

SAN FRANCISCO BAY RESTORATION AUTHORITY

Staff Recommendation
April 11, 2018

SOUTH SAN FRANCISCO BAY SHORELINE PROJECT

Project No.: RA-006
Project Manager: Brenda Buxton

RECOMMENDED ACTION: Authorization to disburse up to \$4,439,406 to the Santa Clara Valley Water District for design and implementation of the South San Francisco Bay Shoreline Project in the community of Alviso, City of San José, Santa Clara County.

LOCATION: Community of Alviso and adjacent ponds and waterways, between Alviso Slough and Coyote Creek, northern San José, Santa Clara County (Exhibits 1 and 2); Measure AA Region: South Bay

MEASURE AA PROGRAM CATEGORY: Vital Fish, Bird and Wildlife Habitat Program; Integrated Flood Protection Program; Shoreline Public Access Program.

EXHIBITS

- Exhibit 1: [Project Location](#)
- Exhibit 2: [Project Map](#)
- Exhibit 3: [*Final Integrated Interim Feasibility Study and Environmental Impact Statement/Environmental Impact Report \(Integrated Document\)*](#)
- Exhibit 4: [Existing Trail Network](#)
- Exhibit 5: [Proposed Shoreline Project Trails](#)
- Exhibit 6: [Project Phases](#)
- Exhibit 7: [Project Letters](#)
- Exhibit 8: [*Santa Clara Valley Water District Resolution Certifying the Final Environmental Impact Report and Adopting Findings of Fact, Statement of Overriding Considerations, and Mitigation Monitoring and Reporting Program and Approving the Project.*](#)

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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 four million four hundred thirty-nine thousand four hundred six dollars (\$4,439,406) to the Santa Clara Valley Water District for design and implementation of the South San Francisco Bay Shoreline Project in the community of Alviso, San José, Santa Clara 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 agreements sufficient to ensure that the project will be implemented, operated, and maintained.”

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 § 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 grantee is not required to enter into a project labor agreement per Resolution 22 since the project will be funded by, and undertaken in collaboration with, the U.S. Army Corps of Engineers.
4. The San Francisco Bay Restoration Authority has independently reviewed and considered the information contained in the *Final Integrated Interim Feasibility Study and Environmental Impact Statement/Environmental Impact Report* (Integrated Document) that was certified with findings by the Santa Clara Valley Water District on March 22, 2016 in order to comply with the California Environmental Quality Act (“CEQA”).
5. The Integrated Document identifies Alternative 3 as the preferred alternative. The Integrated Document identifies potentially significant effects from implementation of Alternative 3 in the areas of Hydrology, Water Quality, Biological Resources, Hazards and Hazardous Materials, Air Quality, Noise, and Cultural Resources. Alternative 3, as modified by incorporation of the mitigation measures identified in the Integrated

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Document, avoids, reduces or mitigates all of the potentially significant environmental effects of the project except for the impacts identified in finding 5, below.

6. Construction of Alternative 3 may result in significant impacts even after mitigation in the areas of Air Quality (emissions of nitrogen oxides and reactive organic gas), Biological Resources (cumulative loss of pond habitat), and Noise (cumulative temporary increase in noise levels). Changes have been incorporated into the project that substantially lessen these three impacts, but they remain significant after mitigation and there are no other feasible measures available to further reduce these impacts. Specific environmental and other benefits of the project described in the accompanying staff recommendation and detailed in the Integrated Document outweigh and render acceptable these unavoidable adverse environmental effects because the project will result in the long-term environmental benefits of restoring habitat for the State- and Federally-listed threatened and endangered species and other plant and animal species that otherwise would be threatened by loss of critical habitat, protecting the community of Alviso and the Regional Wastewater Facility from tidal flooding, and improving regional trail connections and creating new Bay Trail segments.”

PROJECT SUMMARY:

This authorization would fund implementation of the South San Francisco Bay Shoreline Project (Shoreline Project), an effort to provide flood protection, restore 2,900 acres of former salt evaporation ponds, and improve public access in the Alviso area of South San Francisco Bay, by providing the Santa Clara Valley Water District (SCVWD) with \$4,439,406 for design and construction of the first phase of implementation.

In 2006, the SCVWD, the State Coastal Conservancy (Conservancy) and the U.S. Army Corps of Engineers (Corps) embarked on the South San Francisco Bay Shoreline Study (Shoreline Study), a federal feasibility study of the existing flood threat and biological conditions of the Santa Clara County shoreline. The U.S. Fish and Wildlife Service (USFWS) and the San José-Santa Clara Regional Wastewater Facility (RWF) have participated as well since they are the key landowners in this area. In 2011, in the interest of speeding up the planning process, the agencies conducting the Shoreline Study narrowed their focus to a high-risk region, the Alviso area between Alviso Slough/Guadalupe River and Coyote Creek.

Shoreline Study planning has been closely integrated with the South Bay Salt Ponds (SBSP) Restoration Project’s planning efforts since it will be through the Shoreline Study that the SBSP Restoration Project partners expect to restore tidal marsh in Alviso. The Alviso community is currently below sea-level and at great risk for tidal flooding. The infrastructure needed to protect Alviso, which must be constructed before any berms can be breached for tidal restoration, would be extremely costly, perhaps prohibitively so, without federal support.

