

COASTAL CONSERVANCY

Staff Recommendation
February 15, 2024

TIJUANA ESTUARY TIDAL RESTORATION PROGRAM II – PHASE 1 IMPLEMENTATION

Project No. 00-099-04
Project Manager: Sam Jenniches

RECOMMENDED ACTION: Authorization to disburse up to \$30,000,000 to the Southwest Wetlands Interpretive Association to implement the Tijuana Estuary Tidal Restoration Program II, Phase I, consisting of restoring 85 acres of wetlands and associated habitats and enhancing public access at the Tijuana River estuary in San Diego County.

LOCATION: Tijuana River Estuary, Cities of Imperial Beach and San Diego, San Diego County

EXHIBITS

- Exhibit 1: [Project Location Map](#)
- Exhibit 2: [Map of Preferred Restoration Alternative](#)
- Exhibit 3: [June 1, 2023, Staff Recommendation](#)
- Exhibit 4: [Project Letters](#)

RESOLUTION AND FINDINGS

Staff recommends that the State Coastal Conservancy adopt the following resolution and findings.

Resolution:

The State Coastal Conservancy hereby authorizes a grant of an amount not to exceed thirty million dollars (\$30,000,000) to the Southwest Wetlands Interpretive Association (“the grantee”) to implement the Tijuana Estuary Tidal Restoration Program II, Phase I, consisting of restoring 85 acres of wetlands and associated habitats and enhancing public access at the Tijuana River estuary in San Diego County.

Prior to commencement of the project, the grantee shall submit for the review and written approval of the Executive Officer of the Conservancy (Executive Officer) 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 Conservancy funding.
4. Evidence that all permits and approvals required to implement the project have been obtained.
5. Evidence that the grantee has entered into agreements sufficient to enable the grantee to implement, operate, and maintain the project.

Findings:

Based on the accompanying staff recommendation and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed authorization is consistent with Chapter 6 of Division 21 of the Public Resources Code, regarding enhancement of coastal resources.
2. The proposed project is consistent with the current Conservancy Project Selection Criteria.
3. The Southwest Wetlands Interpretive Association is a nonprofit organization organized under section 501(c)(3) of the U.S. Internal Revenue Code.

STAFF RECOMMENDATION

PROJECT SUMMARY:

Staff recommends the Conservancy authorize a \$30,000,000 grant to the Southwest Wetlands Interpretive Association (SWIA) to implement the Tijuana Estuary Tidal Restoration Program II, Phase I, consisting of restoring 85 acres of wetlands and associated habitats and enhancing public access at the Tijuana River estuary in San Diego County (see Exhibit 1, Project Location Map.) The term “project” in this staff recommendation refers to Phase I of the Tijuana Estuary Tidal Restoration Program (TETRP) II.

The Tijuana Estuary is one of the last relatively intact estuarine ecosystems in southern California. However, the estuary has been subjected to continued degradation over time. Activities affecting the estuary include river channel modification, damming, cross-border sewage flows from Mexico, unseasonal freshwater flows, and excessive sediment deposition. It has been estimated that as much as 60-80% of wetland habitats and tidal prism at Tijuana Estuary have been lost since the mid-1800s in part due to this excessive sedimentation. Cross-border flows of pollutants from Mexico contribute to the frequent closure of southern San Diego County beaches, compromising access to the area’s beautiful beaches and waterfronts, and impacting tourism and access of residents to local open space and recreation. Additionally, those conditions impact Naval operations and training at Naval Base Coronado and impact staff and officers of the Department of Homeland Security’s San Diego Section in their border operations.

Despite these serious anthropogenic stressors, Tijuana Estuary remains one of the most functional wetland systems in southern California. The majority of the estuary is natural open space where the river mouth remains unconstrained from hardscape or infrastructure, unlike many coastal wetlands located in the region. The Tijuana Estuary Visitor Center is located at the

northern end of the Tijuana River National Estuarine Research Reserve (TRNERR). The California Department of Parks and Recreation (DPR) manages Border Field State Park, while the U.S. Fish and Wildlife Service (USFWS) manages the Tijuana Slough National Wildlife Refuge (Refuge) that make up TRNERR. A series of trail networks extend throughout the Refuge and Border Field State Park for pedestrian, bike, and equestrian users. Restrooms, picnic areas, and interpretive displays are provided in the southernmost portion of Border Field State Park. Visitors can enjoy bird watching, hiking, and horseback riding at the southwest corner of the continental United States. The County of San Diego has constructed a campground in the river valley to provide additional recreational opportunities.

