

SAN FRANCISCO BAY RESTORATION AUTHORITY

Staff Recommendation
June 18, 2021

TERMINAL FOUR WHARF REMOVAL PROJECT

Project No. RA-027
Project Manager: Marilyn Latta

RECOMMENDED ACTION: Consideration and authorization to disburse up to \$2,300,000 to the City of Richmond for final design, implementation, and monitoring of the Terminal Four Wharf Removal Project near Point San Pablo, Contra Costa County, and adopt findings pursuant to the California Environmental Quality Act.

LOCATION: City of Richmond, Contra Costa County; Measure AA Region: East Bay

MEASURE AA PROGRAM CATEGORY: Safe, Clean Water and Pollution Prevention Program, Vital Fish, Bird and Wildlife Habitat Program

EXHIBITS

- Exhibit 1: [Project Location and Site Map](#)
 - Exhibit 2: [Photographs](#)
 - Exhibit 3: [Enhanced Rock Slope Protection Design](#)
 - Exhibit 4: [Mitigated Negative Declaration for the Terminal Four Wharf, Warehouse, and Piling Removal Project](#)
 - Exhibit 5: [Mitigation, Monitoring, and Reporting Program for the Terminal Four Wharf, Warehouse, and Piling Removal Project](#)
-

RESOLUTION AND FINDINGS

Staff recommends that the San Francisco Bay Restoration Authority adopt the following resolution and findings:

Resolution:

The San Francisco Bay Restoration Authority hereby authorizes the disbursement of an amount not to exceed two million three hundred thousand dollars (\$2,300,000) to the City of Richmond for final design, implementation, and monitoring of the Terminal Four Wharf Removal Project near Point San Pablo, Contra Costa County. Prior to commencement of the project, the grantee

shall submit for the review and written approval of the Executive Officer of the Authority the following:

1. A detailed work program, schedule, and budget.
2. Names and qualifications of any contractors to be retained in carrying out the project.
3. A plan for acknowledgement of Authority funding.
4. Evidence that all permits and approvals required to implement the project have been obtained.
5. Evidence that the grantee has entered into a project labor agreement consistent with San Francisco Bay Restoration Authority Resolution 22.

Findings:

Based on the accompanying staff recommendation and attached exhibits, the San Francisco Bay Restoration Authority hereby finds that:

1. The proposed authorization is consistent with The San Francisco Bay Restoration Authority Act, Gov. Code Sections 66700-66706.
2. The proposed authorization is consistent with The San Francisco Bay Clean Water, Pollution Prevention and Habitat Restoration Measure (Measure AA).
3. The San Francisco Bay Restoration Authority has independently reviewed and considered the “Terminal Four Wharf, Warehouse, and Piling Removal Project Initial Study/Mitigated Negative Declaration” (MND), and Mitigation, Monitoring, and Reporting Program (MMRP) adopted by the State Coastal Conservancy on November 19, 2020 and attached to this staff recommendation as Exhibits 4 and 5. The Authority finds that, as mitigated and designed, there is no substantial evidence that the proposed project will have a significant effect on the environment. The only potential effects, for which mitigation is proposed, are in the areas of Aesthetics, Air Quality, Biological Resources, Cultural Resources, Noise, Tribal Cultural Resources and the Authority finds that there is substantial evidence that the mitigation measures identified in the MND will avoid, reduce or mitigate any possible significant environmental effect of the project to a less-than-significant level.

STAFF RECOMMENDATION

PROJECT SUMMARY:

Staff recommends that the Authority authorize disbursement of up to \$2,300,000 to the City of Richmond for final design, implementation, and monitoring of the Terminal Four Wharf Removal Project (project), which consists completing construction documents, demolishing derelict pilings, decking, and two buildings, and constructing enhanced rock slope protection, and monitoring at Terminal Four near Point San Pablo in Contra Costa County.

The project is needed because the deteriorating warehouse, piles, decking, and debris of the Terminal Four Wharf currently pose a marine debris problem and a navigation hazard, and also

continue to degrade and impair water and habitat quality. The existing debris and pile field inhibit the expansion of nearby eelgrass beds (See Exhibit 2, Figures 1-4, 9). When Pacific herring and other fish and marine invertebrates spawn on creosote-treated piles, exposure to polycyclic aromatic hydrocarbons (PAHs), which are part of the creosote compound, results in adverse effects. In Pacific herring, these effects include developmental delays, degeneration, changes in movement, alterations to cardiac function in embryos, lower rate of hatching success, and skeletal defects in larvae.