The Shoreline Study, formally called the *Final Integrated Interim Feasibility Study and Environmental Impact Study/Environmental Impact Report (Integrated Document)* (Exhibit 3), contains specific recommendations for federal cost sharing as well as environmental impact analysis of a project that would restore 2,900 acres of tidal wetlands, construct new Bay Trail segments, and provide tidal flood protection to the Alviso community. The Corps’ Civil Works

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Review Board approved the Shoreline Study on September 11, 2015. This now enables the Corps to cost-share with the Conservancy and the SCVWD (the two non-federal sponsors).

Now in the implementation stage, the Shoreline Study is referred to as the Shoreline Project. The Shoreline Project proposes construction of an engineered levee along most of an alignment running on top of the existing berms along the eastern or southern borders of Ponds A12, A13, A16 and A18 (Exhibit 2). At the location of the Union Pacific railroad line, a flood gate will be constructed. At Artesian Slough a tidal closure structure will be constructed to protect against flood water but still accommodate outflows from the RWF.

When complete, the levee and gate structures will provide protection from a 1-percent coastal flood (also referred to as the “one-hundred-year flood”), as well as sea level rise, to north San José. This area is home to 5,500 residents and workers and consists of residential, commercial and industrial structures; an elementary school, public library, and fire station; several high-tech businesses; and the RWF and the Silicon Valley Advanced Water Purification Center. Protecting these facilities has even greater benefits to the people they serve outside of the direct impact area.

The Shoreline Project will restore tidal marsh through phasing in restoration of Ponds A9-A15 and A18 pursuant to an adaptive management plan that has been integrated with the SBSP Restoration Project’s Adaptive Management Plan. In addition, an upland transition area (ecotone) will be constructed adjacent to the flood protection levee in Ponds A12, A13 and A18 in order to provide habitat for marsh species during high tides and storms. (No ecotone habitat is proposed for Pond A16 since that pond is managed as open water for pond species, where vegetated upland transition zones are less beneficial.) The ecotone will provide an additional protective buffer for the flood protection levee and will also allow marsh habitat to migrate upslope as sea level rises.

While phasing in the restoration of the ponds, the existing nine-mile loop trail around Ponds A9-A15 (Exhibit 4) will be re-routed onto remaining berms. When all ponds have been breached, the final configuration of the A9-A15 trails will be a three mile total of out-and-back trails with spurs to viewing platforms that will allow visitors to see the evolving marshes. While the Pond A9-A15 loop will be gradually moved inland and reduced in miles, in other project locations, additional new trails will be constructed and trail connectivity improved (Exhibit 5). The maintenance road constructed on top of the flood protection levee will become a Bay Trail alignment, providing over three miles of new public access trail in Pond A18 where there is currently no access. This alignment will continue on existing berms to connect with the Coyote Creek/Bay Trail at North McCarthy Blvd. When completed, currently disconnected visitor serving facilities, the Alviso Marina, the USFWS’ Environmental Education Center and the Coyote Creek/Bay Trail, will all be joined by a continuous six-mile trail.

The Shoreline Project also proposes to continue a 1.4-mile bicycle trail parallel with State Route 237. Constructing a pedestrian/bicycle trail adjacent to State Route 237 will fulfill a request from the public to separate bicycle commuters from the wildlife viewing activities along the levee-top trail in order to minimize user conflicts. Furthermore, constructing additional trail miles and improving key connections will help offset some of the trail miles lost to re-configuring the Ponds A9-A15 loop trail and improve trail connections to the community of Alviso.

According the Corps’ cost sharing requirements, the non-federal sponsors, the SCVWD and the Conservancy, will provide cash for 35% of the construction costs for the flood protection levee

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and tidal wetland restoration, with the remaining 65% provided by the Corps. Recreational improvements are cost shared 50-50. The non-federal sponsors are responsible for 100% of the costs identified in the Shoreline Study as being part of the Locally Preferred Plan (LPP), which are those elements of the project desired by the non-federal sponsors but not deemed eligible for cost-sharing under the Corps’ guidance. LPP elements of the Shoreline Project include the upland transition zone (ecotone) and raising the levee 3 feet higher to improve long-term levee performance with sea level rise. Total project costs, including the LPP elements, are expected to be \$174,000,000¹, with the non-federal sponsors’ share projected to be \$103,738,500.

The first phase of design and construction (levee and ecotone construction of Phase 1, Reach 1) is currently estimated to cost \$27 million. The Corps’ estimated contribution will be \$4 million. (The Corps’ contribution is less than 65% at this stage because the ecotone and additional levee height are part of the LPP and not eligible for federal cost-sharing.) The SCVWD has up to \$15 million available as match in the SCVWD’s Safe, Clean Water and Natural Flood Protection Program. Restoration Authority funds would help close the funding gap and allow the SCVWD to fund technical experts to support design and permit compliance, acquire any needed rights-of-way or easements, plan for and fund dirt delivery to the project site for levee and ecotone construction, and provide construction funds to the Corps as required by the cost sharing agreement.

