and the use of off-road equipment. **Table 1.3-2** shows the unmitigated emissions associated with construction activities.

Table 1.3-2 Proposed Action Construction Emissions

Construction Year(s)	Emissions					
	pounds/day (unmitigated)				tons/year (unmitigated)	
	ROG	NO_X	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
2019-2023	7.86	84.77	22.46	8.39	0.63	0.24
2024-2028	5.11	51.02	20.61	6.69	0.58	0.19
2029-2033	4.76	46.74	20.37	6.47	0.57	0.18
2034	4.87	26.69	19.30	5.53	0.54	0.16
SMAQMD Threshold of Significance	--	85	82	80	14.6	15
Exceeds Project Threshold?	--	No	No	No	No	No

Source: GEI Consultants, Inc. 2019
Notes: ROG = reactive organic gases; NO_X = nitrogen oxides; PM_{10} = particulate matter with aerodynamic diameter less than 10 micrometers; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 micrometers
Source: Emissions modeled by GEI Consultants, Inc., in 2019 (Model results in Appendix F)

SVAB is currently designated as nonattainment for the Federal and State ambient air quality standards for ground-level O_3, as well as for the Federal standards for $PM_{2.5}$. The air basin's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its nature, air pollution is largely a cumulative impact. SMAQMD's approach to thresholds of significance is used to determine whether a project's individual emissions would result in a cumulative considerable adverse contribution to SVAB's existing air quality conditions. If a project's emissions would be less than these levels, the project would not be expected to result in a cumulatively considerable contribution to the significant cumulative impact. The proposed project would not exceed SMAQMD's daily or annual emissions thresholds. This impact would be less than significant.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less-than-Significant Impact. Some members of the population are especially sensitive to emissions of air pollutants and should be given special consideration during the evaluation of the project's air quality impacts. These people include children, older adults, any person with pre-existing respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. Sensitive receptors include residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. While residences and recreational facilities, including the American River Bike Trail, are located adjacent to portions of the project site, the proposed project is not expected to result in the exposure of sensitive receptors to substantial pollutant concentrations, given the short-term nature of these construction emissions and the distance of residences and active recreation facilities to the construction sites. This impact is considered less than significant.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

No Impact. Human response to odors is subjective, and sensitivity to odors varies greatly. Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, anxiety) to physiological (e.g., circulatory and respiratory reactions, nausea, vomiting, headaches). The proposed project would not create new objectionable odors. There would be no impact.

1.4 Biological Resources

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
BIOLOGICAL RESOURCES.					
Would the project:					
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐	☐
c) Have a substantial adverse effect on State or Federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐	☐
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?	☐	☐	☐	☒	☐

This section summarizes the more detailed biological resources discussion provided in the Biological Resources Technical Report included as **Appendix G**.

1.4.1 Environmental Setting

The project study area is located in the riverine, riparian, and woodland corridor of the LAR. Elevation of the study area ranges from approximately 50 feet above mean sea level at the downstream end of the River Bend restoration site to approximately 200 feet at the upstream end of the Mississippi Bar borrow site. Water depth in this portion of the river fluctuates during summer because it is downstream of Nimbus Dam and subject to regulated flows. Vegetation on the restoration sites includes valley oak woodland, mixed riparian forest, and willow scrub (Reclamation 2015). The borrow sites are primarily barren and composed of dredge tailings, though seasonal wetlands are present in concave portions of the

tailings (Water Forum 2008). These habitats have potential to support one special-status plant and several special-status wildlife species. The LAR also supports a variety of native and nonnative fishes, including game fish and special-status species. The study area includes designated critical habitat for two Federally listed species and Essential Fish Habitat (EFH) for Chinook salmon (*Oncorhynchus tshawytscha*).

1.4.2 Discussion

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

Plants

Less-than-Significant Impact. Sanford's arrowhead (*Sagittaria sanfordii*) is the only special-status plant (California Rare Plant Rank 1B.2) that has potential to occur on the restoration sites. This plant has three occurrences mapped along the American River, including one occurrence in a concrete-lined drainage channel, near the restoration site approximately 0.8 mile downstream of the Rossmoor Drive access point. The other nearby occurrences are along the river, within 3 miles of restoration sites. Ground disturbance at the restoration sites would primarily occur below the ordinary high-water mark (OHWM) in areas where waters are generally fast moving and well oxygenated. Because Sanford's arrowhead occurs in slow-moving waters, it is very unlikely to occur in areas of project-related disturbance, and unlikely to be adversely affected by project implementation. Therefore, this impact would be less than significant.

Fisheries

Three Federally and State-listed fish species could occur at the restoration sites: California Central Valley steelhead (*O. mykiss*) (Federally threatened), Sacramento River winter-run Chinook salmon (*O. tshawytscha*) (Federally and State endangered), and Central Valley spring-run Chinook salmon (Federally and State threatened). In addition, Central Valley fall-run Chinook salmon, river lamprey (*Lampetra fluviatilis*), and hardhead (*Mylopharodon conocephalus*), all of which are California species of special concern, could occur at the restoration sites. The entire LAR from the confluence with the Sacramento River to Nimbus Dam is designated as critical habitat for Central Valley steelhead and EFH for Chinook salmon.

Habitat Conditions

Beneficial. The proposed project includes a suite of habitat modification/restoration activities with the expressed intent to improve conditions for anadromous salmonids in the LAR. Activities to augment spawning gravel, enhance floodplain and side channel habitats, and place instream habitat structures are expected to improve aquatic habitats and increase spawning and rearing success. Monitoring of past gravel placement indicates new spawning habitat for salmonids has been created and used successfully. Therefore, impacts associated with changes in habitat conditions would be beneficial.

Hazardous Materials

Less-than-Significant Impact with Mitigation Incorporated. Operation of construction equipment in or adjacent to the river presents the risk of a spill of hazardous materials into the river (e.g., construction equipment leaking fluids). Additionally, on-site refueling of construction equipment can result in minor fuel and oil spills. Without rapid containment and clean up, these materials could have deleterious

effects on special-status fish within the exposure area. Although juvenile salmonids are highly mobile and thus have the ability to avoid potentially hazardous materials, exposure to such materials could result in mortality of large numbers of special-status fishes and have a substantial adverse effect on local populations. Therefore, this potential impact from project-related increases in pollutant discharge on special-status fish would be **potentially significant**. The following mitigation measure has been identified to address this impact:

> **Mitigation Measure GEO-1: Prepare and Implement a Storm Water Pollution Prevention Plan and Best Management Practices.**
>
> Please refer to Mitigation Measure GEO-1 in Section 1.7, "Geology and Soils," for the full text of this mitigation measure.

Implementing Mitigation Measure GEO-1 would reduce the potentially significant impact of pollutant discharge on special-status fish from accidental spill of or exposure to hazardous materials to a less-than-significant level, because a storm water pollution prevention plan (SWPPP) would be prepared and implemented, when required. The SWPPP would include a spill prevention, control, and countermeasure plan, and would identify the types of materials used for equipment operation, along with measures to prevent and materials available to clean up hazardous material and waste spills. The SWPPP would also identify emergency procedures for responding to spills. This impact would be less than significant with mitigation incorporated.

Suspended Sediments and Turbidity

Less-than-Significant Impact with Mitigation Incorporated. Project activities could result in short-term increases in suspended sediment and turbidity levels and impact fish populations through reduced food availability and feeding efficiency. At high levels, suspended solids can adversely affect the physiology and behavior of aquatic organisms and suppress photosynthetic activity at the base of food webs, affecting aquatic organisms either directly or indirectly (Alabaster and Lloyd 1980). Fish responses to increased turbidity and suspended sediment can range from behavioral changes (alarm reactions, abandonment of cover, and avoidance) to sublethal effects (e.g., reduced feeding rate), and, at high suspended sediment concentrations for prolonged periods, lethal effects (Newcombe and Jensen 1996). If this occurs while embryos are incubating, injury or mortality to incubating eggs or alevins could occur through the infiltration of fine sediment into salmonid redds with a reduction of intra-gravel water circulation and, in severe cases, entombment of salmonid eggs. Deposition of fine sediments in food-producing riffles also could reduce the abundance and availability of aquatic insects on which fish feed and result in loss of cover.

Riffle supplementation and floodplain and side channel creation/enhancement require applying the gravel directly to the streambed and/or grading it, thereby disturbing silt and sand on the river bottom and increasing potential for adverse effects. The amount of sediment that may be re-suspended by project activities is not anticipated to be substantial, and any re-suspension and re-deposition of instream sediments is expected to be localized and temporary. In addition, project activities would primarily occur within the middle of the active channel, where fewer juvenile salmonids are expected to rear. Previous studies indicate that juvenile salmonids tend to be found within 10-20 feet of river banks (Allen 2000, FISHBIO and Normandeau Associates 2012, Palmer and Hellmair 2012). Although some rearing and migrating juveniles may be found farther from the banks, the area disturbed by project activities and associated turbidity at any given time is expected to affect less than 40 percent of the river width and to be most concentrated within about 200 feet downstream of the restoration site. Therefore, juvenile

salmonids will have opportunities to move to other portions of the channel where they can avoid potential impacts from turbidity increases. In addition, in-work work windows would prevent the siltation of steelhead redds and eggs. However, project-related increases in suspended sediment and turbidity have potential to cause adverse behavioral responses and sublethal and lethal effects, potentially resulting in a substantial adverse effect on local populations of juvenile salmonids and other special-status fish. Therefore, this impact would be potentially significant. The following mitigation measure has been identified to address this impact:

> **Mitigation Measure GEO-1: Prepare and Implement a Storm Water Pollution Prevention Plan and Best Management Practices.**
>
> Please refer to Mitigation Measure GEO-1 in Section 1.7, "Geology and Soils," for the full text of this mitigation measure.

Implementing Mitigation Measures GEO-1 would reduce the potentially significant impact associated with increases in suspended sediment and turbidity on special-status fish to a **less-than-significant** level because a SWPPP would be prepared and implemented, when required, measures would be implemented to minimize turbidity during in-water construction activities, and construction activities at any one site and collectively during the year are limited to a short duration. This impact would be less than significant with mitigation incorporated.

Physical Disturbance

Less-than-Significant Impact with Mitigation Incorporated. Gravel placement and grading activities for riffle supplementation, excavation activities for floodplain and side channel enhancement, and instream placement of habitat structures have potential to affect special-status fishes through displacement, disruption of normal behaviors, and direct injury or mortality. Rearing habitat for juvenile salmonids is generally well-distributed, allowing for juvenile movement to other areas to avoid the physical disturbance of construction activities. However, fish would not be able to use portions of the river where equipment is actively working or the associated turbidity plume occurs, and displacement may temporarily expose juvenile fish to a greater risk of predation. Although juvenile salmonids are generally expected to avoid areas where equipment is actively placing or excavating gravel, an undetermined number of special-status fishes may attempt to find shelter in the substrate and could be injured or killed by equipment. Placing material in the active channel would generally occur along non-vegetated channel margins where juvenile salmonid presence is expected to be minimal due to the lack of vegetation cover and the timing of in-river construction. However, using heavy equipment in areas that are accessible by fish and/or installing temporary water crossings could result in injury or mortality and have a substantial adverse effect on local populations. Therefore, this potential impact from direct injury or mortality of special-status fish would be potentially significant. The following mitigation measure has been identified to address this impact:

> **Mitigation Measure BIO-1: Minimize Injury and Mortality of Special-Status Fish Species.**
>
> The City/Water Forum and its construction contractor(s) shall implement the following measures to avoid and minimize direct injury and mortality of special-status fish:
>
> - In-water work shall be restricted to July 1 through September 30, with consideration of the spatial and temporal distribution of spawning and incubating steelhead and fall-run Chinook salmon. Work past September 30 would be with approval from the national Marine Fisheries Service.

- Construction may be conducted year-round in areas, such as floodplains and side channels, when flowing water is absent due to separation from the main channel by gravel berms that are either naturally present or artificially created.

- In-water work in floodplains and side channels shall be limited to inlet/outlet areas during the last stage of reconnection to the main channel. if working outside of the instream work timing window.

- Instream habitat structures shall be placed when fish do not have access to the affected areas, or within timing windows, as described above.

- Measures such as slow, deliberate equipment operation and tapping the water surface before entering the channel shall be implemented during in-water work to alert fish to equipment operation in the channel before gravel is placed.

- Before project activities begin, worker Environmental Awareness Training shall be provided to inform agency staff and contractors of the need to avoid and minimize potential impacts on special-status fish and the possible penalties for not complying with these requirements. The training shall include, at a minimum, species identification, habitat requirements, and required practices for fish avoidance and protection. A designated enforcement lead shall be identified to employees and contractors to ensure that questions regarding avoidance and protection measures are addressed in a timely manner.

- A designated enforcement lead shall monitor in-water construction activities to confirm proper implementation of conservation measures and water quality protection measures.

Timing: Before and during ground-disturbing activities.

Responsibility: City/Water Forum and Construction Contractor(s).

Implementing Mitigation Measure BIO-1 would reduce the potentially significant impact associated with project-related injury or mortality of special-status fish to a less-than-significant level, because restrictions related to in-water work would be implemented, agency staff and contractors would receive training, and biological monitoring would be conducted. This impact would be less than significant with mitigation incorporated.

Invertebrates

Vernal Pool Fairy Shrimp

Less-than-Significant Impact with Mitigation Incorporated. Vernal pool fairy shrimp (*Branchinecta lynchi*) is known to occur within 3 miles of the restoration and borrow sites, including one occurrence near the Sailor Bar borrow site. This occurrence is from seasonal wetland habitat on the high floodplain terrace (CDFW 2019), outside the area of dredge tailings that would be used as borrow material. Vernal pool tadpole shrimp (*Lepidurus packardi*) has not been documented in this wetland, but it also could occur if habitat conditions are suitable. Vernal pool fairy shrimp is Federally listed as threatened, and vernal pool tadpole shrimp is Federally listed as endangered. Based on review of aerial photography and past wetland delineation reports (Water Forum 2008, Reclamation 2015), up to 0.24 acre of seasonal wetland habitat is present on the Sailor Bar and Mississippi borrow sites combined. Seasonal wetlands in tailings on the borrow sites are less likely to be suitable for vernal pool fairy shrimp and vernal pool

tadpole shrimp than wetlands on the high floodplain and are not expected to sustain ponded water long enough for either species to complete its lifecycle. However, potential for these species to occur on the borrow sites cannot be entirely excluded. Because project activities would remove material from dredge tailings, seasonal wetland habitat potentially occupied by vernal pool fairy shrimp and vernal pool tadpole shrimp could be removed. This could have a substantial adverse effect on the local populations, depending on the amount of occupied habitat that is affected. Therefore, this potential impact on vernal pool fairy shrimp and vernal pool tadpole shrimp from potential modification of occupied habitat would be potentially significant. The following mitigation measures have been identified to address this impact:

Mitigation Measure GEO-1: Prepare and Implement a Storm Water Pollution Prevention Plan and Best Management Practices.

Please refer to Mitigation Measure GEO-1 in Section 1.7, "Geology and Soils," for the full text of this mitigation measure.

Mitigation Measure BIO-2: Avoid and Minimize Impacts on Waters of the United States and Waters of the State.

The City/Water Forum and its construction contractor(s) shall implement the following measures to avoid and minimize direct fill of waters of the United States and waters of the State in the Lower American River and minimize impacts on seasonal wetland habitats at the borrow sites.