This project is a priority for the Authority and was selected in competitive Grant Round Four because it will remove toxic creosote pilings from San Francisco Bay, a key priority identified in the Subtidal Habitat Goals Report. The Terminal Four site is owned by the City of Richmond (City) and is managed by the City's Port Operations Department (Port). The site is located on the western shore of Richmond, California, about 2.5 miles northwest of the eastern end of the Richmond-San Rafael Bridge, and just south of the tip of Point San Pablo (Exhibits 1 and 2).

The City, in partnership with the State Coastal Conservancy (Conservancy), has been planning the removal of the creosote-treated piles and deteriorated decking at the Terminal Four site for a number of years, and removal of these structures will achieve the following goals:

1. Increase the ecological health of San Francisco Bay by removing derelict pilings, including those containing creosote-treated wood, and large amounts of artificial fill and solid debris from the Bay floor and waters;
2. Improve spawning and development of Pacific herring through removal of the creosote-treated piles, which have been shown to have detrimental effects on early life history stages of Pacific herring, particularly when herring lay their eggs on these toxic structures;
3. Maintain the existing degree of shoreline protection while avoiding activities that would increase the current degree of erosion potential along that portion or adjacent portions of the coastline; and
4. Protect and enhance the existing eelgrass beds and other biological resources.

In addition, the project will help to increase climate resiliency by cleaning this area of the shoreline and strengthening the natural eelgrass beds and shoreline habitats which act as green infrastructure that provides nature-based adaptation to climate change impacts, such as sea level rise and shoreline erosion.

The City and Conservancy have been supporting this project since 2014, primarily through establishing partnerships, facilitating funding, and leading the design and environmental review. Previous planning work to date includes habitat restoration and coastal processes assessments, upon which preparation of environmental documentation, 60% designs, and permit applications (submitted September 2020 to the Bay Restoration Regulatory Integration Team) were based.

The proposed project consists of completing designs, demolishing the decking, warehouse and dockmasters office, and all pilings, sorting and safely disposing of the material. In addition, the project includes constructing a 350-foot portion of rock slope protection that incorporates "living shoreline" habitat elements such as native plantings at the crown, cobbles with native seaweeds embedded into the face of the rock slope, and oyster reef elements incorporated into the toe of the rock slope; and it includes post-project monitoring of the eelgrass bed and the enhanced rock slope protection. Removal designs take into account that there is a range of estimates of the

current number of pilings and volume of debris, as described in the “Site Description” section, below.

Removing creosote pilings, structures, and debris will enhance eelgrass beds by reducing the shading and toxicity. The eelgrass, in turn, will provide a healthier substrate on which Pacific herring and other organisms can attach their eggs, and will provide physical structure and food resources for species such as salmon and sturgeon.

While the primary ecological benefits will result from removal of the derelict structures and debris, the innovative living shoreline component of the project will provide additional habitat benefits. The experimental design for the enhanced rock slope includes a pilot “green-grey hybrid” approach that is being tested for the first time at this site to enhance biological habitats on a traditional rock rip rap revetment. The design incorporates subtidal reef structures that will provide habitat space for native Olympia oysters and other aquatic invertebrates and plants (Exhibit 3). The reef structures will also help trap and stabilize sediments in the areas formerly occupied by creosote-treated pilings. Extending the range of Pacific rockweed, one the native seaweeds to be embedded in the rock slope, will provide an additional type of spawning substrate for herring. Planting native vegetation at the crown of the enhanced slope will further enhance the overall habitat complexity and diversity at the former wharf site.

The City has substantial experience in managing, reporting and billing many types of projects funded by grants from state and regional public agencies, and the City and Conservancy have a strong track record of implementing successful projects. From 2014-2018, the City and the Conservancy completed the SF Bay Creosote Removal and Pacific Herring Restoration Project with a grant from the National Fish and Wildlife Foundation (NFWF). This collaborative effort included design, permitting, creosote-treated pile removal, construction of a living shoreline through installation of 200 oyster reef elements (Exhibit 2, Figures 5-8) and planting of 2,500 eelgrass seedlings, pre- and post-construction monitoring, public information sharing, and documenting lessons learned and sharing them with Bay Area resource agencies and environmental groups. This previous project was implemented at the former Red Rock Warehouse site (Exhibit 2, Figures 5-8) located slightly north and directly adjacent to the proposed project site. The City and its partners will be able to take knowledge and lessons learned from this previous project and apply them to the proposed project implementation, saving time and costs.