The table below summarizes the costs discussed above:

Entire Project Costs	\$174,000,000
Non-Federal Sponsors’ Cost Share	\$103,738,500
Federal Cost Share	\$70,261,500
Phase 1, Reach 1 Project Costs	\$27,000,000
<i>SFB Restoration Authority (this authorization)</i>	<i>\$4,439,406</i>
Non-Federal Sponsors’ Cost Share (after this authorization)	\$18,560,594
Federal Cost Share	\$4,000,000

It is estimated that the current funds recommended and available will fund the project through 2019; given the total cost of the full project, it is anticipated that the SCVWD will apply to future San Francisco Bay Restoration Authority grant rounds as well as other sources for additional funding. Local match can be allocated as federal funds are appropriated by Congress for each phase of the project. Construction of the levee, railroad gate, and Artesian Slough water control structure is expected to take place in three construction phases between 2018-22. The ecotone construction would not start until 2019 at the earliest and would be phased in through 2021. For the wetland restoration elements, breaching of the first subset of ponds is anticipated for 2022 and would continue in five year increments until 2032. (See Exhibit 6 for a map of project phasing).

The community of Alviso, including the Alviso Water Task Force, supports the Project and was involved in determining the levee alignment. The recreational enhancements will improve the community’s access to the regional trail network, wildlife viewing and education opportunities. The Shoreline Project is also strongly supported by multiple local, state and federal elected

¹ This 2015 estimate includes design, construction, land acquisition, and adaptive management and monitoring but does not include operations and maintenance. These costs may change.

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officials and government agencies; restoration and habitat-focused non-governmental organizations; chambers of commerce groups for all Silicon Valley cities; recreation groups; and community groups. (See Exhibit 7 for project letters.)

Use of federal funding for construction will require an appropriation of federal dollars to the Corps by the U.S. Congress. Until this occurs, the Shoreline Project can only continue under its current design agreement to complete design and acquire rights-of-way and permits. There is a risk that construction appropriations will not occur in 2018. If this happens, then the SCVWD would use the San Francisco Bay Restoration Authority funds towards furthering the Project's design and permitting effort, securing clean fill material need for construction, and acquiring lands. In addition, the SCVWD may advance funds to the Corps so design and permitting work for additional project phases can continue while waiting for congressional authorization.

Site Description: The Shoreline Project includes Ponds A9-A15 that were part of the 2003 SBSP Restoration acquisition. These ponds are now owned and managed by the USFWS as managed pond habitat for shorebirds and waterfowl as part of the Don Edwards San Francisco Bay National Wildlife Refuge (Refuge). The Refuge and its Environmental Education Center receive approximately 733,000 visitors each year, and the Refuge's adjacent New Chicago Marsh Trail receives an estimated 8,200 visits each year. At the present time there are two Refuge trail systems in Alviso: an approximately nine-mile loop trail around Ponds A9-A15 and a three-mile loop-and-spur trail around A16 and A17. An active railroad line separates these two trail networks and there is no direct connection the Bay Trail.

In addition, the project includes the adjacent Pond A18, currently owned by the City of San José. Pond A18 is an 850-acre managed pond connected to the Bay through two water control structures. There is currently no public access to Pond A18. Pond A18 is adjacent to the City of San José's RWF, which provides wastewater treatment for over one million people in the South Bay

PROJECT FINANCING

San Francisco Bay Restoration Authority	\$4,439,406
Santa Clara Valley Water District	\$15,000,000
U.S. Army Corps of Engineers	\$4,000,000
Additional Funding (to be secured)	\$3,560,594
Project Total	\$27,000,000

The San Francisco Bay Restoration Authority funds will be matched by \$4 million from the Corps and up to \$15 million from the Santa Clara Valley Water District's voter-approved countywide special parcel tax, District Measure B: Safe Clean Water and Natural Flood Protection Program.

The \$27 million above includes project design, engineering, levee construction and a portion of the ecotone construction costs. An estimated additional \$3.56 million will be needed to complete all of the project elements for Phase 1, Reach 1. Possible sources for additional Phase 1 Reach 1 project funding include future appropriations to the Conservancy, subvention funds from the

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California Department of Water Resources, and future San Francisco Bay Restoration Authority applications. In addition, the Shoreline Project team is also actively seeking ways to lower the costs of ecotone construction by coordination with regional dirt brokers or re-designing this feature to reduce the amount of fill.

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

Consistent with Section 66704.5, the SCVWD is a public entity and the project will 1) restore, protect, or enhance tidal wetlands, managed ponds, or natural habitats on the shoreline in the San Francisco Bay area; (2) build or enhance shoreline levees or other flood management features that are part of a project to restore, enhance, or protect tidal wetlands, managed ponds, or natural habitats; and (3) provide or improve public access or recreational amenities that are part of a project to restore, enhance, or protect tidal wetlands, managed ponds, or natural habitats.

Consistent with Section 66704(e) this award would be used to support planning and construction.

CONSISTENCY WITH MEASURE AA PROGRAMS AND ACTIVITIES:

This authorization is consistent with Measure AA's *Vital Fish, Bird and Wildlife Habitat Program* since it will significantly improve or restore over 2,900 acres of wetland habitat that will support and increase vital populations of fish, birds, and other wildlife in and around the Bay, including the San Francisco Bay National Wildlife Refuge.

