

SAN FRANCISCO BAY RESTORATION AUTHORITY

Staff Recommendation  
April 11, 2018

**MONTEZUMA WETLANDS RESTORATION PROJECT, PHASE 1**

Project No. RA-001  
Project Manager: Laura Cholodenko

**RECOMMENDED ACTION:** Authorization to disburse up to \$1,610,000 to Montezuma Wetlands LLC to complete the Montezuma Wetlands Restoration Project, Phase 1, which includes tidal and seasonal wetland restoration on 630 acres of diked baylands and enhancement of adjacent uplands in Suisun Marsh, Solano County.

**LOCATION:** Montezuma Slough, Solano County; Measure AA Region: North Bay

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

---

**EXHIBITS**

- Exhibit 1: [Project Location](#)  
Exhibit 2: [Project Design](#)  
Exhibit 3: [CEQA Documentation](#)  
Exhibit 4: [Project Letters](#)
- 

**RESOLUTION AND FINDINGS:**

Staff recommends that the San Francisco Bay Restoration Authority adopt the following resolution pursuant to The San Francisco Bay Restoration Authority Act, Gov. Code § 66700-66706:

“The San Francisco Bay Restoration Authority hereby authorizes the disbursement of an amount not to exceed one million six hundred ten thousand dollars (\$1,610,000) to Montezuma Wetlands LLC for implementation of the Montezuma Wetlands Restoration Project, Phase 1, which includes tidal and seasonal wetland restoration on 630 acres of diked baylands and enhancement of adjacent uplands in Suisun Marsh, Solano 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:

- a. A detailed work program, schedule, and budget.

- b. Names and qualifications of any contractors to be employed in carrying out the project.
- c. A plan for acknowledgement of Authority funding.
- d. Evidence that all permits and approvals required to implement the project have been obtained.
- e. Evidence that the grantee has entered into a project labor agreement consistent with San Francisco Bay Restoration Authority Resolution 22.
- f. Evidence that the grantee has recorded an easement, deed restriction, or other agreement, sufficient to protect the public interest in the project.”

Staff further recommends that the Authority adopt the following findings:

“Based on the accompanying staff report 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 reviewed and considered the *Montezuma Wetlands Restoration Project Final Environment Impact Report/Environmental Impact Statement* (EIR/EIS) adopted by Solano County on February 2, 1999, the Recirculated Draft Initial Study/Mitigated Negative Declaration adopted by Solano County on October 21, 2010 that addresses minor revisions to the Montezuma Wetlands Restoration Project and the Addendum to the EIR/EIS dated March 20, 2018 (collectively “CEQA Documents”). The CEQA documents indicate that the project has potentially significant effects in the areas of Hydrology, Water Quality, Biological Resources, Air Quality, Cultural Resources, Geology/Soils, and Noise. As described in the accompanying staff recommendation, mitigation measures that have been incorporated into the project will eliminate or substantially lessen all potentially significant effects with the exception of impacts to air resources.
4. Statement of Overriding Considerations. Construction of the Montezuma Wetlands Restoration Project may result in significant effects to air quality due to emissions of air pollutants during placement of dredged material. Mitigation has been incorporated to lessen these emissions but they remain significant after mitigation and there are no other feasible mitigation measures available to further reduce these effects. Specific environmental and other benefits of the project described in the accompanying staff recommendation and detailed in the CEQA documentation outweigh and render acceptable these unavoidable adverse environmental effects. These benefits include helping restore the region’s tidal marshes historically lost through development of Bay shorelines and implementing an alternative to in-water disposal of sediments dredged from San Francisco Bay.

**PROJECT SUMMARY:**

Staff recommends the disbursement of \$1,610,000 to Montezuma Wetlands LLC to complete the Montezuma Wetlands Restoration Project, Phase 1 (project). The project consists of tidal and seasonal wetland restoration on approximately 630 acres of currently diked baylands along Montezuma Slough and enhancement of adjacent uplands in Suisun Marsh (Exhibit 1). The 630 acres of baylands will be restored to 566 acres of tidal marsh and subtidal habitat, 45 acres of seasonal wetlands, and 19 acres of high tide refuge and bird nesting habitat (Exhibit 2).