The project is supported by the National Oceanic and Atmospheric Administration (NOAA), the San Francisco Bay Conservation and Development Commission (BCDC), East Bay Regional Park District (EBRPD), the Conservancy, and the San Francisco Bay Joint Venture. The project also has broad public support from non-governmental organizations such as Baykeeper, The Watershed Project, Point Molate Alliance, Trails for Richmond Action Committee, and many others.

The proposed project is part of a continuing effort by the Conservancy, BCDC, NOAA, San Francisco Estuary Partnership, and the Ocean Protection Council to promote long-term management and restoration of subtidal habitats in the San Francisco Bay. The piling removal projects helps implement the San Francisco Bay Subtidal Habitat Goals Recommendations (Subtidal Goals), Artificial Structures Restoration Goal 1 for derelict piling/structure removal; and Goal 2 which recommended using a pilot project approach to remove artificial structures and creosote pilings at targeted sites in combination with active or passive restoration of natural

habitats that provide environmental benefits with reduced engineering of hard structures (a “living shoreline”).

There are no known barriers to implementation and there is broad support for the project. While the site is currently off-limits to public access, the future plan is to construct Bay Trail segments that link all areas from the Richmond Bridge, including Point Molate Beach Park, Terminal Four, and Point San Pablo Yacht Harbor (Harbor). The first two sections of trail totaling two and a half miles from the Bridge to the area just south of Terminal Four have been funded and are in permit consultation now, with construction expected to occur in 2022. In the future, the City of Richmond and others will fundraise and plan for the trail to extend through Terminal Four to the Harbor, which is another one and a half miles.

Site Description: The Richmond Terminal Four Wharf Removal site is near the northwestern tip of Point San Pablo (Exhibit 1) and extends along a rubble-armored shoreline at the north and central portions of the pier and in front of a small cove at the southern end of the pier (Exhibit 2). Based on a review of historic bay charts, the Terminal Four structures were built sometime between 1850 and 1915. However, other sources list them as being built in the 1930’s and being initially used for handling and processing fish. The site was used primarily over the years for storage, distribution and processing of vegetable and animal oils, petroleum fuels and additives, and other chemicals. Storage tanks on the shore were used to supply ships docked at the wharf.

Exhibits 2 and 3 show the key site features of the Terminal Four Wharf Removal site which include:

- Approximately 2,150 standing piles, of three types described below;
- A 1,000-foot-long wharf area of deteriorated wood creosote decking;
- An 1,100 square foot dockmaster’s office building;
- A deteriorated wooden warehouse located over the water with a footprint of about 12,800 square feet; and
- Up to 2,700 tons of debris on the bay bottom, made up of pieces of structures that have already collapsed and fallen into the bay.

According to a survey conducted by the San Francisco Estuary Institute (SFEI) in 2009 of the entire San Francisco Bay region (Subtidal Goals 2010), there were approximately 2,500 pilings at the Terminal Four Wharf site. More recently, as part of the design process, Merkel & Associates (2014) conducted a survey largely by sidescan sonar, which resulted in slightly lower estimates of piles ranging from 2,127 to 2,347 total piles within the structure. In 2019 C&W Divers were hired to assess the structure a third time, and they noted 2,150 pilings still standing and up to 2,700 tons of concrete, wood, and other debris on the bay floor. This data shows the substantial deterioration over a short period of time, and the structures have degraded further since 2019. However, since the collapsed beams and decking material can block sidescan sonar, and visibility is limited due to the hazardous structures and due to high turbidity (due to high levels of suspended sediment) in the bay, there remains substantial uncertainty regarding the piling count, which has been taken into consideration during design.

PROJECT FINANCING

San Francisco Bay Restoration Authority	\$2,300,000
--	--------------------

TERMINAL FOUR WHARF REMOVAL PROJECT

Coastal Conservancy	\$3,000,000
Project Total	\$5,300,000

Conservancy funds to be granted to the City for this project will consist of mitigation funds for fill removal paid to the Conservancy to satisfy conditions of regulatory permits, and settlement agreement funds, both of which have been placed in accounts within the Conservancy’s Coastal Trust Fund that were established expressly for the Richmond Terminal Four Wharf Removal Project. These mitigation and settlement funds, which will be passed through the Conservancy, originated with the following sources:

BCDC (Caltrans mitigation funds)	\$162,944
Chevron	\$210,000
Water Emergency Transportation Authority	\$1,230,000
Pacific Gas and Electric	\$1,080,000
City of Sausalito	\$33,480
Port of San Francisco	\$101,160
TransBay Cable LLC	\$19,602
Accumulated Interest	\$162,814
Total Conservancy Funds	\$3,000,000

The specific fund sources and purposes are consistent with the project.