Consistent with Measure AA's *Integrated Flood Protection Program*, this authorization will use natural habitats to protect communities along the Bay's shoreline from the risks of severe coastal flooding caused by storms and high water levels by constructing ninety-two acres of transitional upland habitat (ecotone) along the Bay's edge while also constructing approximately four miles of levees to protect existing shoreline communities and infrastructure.

Furthermore, this authorization is consistent with Measure AA's *Shoreline Public Access Program* since it will enhance the quality of life of Bay Area residents, including those with disabilities, by constructing 4.6 miles of new trail segments, including sections of Bay Trail, connecting visitor-serving facilities, and providing signs, interpretive information, and related facilities.

CONSISTENCY WITH MEASURE AA PRIORITIZATION CRITERIA:

1. **Greatest positive impact.** The Shoreline Project will accomplish the instrumental first step of providing flood protection to the Alviso area, thus allowing the restoration of former salt evaporation ponds to wetlands and the enhancement of recreational opportunities that provide beneficial use to all Bay Area residents. The proposed restoration is at sufficient scale that some of the ecological structure, function and connectivity that has been lost will be regained. The restored habitat will benefit the recovery of protected wetland species and help restore ecological functions as well as decrease water turbidity, improve water quality and improve the physical health of the overall bay. Providing integrated flood protection results in critical health, safety and environmental benefits to residents and businesses, which

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are served by regional infrastructure, such as the RWF, in the Alviso area and throughout the county,. Furthermore, the Shoreline Project will expand and connect the existing regional trail networks to provide Bay Area residents, students and visitors improved access to outdoor recreation, wildlife, and education at the USFWS Refuge's Environmental Education Center (EEC) and Marina Park.

2. **Greatest long-term impact.** The Shoreline Project addresses the area's flood protection needs for the next fifty-plus years using a natural flood protection approach, allowing long-term restoration of the bay and recreational opportunities during that time and beyond. To address the long-term impacts of sea level rise, the SCVWD is funding construction of approximately three additional feet of levee height in order to ensure that the levee meets the 1%-event throughout the entire fifty-year planning life span of the project. (Although planned with a fifty-year time horizon, the improvements are expected to last considerably longer, closer to one hundred years with the current sea level rise projections. Also, the levee will be constructed to allow for height increases if necessary.) The flood protection improvements are foundational for restoring the bay and will have co-benefits for the bay's health, safety, environment and economy, while the wetland restoration and ecotone will add resiliency to the levee by buffering the engineered levee from coastal storm actions. The Project's ability to aid in the recovery of at-risk special status species, and to improve water quality and the physical health of the Bay, combined with natural forms of flood protection, will improve the longevity and life of the engineered levee and reduce levee maintenance costs that will be funded by future generations. Lessons from the implementation of the Shoreline Project at Alviso will be applied to expand activities to the rest of the south bay shoreline.
3. **Leveraging resources and partnerships.** The SCVWD and Conservancy are the non-federal sponsors of the Project and the Corps is the federal sponsor (Water Resources Development Act (WRDA) of 1986). The Shoreline Project partner agencies are coordinating the cost sharing obligations of design and construction based on Corps requirements. The USFWS is also a co-federal sponsor, but is not a cost-sharing sponsor of the Shoreline Project. USFWS is involved in management and execution as a major landowner.

Local and state funds would not be sufficient to construct a project of this scale alone. Partnering with the Corps allows the Shoreline Project to be eligible for federal funding (Water Infrastructure Improvements for the Nation Act (WIIN), also known as the WRDA of 2016). Once approved in the federal budget process, the Corps can receive its share of the Shoreline Project's construction dollars and begin the construction phase. Receiving Measure AA grant funding will assist in leveraging these federal resources.

4. **Economically disadvantaged communities.** Included in the Shoreline Project area is the community of Alviso, which is identified as an economically disadvantaged community (San Francisco Bay Restoration Authority's Economically Disadvantaged Communities map, August 2017). In addition to providing environmental and recreational enhancements, the Shoreline Project will remove Alviso properties from the FEMA flood plain and relieve Alviso property owners from the costly required annual flood insurance premiums, which are estimated to range from \$1,500 to \$3,000 per year.