- Ground disturbance shall be limited to gravel augmentation restoration sites and borrow sites. Existing access routes shall be used to obtain access to restoration and borrow sites. The total area of the project activity shall be limited to the minimum necessary. Borrow extraction areas and staging areas shall be placed to avoid and limit disturbance to the Lower American River and seasonal wetland habitats and shall provide a 250-foot setback from seasonal wetland habitats, to the extent feasible.

- Before the commencement of construction activities, high-visibility fencing shall be erected to protect areas of the Lower American River at gravel augmentation sites and identified seasonal wetland habitats at borrow sites that are located adjacent to disturbance areas but can be avoided from encroachment of personnel and equipment. The fencing shall be inspected before the start of each work day and shall be removed only when the construction within a given area is completed. Limits of waters of the United States and wetlands shall be incorporated into project bid specifications, along with a requirement for contractors to avoid these areas.

- A designated enforcement lead shall monitor all construction activities in waters of the United States to ensure that avoidance and minimization measures are being properly implemented and no unauthorized activities occur. The designated enforcement lead shall be empowered to stop construction activities that threaten to cause unanticipated and/or unauthorized significant adverse project impacts to allow resolution of these potential impacts by the City/Water Forum and U.S. Bureau of Reclamation. Project activity shall not resume until the conflict has been resolved.

- Authorization for direct fill of jurisdictional habitat in the American River and modification of seasonal wetlands at the borrow sites shall be obtained, as required, from

the U.S. Army Corps of Engineers (Corps), Central Valley Regional Water Quality Control Board (RWQCB), and CDFW.

- **Clean Water Act (CWA) Section 404:** Before any ground-disturbing project activities begin in areas containing wetlands or waters, a qualified biologist shall conduct a formal delineation of waters of the United States for CWA Section 404 permitting. The findings shall be documented in a detailed report as part of the formal Section 404 wetland delineation process. Authorization for fill of jurisdictional waters of the United States shall be secured from the Corps via the Section 404 permitting process before project construction. Any mitigation measures determined necessary during the 404 permitting process shall be implemented during project construction.

- **CWA Section 401:** Prior to conducting work under a Section 404 Permit, Reclamation must obtain a Section 401 Water Quality Certification from the Central Valley RWQCB. This declaration states that any discharge complies with all applicable effluent limitations and water quality standards. Reclamation will submit an application to the Central Valley RWQCB for sites not included in the 2019 permit.

- **Fish and Game Code (FGC) Section 1602 or similar agreement:** A CDFW lake and streambed alteration agreement or similar approval from CDFW shall be obtained by the City for all activities that will substantially divert or obstruct the natural flow of water; substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. Any conditions of issuance of the lake and streambed alteration agreement, including avoidance, minimization, and compensation measures, shall be implemented as part of project implementation.

Timing: Before and during ground-disturbing activities.

Responsibility: City/Water Forum.

Implementing Mitigation Measures GEO-1 and BIO-2 would reduce the potentially significant impact associated with direct and indirect disturbance of seasonal wetlands potentially occupied by vernal pool fairy shrimp and vernal pool tadpole shrimp to a less-than-significant level because a SWPPP would be prepared and implemented and measures would be implemented to avoid and minimize extracting borrow from and staging near seasonal wetlands. This impact would be less than significant with mitigation incorporated.

Valley Elderberry Longhorn Beetle

Less-than-Significant Impact with Mitigation Incorporated. Blue elderberry (*Sambucus nigra ssp. caerulea*) shrubs are widely distributed throughout the restoration and borrow sites. These shrubs are the host plant for larvae of Valley elderberry longhorn beetle (VELB) (*Desmocerus californicus dimorphus*), which is Federally listed as threatened. There are a number of known occurrences of VELB on or near the restoration and borrow sites, and two areas of designated critical habitat for the species are located on or adjacent to several of the restoration sites, between approximately river mile (RM) 18 and RM 19 and from RM 14.5 to RM 17. Project activities would not require removal or trimming of elderberry shrubs, but elderberry shrubs adjacent to the restoration and borrow sites could be indirectly

affected. VELB typically emerge from elderberry shrubs in March to July. Because project activities would occur July–September, direct loss of individuals is unlikely to occur. However, indirect impacts on elderberry shrubs could affect habitat quality and larvae that may be present in the shrubs. Depending on the number of shrubs occupied by VELB that are affected, this could have a substantial adverse effect on the local population. Therefore, this potential impact from indirect effects on elderberry shrubs would be potentially significant. The following mitigation measure has been identified to address this impact:

Mitigation Measure BIO-3: Minimize Effects to Valley Elderberry Longhorn Beetle.

The City/Water Forum and its construction contractor(s) shall implement the following measures to avoid and minimize potential adverse effects on VELB during project implementation.

- Before project activities begin, worker Environmental Awareness Training shall be provided to inform agency staff and contractors of the need to avoid and minimize potential impacts on VELB and its host plant and the possible penalties for not complying with these requirements. The training shall include, at a minimum, species identification, habitat requirements, and required practices for their avoidance and protection. A designated enforcement lead shall be identified to employees and contractors to ensure that questions regarding avoidance and protection measures are addressed in a timely manner.

- All elderberry shrubs on or adjacent to work areas shall be temporarily fenced and designated as environmentally sensitive areas. These areas shall be avoided by all construction personnel. Fencing shall be placed at least 20 feet from the dripline of each shrub, unless otherwise approved by USFWS.

- Dirt roadways and disturbed areas within 100 feet of elderberry shrubs shall be watered at least twice a day to minimize dust emissions.

Timing: Before and during ground-disturbing activities.

Responsibility: City/Water Forum and Construction Contractor(s)

Implementing Mitigation Measure BIO-3 would reduce the potentially significant impact associated with project-related adverse effects to valley elderberry longhorn beetle to a less-than-significant level, because agency staff and contractors would receive training, and measures would be implemented to avoid and minimize potential disturbance of elderberry shrubs. This impact would be less than significant with mitigation incorporated.

Reptiles

Less-than-Significant Impact. Western pond turtle (*Emys marmorata*), a California species of special concern, is known to occur along the LAR and could be present on-site during project activities. Natural basking sites, such as partially submerged logs or rocks, vary in abundance along the river, including at the restoration sites. However, habitat on the restoration and borrow sites is unlikely to be used for nesting, due to unsuitable substrate conditions. Placing gravel in the river could reduce habitat suitability for western pond turtle but creating/enhancing floodplain and side channel habitat and placing in-stream woody material at restoration sites could improve habitat quality. If individual pond turtles are present on or adjacent to the restoration sites, they are likely to leave affected areas when project activities begin, and extensive areas of equally suitable habitat are present in immediately adjacent areas. Because

project activities in a given year would be limited to a very small proportion of the overall project area and larger river corridor, the number of individuals potentially affected would be low and is unlikely to substantially affect the local population. Therefore, this impact would be less than significant.

Birds

Less-than-Significant Impact with Mitigation Incorporated. Eight special-status bird species—golden eagle (*Aquila chrysaetos*), bald eagle (*Haliaeetus leucocephalus*), western yellow-billed cuckoo (*Coccyzus americanus*), burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), bank swallow (*Riparia riparia*), and purple martin (*Progne subis*)—have potential to occur on or adjacent to the restoration and/or borrow sites. Bald eagle, Swainson's hawk, and bank swallow are State-listed as threatened or endangered, and western yellow-billed cuckoo is Federally listed as threatened. The remaining species are California species of special concern. Because project activities in a given year would be limited to a very small proportion of the overall project area, and equally suitable habitat is relatively abundant in the project vicinity, any potential disruption of foraging activities would be very minor. Swainson's hawk, white-tailed kite, and bank swallow are known to nest on or near the restoration and borrow sites, but the sites support a relatively limited number of potential nest trees, and extensive areas of forest and woodland nesting habitat are present along the LAR. Bridges over the river and snags throughout the project area could provide suitable nest sites for purple martin, but this species is not known to nest along the river. Both eagle species nest in region but are unlikely to nest in the project area, and the project area is outside the current nesting range of western yellow-billed cuckoo. Suitable nesting habitat for burrowing owl and bank swallow may be present adjacent to restoration or borrow sites, but the sites themselves are unlikely to provide suitable burrow substrate for either species.

Project activities are anticipated to require limited tree removal where side-channels are created and the use of haul routes in the American River Parkway could require tree trimming to facilitate passage of large project vehicles and equipment. Tree removal is limited to areas where side-channels would be created and is not likely to result in the removal of large diameter trees, since these areas are subject to high-velocity flows during periods of flooding. If tree trimming is required, it would not reduce the overall amount of suitable nesting habitat available and is very unlikely to remove active nests of special-status birds. However, if active nests of special-status birds are present on or near the restoration or borrow sites, they could be disturbed by heavy equipment operation and construction personnel, potentially resulting in nest abandonment, reduced care of eggs or young, or premature fledging. Depending on the species and number of individuals that are affected, nest failure could have a substantial adverse effect on the local population. Therefore, this potential impact from failure of active nests of special-status birds would be potentially significant. The following mitigation measure has been identified to address this impact:

Mitigation Measure BIO-4: Minimize Effects on Special-status Species and Nesting Birds.

The City/Water Forum and its construction contractor(s) shall implement the following measures to avoid and minimize potential adverse effects on special-status species and nesting birds during project implementation:

- Before project activities begin, worker Environmental Awareness Training shall be provided to inform agency staff and contractors of the need to avoid and minimize potential impacts on special-status species and nesting birds and the possible penalties for not complying with these requirements. The training shall include, at a minimum, species

identification, habitat requirements and required practices for their avoidance and protection. A designated enforcement lead shall be identified to employees and contractors to ensure that questions regarding avoidance and protection measures are addressed in a timely manner.

- If vegetation removal is required during the bird nesting season (February 1 through August 15), surveys for active bird nests shall be conducted by a qualified biologist in areas of suitable nesting vegetation designated for removal. A minimum of one survey shall be conducted no more than 7 days before vegetation removal occurs. If active nests are found, removal of vegetation in which the nests are located shall be delayed until a qualified biologist determines that the young have fledged or the nest site is otherwise no longer in use.

- Preconstruction surveys will be conducted by a certified arborist to identify the species of trees and any sensitive habitats (i.e., nesting, critical habitat designations, etc.), and an acceptable replacement ratio determined in coordination with CDFW.

- Preconstruction surveys for special-status plant species, including Sanford's arrowhead, shall be conducted by a qualified biologist, and the City will coordinate with CDFW if the species is found within the project boundary subject to ground disturbance.

- Preconstruction surveys for special-status reptiles, including Western pond turtle, shall be conducted by a qualified biologist, and the City will coordinate with CDFW if the species is observed within the project boundary subject to ground disturbance. Preconstruction surveys for active nests of burrowing owl, Swainson's hawk, white-tailed kite, bank swallow, purple martin, and colonial nesting herons and egrets shall be conducted by a qualified biologist in all areas of suitable nesting habitat that could be disturbed by project activities. A minimum of two surveys shall be conducted within 14 days before project activities begin, including at least one survey no more than 7 days before activities begin.

- Appropriate buffers shall be established and maintained around active nest sites to avoid nest failure from project activities. The appropriate size and shape of the buffers shall be determined by a qualified biologist and may vary depending on the nest location, nest stage, construction activity, and existing disturbance levels. The buffers may be adjusted if a qualified biologist determines it would not be likely to adversely affect the nest. Monitoring shall be conducted to confirm that project activities are not resulting in detectable adverse effects on nesting birds or their young. No project activities shall occur within the buffer areas until a qualified biologist determines that the young have fledged or the nest site is otherwise no longer in use.

Timing: Before and during ground-disturbing activities.

Responsibility: City/Water Forum and Construction Contractor(s)

Implementing Mitigation Measure BIO-4 would reduce the potentially significant impact associated with project-related failure of active nests of special-status birds to a less-than-significant level, because agency staff and contractors would receive training and buffers would be implemented around active

nests to minimize potential for nest failure. This impact would be less than significant with mitigation incorporated.

Mammals

Less-than-Significant Impact. Pallid bats (*Antrozous pallidus*) could forage over the restoration and borrow sites, but foraging activities are unlikely to be disturbed by construction activities. Forest and woodland habitat adjacent to the restoration and borrow sites and in bridges over the river may provide marginally suitable roost sites. However, these areas are not expected to support maternity roosts or other large numbers of roosting individuals, because pallid bats are very sensitive to disturbance of roost sites and may avoid existing disturbance from recreational use and adjacent residential areas. Because project activities would not remove roosting habitat, potential impacts are anticipated to be limited to disturbance of temporary roost sites for small numbers of individuals. American badger (*Taxidea taxus*) has low potential to occur in grassland and open woodland adjacent to the borrow sites. Although an individual was recently documented near Folsom Dam (CDFW 2019), this species typically avoids heavily populated areas and is unlikely to occur regularly along the LAR. Because project activities in a given year would be limited to a very small proportion of the overall project area, and badgers are unlikely to occur throughout most of the project area, the number of individuals potentially affected would be very low. Because very few, if any, pallid bats and American badgers would be impacted by project implementation, their populations would not be substantially adversely affected, and these potential impacts would be less than significant.

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

Riparian Habitat and Sensitive Natural Communities

Less-than-Significant Impact. The restoration sites support willow scrub and mixed riparian forest, and on-site valley oak woodland and riparian habitats are considered communities of special concern by CDFW. Selective removal of individual trees may be required to construct side-channels, but a very small number of trees would be removed (i.e., up to 20). The use of haul routes in the American River Parkway could require tree trimming to facilitate passage of large project vehicles and equipment. However, potential impacts of such selective removal and trimming are anticipated to be minor. In addition, a Certified Arborist would be consulted regarding appropriate trimming techniques. These minor impacts on riparian habitat and sensitive natural communities would not have a substantial adverse effect. Therefore, this impact would be less than significant.

Critical Habitat and Essential Fish Habitat

Less-than-Significant Impact. The proposed project is designed to improve conditions for anadromous salmonids in the LAR, and monitoring has indicated that past gravel placement has created new spawning habitat for salmonids. Therefore, although project activities would temporarily disturb designated critical habitat for Central Valley steelhead and EFH for Chinook salmon, the overall result would be beneficial, and critical habitat would not be adversely affected. In addition, although project activities have potential to indirectly affect individual elderberry shrubs on or adjacent to the restoration and borrow sites, they would not result in substantial adverse effects to the two areas of designated critical habitat for VELB. Therefore, these impacts would be less than significant.

c) Have a substantial adverse effect on State or Federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less-than-Significant Impact with Mitigation Incorporated. The LAR is a water of the United States subject to regulation under CWA Sections 404 and 401 and FGC Section 1602. Implementing the proposed project would result in direct modification and placement of fill within the jurisdictional river channel but would not result in the loss of channel capacity. However, project activities could temporarily degrade water quality in the river. Seasonal wetlands are known to occur at the borrow sites and could be directly modified, if borrow material is removed from tailings that support wetlands. Degradation of river water quality and loss of seasonal wetlands that are considered sensitive aquatic sites could have a substantial adverse effect on State and Federally protected wetlands. Therefore, this impact would be potentially significant. The following mitigation measure has been identified to address this impact:

> **Mitigation Measure GEO-1: Prepare and Implement a Storm Water Pollution Prevention Plan and Best Management Practices.**
>
> Please refer to Mitigation Measure GEO-1 in Section 1.7, "Geology and Soils," for the full text of this mitigation measure.
>
> **Mitigation Measure BIO-2: Avoid and Minimize Impacts on Waters of the United States and Water of the State.**
>
> Please refer to Mitigation Measure BIO-2 above for the full text of this mitigation measure.