CONSISTENCY WITH AUTHORITY’S ENABLING LEGISLATION, THE SAN FRANCISCO BAY RESTORATION AUTHORITY ACT:

Consistent with Section 66704.5(a), the City is a public entity. Consistent with 66704.5(b)(1) the project will “restore, protect, or enhance tidal wetlands, managed ponds, or natural habitats on the shoreline in the San Francisco Bay area.” The project will advance removal of marine debris and fill in the Estuary, which will allow the 12-acre project area’s native habitats to recover from the fill, shading, and contamination; and will provide healthier habitat area and function to native fish, birds, and other wildlife. Consistent with Section 66704.5(b)(2), the project will “build or enhance shoreline levees or other flood management features that are part of a project” by replacing a 350-foot section of failing seawall with a pilot enhanced rock slope that will protect the shoreline from wave energy and erosion while also enhancing shoreline habitats. Consistent with Section 66704(e) this award will be used to support planning, construction, and monitoring.

CONSISTENCY WITH MEASURE AA PROGRAMS AND ACTIVITIES: This authorization is consistent with the Safe, Clean Water and Pollution Prevention Program since it will remove toxic creosote pilings and other wharf structures that pollute the bay and harm water quality.

This authorization is also consistent with Measure AA's Vital Fish, Bird and Wildlife Habitat Program since it will restore subtidal and shoreline habitats to benefit wildlife such as Pacific herring, coho salmon, steelhead, Dungeness crab, eelgrass, Olympia oysters, Pacific rockweed, and additional species of plants, birds, and other wildlife.

CONSISTENCY WITH MEASURE AA PRIORITIZATION CRITERIA:

1. **Greatest positive impact:** The Terminal Four wharf is the largest derelict creosote wharf structure in San Francisco Bay, and the project implements key Subtidal Goals recommendations to remove derelict fill in combination with piloting living shoreline designs. Removing toxic pilings, fill and debris, and sources of shading will have a substantial positive benefit to the bay's subtidal and intertidal habitats at the site, improve shoreline ecological health and climate resilience, and clean up an unsafe area for future public access improvements.
2. **Greatest long-term impact:** The cleanup of this site will have a long-term impact through enhanced subtidal and intertidal shoreline habitats that will continue to grow, benefiting bay aquatic species such as Pacific herring that have been negatively impacted by spawning on toxic creosote pilings. The project also has a long-term benefit by facilitating future shoreline public access and trail opportunities that will be increased at the site.
3. **Leveraging resources and partnerships:** The project will leverage state and federal resources, and public/private partnerships. The City and Conservancy have developed a strong regional network of organizational partners, from local, state, and federal agencies to community groups, and the project has strong support. The partners engage multiple stakeholders in planning meetings and in technical forums and share information about project status through presentations and media coverage. NFWF funded the pilot project at the adjacent former Red Rocks Warehouse site, and also funded the 30% design for Terminal Four. Please see PROJECT FINANCING section above for additional funding partners. The project has strong support from the Trails for Richmond Action Committee, East Bay Regional Park District (EBRPD), The Watershed Project, and BayKeeper.
4. **Benefits to economy:** The project is a priority for the City because it will provide job opportunities and economic benefits. The construction will be competitively bid by the City, which includes measures to encourage local labor participation and fair wages. The project will use the services of a construction contractor selected through an open, competitive bid process. To the extent permitted by law, bidding will be subject to local business and hire requirements, including the City's Business Opportunity Ordinance, Local Employment Program Ordinance, and Living Wage Ordinance.
5. **Monitoring, maintenance, and stewardship:** The project will be successful if all planned derelict wharf and fill material is removed and disposed of properly, and the enhanced rock slope performs as designed. The City will monitor activities during demolition to confirm it complies with permit requirements including biological monitoring. The City will also conduct monitoring survival and status of the enhanced rock slope elements, including oyster

reef elements, seaweed transplants, and crown native plantings. The City will provide post-demolition and habitat monitoring reports to confirm goals have been met.