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5. **Benefits to economy.** The Shoreline Project will benefit the region's economy by reducing the potential for economic damages caused by a 1-percent coastal flood event and projected sea level rise. Any flood event that would occur today as a result from failure of the existing pond dikes is likely to result in more than \$100 million dollars in structure and content damages to the Alviso community and a 1-percent flood event that occurred today would cause more than \$200 million in residential and commercial structure and content damages. These estimates are projected to increase over the next fifty years as seas rise. Located in the Shoreline Project area, the RWF is a critical \$3 billion facility that treats wastewater for 1.4 million people in Santa Clara County along with high-tech Silicon Valley businesses. If the RWF was flooded and inoperable, it would cause extreme health, safety and environmental impacts throughout the county. Under current conditions, a flood causing inundation of the RWF's underground equipment is estimated to cause more than \$200 million in direct damage (in addition to the damage estimated above). In addition to avoided economic damages, the Project will benefit the region's economy by creating job opportunities during construction, and after with post-construction maintenance and monitoring. Based on October 2015 price levels, the Corps' regional economic impact model estimates that the Project would generate 2,731 direct and indirect jobs with an associated labor income of \$124,334,355.
6. **Engage youth and young adults.** The Shoreline Project will provide enhanced opportunities for public access, environmental education, and recreation associated with the restored habitat and is in an area of vital educational and recreational open space with its proximity to the County Marina Park, Refuge trails and the EEC. The Shoreline Project will improve access to the EEC, which receives approximately 733,000 visitors each year, and the adjacent New Chicago Marsh Trail receives an estimated 8,200 visits each year. The Shoreline Project's recreation features are estimated to increase the annual number of visitors to the Refuge and EEC by 20 percent. Preliminary results from the 2014 trail user survey indicate that the primary user groups for this trail are organized educational groups ranging from elementary through college age (approximately 66 percent). The Project's educational signs and viewing platforms will provide youth and young adults with information regarding the tidal marsh ecosystem, environmental stewardship, and conservation. The Project will also provide connections to the Alviso Marina County Park, which offers educational public boat rides through the Alviso Slough and educational signage depicting the area's history to share how the South San Francisco Bay shoreline has changed over time.
7. **Monitoring, maintenance, and stewardship.** The Project's Monitoring and Adaptive Management Plan, which is integrated with the SBSP Restoration Project's Adaptive Management Plan, will incorporate monitoring, maintenance, and stewardship practices to develop efficient and effective strategies to restore tidal marsh habitat and ecotone to achieve the maximum benefits of the restoration. A crucial element of the Monitoring and Adaptive Management Plan is a feedback loop between information generation (monitoring) and decision-making (adaptive management) while keeping the public informed and involved in the overall process. Since construction will occur in three phases over 14 years, adaptive management and monitoring will be performed at every phase to allow lessons learned from earlier restoration projects to be incorporated as management and monitoring plans are updated and the designs of future actions are developed and implemented. It is critical to

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investigate and address uncertainties during the first restoration phase, since some of the monitoring studies may take decades to generate useful information. During each phase, the Project partners will assess progress toward the Project objectives and decide whether to continue along the trajectory of additional tidal restoration. Following the third and final phase of pond breaching, monitoring and adaptive management will be ongoing to provide additional information for adaptive decision-making by tracking progress toward the project objectives.

8. **Coastal Conservancy's San Francisco Bay Area Conservancy Program.** The Shoreline Project is consistent with the Bay Area Conservancy Program criteria because it (1) follows the recommendations in adopted regional plans (*San Francisco Bay Plan, Baylands Ecosystem Habitat Goals Report* (1999) pp. 97, 126-139, *Baylands Goals Update* (2015) pp. 198, 203, (2) is multijurisdictional (involves multiple agencies) and serves a regional constituency (the restoration component will facilitate nationally and regionally significant wetland restoration efforts and will complete regional trail connections), (3) can be implemented in a timely way, being fully permitted and able to start construction upon full funding, (4) provides opportunities for habitat, flood protection, and public access benefits that could be lost if the project is not quickly implemented, particularly within the context of future sea level rise, and (5) includes matching funds from other sources of funding as described above in the "Project Financing" section.
9. **San Francisco Bay Conservation and Development Commission's Coastal Management Program.** The Shoreline Project will further the resource protection and public access goals of the Bay Plan. On January 18, 2018, the Shoreline Project received a Coastal Zone Management Act consistency determination from the San Francisco Bay Conservation and Development Commission for the Phase 1, Reach 1 levee and ecotone construction and for stock piling of dirt in the ecotone area during construction. Additional consistency determinations will be required by BCDC for subsequent phases of the project.
10. **San Francisco Bay Joint Venture's Implementation Strategy.** The Project is consistent with the San Francisco's Bay Joint Venture Implementation Strategy and has been included in the San Francisco Bay Joint Venture's June 2017 Priority Projects List.

COMPLIANCE WITH CEQA: In order to comply with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), U.S. Army Corps of Engineers (Corps), U.S. Fish and Wildlife Service (USFWS), Santa Clara Valley Water District (SCVWD), and the State Coastal Conservancy (Conservancy) prepared the *Final Integrated Interim Feasibility Study and Environmental Impact Statement/Environmental Impact Report* (Integrated Document) to evaluate the potential environmental impacts of the Shoreline Project (attached as Exhibit 3).

Chapter 4 of the Integrated Document is the CEQA/NEPA project-level environmental impact assessment. The remaining chapters serve as the Corps' planning document and contain additional analysis (e.g. economic, geotechnical) required by the federal feasibility planning process. The SCVWD was the CEQA lead agency and certified the document, adopted an Errata that corrected minor errors on the Summary of Project Impacts Table, and adopted the

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Mitigation, Monitoring and Reporting Plan at its March 22, 2016 public meeting (Exhibit 8). The SCVWD filed a Notice of Determination on March 30, 2016.