TETRP is a large restoration project led by TRNERR staff designed to reverse degradation and preserve the remaining resources at the Tijuana Estuary (Exhibit 1). The TETRP has multiple phases. To date, two projects identified in TETRP have been completed (the Model Marsh and the Tidal Linkage). These are considered TETRP I. TETRP II is an expected multi-phase restoration of 250-300 acres of current and former tidal wetlands (Exhibit 2). This project, which is the first phase of TETRP II, is an approximately 85-acre restoration project that is designed to increase the tidal prism of the estuary and restore hydrological functions and habitats that have been lost. The loss of tidal prism has resulted from excessive sediment deposition over the last 40+ years due to cross-border flows of sediments. The project site is likely buried by at least 1-2 feet of sediment with some areas experiencing significantly more sedimentation. The loss of tidal exchange has led to decreased habitat and habitat quality as well as reduced estuary function. Restoring the tidal prism will help maintain natural river mouth conditions and will restore tidally-influenced habitat for the benefit of fish and wildlife, including listed and sensitive species. To date, a Feasibility and Design Study for TETRP II was completed in 2008 (see Exhibit 3), the environmental review (EIR/EIS) of the project was completed in March of 2023 (see Exhibit 3), and final design and permit acquisition is currently underway.

The recommended grant will implement Phase I of TETRP II. The project consists of:

- 1) Improve tidal prism and restore 85 acres of tidal wetlands by converting degraded upland to intertidal wetlands and tidal channels. The improved tidal circulation and restoration of 85 acres of coastal habitat at the Tijuana Estuary will increase resilience and enhance the capacity of the system to adapt to changing sea-levels and watershed inputs. Increased tidal exchange at the river mouth will decrease risk of closure in this predominantly-open system, which will help prevent habitat type conversion and decrease flood risk in the ecosystem and surrounding communities. Other ecosystem services associated with wetlands, such as provision of habitat for endangered species and water quality improvements will be enhanced. Restoration of tidal prism and wetland habitats will be accomplished in part by removing approximately 500,000 cubic yards of deposited sediments.
- 2) Enhancement of the beach / dune system adjacent to the marsh. This will be accomplished by placing appropriate excavated material on the beach and, by building upon recent pilot projects, facilitating natural dune-building processes. This will increase habitat quality and functioning in one of the last contiguous dune / wetland systems in Southern California. This living shoreline will also help protect the wetland and infrastructure (trails and public access)

from dune overtopping during storms and extreme high tides. Additional excavated sediments not placed on the beach will be placed in the former Nelson Sloan quarry at the eastern end of the Tijuana River Valley to restore its topography and habitats.

3) Enhance the visitor experience and involve the public. This aspect of the project will include improving public access features and installing interpretation opportunities, such as upgrading an existing trail to the beach from more inland areas, including the new County of San Diego campground in Tijuana River Valley Regional Park. The interpretive opportunities include viewing platforms and interpretive signage, as informed by continued, meaningful, community engagement. A significant component of the final design, implementation, and monitoring of the project will be an effort to include community members from nearby neighborhoods, systemically-excluded communities throughout the region who would benefit from better access to the TRNERR, and tribes whose ancestral homeland includes the project area. Throughout the final design and engineering that TRNERR staff are conducting as a separate planning project, TRNERR staff will be working with community members and tribes to co-develop opportunities for co-design of the project and engagement opportunities. The TRNEER currently has a robust program with students at various local K-12 schools, community colleges, and universities, and they will continue to grow that program through the implementation of the project. Potential community inclusion opportunities include working groups of community members and tribes who will provide feedback directly to TRNERR staff and consultants on project design elements, site visits with TRNERR staff to see and discuss the project elements, and opportunities for employment in certain phases of the project such as revegetation and monitoring. Community and tribal members will be compensated for their participation in the project. These engagement and inclusion opportunities for this project will be developed and refined as part of the final planning for the project, which is being conducted by TRNERR staff as a separate planning project. It will also include opportunities for building authentic relationships with tribal communities that go beyond the formal consultation processes and ensure inclusion of indigenous voices, leadership, and perspectives. The project will improve public access and interpretation opportunities associated with wetland ecology and management. Just as ecosystem services associated with wetlands will be enhanced by TETRP, this restoration will also provide an unprecedented opportunity to characterize, measure, and promote cultural ecosystem services in a trinational watershed, which includes the United States, Mexico, and the Kumeyaay Nation, including recreational, aesthetic, and spiritual services. These non-material benefits can play a role in restoring a sense of place and connection, addressing historic and structural inequities, and preserving legacies and cultural heritage.