Implementing Mitigation Measures GEO-1 and BIO-2 would reduce the potentially significant impact associated with fill and modification of waters of the United States and waters of the State to a less-than-significant level because a SWPPP would be implemented, when required, to protect water quality, impacts to seasonal wetlands would be avoided to the extent feasible, and biological monitoring would be conducted. This impact would be less than significant with mitigation incorporated.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Fish and Wildlife Movement and Migration

Less-than-Significant Impact. The restoration and borrow sites are part of a much larger contiguous extent of woodland and riparian habitats along the LAR. The river system serves as a corridor and/or primary route for fish and wildlife migration movement. Project activities would not substantially interfere with the movement of native wildlife because activities would be limited to a very small proportion of the overall project area and larger river corridor in a given year, would occur over a relatively brief period of time each year, and would not completely impede upstream or downstream wildlife movement. The in-water construction work window is timed specifically to avoid all periods of migration for anadromous salmonids. Therefore, potential impacts on fish and wildlife movement and migration would be less than significant.

Nursery Sites

Less-than-Significant Impact with Mitigation Incorporated. The in-river construction work window would avoid the risk to spawning salmonid adults, incubating eggs and pre-emergent fry. However, significant impacts on rearing juvenile salmonids and spawning and rearing of other native fish could occur (as described above under item a). The LAR serves as a nursery site for colonial-nesting bird species. In addition to the potential for bank swallow and purple martin nest colonies in the project area (as described above), three great blue heron (*Ardea herodias*) and great egret (*Ardea alba*) nest colonies are known to occur near the restoration /borrow sites. If nest colonies on or near the restoration or borrow sites are active during project implementation, they could be disturbed by heavy equipment operation and construction personnel, potentially resulting in nest abandonment, reduced care of eggs or young, or premature fledging. Because such colony sites are typically used for many years, nest failure and potential long-term colony abandonment could have a substantial adverse effect on the local nesting populations. Potential impacts on rearing juvenile salmonids, spawning and rearing of other native fish, and active heron/egret nest colonies would be potentially significant. The following mitigation measures have been identified to address this impact:

> **Mitigation Measure GEO-1: Prepare and Implement a Storm Water Pollution Prevention Plan and Best Management Practices.**
>
> Please refer to Mitigation Measure GEO-1 in Section 1.7, "Geology and Soils," for the full text of this mitigation measure.
>
> **Mitigation Measure BIO-1: Minimize Injury and Mortality of Special-status Fish Species.**
>
> Please refer to Mitigation Measure BIO-1 above for the full text of this mitigation measure.
>
> **Mitigation Measure BIO-4: Minimize Effects on Special-status and Other Nesting Birds.**
>
> Please refer to Mitigation Measure BIO-4 above for the full text of this mitigation measure.

Implementing Mitigation Measures GEO-1, BIO-1, and BIO-4 would reduce the potentially significant impact associated with direct and indirect effects on rearing juvenile fish and colonial nesting birds to a less-than-significant level, because a SWPPP would be implemented, when required, to protect water quality, measures would be implemented to minimize turbidity during in-water activities and project-related injury or mortality of juvenile fish, and buffers would be implemented around active nest colonies to minimize potential for nest failure. This impact would be less than significant with mitigation incorporated.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The restoration and borrow sites are located within the area addressed by the *American River Parkway Plan* (Parkway Plan) (Sacramento County 2008). The Parkway Plan identifies policies and standards for projects within the plan area. The proposed project supports goals to preserve and protect anadromous and resident fishes and meets policies and standards defined in the Parkway Plan. Specifically, it is consistent with the Aquatic Communities Policy 3.7 to preserve, protect, and/or restore riparian and in-channel habitat necessary for spawning and rearing of fish species. Sacramento County policies and ordinances (i.e., Sacramento County General Plan and the Sacramento County Tree Preservation and Protection Ordinance) protect native oak trees. However, the project would not require

removal of protected native oak trees. Therefore, the proposed project would have no impact related to potential conflict with local policies or ordinances protecting biological resources.

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?

No Impact. The restoration and borrow sites are not within an area covered by an adopted Habitat Conservation Plan or Natural Community Conservation Plan. Actions and goals of the proposed project are consistent with those identified in the NMFS Recovery Plan for Central Valley Steelhead and Spring-run Chinook Salmon. Additionally, the proposed project is designed to meet objectives of the Central Valley Project Improvement Act (CVPIA) to mitigate effects of the Central Valley Project (CVP) on native fishes. Therefore, the proposed project would have no impact related to potential conflict with any adopted conservation plan.

1.5 Cultural Resources

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
I. CULTURAL RESOURCES.					
Would the project:					
a) Cause a substantial adverse change in the significance of a historical resource pursuant to California Code of Regulations (CCR) Section 15064.5?	☐	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CCR Section 15064.5?	☐	☐	☐	☒	☐
c) Disturb any human remains, including remains interred outside of dedicated cemeteries?	☐	☐	☐	☒	☐

1.5.1 Environmental Setting

Archaeologically, the prehistory of the project area can be divided into three broad periods. The first of these is the Paleo-Indian Period which spanned from 10,000 to 6,000 BC. Few sites dating to this period have been identified in the Sacramento Valley, but it is assumed the lack of finds is due to rapid sedimentation burying older sites. There is likewise little evidence for the Lower Archaic Period (6,000 to 3,000 BC). The Middle Archaic Period (3,000 to 1,000 BC) is much better represented. The Middle Archaic is thought to have seen a shift from foraging subsistence strategies focusing on high-energy return resources to a more diversified strategy where more, though lower quality, resources were gathered. The following Upper Archaic Period (1,000 BC to AD 500) saw increased social complexity as well as more developed and formalized exchange systems between groups and regions. The Emergent Period (AD 500 to 1,800) saw continued technological and social changes including the introduction of the bow and arrow, monetized clamshell disk beads, and increased social stratification.

Sacramento County was created in 1850 when California became a state. As early as 1839, Captain John A. Sutter arrived in the Central Valley and established the settlement of New Helvetia, later known as Sacramento, near the confluence of the American and Sacramento Rivers. After the Gold Rush of 1848, the City of Sacramento was chosen as the County seat. The City of Sacramento was incorporated in 1849 and served as an important gateway to California's gold fields during the Gold Rush years. The Central Pacific Railroad of California was formed in 1861 and had a tremendous impact on Sacramento as it enabled easier transport of materials and goods. Sacramento grew and prospered throughout the 19th and 20th centuries. By 2010, Sacramento encompassed more than 92 square miles and had more than 466,000 residents (McGowan and Willis 1968: 59; U.S. Census Bureau 2017).

Mining along the American River dates back to the mid-1800s. During the Gold Rush, mining camps sprang up along the American River extending from the Sacramento Valley to the Sierra Foothills. Initially, mining was done on a small scale by individuals willing to work their claims with limited resources. In later years, large-scale mining operators who had the means to construct the vast water-conveyance systems necessary to dredge-mine effectively entered the region. The Natoma Water &

Mining Company created a vast ditch system in the area as early as 1853. By the late nineteenth century, dredge mining became the preferred method of mining in the region. Several dredge-mining companies functioned along the American River over the years. The Colorado-Pacific Gold Dredging Company, Ashburton Mining Company, American River Water and Mining Company, Natoma Water & Mining Company, and Capital Dredge Company established and operated mining operations in the project area for decades leaving behind miles of dredge tailings and associated refuse deposits along the river. In recent years, much of the dredged area has been removed through rock crushing and reclamation for development and agricultural purposes (EDAW 2009: 7, 24, 27). The proposed action is situated on modern sediments and sand bars within and adjacent to the American River.

1.5.2 Discussion

Reclamation conducted a cultural resources investigation in 2015 of the western portion of the project area (Reclamation 2015). The Reclamation investigation included a records search and a reconnaissance-level pedestrian survey; a reconnaissance-level survey was determined to be sufficient for Reclamation because of the project context, i.e., situated in the American River as well as on modern sediments and sand bars. The records search, conducted at the North Central Information Center (NCIC) of the California Historical Resources Information System, identified two resources on the project site. The two resources included P-34-000509 (the American River Levee) and P-34-000335 (CA-308H, Capital Dredge Company Diggings). Reclamation found that P-34-000509 was mis-plotted by the NCIC and does not lie on the project site. Likewise, even though plotted within Reclamation's study area, there was no evidence of P-34-000335 on the project site.

EDAW conducted a cultural resources investigation of the eastern portion of the project site in 2009 (EDAW 2009). The investigation included a records search conducted at the NCIC as well as a cultural resources pedestrian survey. The pedestrian survey of the eastern portion of the project site identified historic-era dredge tailings and other features at Sailor Bar and Mississippi Bar associated with resource P-34-000335; both were found eligible for listing in the CRHR and the National Register of Historic Places (NRHP). The project proposed at the time would not have caused any impacts to Mississippi Bar and a finding of no historical resources impacted was recommended. Sailor Bar could not be avoided and subsequently mitigation was proposed consisting of interpretive material in the form of exhibits to be placed at Sailor Bar (SHPO 2010).

a) Cause a substantial adverse change in the significance of a historical resource pursuant to in California Code of Regulations Section 15064.5?

No Impact. Both the Sailor Bar dredge tailings and Mississippi Bar dredge tailings have been determined eligible for listing in the NRHP as contributors to P-34-000335 (a historic mining district). In 2009, the State Historic Preservation Officer (SHPO) determined that other ongoing rock crushing and quarrying activities at Mississippi Bar had affected the integrity of the tailings at the site and therefore proposed gravel extraction and processing activities at Mississippi Bar would have no adverse effect to the contributing elements of the mining site (P-34-000335) (SHPO 2009). Based on analysis of the previous determination, the Mississippi Bar site has lost integrity and is no longer considered an historical resource for the purposes of NEPA and CEQA. There would be no impact.

In 2010, a Memorandum of Agreement (MOA) was executed between Reclamation and SHPO to resolve any adverse effects to Sailor Bar. The mitigation outlined in the MOA was concurred with by SHPO in 2012 (SHPO 2010; Reclamation 2015). Because SHPO determined Mississippi Bar dredge

tailings have lost integrity and because consultation resulted in mitigation of impacts to Sailor Bar, there would be no impact.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to California Code of Regulations Section 15064.5?

No Impact. The proposed restoration areas have been previously adequately surveyed for the presence of cultural resources. The restoration areas comprise portions of the American River and modern sediments and sand bars. Because of the recently deposited material and dynamic environment along the river, these areas have extremely low archaeological sensitivity for prehistoric resources. Further, aerial photography of these two restoration sites do not show any features that might be associated with historic-era resources such as tailings piles.

No archaeological resources have been identified on the project site. Further, given the physical context of the site, modern sand bars and sediment in the river, archaeological sensitivity is extremely low. Therefore, there would be no impact.

c) Disturb any human remains, including remains interred outside of dedicated cemeteries?

No Impact. No burials including remains interred out of formal cemeteries were identified on the project site. The project site is situated in modern sediments, sand bars, and portions of the American River giving the area very low potential for human remains. Therefore, there would be no impact.

1.6 Energy

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
ENERGY.					
Would the project:					
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐	☐
b) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒	☐

1.6.1 Discussion

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less-than-Significant Impact. The project would consume energy during the construction phase, largely due to the annual movement of up to 30,000 tons of gravel that would be washed, transported, and placed in the river, and to a lesser extent due to side channel excavation and in-stream habitat structure placement. However, most of this energy use would be through operation of construction equipment and vehicles rather than electric use and the need to operate the equipment is in support of Reclamation's environmental commitments regarding salmonid habitat restoration as required under the CVPIA. Equipment and vehicle use would occur as specified in Table 2-2 in Section 2, "Alternatives Including the Proposed Action," which is typical of similar earthmoving projects and would not be wasteful or inefficient. Once constructed, no operations and maintenance activities are proposed. Implementing the project would result in negligible use of electrical or natural gas energy, and impacts would be less than significant.

b) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

No Impact. The proposed project would change flow dynamics of discrete reaches of the LAR and create and enhance spawning and rearing habitat for fall-run Chinook salmon and steelhead trout in the river. Because implementing the project would not result in any developed land uses that could conflict with State or local plans for renewable energy or efficiency, there would be no impact.

1.7 Geology and Soils

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

1.7.1 Environmental Setting

Geology

The project area lies within the Sacramento Valley, which is part of the Great Valley Geomorphic Province. In the project area, Holocene (i.e., 11,700 years B.P. [Present Day]) and Pleistocene (1.8 million–11,700 years B.P.]) alluvial deposits lie atop the thick sequence of sedimentary rock units that form the deeply buried bedrock units in the mid-basin areas of the valley. The youngest geomorphic

features in the project area are low floodplains, which are found primarily along the Sacramento and American Rivers. These major drainage ways were originally confined within broad natural levees sloping away from the rivers or streams. The natural levees formed through the deposition of coarser materials that settled out of suspension nearest the rivers and streams, forming the natural levees and sand bars in the vicinity of the river channel. The finer material was carried in suspension farther from the rivers or streams and settled out in quiet water areas such as swales, abandoned meander channels, and lakes. However, because the streams have meandered and reworked the previously deposited sediments, extreme variations in material types may be found over a limited distance or depth.

As described in the 2008 EA, and incorporated by reference, within the Mississippi Bar and Sailor Bar borrow areas, the sites have been highly disturbed as a consequence of historic gold mining operations. A large portion of the project area outside of the borrow areas, extending as far downstream as the El Manto site, has been altered by mining activities. In these areas, dredger tailings are prevalent, and in some areas, they have been partially, or largely, removed to provide gravel for construction projects. Where gravel remains, it is poorly graded with sand, cobble, and boulders in upper portion of the dredge piles. Where gravel has been mined, silty sand or silty sand with gravel is present at the surface, which in turn lies atop sandy materials and a basal layer of fines deposited over bedrock or undredged deposits. In between windrows of dredge materials occasionally are parallel rows of slickens deposits, which are fined-grained materials (silts or clays) that settled out of standing water during the dredging process. Past gravel mining and associated excavation activities have created large deep areas within the riverbed at approximately RM 12-14. Modeling shows that this area catches sediment as it moves downstream (see discussion in Section 1.10, "Hydrology and Water Quality," and Appendices D and E to the Environmental Assessment).

The local bedrock is the Mehrten Formation which is usually well indurated and slightly to well cemented silty sands or mud-stones. In some locations in the project area, the Mehrten Formation is exposed along the river bank (Sherer 2008). The main channel of the LAR and side channel areas are primarily gravel bars with some boulders and outcropping of the Mehrten Formation.

Seismicity and Other Hazards

The Sacramento Valley has experienced relatively low seismic activity in the past and does not contain any Alquist-Priolo Earthquake Fault Zones (California Geological Survey [CGS] 2019). Numerous earthquakes of magnitude (M) 5.0 or greater have occurred on regional faults in the Coast Ranges, approximately 38–55 miles west of downtown Sacramento. The nearest known active (Holocene or Historic) fault trace to the project area is the Dunnigan Hills fault, approximately 30 miles northwest of project site (Jennings and Bryant 2010).

According to the California Geological Survey, the project area is not mapped in an area where strong seismic ground shaking, liquefaction, landslides, or seiche are likely to occur (CGS 2019).