Approximately 220 acres of adjacent uplands will be enhanced to improve upland habitat quality. The project includes initial placement of dredged materials to raise the site elevation followed by additional construction activities and then breach of the existing dikes to enable tidal action on the site. Most of the dredged material has been placed. The proposed authorization is to fund the other activities necessary to restore the site.

The project is located at a position in the San Francisco estuary where freshwater outflow from the Sacramento-San Joaquin Delta mixes with saline water from San Francisco Bay. Tidal marsh in this mixing zone supports high primary productivity that fuels the aquatic food web and provides food for many native fish species. Several state and federally listed species including delta smelt and longfin smelt, as well as other native fish, have been found to concentrate in this region of the estuary and will benefit substantially from the increased food production and habitat expansion provided by the project's planned restoration of tidal marsh and subtidal habitat.

The restoration of tidal marsh as well as enhancement of remnant levee areas will also provide benefits to many terrestrial species, including three federally endangered species: salt marsh harvest mouse, Ridgway's rail, and California least tern; as well as the state-listed California black rail. Restoration and enhancement of these habitats will increase areas for foraging and nesting and will provide upland refugia habitat during periods of high tide when tidal marsh habitat is inundated. A historic railroad embankment adjacent to the tidal marsh will be improved to provide additional upland transition habitat for marsh wildlife and to protect adjacent vernal pool habitat and a fire road from flooding after tidal connectivity is restored to the project site. This transition zone levee has been designed to support marsh migration in response to predicted sea level rise.

Adjacent to the transition zone levee, the project site supports broad gently sloping uplands with areas of native grassland and vernal pool habitat. This offers a rare opportunity in the estuary to restore tidal wetlands that will be naturally connected to high quality uplands. The project will enhance approximately 220 acres of these uplands, which provide habitat for a unique and diverse suite of native plants and animals, including several threatened and endangered species such as the vernal pool fairy shrimp and vernal pool tadpole shrimp.

Specific project activities to be funded by the proposed authorization include: 1) preparation of final construction plans, 2) construction of seasonal wetlands and nesting islands for least terns, final grading of tidal channels and levees, and construction of flood protection features to protect the Department of Water Resources' salinity control gates in Montezuma Slough (the gates control salinity levels in the marsh to protect waterfowl habitat and use of the area for waterfowl hunting); 3) site clean-up including removal of old structures related to sediment placement

activities, planting of native plants, weed control activities, and breaching of the levees to allow tidal exchange; and 4) three years of post-breach monitoring. Montezuma Wetlands LLC began implementation of the project in 2003 and has nearly completed placement of dredged sediment in the Phase 1 project area. The project activities to be funded with the proposed authorization will commence while additional sediment is placed in three remaining cells. The proposed authorization does not include funding for the additional sediment placement.

Historically, the project site supported tidal marsh that was later diked and drained for ranching, agriculture, and development. These land uses dried out the marsh, causing the site to subside up to ten feet below sea level in some locations. The loss of habitat also reduced important resting, breeding and foraging areas for many species. Since 2003, Montezuma Wetlands LLC has partnered with public and private organizations including the Port of Oakland, Port of San Francisco, Chevron, and the U.S. Army Corps of Engineers to redirect their dredged sediment from aquatic disposal sites and apply it to the project site in order to raise surface elevations of the site to marsh plain elevation. Without a return to these elevations, the site would be too low to support emergent marsh vegetation once the outboard levee is breached and tidal action is restored. To date, Montezuma Wetlands LLC has diverted over 7.5 million cubic yards of sediment from aquatic disposal sites.