4) Monitor and evaluate TETRP, using the restoration as an opportunity to learn lessons in both the biophysical and social science of restoration and wetlands management. TRNERR staff are currently working on a separate planning project, which includes final design and permit acquisition for this project, and will develop a monitoring report and a plan for implementation monitoring for this project. Implementation and post-implementation monitoring for this project will include both biophysical and social assessments of function and/or impact. This will be accomplished by leveraging TRNERR resources, including scientific, technical, and relational expertise. This project will continue to serve as a “living laboratory” that engages academic and

community science, including opportunities for internships, student projects, and public engagement in tracking restoration progress.

Site Description:

The Tijuana Estuary is located in the southwestern corner of California. It is the terminus of the Tijuana River and exists within the trinational border area of the United States, Mexico and the Kumeyaay people. It is the site of the Tijuana River National Estuarine Research Reserve (TRNERR), a partnership of the National Ocean and Atmospheric Administration (NOAA) and the State of California, established under the auspices of the federal Coastal Zone Management Act. TRNERR is operated by staff from DPR, USFWS, and SWIA. In addition, several regional agencies and local municipalities share ownership and management responsibilities at TRNERR, and many sit on the TRNERR Advisory Council. The project is located on state and federal land under the jurisdiction of DPR and the USFWS.

TRNERR encompasses beach, dune, mudflat, salt marsh, riparian, coastal sage scrub, and upland habitats surrounded by the growing cities of Tijuana, Imperial Beach, and San Diego. Critical issues confronted by TRNERR include habitat conservation and restoration, endangered species management, management of the wastewater from Mexico, solid waste, sediment management, and the integration of recreation.

Grant Applicant Qualifications:

SWIA works in collaborative partnerships with federal, state, county, and local agencies, and holds a cooperative agreement with DPR. Since 1979, SWIA has successfully managed more than \$45 million in wetland projects and programs, in and around the Tijuana River Valley and South San Diego Bay. SWIA and its contractors have completed the following related projects at the Tijuana River Estuary:

- Construction of the TETRP 20-acre **Model Marsh - \$3.08M** (2000)
- Completion of the feasibility and design study for the remaining 250 acres of the **TETRP II – \$1.2M** (2008)
- Completion of **Tijuana Estuary Sediment Fate & Transport Study – \$1.62M** (2010)
- Completion of 30% design and engineering and EIR/EIS for **TETRP II Phase I – \$1.24M** (2023)

CONSISTENCY WITH CONSERVANCY’S PROJECT SELECTION CRITERIA:

The proposed project is consistent with the Conservancy’s Project Selection Criteria, last updated on September 23, 2021, in the following respects:

Selection Criteria

- 1. Extent to which the project helps the Conservancy accomplish the objectives in the Strategic Plan.**

See the “Consistency with Conservancy’s Strategic Plan” section below.

2. Project is a good investment of state resources.

The project will increase tidal prism, which is critical to maintenance of river mouth conditions, and the restoration of approximately 85 acres of tidally influenced habitat for the benefit of fish and wildlife. The project will restore:

- Tidal salt marsh, including cordgrass, pickleweed, and associated native plants. The endangered light-footed Ridgway's rail and Belding's Savannah sparrow are dependent on this habitat for survival.
- Intertidal flat, which supports a wide variety of birds migrating along the Pacific Flyway.
- Tidal channels, which support a variety of fish and invertebrates, including leopard sharks, juvenile California halibut, and littleneck clams.

The project will facilitate dune-building by placement of material on the shore, supporting the endangered California least tern and threatened western snowy plover, and will promote resilience of the intertidal system to sea level rise and large storm events.

3. Project includes a serious effort to engage tribes. Examples of tribal engagement include good faith, documented efforts to work with tribes traditionally and culturally affiliated to the project area.

On September 7, 2021, DPR, as a landowner of the project area, sent an outreach letter to the list of 20 Native American Tribal representatives identified by the Native American Heritage Commission (comprising 13 Tribes) and followed up with both emails and phone calls. Of the 13 Tribes on the consultation list, DPR received five responses and, of these, Jamul Indian Village (Jamul) and the San Pasqual Band of Diegueño Mission Indians (San Pasqual) requested formal consultation with DPR during the preparation of the Draft EIR. In addition, the Viejas Band of Kumeyaay Indians also requested to be informed of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains. A consultation meeting was held with Jamul on September 29, 2021, with representatives from SWIA, USFWS, and DPR present. A consultation meeting with San Pasqual was held on November 19, 2021 with the same agencies present. A summary of TETRP II Phase I and the environmental setting was summarized and discussed at both consultations, and both natural and cultural concerns were discussed and noted.