1.7.2 Discussion

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist

for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)

ii) Strong seismic ground shaking?

iii) Seismic-related ground failure, including liquefaction?

iv) Landslides?

No Impact. Because there are no active faults mapped in the project area by the CGS or the U.S. Geological Survey, and the area is not located within an Alquist-Priolo Earthquake Fault Zone, fault ground rupture and strong seismic ground shaking are unlikely. Additionally, as stated in the Environmental Setting, this area has not been mapped as a location where liquefaction, landslides, or other geologic hazards are likely to occur. Subsidence and settlement resulting from construction of the proposed project is unlikely since the project only involves borrowing and placing gravel, excavating side channels, and creating in-stream habitat, and does not involve constructing any buildings or other structures that could contribute to, or be subject to, settlement or subsidence. Finally, a seismic seiche (an earthquake-induced wave within an enclosed or restricted body of water) in the project area is unlikely given the low probability of strong seismic ground-shaking. Therefore, there would be no impact.

b) Result in substantial soil erosion or the loss of topsoil?

Less-than-Significant Impact with Mitigation Incorporated. Gravel placement, side channel excavation, and habitat structure placement would take place within the river and would thus not impact surface soil erosion or contribute to loss of topsoil. Gravel borrow and processing would occur in areas previously used for and disturbed by gravel borrow and past gold mining activities and all work would be conducted during the dry season. However, construction could result in the temporary and short-term disturbance of soil and could expose disturbed areas if a storm event were to occur during project implementation. Rainfall of sufficient intensity could dislodge soil particles from the soil surface. Once particles are dislodged and the storm is large enough to generate runoff, substantial localized erosion could occur. In addition, soil disturbance during summer could result in substantial loss of topsoil because of wind erosion. Therefore, these proposed project elements would have a potentially significant effect. The following mitigation measures have been identified to address this impact:

Mitigation Measure GEO-1: Prepare and Implement a Storm Water Pollution Prevention Plan and Associated Best Management Practices.

Pollution Prevention Plan and Associated Best Management Practices.

When required, the City/Water Forum shall prepare and implement the appropriate Stormwater Pollution Prevention Plan (SWPPP), or Stormwater Management Plan (SWMP), as needed, to prevent and control pollution and to minimize and control runoff and erosion in compliance with state and local laws. The SWPPP or SWMP shall identify the activities that may cause pollutant discharge (including sediment) during storms or strong wind events, techniques to control pollutant discharge, and an erosion control plan. Regardless of the need for a SWPPP or SWMP, construction techniques and BMPs will be identified and implemented, as appropriate to reduce the potential for runoff, exposure to hazardous materials, and manage turbidity. Construction techniques will include minimizing site disturbance, controlling water flow over the construction site, stabilizing bare soil, and ensuring proper site cleanup.

BMPs that specify erosion and sedimentation control measures to be implemented, may include silt fences, staked straw bales/wattles, silt/sediment basins and traps, geofabric, trench plugs, terraces, water bars, soil stabilizers re-seeding with native species and mulching to revegetate disturbed areas. If suitable vegetation cannot reasonably be expected to become established, non-erodible material will be used for such stabilization.

If required, the SWPPP or SWMP shall also include a spill prevention, control, and countermeasure plan, and applicable hazardous materials business plans, and shall identify the types of materials used for equipment operation (including fuel and hydraulic fluids), and measures to prevent and materials available to clean up hazardous material and waste spills. The SWPPP or SWMP shall also identify emergency procedures for responding to spills. The SWPPP shall also include dust control practices to prevent wind erosion, sediment tracking, and dust generation by construction equipment, including during gravel processing.

The BMPs presented in either document shall be clearly identified and maintained in good working condition throughout the construction process. The construction contractor shall retain a copy of the approved SWPPP or SWMP on the construction site and modify it as necessary to suit specific site conditions through amendments approved by the Central Valley RWQCB, if necessary.

The City and all contractors will abide by regulations governing hazardous materials transport are included in CCR Title 22, the California Vehicle Code (CCR Title 13), and the State Fire Marshal Regulations (CCR Title 19). Transport of hazardous materials can only be conducted under a registration issued by the California Department of Toxic Substances Control. Construction contractors would be required to use, store, and transport hazardous materials in compliance with federal, state, and local regulations during project construction.

Timing: Before and during construction.

Responsibility: City/Water Forum and Construction Contractor(s).

Implementing Mitigation Measure GEO-1 would reduce the potentially significant impact from construction-related erosion to a less-than-significant level because a SWPPP or SWMP would be prepared and implemented, when required, consistent with permit requirements that would prevent and control pollution and minimize and control runoff and erosion. This impact would be less than significant with mitigation incorporated.

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

No Impact. See response to Question a above.

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

No Impact. Soils in the proposed project area are comprised of riverwash or dredge tailings and the remainder of the project area is within the wetted river channel (classified as "water" by the Natural Resources Conservation Service). Soils are deep and well-drained, low or completely lacking in clay

content, and thus are not considered expansive (U.S. Department of Agriculture 2019). Therefore, there would be no risk to life or property due to expansive soils.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. Because the project would not involve the use of wastewater disposal systems of any kind, there would be no impact related to the ability of project area soils to support the use of septic systems.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less-than-Significant with Mitigation Incorporated. The project site lies in Quaternary-period stream channel and alluvial fan deposits from the Holocene epoch (CGS 1965). These recent sedimentary deposits are not known to be paleontologically-sensitive. Igneous rock formations generally are not paleontologically sensitive, with the notable exception of the Mehrten Formation (which is known to contain vertebrate fossils and is paleontologically sensitive) and is known to be exposed along banks within the project area (Sherer 2008). No unique geologic features occur in the project area (CGS 1965).

As analyzed in the 2008 EA, and incorporated by reference, gravel would be extracted in the borrow areas from above ground dredger tailings, and no below-ground excavation would take place. Spawning gravel placement, as well as side channel enhancement and habitat structure placement, would involve some redistribution of gravel within the LAR and shallow excavation along the LAR bank and existing gravel bars within the restoration reaches. These areas are subject to past and present erosion and periodic shifts during high-water events and the underlying stream channel and alluvial fan deposits and do not represent fossil-bearing geologic formations. The side channels would be excavated to 1.0 to 2.5 feet in depth in areas that are part of the historical meander belt, and these excavations could encounter outcroppings of the Mehrten Formation, potentially causing incidental damage to a paleontological resource. This would be a potentially significant 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 City/Water Forum shall require the measures listed below to be implemented to minimize accidental damage to or destruction of unique paleontological resources.
>
> - Before the start of any earthmoving activities, all construction personnel involved with earthmoving activities, including the site superintendent, will be trained 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 City/Water Forum and shall immediately cease work in the vicinity of the find. The City/Water Forum shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with applicable

guidelines (Society of Vertebrate Paleontology 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 Water Forum to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.

Significance after Mitigation: Implementing this mitigation measure would reduce potentially significant effects related to the inadvertent damage or destruction of unique paleontological resources 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 and recorded and would undergo appropriate curation.

Timing: During construction.

Responsibility: City/Water Forum and Construction Contractor(s).

1.8 Greenhouse Gas Emissions

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
II. GREENHOUSE GAS EMISSIONS.					
Would the project:					
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?	☐	☐	☒	☐	☐

1.8.1 Environmental Setting

Sacramento County's Climate Action Plan (Sacramento County 2011) does not include any actions or strategies relevant to implementing the project beyond those already required by other laws (i.e., diversion of construction and demolition waste).

1.8.2 Discussion

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less-than-Significant Impact. Implementing the proposed project would generate temporary construction-related greenhouse gas (GHG) emissions that would cease following construction of the proposed project. Construction emissions would be generated by vehicle engine exhaust from heavy-duty construction equipment, haul trips, and construction worker trips. Construction would be temporary and short-term and is expected to occur over the course of approximately 19 months. Construction-related GHG emissions were modeled using CalEEMod (see Appendix F, "Air Quality Modeling Results"). Modeling results show that the proposed project's total construction-related GHG emissions would be 279 metric tons in the maximum modeled year.

SMAQMD has adopted a CEQA threshold of 1,100 metric tons of carbon dioxide equivalent (CO_2e) per year for construction-related GHG emissions related to land development and construction, and stationary source construction and operation (SMAQMD 2015).

Because the total annual construction emissions would not exceed SMAQMD's threshold of significance, the proposed project would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the physical environment. Furthermore, measures to reduce GHG emissions, such as reducing heavy equipment and truck idling time, using properly sized equipment, maintaining equipment (wheel alignment and properly inflated tires), and improving operator training (provide training during tailgate safety meetings to minimize excessive fuel consumption), have been incorporated into project construction. Therefore, this impact would be less than significant.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less-than-Significant Impact. The proposed project would not conflict with plans, policies, or regulations prepared or established to reduce GHG emissions. The proposed project's incremental contribution to the cumulative impact of increasing atmospheric levels of GHGs would be less than cumulatively considerable. The impact would be less than significant.

1.9 Hazards and Hazardous Materials

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
HAZARDS AND HAZARDOUS MATERIALS.					
Would the project:					
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?	☐	☒	☐	☐	☐
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 two 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?	☐	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☒	☐	☐

1.9.1 Environmental Setting

Known Hazardous Materials Sites

Table 1.9-1 presents database search results for the project vicinity and includes all data sources in the Cortese List (enumerated in PRC Section 65962.5). These sources include the GeoTracker database, a groundwater information management system that is maintained by the State Water Resources Control Board (SWRCB); the Hazardous Waste and Substances Site List (i.e., the EnviroStor database), maintained by the California Department of Toxic Substances Control (DTSC); and EPA's Superfund Site database. Two sites were identified within 0.25 mile of the project site:

Table 1.9-1 Cortese-Listed Sites

Site Name, Address, Description, Number	Contaminants	Media Affected	Status/Cleanup Actions
American River Fish Hatchery 2101 Nimbus Road Sacramento, CA 95670 SWRCB: T0606701086	Diesel	Soil	Cleanup completed, case closed as of 3/3/2005. Prior soil contamination from LUST.
Fair Oaks Wrecking 11350 Bridge Street Rancho Cordova, CA SWRCB: T0606700623	Gasoline	Soil	Cleanup completed, case closed as of 1/2/1997. Prior soil contamination from LUST.

Notes: SWRCB = State Water Resources Control Board; LUST = Leaking Underground Storage Tank
[1]Includes listings within 0.25 mile of project activity areas.
Sources: DTSC 2019 and SWRCB 2019

Schools

There are no schools within 0.25 mile of the borrow sites or any of the restoration sites. The Sacramento Waldorf School is located approximately 0.8 mile north of the El Manto restoration site.

1.9.2 Discussion

a, b) Create a significant hazard to the public or the environment through: the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less-than-Significant with Mitigation Incorporated. Project activities at borrow areas and restoration sites would involve the incidental transport and use of common materials used for the operation and maintenance of construction vehicles and equipment such as oils, lubricants, and fuel. However, the project would not involve routine or long-term transport or disposal of such materials. None of the proposed project activities would involve the use of acutely hazardous materials. Construction contractors would be required to use, store, and transport hazardous materials in compliance with Federal, State, and local regulations during project construction. Additionally, as described in Section 2, "Alternatives Including the Proposed Action," all gravel placement, side channel excavation, and habitat structure placement would be conducted using river-friendly construction equipment. River-friendly equipment is pressure washed and uses food-grade vegetable oil in lieu of traditional hydraulic fluid for protection of water quality during in-river work. However, accidental spills could still occur and therefore the project would have a potentially significant impact. The following mitigation measure has been identified to address this impact:

> **Mitigation Measure GEO-1: Prepare and Implement a Storm Water Pollution Prevention Plan and Best Management Practices.**
>
> Please refer to Mitigation Measure GEO-1 in Section 1.7, "Geology and Soils," for the full text of this mitigation measure.

Implementing Mitigation Measure GEO-1 would reduce the potentially significant impact from accidental spill of or exposure to hazardous materials during routine use, transport, or disposal to a less-than-significant level because a SWPPP would be prepared and implemented, when required. The

SWPPP would include a spill prevention, control, and countermeasure plan, and would identify the types of materials used for equipment operation (including fuel and hydraulic fluids), along with measures to prevent and materials available to clean up hazardous material and waste spills. The SWPPP would also identify emergency procedures for responding to spills. This impact would be less than significant with mitigation incorporated.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. There are no schools within 0.25 mile of any of borrow or restoration sites. Therefore, there would be no impact.

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

No Impact. Based on search results of sites compiled pursuant to Government Code Section 65962.5, there are two hazardous sites located near the project area (within 0.25 mile); however, both sites have been remediated and the cases closed with SWRCB. Additionally, neither of these sites is located directly within borrow areas or restoration sites. Thus, there would be no impact.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact. The project site is not within the jurisdiction of an airport land use plan, or within 2 miles of any airport. There would be no impact.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. Construction of the proposed project would result in short-term construction activities within the borrow areas and at a maximum of three restoration sites within a construction season and will not require closure or reduced access on any adjacent roads that would interfere with an adopted emergency response plan or evacuation plan. Additionally, none of the roads in the project vicinity are listed as evacuation routes by the Sacramento County Office of Emergency Services (Sacramento County 2018). There would be no impact.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Less-than-Significant Impact. CAL FIRE (2007, 2008) has determined that the areas where project activities would occur are not within a State responsibility area nor a very high fire hazard severity zone. The project would not include changes to the project site which would increase the risk of wildfire, and construction activities would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Existing Sacramento County Parks Fire Fuel Reduction Action Plan activities along the Parkway would continue as would fuels and vegetation management in compliance with County Code (Sacramento County 2018). This impact would be less than significant.

1.10 Hydrology and Water Quality

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

1.10.1 Environmental Setting

Surface Water

The project site is immediately adjacent to, and within, the LAR. Within Sacramento County, the American River is impounded at Folsom Dam and Nimbus Dam. Folsom Dam, at RM 29.4, was completed in 1955. Releases from Folsom Dam are re-regulated approximately 7 miles downstream by Nimbus Dam (RM 23). Both dams are part of the Federal CVP. Releases from Nimbus Dam to the LAR pass through the Nimbus Power plant, or, at flows in excess of 5,000 cubic feet per second (cfs), the spillway gates.

Water that is stored in upstream reservoirs (primarily Folsom Reservoir) during winter and spring is released in summer and fall for municipal and industrial supply, irrigation, water quality, power generation, recreation, and fish and wildlife purposes. Consequently, the flows in the LAR are generally lower in winter and spring and higher in summer and fall than they were prior to the building of the dams. The dams regulate LAR flows throughout the project site (excepting stormwater flows from the adjacent levee slopes and floodplain and small local drainages such as Carmichael Creek [near Ancil Hoffman Park]), downstream to its confluence with the Sacramento River. Local runoff in the project area flows by gravity overland during storm events, and also through culverts and vegetated or lined intermittent drainages.

Releases from Folsom and Nimbus Dams are operated under State water rights permit and fish protection requirements. SWRCB Decision D-893 in 1958 required minimum flows of 250 cfs from January through mid-September and 500 cfs between mid-September through December 31. The Water Forum, in cooperation with Reclamation, NMFS, USFWS, and CDFW, subsequently developed the Flow Management Standard (FMS) for the LAR. The FMS regulates flows in the LAR below Nimbus Dam, establishing Minimum Release Requirements from 800 to 2,000 cfs. The FMS also included the Lower American River Group to coordinate fishery and operational requirements. The FMS was included in the NMFS 2009 Biological Opinion on the Long-Term Operations of the Central Valley Project and State Water Project Reasonable and Prudent Alternative action. The proposed action would not affect the FMS or Minimum Release Requirements and is designed to meet the target fishery needs of the FMS.