Shoreline Project Alternatives Analysis

In order to create a reasonable range of alternatives as required under CEQA and NEPA, five alternatives were considered including a no action alternative (Alternative 1). Each action alternative consists of a flood protection measure, environmental restoration or enhancement elements, and changes or improvements to recreation. Alternative 3 was selected as the preferred alternative and approved by the SCVWD on March 22, 2016.

Flood Protection Measures

The Integrated Document includes an analysis of various flood protection measures. All the action alternatives propose construction of an engineered levee although the project team did evaluate alternatives to levee construction early in the process. The project team analyzed a scenario which involved moving residences out of Alviso and building an engineered levee around the RWF. This option was determined to be much more expensive than constructing an engineered levee along the salt pond berms and therefore would not be eligible for a Corps cost-shared project. In addition, it would profoundly affect the residents of Alviso. The project team also considered constructing tide gates at the end of the slough and building up the outboard berm system. This scenario, however, would not allow tidal restoration of the ponds and therefore would not be consistent with the goals of the SBSP Restoration Project and other regional wetland restoration plans. In order to allow tidal restoration and provide flood protection sufficient to meet the project goals (protection against the one-percent annual chance of exceedance tidal event along with sea level rise), the project team determined that engineered levees would be the most effective option for flood protection.

Earlier in the planning process, alternative alignments for Pond A18 were examined but were determined to be infeasible. Moving the levee alignment into Pond A18 would have had unacceptable environmental impacts, while moving the alignment onto RWF lands was not consistent with the City of San José's plans or would have interfered with RWF operations. As a result, all action alternatives featured the same levee alignment in Pond A18.

On the USFWS' Refuge property, several alternative alignments were considered for the levee. Alternatives 2 and 3 both run along the existing berm on the eastern side of A12 and the southern side of Ponds A13 and A16. The difference between the two alternatives is levee height. Alternative 2 proposes a levee height of 12.5 feet since the Corps economic analysis determined this to be the optimal levee height in terms of cost-sharing even though at 12.5 feet, the flood protection level would decrease with time due to sea level rise. However, a 15.2-foot high levee, proposed in Alternative 3, would maintain the level of flood protection during the entire fifty-year life of the project. Alternative 4 follows an old railroad spur alignment through the middle of New Chicago Marsh and Alternative 5 would run south of New Chicago Marsh, immediately adjacent to the community of Alviso.

At the Union Pacific railroad line and Artesian Slough, the project team considered extending the levees inland parallel with the railroad line or slough to high ground in order to close the flood protection gap. However, since this action would generate larger amounts of wetland fill and greatly increase the project costs, this option was not pursued for further analysis as one of the

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alternatives. Instead, all action alternatives propose to construct a flood gate at the rail line that would be closed during flood events and a water control structure across Artesian Slough that would allow uninterrupted tidal flows and RWF discharges but could be closed during high water events.

Environmental Restoration

All action alternatives proposed tidal restoration for Ponds A9-A15 and A18. The Shoreline Study team sought to make it consistent with the programmatic planning of the SBSP Restoration Project. The preferred alternative in the SBSP Restoration Project's long term plan, *2007 South Bay Salt Pond (SBSP) Restoration Project Programmatic Environmental Impact Statement/Environmental Impact Report (2007 EIS/R)*, was Programmatic Alternative C, the Tidal Emphasis Alternative, which would eventually convert 90 percent of the former salt ponds to tidal marsh, while 10 percent would remain as enhanced managed ponds. However, by implementing the SBSP Restoration Project in phases, through an adaptive management process, the project team for the SBSP Restoration Project would retain the option of stopping tidal marsh restoration prior to restoring 90 percent of total acreage as tidal marsh if, for example, monitoring shows that pond-dependent species appear to be adversely affected by the losses of pond habitats. This means that the adaptive management feedback will guide the SBSP Restoration Project and the end result may be somewhere between Programmatic Alternative B (50% tidal restoration) and Programmatic Alternative C (90% tidal restoration).

Although the Shoreline Study covers a subset of the SBSP Restoration Project area, the Shoreline Study project team adopted the same restoration approach: all of ponds in the project area are to be restored to tidal wetlands but it will be accomplished through an adaptive management framework. The ponds will be broken up into smaller subsets and tidal restoration will be phased in over a fifteen-year period. In between breaches, the restored area will be monitored in a manner integrated with the SBSP Restoration Project's monitoring and adaptive management processes. This will allow the project teams for both the Shoreline Project and the SBSP Restoration Project to jointly assess the changes to the larger South Bay landscape and to slow down, or even halt, pond conversion on either project if negative or undesired impacts emerge.

The other environmentally beneficial element proposed as part of the Shoreline Project is the creation of upland transition zone habitat (also referred to as ecotone). Currently in San Francisco Bay, wetland-upland transition zones have largely disappeared from marshes. These features mimic the natural landform that once existed around the perimeter of San Francisco Bay and provide the functions of a distinct habitat that is now largely absent along southern San Francisco Bay. These habitat areas serve as high-tide refugia for State- and Federally-listed threatened and endangered species, such as Ridgway's rail, black rail, and salt marsh harvest mouse and also provide habitat for a unique suite of plant species. Adding this feature on the bay side of the levees would benefit the recovery of protected wetland species and help restore ecological functions. Alternatives 2, 4, and 5 analyzed the creation of a small ecotone area (called a "bench") constructed on the bay side of the proposed flood protection levee along Ponds A12, A13, and A18. Alternative 3 analyzed a larger ecotone in the same location with a 30:1 slope. The larger ecotone would result in more fill impacts but was seen as more beneficial since it would buffer the adjacent flood protection levee, provide more transitional habitat, and would allow inland migration of the restored marshes in response to sea level change.