6. **Coastal Conservancy's San Francisco Bay Area Conservancy Program.** The project is consistent with the Conservancy's San Francisco Bay Area Conservancy Program's Criteria in several ways briefly summarized below.

It will promote and implement three state plans:

San Francisco Bay Subtidal Habitat Goals Report (2010, jointly authored by the State Coastal Conservancy, California Ocean Protection Council, NOAA NMFS and Restoration Center, San Francisco Bay Conservation and Development Commission, and San Francisco Estuary Partnership), a 50-year Conservation Plan for submerged habitats in San Francisco Bay which recommends the removal of derelict piling structures in combination with piloting living shoreline techniques in San Francisco Bay.

Baylands Goals Science Update (2015): The update documents the progress made toward achieving the 1999 Baylands Goals and outlines strategies for continuing restoration progress in the face of climate change and sea-level rise. The Project is consistent with the Update's recommendations to increase resilience to sea level rise by removing fill and cleaning up the shoreline along the Bay edge and enhancing subtidal and intertidal physical habitat and functions.

State Coastal Conservancy's Strategic Plan (2018-2022): The Project is consistent with Objectives 12A, 12B, and 12D which call for the protection of tidal wetlands and subtidal habitat, protection of wildlife, and the enhancement of tidal wetlands and subtidal habitat. This project protects tidal wetlands, subtidal habitat and wildlife through the removal of fill and debris, as well as enhances these habitats through installation an enhanced rock slope protection.

This project will help refine best practices for removing creosote pilings from the Bay system and provide a model for new techniques for restoration of shoreline and subtidal habitats in the Bay. The techniques and designs resulting from this demonstration project have strong applicability at other sites in the Bay and in other estuarine systems on the Pacific Coast.

The project can be implemented in a timely way, as 60% designs are completed, and permit applications have been submitted and are expected to be issued in Fall 2021. Implementation of wharf removal is expected to occur in 2022-23. Multiple benefits including reduction in marine debris and fill, and enhancement of subtidal and intertidal shoreline habitats could be lost if the project is not quickly implemented.

The project includes matching funds from multiple local, state, and federal sources.

7. **San Francisco Bay Conservation and Development Commission's Coastal Management Program.** The San Francisco Bay Plan ("Bay Plan") was completed and adopted by BCDC in 1968 pursuant to the McAteer-Petris Act of 1965 and last amended in October 2011. The Bay Plan guides BCDC's management and permitting decisions in the Bay. The project is consistent with the following policies articulated in Part III, Findings and Policy Section of the Bay Plan:

Subtidal Areas Policy 5 (adopted April 2002): “The [BCDC] should continue to support and encourage expansion of scientific information on the Bay's subtidal areas, including: (a) inventory and description of the Bay's subtidal areas; (b) the relationship between the Bay's physical regime and biological populations; ... (e) where and how restoration should occur.”

The proposed project will assist in implementation of this policy by providing additional data on best techniques for restoration at a specific site, describe the densities, locations, and species associated with subtidal habitats at that site, and conduct five years of monitoring on herring presence before and after construction.

Fish, Other Aquatic Organisms and Wildlife Policy 1 (amended April 2002): “To assure the benefits of fish, other aquatic organisms and wildlife for future generations, to the greatest extent feasible, the Bay's tidal marshes, tidal flats, and subtidal habitat should be conserved, restored and increased.”

The project is consistent with this policy because it will restore and increase subtidal and intertidal habitats in San Francisco Bay.

8. San Francisco Bay Joint Venture’s Implementation Strategy: The project is consistent with the Joint Venture’s Implementation Strategy in that it helps to clean up marine debris and fill from the bay and enhance subtidal and intertidal shoreline habitats. The project is included on the Joint Venture’s list, and the project proponents consulted with the Joint Venture staff and the Conservation Delivery Committee prior to applying for funding and received strong support.

COMPLIANCE WITH CEQA:

The 2020 “Terminal Four Wharf, Warehouse, and Piling Removal Project Initial Study and Mitigated Negative Declaration (“MND”) and Mitigation Monitoring and Reporting Program (“MMRP”) was prepared for the project pursuant to the California Environmental Quality Act (CEQA) by the Conservancy as lead agency and adopted on November 19, 2020 (Exhibits 4-5). The MND was prepared by the Conservancy in accordance with CEQA (Public Resources Code § 21000 et seq.) and the CEQA Guidelines (California Code of Regulations Title 14, section 15000 et seq.). It describes the proposed project and provides an assessment of the project’s potential significant adverse impacts on the environment. The MND concludes that the proposed project will not have any significant effects on the environment after implementation of project design features, conservation measures, avoidance and minimization and mitigation measures, and best management practices.