Water Quality

The project site is in the Sacramento Hydrologic Basin Planning Area and the Lower American Hydrologic Subarea, as designated by the Central Valley RWQCB. In accordance with CWA Section 303, water quality standards for this basin are contained in the Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin (Basin Plan). Stormwater runoff from the project site is received by the American River which is listed on the 303(d) list as an impaired water for several constituents of concern, including fecal indicator bacteria, bifenthrin, pyrethroids, toxicity, mercury, and polychlorinated biphenyls (CVRWQCB 2016).

In 1991, the Sacramento Regional County Sanitation District, the County of Sacramento Department of Water Resources, and the City of Sacramento jointly established the Sacramento Coordinated Water Quality Monitoring Program (CMP) to conduct water quality monitoring in the Sacramento and American Rivers. The CMP has routinely monitored the LAR for heavy metals content and for compliance with conventional water-quality parameters. Monitoring has shown that water quality generally meets ambient water-quality criteria for aquatic life protection. Specifically, CMP data for the 1992–1995 monitoring period indicate a mean total suspended solids content of less than 1 milligrams per liter (mg/L), mean electrical conductivity of 52 micro Siemens per centimeter (µS/cm), and a $CaCO_3$ hardness of 25 mg/L (Sacramento County Water Agency 1995). Nevertheless, through its Resolution No. 98-055 (1998) and its CWA Section 303(d) efforts, SWRCB named the LAR as impaired because of group “A” pesticides, mercury, and unknown toxicity and assigned low, medium, and high priority rankings, respectively, for the development of corresponding total maximum daily load programs (CVRWQCB 2002).

Water temperature in the LAR is controlled by releases from Folsom and Nimbus Dams. On June 4, 2009, NMFS issued a biological opinion (BO) for listed anadromous fishes and their critical habitats

governing the coordinated long-term operation of the CVP and State Water Project that included water temperature requirements from May 15 through October 31 for juvenile steelhead rearing.

Groundwater

The project site is in the Sacramento Valley Groundwater Basin and abuts the North and South American Subbasins; the LAR serves as the boundary between these two basins (DWR 2003). According to the Groundwater Information Center Interactive Map Application, both subbasins are designated as "High Priority" and groundwater levels in the project area are approximately 30-40 feet from ground surface (DWR 2018).

Flood Management

The majority of the project area is mapped as Zone AE on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Zone. AE areas are designated as a Regulatory Floodway and are within the 100-year floodplain for the American River. The area near the Nimbus Hatchery is mapped as AO (flood depths 1-3 feet expected due to sheetflow) and the Mississippi Bar borrow site is not mapped in a flood zone (map panels 06067C0205H, 06067C0202H, 060670206H, 06067C0093H, 06067C0094H, 06067C0113H, and 06067C0114H) (FEMA 2019).

1.10.2 Discussion

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less-than-Significant Impact with Mitigation Incorporated. Both direct and indirect discharges associated with ground-disturbing construction activities for the proposed project could cause surface or groundwater to become contaminated by soil or construction-related substances. The proposed activities include removing and processing gravel borrow, transporting material to restoration sites, earthmoving and placing gravel and woody material in-river, excavating side channels, and revegetating gravel borrow and channel-adjacent floodplain areas.

As described in Section 2, "Alternatives Including the Proposed Action," all side channel excavation areas would be isolated from the main channel during excavation and only after excavating and grading the side channel is complete, would the inlet/outlet of the side channel be opened to introduce flows. Bladder dams may also be used, where appropriate, to allow construction to take place isolated from the river. Gavel sorting and cleaning would occur at borrow sites and adjacent to restoration sites, where appropriately sized material is available, and consists of scooping gravel into a mobile incline screener to separate gravel of an unsuitable size and transport via conveyer where the gravel is shaken and washed, if needed, to dislodge small particles, then stockpiled. The conveyor would be located over a shallow sump to catch the wash water. The sump would be filled with excess gravel and restored to the original grade once borrow activities are complete.

As previously analyzed in the 2008 and 2016 EAs, and incorporated by reference herein, gravel placed in the river would be previously washed to minimize turbidity plumes, if needed. Some turbidity is expected and would be monitored in accordance with relevant requirements and permits. If turbidity levels exceed permit standards, work would be suspended until the standards are met. Consequently, instream work associated with in-river gravel and woody material placement could result in relatively small, short-term, turbidity plumes immediately downstream of the construction area. There would be no dewatering associated with project activities that would require a National Pollutant Discharge Elimination System "Groundwater from Construction and Project Dewatering [#CAG994004] permit.

Project activities could temporarily impair water quality should disturbed material, petroleum products, or construction-related wastes be discharged into the LAR, or onto the ground where they could be carried into receiving waters. Accidental spills of construction-related substances such as oils and fuels could also contaminate both surface water and groundwater. The extent of potential impacts on water quality would depend on several factors: the tendency toward erosion of soil types encountered, soil chemistry, construction practices, extent disturbed area, duration of construction activities, proximity to receiving water bodies, and sensitivity of those water bodies to construction-related contaminants.

During project implementation, bare soil would be exposed to wind and water erosion during excavation and material transport activities. If precautions are not taken to contain sediments, construction activities could produce sediment-laden storm runoff that would degrade water quality. Exposure of construction materials to rain or wind could also result in adverse water quality impacts. Construction activities would take place during the dry season, and span July-September. Regardless of construction timing, direct and indirect impacts to water quality from erosion and stormwater runoff, and ponding during storm events, have the possibility to occur and be potentially significant. The following mitigation measure has been identified to address this impact:

> **Mitigation Measure GEO-1: Prepare and Implement a Storm Water Pollution Prevention Plan and Best Management Practices.**
>
> Please refer to Mitigation Measure GEO-1 in Section 1.7, "Geology and Soils," for the full text of this mitigation measure.

With incorporation of the project construction practices described above into the proposed project, and implementation of Mitigation Measure GEO-1, the potential for impacts to water quality following project construction would be less than significant.

Gold mining historically occurred upstream and adjacent to the LAR, and management of mercury could be a concern during project construction due to processing methods used during historic mining operations. To address this concern, in 2009, Reclamation conducted sediment characterization testing at several sample pits within the gravel source areas at Mississippi Bar and Sailor Bar. Some test pits did report levels of cadmium, copper, lead, nickel, and zinc over thresholds allowed under the California Toxics Rule and EPA aquatic life standards, but only one pit contained elevated levels of mercury and arsenic. One site at the east of Sailor Bar had high concentrations of all metals. However, the project geologist reported that this is likely due to the presence of Mehrten Formation material in this pit. Mehrten Formation gravels consist of mafic volcanics and as such would have a higher metal content than the surrounding granitic gravels. Additionally, all metals detected at the test pits were associated with fine materials and not the gravel-sized sediment that will be used for project activities (Reclamation 2009). Since all material that will be introduced to the river will be sorted and fines removed at the gravel processing site, there is no concern about introducing the cleaned material to the river and there would be a minimal chance that mercury would be introduced into the LAR due to project gravel borrow or placement activities. The potential for impacts to water quality from elevated levels of mercury, or other metals, would be less than significant.

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

No Impact. The proposed project would not rely on groundwater use for construction, operation, or maintenance of any project elements. The project would use existing surface water that is already conveyed through the LAR and there are no project components that would interfere with groundwater recharge that already occurs through the bed and banks of the LAR nor impede sustainable management of the groundwater basin. Thus, there would be no impact.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

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

Less-than-Significant Impact. Northwest Hydraulic Consultants, Inc., (NHC) analyzed the potential for the proposed project to cause substantial erosion or siltation on- or offsite using a one-dimensional (1D) sediment transport model of the LAR from the Sacramento River confluence (RM 0) upstream to RM 22, supplemented by a two-dimensional (2D) sediment transport model of the depositional reach of the LAR near William Pond Park (RMs 10-14).

Previous sediment transport model studies and physical observations indicate that the reach of the LAR between RM 13.5 and Nimbus Dam is an erosional reach (see Appendices D and E). This characteristic is expected as this reach is located immediately downstream of Folsom and Nimbus dams, which capture upstream sediment. The gravel augmentation portion of the proposed project targets this erosional reach with strategically placed fine to coarse gravels to replace continuously eroding bed sediment to improve spawning habitat.

The 1D and 2D models included updated surface and sub-surface bed material data collected by NHC in December 2018. The 1D model was used to simulate long-term effects of gravel augmentation, while the 2D model was used to simulate flow-specific effects and to support and verify 1D modeling results. Two scenarios were modeled to simulate long-term effects of gravel placement due to the proposed project including: baseline conditions (future LAR conditions with no gravel placement) and with-project conditions (placement of 30,000 tons/year, which is the proposed project annual maximum amount of gravel that may be placed in the LAR). . The analytical approach and model results are described in more detail in Appendix D, “Hydraulic Analysis Technical Report - Sediment Transport.”

Modeling is inherently a simplification of real-time processes. Thus, within the model, the 30,000 tons/year was evenly distributed among the 10 restoration sites and applied annually during July, August, and September. The model was run using the previously developed 73-year hydrologic record (water years 1930-2002) representative of the new Folsom Dam Water Control Manual.

Under the baseline conditions (without gravel placement), sediment load rapidly increases in the erosional reach of the LAR (downstream of Nimbus Dam to RM 13.5) due to ongoing erosion of channel bed material, then rapidly decreases in the reach of historic instream aggregate mining between RMs 10.5-13.5 due to coarse bed material deposition, and then gradually reduces downstream of RM 10.5 due to additional bed material deposition. The simulated project gravel placement would progressively increase sediment loads upstream of about RM 11, with minimal effects on sediment loads

downstream of RM 11. The modeled increase in sediment load may include both gravel placed as part of the project and original bed material which could be mobilized by project-induced hydraulic changes.

The gravel that would be placed as part of the proposed project is noticeably finer and more widely graded than the existing coarse surface material in the project reach of the LAR. If gravel placed by the project were mobilized, it would begin to disperse and mix with the existing bed material downstream of the restoration sites, thus locally increasing the mobility of surface bed sediment, and further increasing sediment outflow into the downstream reaches. However, these increases in sediment transport would not represent a significant impact related to onsite or offsite erosion or siltation due to the following:

- Although sediment transport could locally increase in the LAR due to project activities, 1D model results demonstrated that the gravel placed at the restoration sites deposits in the LAR between RMs 10.5-13.5. This reach was previously impacted by instream aggregate mining which created a "sediment trap. " This "sediment trap" captures the existing gravel load from the project reach under baseline conditions and would also capture the additional gravel load transported from the project reach with implementation of the project, greatly reducing further downstream effects under both scenarios. The "sediment trap" (depositional reach) of the LAR, which begins near William B. Pond Park, captures approximately 93% of the long-term annual average sediment load in the LAR (see Appendix D: Table 4.1).

- The model shows that the project's gravel placement would reduce channel erosion upstream of RM 12 (in the project area) and would not impact streambed elevation downstream of RM 12 (the leveed reach, below the project area).

- Placement of the proposed annual maximum gravel volume (30,000 tons/year for 15 years) would not significantly affect channel capacity during the 15-year proposed project duration. Under baseline conditions, approximately 31,000 tons/year are transported out of the project reach. This would increase to 38,800 tons/year under project conditions where the maximum allowed amount of gravel (30,000 tons/year) would be applied to the restoration sites. This represents an approximately 20% increase in the volume of transported sediment. However, even if 30,000 tons per year (the maximum permitted as part of the project for the 16 years from 2019 through 2034) were applied over the entire 73-year model simulation period, this volume would not affect overall LAR channel capacity due to the "sediment trap" between RMs 10.5-13.5 of the LAR created by past aggregate mining near William B. Pond Park.

As shown by the modeling results summarized above and presented in more detail in Appendix D, the project would have a less-than-significant impact to onsite and offsite erosion and siltation.

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

Less-than-Significant Impact with Mitigation Incorporated. Stormwater runoff in the Project vicinity currently travels overland as sheetflow to local drainages and the LAR. There are no stormwater facilities that would be affected by the proposed project. The stormwater drainage amount and pattern in the project area would not be altered, and surface runoff would not be increased by construction or operation of the proposed project. However, the potential for substantial additional sources of polluted

runoff during and after project construction would be potentially significant. The following mitigation measure has been identified to address this impact:

> **Mitigation Measure GEO-1: Prepare and Implement a Storm Water Pollution Prevention Plan and Best Management Practices.**
>
> Please refer to Mitigation Measure GEO-1 in Section 1.7, "Geology and Soils," for the full text of this mitigation measure.

With the implementation of Mitigation Measure GEO-1, the potential for impacts due to additional sources of polluted runoff during and after project construction would be substantially reduced. This impact would be less than significant with mitigation incorporated.

iv) Impede or redirect flood flows?

Less-than-Significant Impact. cbec analyzed potential for the proposed project to impede or redirect flood flows. This analysis was based on 10% level of design information for the restoration sites and a 2D hydrodynamic model that covers RM 23-13, which includes the project reach (see Appendix E: Hydraulic Analysis Technical Report – Water Surface Elevations). Flood flow scenarios were modeled for two historic topographic/bathymetric datasets (2006/2008 and 2017) and a future conditions dataset with the project restoration site design surfaces incorporated. The model evaluated whether there would be changes in water surface elevation (WSE) or velocity due to the proposed project under at several flow rates, including 115,000 cfs (the former peak design discharge for the LAR), 160,000 cfs (the new peak design discharge for the LAR), and 192,000 cfs (Corps' top-of-levee discharge).

Model results show only small and localized velocity differences between existing and future conditions that do not extend beyond the project area, span the entire wetted channel, or impact levees (see Appendix E: Figures 14-19). Additionally, results for all three flow scenarios show small WSE increases of 0.1 – 0.25 ft above RM 21.5 and 0.1 – 0.15 ft at RM 20.5 (upstream of Fair Oaks Bridge) (see Appendix E: Figure 1-10.1). However, these localized increases would represent a negligible flood risk due to the following:

- The increases would not be adjacent to any Federal or non-Federal levees.
- The increases would be partially mediated by ongoing natural geomorphic process in the LAR. As discussed previously, in Question C(i), the LAR from downstream of Nimbus Dam to RM 13.5 is a net erosional stream due to the lack of sediment input below Folsom and Nimbus Dams. Therefore, sediment is continually eroding from within the channel and banks under existing conditions, which continuously increases conveyance capacity of the channel. This effect is most pronounced at 115,000 cfs between RM 15.5 - 22.25 (see Appendix E: Figures 7 and 8).
- As shown in Table 1-1 in Chapter 1, "Background." of the EA/IS, past Reclamation restoration activities in the LAR (between 2008 and 2016) have already added gravel to several sites along the LAR between RM 23 and 13. Despite this past gravel placement, modeling results show a net reduction in WSE throughout much of the upper portion of the project area. This result demonstrates that past gravel augmentation projects have had no long-term impact to WSEs as high flows periodically mobilize the gravel and move it downstream. Furthermore, there would be no downstream impacts to WSE (downstream of the project area) that can be attributed to project activities; sediment that would be eroded from upstream gravel placement sites and

deposited downstream only partially replaces the gravels that are being eroded in those downstream areas, resulting in no net increase in deposition or WSE.