Recreation Elements

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All action alternatives include a maintenance road along the crest of the new levee, which will be made available for pedestrian traffic under the management of the USFWS Refuge (for segments on Refuge property) or a local entity (for Pond A18). At Artesian Slough, a pedestrian crossing was proposed over the tide gate structure to connect all levee segments. At the eastern terminus of the levee, the trail would connect to a designated route generally following existing roads and berms and connect with the existing bridge at McCarthy Boulevard. The existing pedestrian walkway on the bridge would take recreationists to the Coyote Creek Trail (which is also the Bay Trail in this area) that runs along the east bank of the creek.

To cross the active railroad, a 380-foot-long pedestrian bridge was proposed with Americans with Disabilities Act-compliant approaches on either side. The location of the railroad bridge varies by alternative. For Alternatives 2 and 3, the bridge would be near the northeast corner of Pond A12 and southwest corner of Pond A16. For Alternative 4, the railroad bridge would be where the Alviso levee segment turns east from Pond A12 to connect in to the idle railroad alignment. For Alternative 5, the railroad bridge would be near the Alviso Marina.

The tidal wetland restoration proposed by the project would impact the nine-mile loop trail around Ponds A9-A15. As the ponds are breached, the trail will move closer to the levee, with the final alignment being an out-and-back trail with spurs to overlook platforms. Maintaining the Alviso Slough Trail in its current configuration would require maintaining the existing salt pond berms in place and bridging all proposed breaches. While technically feasible, surrounding the marsh with trails would have substantial impacts to sensitive tidal marsh species. Furthermore, maintaining the existing berms for trails would preclude their use as borrow sites and would not allow the project to create high-tide islands or pickleweed marsh on the former berms, an action that would enhance wildlife habitat. For these reasons, bridging the breaches was not retained for further analysis in the alternatives and the project proposes that, for the most part, the trails that would be retained would be concentrated on one side of the Alviso Loop Trail to minimize the adverse impacts of human/wildlife interactions. Changes to the Alviso Loop Trail configuration would ensure compatibility with wildlife and habitat created as a result of restoration while maintaining public access to the shoreline.

Overall, berm breaches for ecosystem restoration would result in a reduction of about 7.4 miles of trails; however, with the addition of trail along Pond A18 (additional 3.3 miles) and a proposed trail parallel with State Route 237 (1.6 miles), the net loss would be about 2.2 miles. The new trail just north of State Route 237 would create a paved multi-use trail that provides connection at a current gap in the multi-use network between its current terminus at Zanker Road to the community of Alviso. In addition, the new trails would connect to the regional trail network and link the visitor serving facilities in the region. Finally, viewing platforms, interpretive signs, and benches would be installed along existing and new trails in the study area.

CEQA Process

The Corps and the USFWS were joint NEPA leads and the SCVWD was the CEQA lead. All agencies have complied with CEQA and NEPA noticing requirements. Notice of Intent/Notice of Preparation (NOI/NOP) was released on January 6, 2006. The Draft Integrated Document was released for review on December 18, 2014 with a public meeting held in Alviso on January 14, 2015. The comment period on the Draft Integrated Document was extended beyond the minimum 45-day period to February 23, 2015. Forty letters from individuals and organizations were received on the Draft Integrated Document including 17 from federal, state, and local agencies; 2 from for profit businesses (Cargill and PG&E); 12 from non-governmental

organizations; and 9 from individuals. All comments were considered and evaluated. Written responses to all comments on the Draft Integrated Document are included in Appendix I of the Integrated Document.

Significant Effects Reduced to Less Than Significant Levels by Mitigation

Exhibit 8 contains a California Environmental Quality Act Summary prepared for the SCVWD (Attachment 1 of Exhibit 8). The Summary includes Table C.3-1, Summary of Project Impacts, which lists the project's potential impacts, avoidance and minimization measures that would be incorporated into the project, and the mitigation measures necessary to avoid or minimize significant impacts. After the Corps released the final version of the Integrated Document in December 2015, the SCVWD noticed some errors in the CEQA Summary, namely a few entries in Table C.3-1 do not accurately reflect the information provided in the environmental analysis sections of the Integrated Document. The SCVWD prepared an Errata, (Attachment 2 of Exhibit 8) which the SCVWD Board adopted with the CEQA findings on March 22, 2016.

Many of the identified potential impacts are reduced to a less than significant level with the incorporation of avoidance and minimization measures. However, some impacts, mostly short term impacts from construction, in the areas of Hydrology, Water Quality, Biological Resources, Hazards and Hazardous Materials, Air Quality, Noise, and Cultural Resources require mitigation to avoid, minimize, or mitigate these impacts to a less than significant level. Mitigation measures include actions or requirements to protect the Bay's water quality, prevent scouring of infrastructure near or in project area, protect or enhance habitat for affected species, minimize emissions and noise, and document potential cultural resources. Additional description of mitigation measures is provided in pp. 7-32 of Attachment 3 of Exhibit 8.