The MND indicates that the proposed project will not have a significant effect on the environment with incorporation of certain mitigation measures and adoption of the mitigation measure identified in the MMRP. The only potential effects, for which mitigation is proposed, are in the areas of Aesthetics, Air Quality, Biological Resources, Cultural Resources, Noise, and Tribal Cultural Resources. The Authority’s grantee will be responsible for compliance with the mitigation measures. The potential significant effects and the mitigation measures are described below.

Aesthetics

Portions of work in the tidal zone may require intermittent nighttime construction work (i.e., between the hours of 5:00 p.m. and 7:00 a.m.), which would require lighting at the working face. To ensure that nighttime lighting does not adversely affect receptors at the East Brother Light Station, the Conservancy would implement Mitigation Measure AES-1, Construction Lighting, and require the contractor to direct nighttime lighting used during construction toward the work face and away from the East Brother Light Station, Mitigation Measure AES-1, Construction Lighting, requires that nighttime lighting used during construction be directed toward the work face and away from the East Brother Light Station to the extent possible.

After demolition and construction activities are complete, there will be no operations-related lighting. For these reasons, the project will not create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area, and the impact will be **less than significant**.

Air Quality

Demolition and construction activities would result in emissions of ozone precursors and criteria pollutants from the operation of off-road construction equipment and vehicle exhaust from vehicles transporting workers, construction materials and debris. In addition, water-based sources such as tugboats used to steer barges and work skiffs also produce air pollutants. Criteria pollutant emissions from off-road demolition and construction equipment as well as worker and truck trips were estimated using the most recent version of the California Emissions Estimator Model. Based on estimates of potential debris volumes that may need to be removed from the site, this analysis assumes that pile removal would require approximately 18 barge trips from the project site to the Port of Richmond's Terminal Three sorting facility, the Port of San Francisco's Pier 96, or another facility determined by the contractor, and approximately 350 truck trips from Terminal Three or Pier 96 to one of the four planned disposal sites (assumed to be Potrero Hills Landfill in Suisun City for this analysis). In addition, approximately 230 haul truck trips would be needed to transport spoils from the project site and approximately 330 truck trips to transport ESRP construction materials to the project site.

Emissions from tugboats that would steer barges and work skiffs were estimated using marine diesel and gasoline engine emission factors, respectively, from the U.S. Environmental Protection Agency (U.S. EPA). The average daily emissions were calculated by adding the emissions from all the construction phases and dividing the total by the number of construction workdays (after taking into account any overlapping of phases).

With mitigation and implementation of the referenced best management practices, project emissions would not exceed BAAQMD significance thresholds and adequate fugitive dust reduction measures would be implemented consistent with BAAQMD's BMPs, and potential impacts related to the project's individual emissions would be reduced to **less than significant**.

Biological Resources

Special-Status Wildlife

Western Burrowing Owl

Construction-related impacts to western burrowing owls would primarily include crushing burrows in use by owls for either breeding or wintering. In addition, noise, vibration, increased vehicular traffic and human presence during demolition activities, project staging and access could result in nest failure (disturbance, avoidance, or abandonment that leads to unsuccessful reproduction), or cause flight behavior that exposes an adult or its young to predators during the breeding season. These activities could also cause wintering birds to flush, expending energy or interrupting foraging and roosting, and potentially exposing an owl to predators. These will be significant impacts. Implementation of Mitigation Measure BIO-1, Avoidance and Minimization of Impacts to Western Burrowing Owl, would mitigate potential impacts to burrowing owls to a **less-than-significant level**.

Special-Status Bats

Impacts to special-status bats could occur if building demolition were to occur during periods of winter torpor; any bats present would likely not survive the disturbance. Disturbance to maternity roosts could impact survival of young. These disturbances would be a significant impact. Implementation of Mitigation Measure BIO-2, Avoidance and Minimization of Impacts to Roosting Bats, would reduce this impact to a **less-than-significant level**.