- cbec conducted a topographic/bathymetric change analysis from 2006/2008 through 2017 and calculated that a total of 338,000 cubic yards of sediment was exported (i.e., eroded and washed away) from the LAR, an annual average rate of 31,000 cubic yards/year. The study confirmed that the LAR exported more gravel than was replaced by the previous gravel augmentation projects and that the past gravel projects did not cause significant channel aggradation in any part of the LAR.

The gravel that would be placed at restoration sites would be highly mobile at the flows analyzed for the proposed project. Despite this, the model conservatively assumes no topographic/ bathymetric change in the LAR (i.e., the gravel would stay as placed and continue to back up flow). During actual flood flows of 115,000 cfs or higher, the gravel would move downstream, deposit over a dispersed area, and the net WSE impact would be smaller than what the model predicts. This conclusion is supported by data that show how the previously restored sites on the LAR evolved over the 2017 water year (which included a peak flow of approximately 82,000 cfs in the LAR). Pre- and post-conditions modeling did not demonstrate that the gravel moving downstream caused an increased flood risk under these conditions. As demonstrated by the analysis summarized above and presented in more detail in Appendix E, the project would have a less-than-significant impact on impedance or redirection of flood flows.

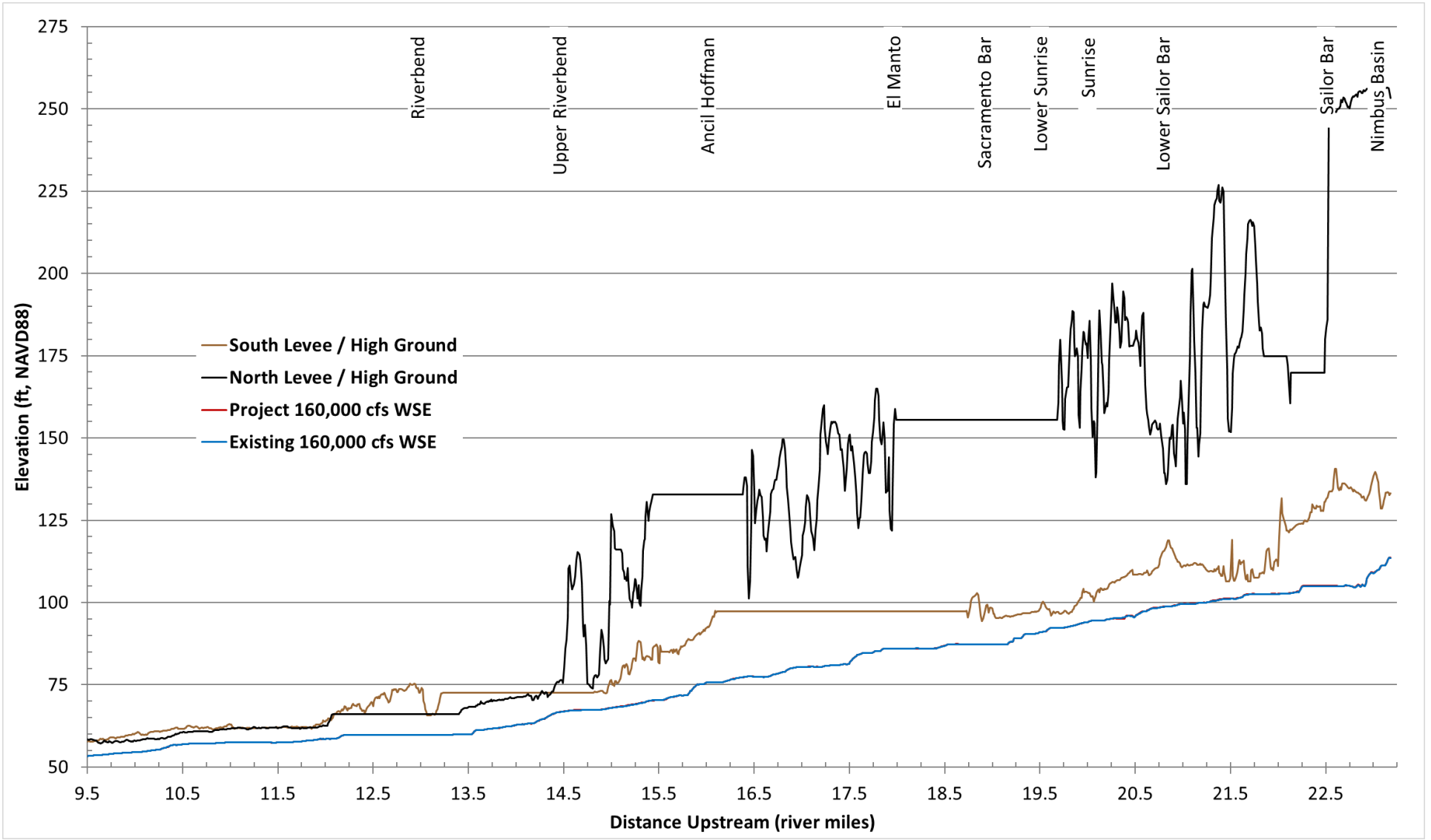
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less-than-Significant Impact. Although the project is mapped in FEMA flood hazard zones (with the exception of the Mississippi Bar area), the entire project reach lies within a designated floodway that is meant to accommodate flood flows and other releases from Folsom and Nimbus dams. Additionally, as discussed in Section 1.7, "Geology and Soils," the project area is not mapped in an area where tsunami or seiche are likely to occur (CGS 2019). Since project work within the designated floodway would occur outside of the flood season and the area is not a likely location for seiche or tsunami, the risk of release of pollutants due to project inundation is very low. This impact would be less than significant.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact. The proposed project is located within the jurisdiction of the Central Valley RWQCB's Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin and also within the North and South American groundwater subbasins (5-021.64 and 5-021.65), as designated in the California Department of Water Resources' (DWR's) Bulletin 118 (DWR 2016). However, the proposed project would not affect implementation of the Water Quality Control Plan nor the Groundwater Sustainability Plan for this area, as there would be no discharge to surface waters nor any use or affect to groundwater related to construction or operation of the proposed project**.** There would be no impact.

Figure 1-10.1. Water Surface Elevations for Baseline and Proposed Project Conditions



1.11 Land Use and Planning

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
LAND USE AND PLANNING.					
Would the project:					
a) Physically 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?	☐	☐	☐	☒	☐

1.11.1 Environmental Setting

The proposed project is located in land use areas designated for recreation and natural preserve by the Sacramento County General Plan (Sacramento County 2011), and the Folsom Lake State Recreation Area & Folsom Powerhouse State Historic Park General Plan/Resource Management Plan (California State Parks and Reclamation 2010). The project site is located within the Arden Bar, River Bend, Ancil Hoffman, Rossmoor Bar, Sacramento Bar, Sunrise, Upper Sunrise, Sunrise Bluffs, Sailor Bar, and Lake Natoma Areas as designated in the American River Parkway Plan (Sacramento County 2008) and does not include any residential areas, except along the designated haul routes.

1.11.2 Discussion

a) Physically divide an established community?

No Impact. Borrow and placement of spawning gravel, side channel excavation, and in-stream habitat structure placement would occur in the LAR and adjacent floodplain areas within the existing Parkway and Folsom Lake State Recreational Area. No residential or commercial land uses are located at the proposed sites and there are no proposed activities that would create a physical barrier within an established community. Thus, there would be no impact.

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

No Impact. Implementation of the proposed project would be compatible with continued use of the project area for recreational and natural preserve land uses. No conflict with land use plans would occur. Therefore, there would be no impact.

1.12 Mineral Resources

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
MINERAL RESOURCES.					
Would the project:					
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	☐	☐	☐	☒	☐
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒	☐

1.12.1 Environmental Setting

The proposed project lies within the Sacramento-Fairfield Production-Consumption Region for Portland cement concrete aggregate, which includes all designated lands within the marketing area of the active aggregate operations supplying the Sacramento-Fairfield urban center. In compliance with the Surface and Mining Reclamation Act, CGS has established the classification system for Mineral Resource Zones (MRZ) shown in **Table 1.12-1** to denote both the location and significance of key extractive resources.

Table 1.12-1 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: Dupras 1999:Plate 3

1.12.2 Discussion

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

No Impact. The Mississippi Bar borrow area is classified by CGS as MRZ-1—areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence (Dupras 1999:Plate 4). The Sailor Bar borrow area and all of the in-river restoration sites are classified as MRZ-2 (Dupras 1999:Plate 4). Both proposed borrow sites have been previously disturbed from historic gold mining operations and have both been used to supply gravel during previous related restoration activities and for other construction projects in the region.

Although the Sailor Bar borrow area and LAR restoration sites are classified as MRZ-2, they are not located within designated Aggregate Resource Areas, which are areas where current land uses are considered compatible with mining aggregate resources by the State Geologist (Dupras 1999). Therefore, there would be no impact.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. The Sacramento County General Plan indicates there are no locally important mineral resources in the vicinity of the proposed borrow or restoration sites (Sacramento County 2011). Therefore, there would be no impact.

1.13 Noise

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
NOISE.					
Would the project:					
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 in other applicable standards of other agencies?	☐	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne 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 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒	☐

1.13.1 Environmental Setting

The existing noise environment within the project area is typical of an open-space area within a suburban environment. In the vicinity of the project site, sensitive land uses include the American River Parkway, portions of the Folsom Lake State Recreation Area, and single-family and multi-family residential uses with direct line of site to the proposed gravel augmentation sites, and those located along proposed gravel haul routes. These land uses could potentially experience noise impacts associated with project construction and/or increased traffic from project operation.

1.13.2 Discussion

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 in other applicable standards of other agencies?

Less-than-Significant Impact. Construction noise impacts typically occur when construction activities take place during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), when construction activities occur immediately adjacent to noise sensitive land uses, or when construction durations last over extended periods of time.

The proposed project would generate construction noise from equipment operating at the project site and transport of construction workers, construction materials, and equipment to and from the project site. The list of construction equipment that would be used for project construction activities is shown in **Table 1.13-1** with typical noise levels generated at 50 feet from the equipment (reference levels).

Table 1.13-1 Construction Equipment and Typical Equipment Noise Levels

Type of Equipment	Typical Noise Levels (dB) at 50 Feet
Dozer	85
Dump Truck/Haul Truck	84
Excavator	85
Front-end Loader	80
Generator	70
Gravel Screener/Sorter	85
Pick-up Truck	75
Scraper	85

Notes:
dB = decibels; L_{max} = maximum instantaneous sound level; L_{eq} = 1-hour equivalent sound level (the sound energy averaged over a continuous 1-hour period)
Source: Reclamation 2008

The County's noise ordinance (Section 6.68.070 of the Sacramento County Code) sets a noise standard of 55 dB L_{eq} between 7 a.m. and 10 p.m. Section 6.68.090 (Exemptions) exempts construction noise from its noise standards, provided that construction noise occurs between 6 a.m. and 8 p.m. on weekdays, or 7 a.m. and 8 p.m. on weekends. Since all project-related construction activities would only occur within the hours specified in the County's code, the proposed project would not result in a violation of the County's construction noise standards, and this impact would be less than significant. The project would not generate operational noise beyond occasional vehicle trips for monitoring activities.

The project would include hauling of gravel material from borrow sites at Sailor Bar and Mississippi Bar to the various gravel augmentation sites. Reclamation prepared traffic noise modeling on typical roadways that would be used for gravel hauling in the project vicinity, including U.S. Highway 50, Sunrise Boulevard, Hazel Avenue, Folsom Boulevard, Mather Field Road, Sunset Boulevard, Winding Way, and Illinois Avenue (Reclamation 2008). Increased traffic noise generated by the project ranged from less than 0.1 dB on larger roads (including Sunrise Boulevard, Hazel Avenue, and U.S. Highway 50) to an increase of 3.9 dB on Winding Way. A project-related noise level increase of 5 dB or greater would be significant where ambient noise levels are less than 60 dB Ldn/CNEL; an increase of 3 dB would be significant where ambient noise levels exceed 60 dB Ldn/CNEL. Based on this threshold, Reclamation found that all of the incremental traffic noise increases caused by a previous 1 year project in 2008 would be less than significant. Because the volume of material and roadways that would be used for hauling are similar to those modeled by Reclamation in 2008, traffic noise impacts for any given year of the proposed project would similarly be less than significant. Even when carried out from 2019 through 2035, the noise impacts from the proposed project's construction activities would still remain less than significant during the short construction periods. Therefore, the proposed project would result in a less-than-significant impact on noise during construction activities for the life of the project.

Nevertheless, Reclamation has previously committed to the following actions to further reduce noise associated with constructing the project:

Mitigation Measure NOI-1: Implement Noise Controls.

The City/Water Forum will implement four BMPs for the control of construction noise levels. Implementation of the following BMPs generally reduces construction-generated noise levels by 15 dB to 25 dB:

- Construction operations and the hauling of gravel would be limited to Monday through Friday, except holidays, from 7 a.m. to 6 p.m.
- Provide and maintain noise control devices for construction equipment. Construction equipment shall be properly maintained per manufacturers' specifications and fitted with the best available noise suppression devices (i.e., mufflers, silencers, wraps, etc.).
- Coordinate routes and arrange equipment to minimize disturbance to noise-sensitive uses. Construction equipment usage shall be arranged to minimize travel adjacent to occupied residences and turned off during prolonged periods of non-use.
- Designate a disturbance coordinator to respond to all public complaints.

Timing: During construction.

Responsibility: City/Water Forum and Contractor(s).

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less-than-Significant Impact. The proposed project would not involve the use of any equipment or processes that would generate potentially high levels of ground vibration, such as pile drivers or blasting. Construction operations associated with the proposed project would be anticipated to include backhoes, loaders, excavators, and trucks. No pile driving would occur.

Construction of the proposed project would result in additional vehicle trips on the local roadway network as workers commute and equipment and materials are transported. Heavy truck traffic can generate groundborne vibration, which varies considerably depending on vehicle type, weight, and pavement conditions. However, groundborne vibration levels generated from vehicular traffic are not typically perceptible outside of the road right-of-way for rubber-tired vehicles.

Therefore, the proposed project would have a less-than-significant impact with respect to the exposure to or generation of excessive groundborne noise or vibration levels from construction or construction traffic.

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

No Impact. The project site is not within an airport land use plan, or within 2 miles of any airport (Sacramento County 1997). There would be no impact.

1.14 Population and Housing

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
POPULATION AND HOUSING.					
Would the project:					
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒	☐

1.14.1 Environmental Setting

The project site is located within the Arden Bar, River Bend, Ancil Hoffman, Rossmoor Bar, Sacramento Bar, Sunrise, Upper Sunrise, Sunrise Bluffs, Sailor Bar, and Lake Natoma Areas as designated in the American River Parkway Plan (Sacramento County 2008) and does not include any residential areas, except for along the designated haul routes.

1.14.2 Discussion

a, b) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure) or displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. As discussed and analyzed on page 22 of Reclamation's 2008 EA (Reclamation 2008), and incorporated by reference, the proposed project would result in no new population growth in the area and thus would not require additional housing, roads, or other development-related infrastructure. No residential or commercial land uses are located at the borrow or restoration sites. With implementation of the proposed project, no new housing would be developed, and no existing housing or people would be displaced. No conflict with land use plans would occur. There would be no impact to population and housing.