SWIA and project partners have expanded tribal engagement efforts as part of the final design and permit acquisition phase of the project. These efforts seek to provide opportunities for governments and members of Tribal Nations who include Tijuana Estuary in their ancestral homelands to participate in the project. This process may include creation of a Tribal advisory committee or inclusion of Tribal representation in existing committees. The type of participation will be determined by the Tribes but could include providing recommendations on design elements, communications, cultural monitoring, and planting palettes.

4. Project benefits will be sustainable or resilient over the project lifespan.

The TETRP II Phase I restoration design included an in-depth consideration of resilience, especially as related to potential climate change impacts for the estuary and its restoration. Pertinent work included consideration of long-term change in the Tijuana River Valley as informed by the Tijuana River Valley Historical Ecology Investigation (2017), interpretation of

both sea level rise and marsh response modeling results, expert elicitation, and scenario planning.

Grading of the project site in locations where sedimentation has buried marsh habitats to create slopes with a gradual habitat gradient will create opportunities both for near-term wetland function as well as future wetland function since enhancement will allow for upslope migration of salt marsh in response to sea level rise. With the anticipated preferred design, the proposed project aims to create a more resilient ecosystem that can better accommodate future climate change scenarios, including sea level rise. In addition, specific soil management options provide soft, natural solutions through beach nourishment consistent with sea level rise guidance by including soft solutions as a component to shoreline protection.

The sea-level rise planning for this project, and management needs of the Tijuana Estuary more generally, is provided by the Climate Understanding and Resilience in the River Valley project (CURRV, 2017), which suggests that elevated sea levels coupled with changing wave climates can increase the frequency and/or duration of mouth closure events at the estuary, thus decreasing the resilience of the system and dramatically compromising ecosystem integrity and health. TETRP directly addresses this by increasing tidal prism, a long-standing project goal aimed at helping to maintain tidal circulation. In addition, elevation increases due to sedimentation within the estuary have been so extensive that it would take decades for sea level rise to recover lost habitats in the project footprint. The proposed project restores these lost habitats in the short term to the benefit of multiple species. Input of sediments is expected to continue such that sea level rise is less likely to impact the project as designed.

The sea-level rise information provided through the CURRV project was supported by TETRP-specific modelling conducted by the United States Geological Survey as part of the Conservancy-led Marshes on the Margins project (2020). Sea level rise modeling analysis associated with the scenario development of CURRV suggested that the greatest potential impact of sea level rise might be increased frequency and/or duration of river mouth closure events, which would decrease the resilience of the system and result in compromised ecosystem function including more frequent mass mortality events. A large amount of scientific information about the project site was used to design the project to be resilient to rising sea-levels, changing watershed hydrology, and other environmental changes over time.

5. Project delivers multiple benefits and significant positive impact.

In addition to the benefits outlined in the “2. Project is a good investment of state resources” section above, the project is part of a suite of projects that are intended to improve water quality at the California-Mexico Border. Deteriorated water quality represents a substantial problem for the Tijuana Estuary, particularly within the river channel and along the beach, and has caused increasingly frequent closures for public health and safety. Sewage flows from Mexico provide the main pollution source. Construction of the South Bay International Wastewater Treatment Plant in the late 1990s has helped to alleviate some of the effluent discharge into the United States. However, during rain events or infrastructure failures, the capacity of the plant is exceeded, and sewage (raw and partially treated) flows through the river and into the Tijuana River Valley. Tijuana Estuary is listed as a Clean Water Act 303 (d) waterbody impaired by parameters including indicator bacteria, lead, low dissolved oxygen,

eutrophic, nickel, pesticides, thallium, toxicity, trash, and turbidity. The proposed project will improve the water quality of the estuary and surrounding beaches by improving tidal circulation. The improved hydrological function of the estuary will result in an increase of appropriate wetland habitat, improving the baseline estuarine function of the project site. The improved baseline function of the estuary will result in improvements to water quality due to the ecosystem processes of coastal estuaries.