Special-Status Plants

Suisun marsh aster has not been confirmed in the project area, though potential habitat that could support this species occurs on-site. Construction-related impacts to Suisun marsh aster could occur due to vegetation removal activities within and adjacent to rip-rap; damage during removal of railroad remnants, steel holding tank, concrete box or utilities and pipes, which are located in or on rip-rap; or direct crushing by materials or vehicles using the potential staging areas and roads adjacent to rip-rap. Implementation of Mitigation Measure BIO-3, Avoidance and Minimization of Impacts to Special-Status Plants, would reduce this impact to a **less-than-significant level**.

Marine Mammals

Hydroacoustic Impacts

- Vibratory hammers may be required to remove creosote-contaminated piles. Use of a vibratory hammer has the potential to generate increased underwater sound levels that are dangerous to aquatic species, marine mammals in particular.
- Vibratory pile drivers work on a different principal than impact pile-driving hammers and therein produce a different sound profile. A vibratory driver works by inducing particle motion to the substrate immediately below and around the pile, causing liquefaction of the immediately adjacent sediment, allowing the pile to be removed. While vibratory pile driving typically generates sound profiles 10-20 decibels (dB) lower in intensity, relative to impact hammers, noise generated from these activities can have deleterious effects on marine mammals. As such, the National Oceanic and Atmospheric Association enforces underwater noise thresholds to prevent such an impact.

- If vibratory hammers are used to remove piles, Mitigation Measure BIO-4 will be implemented to ensure hydroacoustic impacts on marine mammals occur at **less-than-significant levels**.

“Waters of the United States” are defined in the Code of Federal Regulations (33 CFR 328.3[a]; 40 CFR 230.3[s]) as rivers, streams, mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters.

Potentially jurisdictional features within the project study area that could be affected by the project include a freshwater seep and tidal waters. The freshwater seep which is located at the eastern edge of a potential staging area in the northern portion of the site, could be adversely affected by vehicles or placement of equipment or materials; however, implementation of Mitigation Measure BIO-5, Avoid Impacts to Terrestrial Wetlands, will reduce this impact to a **less-than-significant level**.

Tribal Cultural Resources

As a result of archival review, field survey, distribution of nearby archaeological sites, and the geologic and environmental setting, the archaeological sensitivity of the project site is considered low. While unlikely, given the general sensitivity of the project vicinity, the inadvertent discovery of redeposited archaeological resources cannot be entirely discounted, including in areas of artificial fill. Impacts to archaeological resources would be potentially significant. In the event that archaeological resources are encountered during ground disturbing activities, Mitigation Measure CUL-1, Inadvertent Discovery of Archaeological Resource, will reduce impacts to a less-than-significant level. If prehistoric or historic-era archaeological resources are encountered by construction personnel during project implementation, all construction activities within 100 feet shall halt until a qualified archaeologist, defined as one meeting the Secretary of the Interior’s Professional Qualification Standards for archaeology, can assess the significance of the find.

There is no indication that the project site has been used for burial purposes in the recent or distant past. While unlikely, the inadvertent discovery of redeposited human remains cannot be entirely discounted, including in areas of artificial fill. Impacts to human remains would be potentially significant. In the event that human remains are encountered during ground disturbing activities, Mitigation Measure CUL-2, Inadvertent Discovery of Human Remains, will reduce impacts to a **less-than-significant level**.

Noise

Noise Reduction Techniques for Equipment Used in Nighttime Construction Activity will reduce this impact to a less-than-significant level. With mitigation, project construction will not result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Therefore, construction-related impacts would be **less than significant with mitigation**.

There will be no permanent project components added to the environment with the ability to produce noise. Therefore, no operational impact would occur.

Less than Significant with Mitigation. As described in the preceding sections, the project has the potential to cause significant impacts related to aesthetics, air quality, biological resources, cultural resources, tribal cultural resources, and noise. Mitigation measures have been identified that would reduce these impacts to less-than-significant levels. Overall, the project has limited impacts on the physical environment and most of the impacts associated with implementation of the project would occur during construction and would be short-term.

All mitigation measures proposed by the MND are contained in the Mitigation Monitoring and Reporting Program for the Project (Exhibit 5).

Staff has independently evaluated the MND and MMRP and concurs that there is no substantial evidence that the proposed project will have a significant effect on the environment. Staff therefore recommends that the Authority find that the project as mitigated avoids, reduces or mitigates the possible significant environmental effects to less than significant and that there is no substantial evidence that the project will have a significant effect on the environment.

Upon approval of the project, staff will file a Notice of Determination.