1.15 Public Services

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
PUBLIC SERVICES.					
Would the project:					
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:					
Fire protection?	☐	☐	☐	☒	☐
Police protection?	☐	☐	☐	☒	☐
Schools?	☐	☐	☐	☒	☐
Parks?	☐	☐	☐	☒	☐
Other public facilities?	☐	☐	☐	☒	☐

1.15.1 Environmental Setting

Emergency medical and fire protection is provided by Sacramento Metropolitan Fire, a California Special District, and there are seven fire stations located within two miles of the project area (Sacramento Metropolitan Fire 2019). The project area falls under the jurisdiction of and is served by the Rancho Cordova Police Department, Sacramento County Sheriff, and County Park Rangers. Residential neighborhoods adjacent to the project area are served by the Folsom Cordova and San Juan Unified School Districts. Additionally, the project site is located within the Arden Bar, River Bend, Ancil Hoffman, Rossmoor Bar, Sacramento Bar, Sunrise, Upper Sunrise, Sunrise Bluffs, Sailor Bar, and Lake Natoma Areas as designated in the American River Parkway Plan (Sacramento County 2008).

1.15.2 Discussion

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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?

No Impact. Areas along the borrow and restoration sites in the Parkway are readily accessible by the public and are routinely used by existing local and regional residents for recreation. The proposed project

would not involve construction of residences or commercial buildings that would increase the population in the Sacramento Metropolitan Fire service area. Construction workers, some likely from outside the immediate adjacent neighborhoods, would be in the area temporarily during construction. Construction and operation of the project would not increase population such that additional fire stations would be needed under General Plan guidelines. The proposed project is consistent with the land use designation for these areas. Existing Sacramento County Parks Fire Fuel Reduction Action Plan activities along the Parkway would continue as would fuels and vegetation management in compliance with County Code (Sacramento County 2018). The project would comply with the requirements of County Parks and General Plan policies regarding adequate fire protection services. As a result, no impact would occur related to fire protection.

Police protection?

No Impact. The project area is already used for undeveloped recreation and is under the jurisdiction of and served by the Rancho Cordova Police Department, Sacramento County Sheriff, and County Park Rangers. The proposed project would not require construction of a new station or expansion of an existing facility in order to provide law enforcement services in the project area. Thus, there would be no impact.

Schools?

No Impact. The project site is located within the Arden Bar, River Bend, Ancil Hoffman, Rossmoor Bar, Sacramento Bar, Sunrise, Upper Sunrise, Sunrise Bluffs, Sailor Bar, and Lake Natoma Areas as designated in the American River Parkway Plan (Sacramento County 2008). The proposed project would not require school or library services because the project does not propose any residential uses that would generate demand for such services. Therefore, there would be no impact.

Parks and Other Public Facilities?

No Impact. Areas along the borrow and restoration sites in the Parkway are readily accessible by the public and are routinely used by existing local and regional residents for recreation. These uses would not change after construction of the project and the project would not require the development of any new park or other facilities. There would be no impact.

1.16 Recreation

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
RECREATION.					
Would the project:					
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 that might have an adverse physical effect on the environment?	☐	☒	☐	☐	☐

1.16.1 Environmental Setting

The proposed project is located in land use areas designated for recreation and natural preserve by the Sacramento County General Plan (Sacramento County 2011), and the Folsom Lake State Recreation Area & Folsom Powerhouse State Historic Park General Plan/Resource Management Plan (California State Parks and Reclamation 2010). The Mississippi Bar borrow site is located within the Folsom Lake State Recreation Area administered by the California Department of Parks and Recreation, through a contract with Reclamation. The Sailor Bar gravel borrow site and all restoration sites are located within the Arden Bar, River Bend, Ancil Hoffman, Rossmoor Bar, Sacramento Bar, Sunrise, Upper Sunrise, Sunrise Bluffs, Sailor Bar, and Lake Natoma Areas as designated in the American River Parkway Plan (Sacramento County 2008).

Both the American River Parkway and the Folsom State Recreation Area provide a wide range of recreational opportunities including boating, bicycling, hiking, jogging, horseback riding, fishing, bird watching, dog walking, and picnicking. Sailor Bar is a very popular fishing, boating, hiking, and dog walking area and contains equestrian trails. In addition, the Jedediah Smith Trail at Upper Sunrise and American River South is very popular with cyclists, joggers, and hikers. A spur off the Jedediah Smith Trail passes under Hazel Avenue and crosses the entrance road to the Nimbus site (Figure 2-1 in the Project Description illustrates the locations of the individual gravel augmentation sites). The area at Mississippi Bar is used mostly for horseback riding, hiking, and dog walking. Shadow Glenn Riding Stable is located at Mississippi Bar, as are a number of walking trails and a paved bicycle path.

The Nimbus site is currently closed to vehicle traffic and is accessible by pedestrians only. However, the Folsom Lake State Recreation Area & Folsom Powerhouse State Historic Park General Plan/Resource Management Plan proposes to develop a hand launch access point at this location when Reclamation removes the existing fish weir. At the upstream-most restoration sites, there is little boating activity, since there is no access upstream of the boat ramp at Sailor Bar. There is light boat traffic, primarily canoes, kayaks, and drift boats, between Upper Sailor Bar and Sunrise. The primary raft put-in is at the Sunrise access area with concessions on both sides of the river. Boating usage is much higher during weekends and holidays than on weekdays, when all project construction would occur.

Fishing is popular along the LAR, and numbers of fishers increase during late summer into early fall, as returning salmon become more numerous. The river is closed to fishing from November 1 through December 31 from the Hazel Avenue Bridge to Ancil Hoffman Park, when the bulk of salmon spawn. The area around the Sailor Bar borrow area is a popular spot for steelhead fishing during winter, and the area above Arden Rapid is popular for shad fishing in spring. As of March 2018, a portion of the LAR from Nimbus Dam downriver one-half mile to the U.S. Geological Survey gauging station cable crossing, is closed to fishing due to the ongoing Nimbus Hatchery Fish Passage Project, which involves work on the hatchery's fish ladder and existing weir (CDFW 2018).

1.16.2 Discussion

a, b) 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 or include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

Less-than-Significant Impact with Mitigation Incorporated. The project does not involve any new housing that would generate new residents who would increase the use of existing recreational facilities or that would require the construction or expansion of recreation facilities that may have an adverse effect on the environment.

As analyzed in Reclamation's 2008 EA (pages 74-75) and 2016 EA (page 48), Reclamation found there may be temporary impacts to recreational access and safety of recreationists due to construction-related traffic and possible road closures. Access routes have been designed to avoid heavily-used recreation areas; however, several sites would require partial closures of certain areas, roads, and/or trails during haul and/or construction activities. This impact would be potentially significant.

Mississippi Bar Borrow Area
The borrow site and processing area at Mississippi Bar is adjacent to old dredger tailings and is an area that is not widely used by recreationists. Trucks and personnel would use an existing access road across the previously mined adjacent State land to access the borrow and processing area. However, since this area is otherwise open to recreation and is within the Parkway, borrow activities could result in a potentially significant impact.

Sailor Bar Borrow Area
The existing access road for the Sailor Bar borrow area is a fire road closed to the public. Fire equipment and vehicle access would continue during construction. However, since this general area is otherwise open to recreation and is within the Parkway, borrow activities could result in a potentially significant impact to recreation in the localized area afforded accessibility from this road.

Gravel Augmentation and Restoration Sites
Haul trucks and equipment would cross the Jedediah Smith Trail, equestrian trails, and hiking trails to access the river at any of the gravel augmentation and restoration sites. During construction, these trails would be signed, cautioning users that equipment would be crossing. However, during times when repetitive truck trips are expected this could result in a potentially significant impact to recreation access and safety at the restoration sites. The following mitigation measure has been identified to address this impact:

Mitigation Measure REC-1: Prepare and Implement a Trail/Traffic Control and Road Maintenance Plan.

Before the start of project-related construction activities, the City/Water Forum shall prepare and implement a plan to manage expected construction-related traffic to the extent feasible, and to avoid and minimize potential traffic congestion during project-related construction. The traffic control and road maintenance plan shall outline the phasing of activities and the use of specific routes to and from the work site locations to minimize the daily volume of traffic on individual roadways.

The items listed below will be included, as terms of the construction contracts:

- Limit all heavy construction work to occur only between 7:00 am and 6:00 pm on weekdays, avoid hauling on public roads during weekends and holidays, and confine weekend/holiday work to less disruptive tasks using materials previously hauled to the site, to ensure that most construction work occurs when recreational use of the project areas is lightest.

- During construction, ensure that nearby trails are signed, cautioning users that equipment would be crossing.

- Provide a site-specific access plan specifying the roadways on which construction workers are allowed travel to access the work sites.

- Prohibit construction workers from accessing work sites from any locations other than those specified in the plan.

- Provide clearly marked bicycle detours to address bicycle route closures or if bicyclist safety would be otherwise compromised.

- Post warnings about the potential presence of slow-moving vehicles.

Consistent with the traffic control and road maintenance plan, assess pre- and postconstruction condition of roadways identified for use by haul traffic, including repairing to pre-project conditions project-related potholes, fractures, or other damage to roadways used during construction.

Timing: Before, during, and after construction.

Responsibility: **City**/Water Forum and Contractor(s).

Implementation of Mitigation Measure REC-1 would reduce the potentially significant impact associated with temporary impacts to access and the safety of recreationists to a less-than-significant level because the Water Forum would prepare and implement a construction traffic control and road maintenance plan. This impact would be less than significant with mitigation incorporated.

At all in-river restoration sites, boating/swimming traffic is historically light during weekdays when construction would occur and, as described in Section 2.3.4, in-river work would occur during flows of generally less than 3,000 cfs. Additionally, the LAR is a river with all the hazards inherent to flowing cold water. There is recognition that no project can be built to be completely hazard free, particularly during higher flows, and personal responsibility is involved when recreating in and around the river.

However, due to the popularity of water-based recreation along the LAR, impacts to boater/swimmer safety during and after construction could be potentially significant. The following mitigation measure has been identified to address this impact:

Mitigation Measure REC-2: Prepare and Implement a Boater Safety Plan.

Recognizing the high recreational use of the Lower American River, the following safety measures will be implemented as part of the Boater Safety Plan to reduce risk during the design and construction of all in-river habitat elements:

- In-river safety personnel will be posted upstream of each site when boater traffic is heavy, typically Fridays and will implement the following safety measures:
  - Verbally communicate with recreational boaters to warn them of ongoing downstream in-river work,
  - Communicate via radio with downstream construction equipment operators to temporarily stop in-river work until boater traffic has safely passed the restoration site, and
  - Post signs upstream of construction areas to warn boaters of the location and schedule of upcoming in-river work.
- Designs for gravel augmentation will ensure that restoration and enhancement activities do not impede navigation within the main channel The appropriate minimum channel width and depth will be decided on a site-by-site basis during design with the modeling and construction to ensure adequate recreational and emergency access. The City/Water Forum will consult with County Parks to ensure boating access.
- Habitat structures will be placed at the stream margins or within side channels and outside of the main channel flow and thus away from areas where the majority of boater traffic will occur.
- The natural wood material will be angled diagonally down river to reduce the chances of hazardous contact with swimmers, boaters, anglers, and material.
- If any tagged woody material that is placed in the river is washed downstream and, in the judgment of County Parks, becomes a safety hazard, the Water Forum would coordinate wood removal with County Parks and pay existing County contractors to have it removed or moved to a safe location.

Timing: During and after construction.

Responsibility: City/Water Forum and Contractor(s).

Implementation of Mitigation Measure REC-2 would reduce the potentially significant impact associated with boater safety to a less-than-significant level because the Water Forum would prepare and implement a boater safety plan. This impact would be less than significant with mitigation incorporated.

During July and August a few anglers seek early returning salmon; the number of anglers using the LAR increases in September and peaks in October, before the upper river is closed to fishing. In general, fish avoid in-water disturbances, such as construction. Therefore, it is not expected that anglers would want to access the river at specific restoration sites during the short construction period, as there are likely no fish. In any one year, the size of the construction site as compared to the areas inhabited by fish in the remainder of the river is negligible and anglers can easily access other fishing sites during the construction period. Due to the temporary and localized impact to fishing and the availability of abundant fishing opportunities on the LAR, this impact would be less than significant.

Due to gravel placement and the construction of side channels as part of the proposed project, the in-river channel morphology may change slightly from existing conditions. Gravel placement that supports favorable spawning habitat may create discrete areas within the river channel that are deeper or more shallow than existing conditions. Additionally, the creation of side channels may create islands in areas that may have previously been gravel bars or overbank areas. However, although the LAR travels through an urbanized area and is managed as a Parkway, the LAR retains the natural fluvial geomorphic processes of a free-flowing river, especially in this un-leveed reach. These processes are ongoing, flow-driven, and include sediment transport, formation of depositional bars, cut banks, vegetation recruitment and removal, and braiding of channels. Since the proposed project activities approximate the natural characteristics and processes of a free-flowing, gravel bed river and would not differ significantly from existing conditions or ongoing fluvial geomorphic processes along the LAR, this impact would be less than significant.

1.17 Transportation

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
TRANSPORTATION.					
Would the project:					
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐	☐
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)?	☐	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☐	☒	☐

1.17.1 Environmental Setting

Figure 2-1 in Section 2, "Alternatives Including the Proposed Action," presents potential haul routes that may be used to access the borrow sites and gravel augmentation sites during project activities.

The Institute of Transportation Engineers (ITE) has recommended a screening criterion for assessing the effects of construction projects that create temporary traffic increases (ITE 1988). To account for the large percentage of heavy trucks associated with typical construction projects, ITE recommends a threshold level of 50 or more new peak-direction truck trips during the peak-hour. Therefore, a project would cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system, and result in a significant effect related to traffic, if they would result in 50 or more new truck trips (100 passenger car equivalent [PCE] trips) during the a.m. or p.m. peak hours. This is considered an "industry standard" and is the most current guidance for significance thresholds.

1.17.2 Discussion

a, b) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

Less-than-Significant Impact. The project would include gravel augmentation and habitat restoration within the American River Parkway and would not result in any land use changes or change in vehicle miles traveled (VMT) compared to the existing conditions. Construction-related activity from the proposed project may potentially disrupt the existing transportation network in the surrounding project area. No lane, street, sidewalk, or on-street bike lane closures are planned, but heavy construction vehicles, materials, and workers would travel to and from the gravel augmentation sites and borrow sites. As a result of these activities, existing roadway operation conditions may be degraded.

Up to 30,000 tons of gravel could be placed in any given year from 2019 through 2035. This would require a total of 3,500 one-way truck trips to transport gravel from the borrow site(s) to the gravel augmentation site over an estimated 4-week period, approximately 175 trips per day, an average of less than 20 trucks per hour over a 10-hour work day. Additional traffic would occur from daily worker trips. Construction-related activity would therefore be substantially less than the threshold of 50 heavy truck trips (or 100 PCE trips) during the peak a.m. or p.m. hour. This impact would be less than significant.

The Jedediah Smith Memorial Trail provides bicycle, pedestrian, and equestrian access along the American River from downtown Sacramento to Folsom. Potential effects on users of the Jedediah Smith Memorial Trail, including bicycle and pedestrian users, are addressed in Section 1.16, "Recreation," under items a and 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)?

No Impact. The project would not change any design features for roadways or introduce incompatible uses. There would be no impact.

d) Result in inadequate emergency access?