Montezuma Wetlands LLC has held extensive meetings with community, environmental, business and labor groups and incorporated ideas and input from those meetings into the project design. Since beginning operations in 2003, the project has worked with the Operating Engineers Local 3 to use union labor for all offloading activities at the site. In the past 15 years, Montezuma Wetlands LLC has allowed for dozens of organizations to conduct research on site that has helped shape the project design.

The multi-phase Montezuma Wetlands Restoration Project is overseen by a Technical Review Team (TRT) that consists of regulatory personnel and other experts in a number of disciplines such as wetland ecology, tidal wetland hydrology, contaminants, and the biology of specific biota including salt marsh harvest mouse, Suisun Marsh fish, California least terns, and rare plants. The TRT reviews site monitoring plans and data, and works with Montezuma Wetlands LLC staff to integrate adaptive management approaches in the design of the project.

Montezuma Wetlands LLC began project design and permitting in 1990, establishing the company as a pioneer in the beneficial reuse of dredged sediment to accelerate restoration of key subsided tidal wetlands. The core project team has been working together for over 20 years on the project, successfully taking the project through design, agency review, permitting, financing, and construction. The successful operations of the site demonstrates the team's ability to execute the complicated design, as well as regulatory, construction, operational and financial management activities required for a project of this scale.

**Site Description:** The project site is located in Suisun Marsh, bordered to the west by Montezuma Slough and to the east by the Montezuma Hills. This site is near Collinsville and approximately 17 miles southeast of Fairfield. Suisun Marsh historically was a vast area of tidal wetlands most of which were diked over 100 years ago, initially for agriculture and later to create managed wetland habitat for migratory waterfowl and to support duck hunting. Although Suisun Marsh has been highly altered, its diked habitats as well as remaining tidal marshes, shallow embayments, small tidal channels, and gently sloping uplands continue to provide

important habitat for migratory waterfowl, native plants, fish and other terrestrial and aquatic wildlife.

The project site was farmed and ranched for over 100 years, which caused the land to subside. A series of ponds were constructed on the site to receive dredged sediment that will raise the site to elevations that are appropriate for tidal wetland restoration. The ponds have been constructed with winding shapes so that their levees form the banks of what will be tidal channels, providing a range of benefits for fish and wildlife when the site is breached.

Two classes of dredged sediment have been placed on site: cover and non-cover sediment. Cover sediments are those with lower concentrations of contaminants that can be used as a top layer that may be in contact with biological resources (e.g., plants and invertebrates); non-cover sediments are those with slightly higher contaminant concentrations that must be covered on the top and sides by a minimum of three feet of cover material so that they do not come into contact with biological resources. Montezuma Wetlands LLC is responsible for sampling incoming dredged sediment to demonstrate that contaminant concentrations do not exceed accepted criteria established in the project's permit from the San Francisco Bay Regional Water Quality Control Board.

The complete Montezuma Wetlands Restoration Project will occur in four Phases (Exhibit 2). Montezuma Wetlands LLC owns all the lands proposed for the four-phase restoration project (approximately 2,000 acres) and approximately 480 acres of adjacent transition and buffer lands plus another 1,000 acres of upland margin. All of the parcels are owned in fee title, with no outstanding mortgages or loans on the land.

**PROJECT FINANCING**

<b>San Francisco Bay Restoration Authority</b>	\$1,610,000
Applicant Funding	\$1,050,000
<b>Project Total</b>	<b>\$2,660,000</b>

The Solano County permit issued to the project provides a sustaining mechanism for long-term stewardship, maintenance and monitoring of the restored marsh. Under the County permit, over \$2.3 million has already been funded and reserved by Montezuma Wetlands LLC for these activities. These funds (currently held in trust for the project by the Solano County Treasurer), are accessible for Phase 1 monitoring and maintenance, and a portion would serve as matching funds to the SFBRA funds.