Significant Impacts

The Integrated Document found three impacts that cannot be reduced to less-than-significant for Alternative 3, which was selected as the preferred alternative. There are additional impacts for alternatives that are not part of the recommended project but this discussion will summarize only those impacts for Alternative 3.

Violate air quality standards for nitrogen oxides and reactive organic gases

The air quality analysis presents the most conservative case, which assumes that the levee and ecotone would be constructed simultaneously in a four-year timeframe. Other ecosystem-restoration activities were determined to be similar to regular, ongoing maintenance in the study area and would not result in emissions above those already occurring.

The air quality analysis determined that emissions of nitrogen oxides (NO_x) and reactive organic gas (ROG), precursors to ozone, during construction would exceed significance thresholds established by the Bay Area Air Quality Management District (BAAQMD). The Bay Area air basin is already in non-attainment of the National Ambient Air Quality Standards for ozone, so exceeding thresholds would contribute substantially to an existing air quality violation.

Implementation of Mitigation Measures N-AIR-1a and M-AIR-1b would require contractors to achieve a fleet-wide reduction of NO_x by 20% and of particulate matter by 45% and to use equipment with the Best Available Control Technology. However, these measures will not be sufficient to reduce project emissions to below the BAAQMD significance thresholds. No feasible measures are available to further reduce this impact.

Cumulative loss of pond habitat used by pond-specialist bird species

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Once the project is fully implemented it will result in the loss of a substantial amount of human-created managed pond habitat that is used by managed pond-specialist waterbirds for foraging and roosting. The intent of the adaptive management plans for both the Shoreline Project and the SBSP Restoration Project is to avoid significant impacts to pond-specialists by detecting such impacts in sufficient time to address them or stop conversion of ponds to tidal wetlands.

Furthermore, in the case of the SBSP Restoration Project, while the amount of pond habitat will be reduced, the remaining ponds will be enhanced for pond-specialist species, maintaining their populations throughout the South Bay. The magnitude of effects would depend on the long-term success of the SBSP Restoration Project, the Shoreline Project and other restoration projects in the region, population trends, and adaptability of the pond-specialist species. Due to the scale of the Shoreline Project relative to other projects, the incremental impact of the Shoreline Project would be cumulatively significant. No feasible measures are available to reduce this impact.

Cumulative temporary increase in noise levels

The cumulative noise impacts experienced by people in the town could be significant because of the proximity of residents to area roads, the airport, the Union Pacific Railroad track, and the RWF, particularly if Shoreline Project construction activity is concurrent with construction activity at the RWF. Mitigation Measure M-NOI-1 would require the contractor to manage equipment noise and reduce work hours pursuant to a City conditional-use permit in order to reduce the incremental contribution of the project to overall noise in the area. However, given all the potential concurrent noise sources, the cumulative impact would remain significant. No feasible measures are available to further reduce this impact.

Project Benefits

The benefits of the Shoreline Project include:

- Providing tidal flood protection to a population of approximately 6,000 residents and workers in the area and to 1,140 structures as well as to key infrastructure such as the RWF.
- Creating approximately 2,900 acres of tidal marsh and ecotone habitat which will benefit State- and Federally-listed threatened and endangered species such as salt marsh harvest mouse, Ridgeway's rail, steelhead trout, and other marsh species.
- Restoring marsh at sufficient scale to restore ecological structure, function, and connectivity.
- Enhancing Bay Trail connections and creating new trails to improve access to visitor serving facilities in the area and providing safe pedestrian/bicycle crossing over an active railroad.
- Scouring local sloughs which have been filled with sediment due to decreased tidal prism and increasing their navigability.
- Improved water quality from increased circulation of tidal waters.

Statement of Overriding Considerations

In the event a project has unavoidable significant effects, the CEQA Guidelines require the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental risks when determining whether to approve the project (14 Cal. Code of Regulations, Section 15093). If the

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specific project benefits outweigh the unavoidable adverse environmental effects of the project, a Statement of Overriding Considerations may be adopted and the project approved, despite its adverse environmental effects.

The overall environmental benefits of the proposed project as detailed above and in the Integrated Document recommend that the San Francisco Bay Restoration Authority approve the project even though not all of the potentially significant environmental effects of the project are mitigated. As discussed above, the potentially significant impacts to air quality and noise are mitigated to the maximum feasible extent and are limited to the construction period of the project only. In terms of impacts due to conversion of former salt ponds to tidal wetlands, the project has an adaptive management plan that has been integrated with the SBSP Restoration Project and will seek to monitor and avoid impacts to pond specialist birds. This is seen as a cumulative impact because there is still risk associated with landscape-scale restoration projects and wildlife responses in a changing environment.

For these reasons, the San Francisco Bay Restoration Authority staff recommends that the Authority find that the specific environmental, resource, flood protection and public access benefits of Alternative 3 proposed in the Integrated Document, as described in the Project Benefits section above, outweigh the unmitigated or unavoidable environmental effects of the project, thereby warranting its approval.

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