No Impact. The project would not require any road closures or other changes which could result in inadequate emergency access. The increased number of construction-related trucks to and from the project sites during construction activities would be small and not effect emergency access. There would be no impact.

1.18 Tribal Cultural Resources

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
III. TRIBAL CULTURAL RESOURCES.					
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:					
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k), or	☐	☒	☐	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐	☒

1.18.1 Environmental Setting

The project is situated in the traditional territory of Miwok and Nisenan California Native American Tribes. Miwok and Nisenan do not themselves constitute political units but rather linguistic units. California Native American Tribal political units in Sacramento County generally consisted of a large, independent central village or two with one or more smaller satellite villages. These independent political units were led by a hereditary chief, generally passing to a male heir though female family members were also sometimes chosen.

Data Sources/Methods

Under PRC Section 21080.3.1 and 21082.3, the CEQA lead agency must consult with tribes traditionally and culturally affiliated with the project area that have requested formal notification and responded with a request for consultation. The parties must consult in good faith. Consultation is deemed concluded when the parties agree to measures to mitigate or avoid a significant effect on a tribal cultural resource when one is present or when a party concludes that mutual agreement cannot be reached. Mitigation measures agreed on during the consultation process must be recommended for inclusion in the environmental document.

Three Tribes have previously requested to be notified regarding proposed projects within their geographic area of cultural affiliation, in accordance with PRC Section 21080.3.1: Buena Vista Rancheria of Mewok Indians, United Auburn Indian Community (UAIC), and Wilton Rancheria. On March 28, 2019, in accordance with PRC 21080.3.1 (b), SAFCA sent a letter to each of these three

Tribes, notifying these Tribes about the proposed project, providing a proposed project description and a map of the project area, and requesting a response within 30 days if consultation concerning the proposed project is requested.

Responses

One Tribe that previously requested to be notified regarding proposed projects within their geographic area of cultural affiliation, in accordance with PRC Section 21080.3.1, responded to the March 28, 2019 letter from SAFCA. In a letter dated April 22, 2019, UAIC acknowledged receipt of the March 28, 2019 letter, requested to initiate consultation on this project, requested information including cultural resources records searches and any assessments, and requested to participate in cultural resources surveys.

On February 25, 2019, the Native American Heritage Commission (NAHC) was also contacted and asked to conduct a search of their Sacred Lands File and to provide a list of Native American contacts for the project area. The NAHC responded on February 26, 2019, stating in its response letter that its Sacred Lands File search had been positive; this response does not necessarily mean that tribal cultural resources are located within the project boundary but rather indicates that a sacred site is located either within or in general proximity to the project area. The response letter also stated that UAIC should be contacted. The response from the NAHC included a list of Native American representatives that might have information regarding cultural resources within the project boundary. Included in the list were the three Tribes contacted in accordance with PRC 21080.3.1(b) (Buena Vista Rancheria, UAIC, and Wilton Rancheria), as well as four Tribal organizations that had not previously requested to be notified in accordance with PRC 21080.3.1(b) concerning projects in their geographic area of cultural affiliation: Colfax-Todds Valley Consolidated Tribe, the Ione Band of Miwok Indians, Nashville Enterprise Miwok-Maidu-Nishinam Tribe, and the Shingle Springs Band of Miwok Indians.

On March 28, 2019, SAFCA sent a letter to each of four Tribes the NAHC list that were not already being contacted in accordance with PRC 21080.3.1(b), notifying these Tribes about the proposed project, providing a proposed project description and a map of the project area, and requesting a response within 30 days if consultation concerning the proposed project is requested. As Lead Agency, the City assumed responsibility for Native American consultation in May 2019.

One Tribe that was identified on the NAHC contact list responded to the March 28, 2019 SAFCA letter. On May 1, 2019, the Shingle Springs Band of Miwok Indians sent an email response stating that they would like to initiate consultation for this project.

Discussion

a, b) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k), or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant

to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less-than-Significant Impact with Mitigation Incorporated. Although no Tribal Cultural Resources have been identified within the Area of Potential Effect (APE), it is possible that Tribal Cultural Resources could be identified in the APE. This impact would be potentially significant.

Mitigation Measure TCR-1a: Conduct Cultural Resources and Tribal Cultural Resources Sensitivity and Awareness Training Program Prior to Ground-Disturbing Activities

The City/Water Forum shall 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, as well as culturally affiliated Native American tribes. The City may invite Native American representatives from interested culturally affiliated Native American tribes to participate. The training shall be conducted before any project-related construction activities begin at the project site and will include relevant information regarding sensitive cultural resources and tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating 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 at the project site and will outline what to do and who to contact if any potential cultural resources or tribal cultural resources are encountered. 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: During construction.

Responsibility: City/Water Forum and Contractor(s).

Mitigation Measure TCR-1b: In the Event that Tribal Cultural Resources Are Discovered During Construction, Implement Avoidance and Minimization Measures to Avoid Significant Impacts and Procedures to Evaluate Resources.

If tribal cultural resources (such as Native American archaeological materials, sacred objects, unusual amounts of bone or shell, artifacts, or human remains and associated objects and materials) are encountered at the project site during construction, work shall be suspended within 100 feet of the find (based on the apparent distribution of cultural materials), and the construction contractor shall immediately notify the project's City/Water Forum representative. Avoidance and preservation in place is the preferred manner of mitigating impacts to cultural resources or tribal cultural resources. This will be accomplished, if feasible, by several alternative means, including:

- Planning construction to avoid tribal cultural resources, archaeological sites and/or other cultural resources; incorporating cultural resources within parks, green-space or other open space; covering archaeological resources; deeding a cultural resource to a permanent conservation easement; or other preservation and protection methods agreeable to consulting parties and regulatory authorities with jurisdiction over the activity.
- Recommendations for avoidance of cultural resources or tribal cultural resources will be reviewed by the City/Water Forum representative, interested culturally affiliated Native American tribes and other appropriate agencies, in light of factors such as costs, logistics, feasibility, design, technology and social, cultural and environmental considerations, and the extent to which avoidance is consistent with project objectives. Avoidance and design alternatives may include realignment within the project site to avoid cultural resources or tribal cultural resources, modification of the design to eliminate or reduce impacts to tribal cultural resources or modification or realignment to avoid highly significant features within a cultural resource or tribal cultural resource.
- Native American representatives from interested culturally affiliated Native American tribes will be invited to review and comment on these analyses and shall have the opportunity to meet with the City/Water Forum representative and its representatives who have technical expertise to identify and recommend feasible avoidance and design alternatives, so that appropriate and feasible avoidance and design alternatives can be identified.
- If the discovered cultural resource or tribal cultural resource can be avoided, the construction contractor(s), will install protective fencing outside the site boundary, including a 100-foot buffer area, before construction restarts. The boundary of a tribal cultural resource will be determined in consultation with interested culturally affiliated Native American tribes and tribes will be invited to monitor the installation of fencing. Use of temporary and permanent forms of protective fencing will be determined in consultation with Native American representatives from interested culturally affiliated Native American tribes.
- The construction contractor(s) will maintain the protective fencing throughout construction to avoid the site during all remaining phases of construction. The area will be demarcated as an "Environmentally Sensitive Area".

If a tribal cultural resource cannot be avoided, the following performance standard shall be met prior to continuance of construction and associated activities that may result in damage to or destruction of tribal cultural resources:

- Each resource will be evaluated for California Register of Historical Resources- (CRHR) eligibility through application of established eligibility criteria (California Code of Regulations 15064.636), in consultation with consulting Native American Tribes, as applicable.

If a tribal cultural resource is determined to be eligible for listing in the CRHR, the City will avoid damaging effects to the resource in accordance with California Public Resources Code Section 21084.3, if feasible. The City shall coordinate the investigation of the find with a qualified archaeologist (meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology) approved by the City and with interested culturally affiliated Native American tribes that respond to the City's invitation. As part of the site investigation and resource assessment, the City and the archaeologist shall consult with interested culturally affiliated Native American tribes to assess the significance of the find, make recommendations for further evaluation and treatment as necessary and provide proper management

recommendations should potential impacts to the resources be determined by the City to be significant. A written report detailing the site assessment, coordination activities, and management recommendations shall be provided to the City representative by the qualified archaeologist. These recommendations will be documented in the project record. For any recommendations made by interested culturally affiliated Native American tribes that are not implemented, a justification for why the recommendation was not followed will be provided in the project record.

Native American representatives from interested culturally affiliated Native American Tribes and the City/Water Forum representative will also consult to develop measures for long-term management of any discovered Native American cultural resources or tribal cultural resources. Consultation will be limited to actions consistent with the jurisdiction of the City and taking into account ownership of the subject property. To the extent that the City has jurisdiction, routine operation and maintenance within tribal cultural resources retaining tribal cultural integrity shall be consistent with the avoidance and minimization standards identified in this mitigation measure.

If the City determines that the project may cause a significant impact to a tribal cultural resource, and measures are not otherwise identified in the consultation process, the following are examples of mitigation capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to the resource. These measures may be considered to avoid or minimize significant adverse impacts and constitute the standard by which an impact conclusion of less-than significant may be reached:

- 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.

- 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:

    - Protect the cultural character and integrity of the resource.
    - Protect the traditional use of the resource.
    - Protect the confidentiality of the resource.
    - Establish permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or using the resources or places.
    - Protect the resource.

The title to all archaeological sites, and historic or cultural resources on or in submerged lands of California is vested in the state and under the jurisdiction of the California State Lands Commission (Pub. Resources Code, § 6313). Additionally, the final disposition of archaeological, historical, and paleontological resources recovered on state lands under the jurisdiction of the California State Lands Commission must be approved by the Commission.

Responsibility: City/Water Forum

Timing: During Construction

1.19 Utilities and Service Systems

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
UTILITIES AND SERVICE SYSTEMS.					
Would the project:					
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider that 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?	☐	☐	☐	☒	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒	☐
e) Comply with Federal, State, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒	☐

1.19.1 Discussion

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

No Impact. The proposed project would not involve any activities that would require new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities. No impact would occur.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

No Impact. No new water supplies would be required for the proposed project. The proposed project relies on the operations of Folsom and Nimbus dams for water supplied to the restoration sites. Reclamation is responsible for daily operations and releases at Folsom and Nimbus dams, located upstream of the restoration reaches. Reclamation releases water from Folsom/Nimbus for to serve

multiple uses during all water year types, in accordance with the Water Control Manual for the facility (revised September 2017) (Corps 2017). The project would have no impact on the supply of water during normal, dry, and multiple dry years. There would be no impact.

c) Result in a determination by the wastewater treatment provider that 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?

No Impact. The proposed project would not result in changes to wastewater generation. Thus, the proposed project would not exceed a wastewater treatment provider's capacity. No impact would occur.

d,e) 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 and comply with Federal, State, and local management and reduction statutes and regulations related to solid waste?

No Impact. The proposed project would not result in the generation of solid waste. Thus, the proposed project would not exceed capacities or impair attainment of solid waste reduction goals or compliance with solid waste reduction statutes. No impact would occur.

1.20 Wildfire

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

1.20.1 Environmental Setting

The borrow areas and restoration sites are located within local responsibility areas, and none are within a very-high fire hazard severity zone (CAL FIRE 2007, 2008).

1.20.2 Discussion

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. Construction of the proposed project would result in short-term work within the borrow areas and at a maximum of three restoration sites within a construction season and would not require closure or reduced access on any adjacent roads that would interfere with an adopted emergency response plan or evacuation plan. Additionally, none of the roads in the project vicinity are listed as evacuation routes by the Sacramento County Office of Emergency Services (Sacramento County 2018). There would be no impact.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact. The proposed project involves only gravel borrow, transport and in-river placement, side channel excavation, and habitat structure placement, where appropriate, and would not increase the risk of wildfire or the possibility of uncontrolled spread of wildfire in the project area. Additionally, the proposed project would not contribute to additional temporary occupants of the project site beyond current levels of local and regional recreational users who could be exposed to pollutant concentrations resulting from a wildfire in the project area. No impact would occur.

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

No Impact. The proposed project would not include any activities that require the installation or maintenance of wildfire prevention or management infrastructure or that would exacerbate fire risk. No impact would occur.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact. The proposed project involves only gravel borrow, transport and in-river placement, side channel excavation, and habitat structure placement, where appropriate. All activities would take place within the LAR or floodplain areas and would not expose people or structures to significant after-fire risks due to changes in drainage patterns, topography, or slope stability. Existing Sacramento County Parks Fire Fuel Reduction Action Plan activities along the Parkway would continue as would fuels and vegetation management in compliance with County Code (Sacramento County 2018). No impact would occur.

1.21 Mandatory Findings of Significance

Environmental Issue	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Beneficial Impact
IV. MANDATORY FINDINGS OF SIGNIFICANCE.					
Would the project:					
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐	☐
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐	☐

1.21.1 Discussion

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

Less-than-Significant Impact with Mitigation Incorporated. The analysis conducted in this CEQA Environmental Checklist concludes that implementation of the proposed project would not have a significant impact on the environment. As evaluated in Section 3.4, "Biological Resources," impacts on biological resources would be less than significant with mitigation incorporated. The proposed project would not substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or reduce the number or restrict the range of an endangered, rare, or threatened species. As discussed in Section 3.5, "Cultural Resources," the proposed project would not eliminate important examples of the major periods of California history or prehistory. This impact would be less than significant.

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

Less-than-Significant Impact. As discussed in this CEQA Environmental Checklist, the proposed project would result in less-than-significant impacts or no impacts on aesthetics, air quality, biological resources, cultural resources, geology and soils, GHG emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation, tribal cultural resources, and utilities and services systems.

The temporary nature of the proposed project's construction impacts (approximately 4 to 6 weeks per year for up to 16 years), and the beneficial changes to habitat at the restoration sites, would result in no impacts or less-than-significant environmental impacts on the physical environment.

Other projects that may affect the project area include angling and state angling regulation changes, voluntary state or private sponsored habitat restoration activities (such as gravel augmentation as mitigation for the Folsom Dam Joint Federal Project), agricultural practices, water withdrawals and diversions, adjacent mining activities, and increased population growth resulting in urbanization and development of floodplain habitats. While state angling regulations have moved towards restrictions on selected sport fishing to protect listed fish species, incidental hooking of Chinook Salmon, hook and release mortality of steelhead, and trampling of redds by wading anglers may continue to cause a threat. Habitat restoration projects may have short-term negative effects associated with in-water construction work, but these effects typically are temporary, localized, and the outcome is expected to benefit listed species and habitats long-term after construction. One specific reasonably foreseeable future project is Reclamation's Nimbus Hatchery Fish Ladder Project. In 2013, Reclamation signed a Record of Decision for the Nimbus Hatchery Fish Passage Project Environmental Impact Statement/Environmental Impact Report. The project is anticipated to begin in 2020 or later. Following the fish ladder construction and the initial years of fish ladder effectiveness testing, the weir foundation may be removed. The removal would likely occur sometime after 2020. Both projects would result in construction activities that could occur simultaneously. But the Proposed Action's construction activities are limited both spatially and temporally, and mitigation measures will reduce construction-related impacts that could interact. Therefore, the Proposed Action, in association with the Nimbus Hatchery Fish Ladder Project, would not result or contribute to any significant cumulative impacts.

c) Would the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

Less-than-Significant Impact. The proposed project would result in less-than-significant impacts and would not cause substantial adverse effects on human beings, either directly or indirectly. The impact would be less than significant.