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

The San Francisco Bay Restoration Authority Act (SFBRA Act), Government Code Section 66704.5 authorizes the Authority to grant funds for eligible projects. Consistent with Section 66704.5(a) the grantee is a private entity that owns the project area located in Solano County along Suisun Bay, on a shoreline parcel in the San Francisco Bay area that is outside of the Delta primary zone.

The project is eligible for a grant under Section 66704.5(b)(1) because the project will restore tidal and seasonal wetland habitat and will enhance upland habitat. The project is also eligible under Section 66704.5(b)(2), because the project will build a new shoreline levee to protect infrastructure and to provide upland transition habitat that allows for marsh migration in response to sea level rise.

The proposed funding of the project's final design, construction, monitoring and maintenance is consistent with Section 66704.5(e), which provides that the Authority may award grants for "all phases of planning, construction, monitoring, operation, and maintenance" of eligible projects.

#### **CONSISTENCY WITH MEASURE AA PROGRAMS AND ACTIVITIES:**

The proposed project is consistent with The *Safe, Clean Water and Pollution Prevention Program* in that it will restore 534 acres of tidal wetlands that naturally filter and remove pollutants from the Bay's water.

The project is also consistent with the *Vital Fish, Bird and Wildlife Habitat Program* because it will restore 630 acres of tidal and seasonal wetland habitat and enhance uplands, which will significantly expand and improve habitat for native fish, as well as marsh-dependent birds and mammals. The project will also provide for stewardship, maintenance and monitoring of the restored habitat, to ensure that ongoing benefits to wildlife are realized.

The project is consistent with the *Integrated Flood Protection Program* because it will build an approximately 5,500-foot upland transition levee that protects existing habitat, provides marsh migration space and provides flood protection for nearby infrastructure.

#### **CONSISTENCY WITH MEASURE AA PRIORITIZATION CRITERIA:**

1. **Greatest positive impact.** The project provides the greatest positive benefit in protecting native species through replacement of existing diked areas along Montezuma Slough with approximately 566 acres of tidal wetlands and subtidal habitat. The restored habitat will specifically enhance food production and expand habitat for aquatic species including Delta and longfin smelt and salmonids, and also support terrestrial tidal marsh species, such as Ridgway's rail and salt marsh harvest mouse, all of whose populations have suffered from dramatic habitat loss throughout the San Francisco estuary.
2. **Greatest long-term impact.** Tidal marsh will be restored adjacent to gently sloping uplands and an upland transition levee that will accommodate sea level rise and enhance the resiliency of the marsh to climate change impacts while protecting infrastructure and seasonal wetland habitat.
3. **Leveraging resources and partnerships.** Grant funding leverages the applicant's funding that has been secured through private and public dredging project sponsors for over 10 years.
4. **Benefits to economy.** The overall Montezuma Wetlands Restoration Project has helped accelerate dredging projects across the region, providing an environmentally beneficial disposal option that avoids potential fisheries impacts due to dispersion of sediments during direct aquatic disposal. Before Montezuma was available, major dredging projects faced

significant challenges and delays. Millions of dollars of regional economic benefits are associated with a reliable 365-day disposal option. Beneficial reuse of sediment creates many more jobs than ocean disposal and the project has supported a number of construction firms in the region. Montezuma Wetlands LLC also pays Solano County a fee for placement of sediment and these funds help pay for county services.

5. **Engage youth and young adults.** Montezuma Wetlands LLC has conducted presentations about the project to both middle school and University students. Once the project site has been breached and tidal action is returned to the property, Montezuma Wetlands LLC is planning to take students out to the site to see the restoration effort, learn about the science that informed the project design and monitoring, and how dredged sediment was beneficially placed to restore elevations and allow for the target habitats to become re-established.
6. **Monitoring, maintenance, and stewardship.** The project includes follow-up monitoring and evaluation of the Phase 1 restoration effort and follow-on scientific evaluations that are part of the Project's adaptive management program. The project has a Technical Review Team, led by the San Francisco Estuary Institute that will continue to provide input on monitoring and adaptive management of the site. As described in the Project Financing section, an endowment of \$2.3 million has been established that will fund management and monitoring.
7. **Coastal Conservancy's San Francisco Bay Area Conservancy Program.** The project is consistent with the Conservancy's San Francisco Bay Area Program's Criteria, as follows:
  - a. Due to its unique position in the estuary, restoration of tidal marsh at the project site will make substantial progress toward meeting regional goals for tidal marsh restoration and recovery of listed species as called for the Baylands Ecosystem Habitat Goals (1999) report, the Suisun Marsh Plan (2011), and the Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California (2013).
  - b. The restoration of approximately 630 acres of tidal and seasonal wetland habitats will benefit regional populations of fish and wildlife; including commercially valuable fish species.
  - c. The project has already commenced and reintroduction of tidal influence to the project site would occur within two years following project initiation.
  - d. The Baylands Goals 2015 science update calls for accelerating the pace of tidal restoration to keep pace with sea level rise; therefore returning the site to the tides as early as possible will help ensure successful project outcomes.
  - e. Project costs include the applicant's matching funds from private and public sources.
8. **San Francisco Bay Conservation and Development Commission's Coastal Management Program.** The proposed project is consistent with the McAteer-Petris Act, the Suisun Marsh Preservation Act, and The Suisun Marsh Protection Plan; the project was permitted by BCDC.
9. **San Francisco Bay Joint Venture's Implementation Strategy.** The project meets the implementation strategy and criteria of the Joint Venture for restoration activities in the San Francisco estuary. The Joint Venture has stated (through personal communication) that

because the project is explicitly included in the Habitat Goals report, it can be approved by the Joint Venture and marked as a Tier 1 project based on readiness to be implemented.

### **COMPLIANCE WITH CEQA:**

The *Montezuma Wetlands Project Final Environment Impact Report/Environmental Impact Statement* (EIR/EIS) addressing all phases of the Montezuma Wetlands Restoration Project (Project) was certified by Solano County on February 2, 1999. The County approved the Project and adopted a Mitigation, Monitoring, and Report Program on October 5, 2000. An Initial Study/Mitigated Negative Declaration (MND) addressing two adaptive management modifications to the design for Phase 1 of the Project was adopted by Solano County (County) on October 21, 2010. Three additional Project modifications were addressed in regulatory authorizations by the Army Corps of Engineers, San Francisco Bay Regional Water Quality Control Board, National Marine Fisheries Service, U.S. Fish and Wildlife Service, and San Francisco Bay Conservation and Development Commission between 2010 and 2014. The three additional Project modifications are addressed in an Addendum to the EIR/EIS (Exhibit 3). These three changes are: opening the Phase I site to tidal action in stages rather than at one time; modifying the high marsh design to allow for growth of a diversity of plants rather than solely pickleweed; and pumping water directly from the Sacramento River, rather than relying on groundwater, during placement of dredged sediments. As indicated in the Addendum, none of these changes will result in new significant effects or increased severity of previously identified significant effects.

The EIR/EIS and MND identify several potentially significant impacts due to implementation of the Project, including one impact that is not mitigated to a less-than-significant level (Exhibit 3). The following is a summary of potential impacts and planned mitigation for the Project.

Air Quality – Construction would create fugitive dust that would elevate local levels of suspended particulates. Mitigation includes watering active construction areas, limiting traffic speeds on unpaved roads, replanting vegetation, and suspending excavation and grading activity when winds exceed 25 mph.

Emissions from sediment placement activities were found to exceed the Bay Area Air Quality Management District standards for air pollutants. Mitigation for this impact includes maintaining and tuning equipment according to the manufacturers' specifications to ensure efficient operation. This mitigation measure was found to mitigate the impact to some degree but not to a level of less-than-significance. Pursuant to Section 15903 of the state CEQA guidelines, the County found that the benefits of the Project outweigh the unavoidable adverse environmental effects and that the adverse environmental effects are, therefore considered acceptable, because the Project will help restore the region's tidal marshes historically lost through development of Bay shorelines while also implementing an alternative to in-water disposal of sediments dredged from San Francisco Bay.

Biological Resources – Sediment placement could attract wildlife and expose them to potentially harmful levels of contaminants if non-cover material is exposed long enough. Plant and wildlife colonization or use of the non-cover disposal cells is monitored closely and the interval during which non-cover material is left exposed is shortened as necessary to minimize wildlife exposure. Project monitoring includes sampling of above-ground plant tissues and specific

invertebrates to determine if the concentration of any toxic contaminant is significantly higher than background concentrations. Remedial actions may include isolating the excavation of affected sediment and capping with clean sediment, removing affected sediment and disposing of it at an appropriate disposal facility, and other measures.

High marsh, seasonally flooded depressions, and the upland transition zone could be invaded by non-native invasive pepperweed, reducing habitat values associated with tidal restoration. The project includes an exotic species control program focused on preventing the establishment of pepperweed. To demonstrate the viability of habitat restoration, implementation of future phases of the project will proceed only after the relative dominance of desirable vegetation in the initial colonization of Phase 1 has been documented.

Impacts to several listed terrestrial and aquatic species have the potential to occur as a result of construction activities and habitat conversion. Mitigation for these impacts includes protection of habitat adjacent to construction areas, limiting certain activities to less sensitive time periods, replacement of impacted habitat, and monitoring to ensure that species become reestablished in restored areas.

Cultural Resources – Grading and excavation in areas of uplands have the potential to impact buried cultural resources. If cultural resources are identified, construction will be stopped and redirected and an archaeologist from the Army Corps of Engineers, in consultation with the State Historic Preservation Office, will determine what additional measures should be implemented to protect the resource. In the event that potential human remains are encountered, the materials shall be subject to the Native American Graves Protection and Repatriation Act and the appropriate tribal entities will be consulted.

Geology and Seismicity – Project structures, such as cell and perimeter levees, and holding pond levees could fail or be damaged during an earthquake or during application of sediment placement. Levee damage would increase the potential for release of contaminants to the environment. This effect will be minimized by designing Project structures to current engineered standards and by creating a process for surveying and repairing any structures that fail.

Hydrology and Water Quality – Sediment could be placed too high, preventing the formation of small channels and the deposition of soft sediment. In order to prevent the over placement of sediment, design criteria has been established and sediment placement is pulsed when the sediment elevation is estimated to be within 1 foot of the design elevation.

Erosion of major channel banks or incision of channels into non-cover sediment could expose the non-cover sediment and lead to release of contaminated material into the environment. The tops of levees are constructed of compacted cohesive clays to prevent channels from cutting through them and levee slopes are designed to be sufficiently shallow to prevent excessive erosion during sediment placement operations.

Noise – Equipment, vehicles, and other activities during operation would increase noise levels for residents and recreationist. The Project's noise levels will be minimized in residential areas near Collinsville, noise levels will be monitored to confirm compliance, and construction equipment used by the project shall include mufflers or shields to reduce noise.

Sediment quality – Chemical concentrations in sediments used on the Project site may exceed screening criteria. To minimize the potential to exceed screening criteria, quarterly sampling and analysis of the pond sediment and water are conducted. If sampling indicates that sediments

placed on the site have exceeded screening criteria, in consultation with the Regional Water Quality Control Board, such sediments will either be removed, allowed to remain in place, or addressed through other measures such as lining to reduce contaminant mobility or capping.

Staff has independently evaluated the EIR/EIS and MMRP and concurs that, with the exception of effects on air quality, each of the potentially significant effects of the Project has been eliminated or substantially lessened through mitigation measures. The significant effects on air quality are unavoidable but are acceptable due to overriding considerations. Upon approval of the project, staff will file a Notice of Determination.