6. Project planned with meaningful community engagement and broad community support.

TETRP was introduced over 30 years ago and has received broad support throughout numerous sectors of the community. In addition to public meetings associated with environmental review, TETRP has been presented at multiple public meetings of the Tijuana River Valley Recovery Team and the TRNERR Advisory Council. The project team has engaged local citizens concerned about water quality and access issues, as well as the Tijuana River Valley Equestrian Association. This engagement has led to refinement of the design alternatives.

PROJECT FINANCING

Coastal Conservancy	\$30,000,000
Additional Anticipated Grant Funding	\$40,000,000
Project Total	\$70,000,000

Conservancy funding is anticipated to come from a Fiscal Year 2023/24 appropriation from the General Fund to the Conservancy to address "urgent sea-level rise adaptation and coastal resilience needs using nature-based solutions or other strategies" (The Budget Act of 2023, Chapter 38, Statutes of 2023 (AB 102)). The project is consistent with this funding source as it will increase the sea level rise resilience of a coastal estuary by using nature-based solutions at the Tijuana Estuary. The project will implement a habitat restoration project that will increase resiliency and potentially decrease coastal flooding. The project area is an area of geographic vulnerability because altered sediment regimes due to anthropogenic activities have reduced tidal prism, smothered habitat, and reduced estuary function. This jeopardizes multiple species, including federal and state listed species, and can contribute to coastal flooding in some scenarios. The project area is considered a disadvantaged community according to the State Water Resources Control Board's mapping. There are opportunities for federal financial support for this project, as described below.

Conservancy staff have been invited to submit a full proposal to NOAA's Climate Resilience Regional Challenge grant program in the amount of \$75 million. If successful, the NOAA grant will provide \$40 million to the TETRP II project and with this proposed authorization, would provide full funding for the project. This proposed funding is identified as match funding in that application. Staff anticipates hearing back on the NOAA grant in spring 2024. If the NOAA grant is not awarded, SWIA will continue to seek funding from other state and federal sources for the project.

Unless specifically identified as "Required Match," the other sources of funding and in-kind contributions described above are estimates. The Conservancy does not typically require

matching funds or in-kind services, nor does it require documentation of expenditures from other funders or of in-kind services. Typical grant conditions require grantees to provide any funds needed to complete a project.

The “Project Total” is subject to refinement resulting from the ongoing design and permitting activities which will culminate in an engineer’s estimate for the final design. \$70 million is believed to be the upper limit of the potential implementation cost.

CONSISTENCY WITH CONSERVANCY’S ENABLING LEGISLATION:

The proposed project is undertaken pursuant to Chapter 6 of Division 21 of the Public Resources Code, as follows:

Pursuant to section 31251, the Conservancy may award grants to local public agencies and nonprofit organizations for the purpose of enhancement of coastal resources which, because of human-induced events, or incompatible land uses, have suffered loss of natural and scenic values. Consistent with this section, the proposed authorization provides funds to SWIA to implement a tidal prism and habitat restoration project that will enhance coastal resources disturbed by incompatible land uses, such as adjacent inappropriate development that has adversely impacted the tidal prism in the Tijuana Estuary.

As required by section 31252, the proposed project is consistent with the General Plans of the City of Imperial Beach and the City of San Diego as described below.

Consistent with Goal 2 of the Conservation and Open Space Element of the City of Imperial Beach General Plan, the proposed project will conserve and protect natural resources that are a key foundation of the city by restoring wetlands and associated habitat in the Tijuana River Estuary.

Consistent with Policy CE-E.7 of the Conservation Element of the City of San Diego General Plan, the proposed project will manage floodplains to address their multi-purpose use, including natural drainage and habitat preservation, by restoring wetlands and associated habitat in the Tijuana River Estuary.

CONSISTENCY WITH CONSERVANCY’S [2023-2027 STRATEGIC PLAN](#):

Consistent with **Goal 1.1, Commit Funding to Benefit Systemically Excluded Communities**, the recommended grant will implement a project that includes engagement with people from systemically excluded communities and improves climate resilience of the community.

Consistent with **Goal 3.2.2, Restore or Enhance Habitats**, the recommended grant will restore 85 acres of wetland habit to improve resilience to future sea-level rise and climate change.

Consistent with **Goal 4.1.2, Sea Level Rise Adaptation Projects**, the recommended grant will implement one project for the restoration of wetland habit to improve resilience to future sea-level rise using natural processes to enhance sediment management and habitat creation.

Consistent with **Goal 4.3.2, Multi-Benefit Nature-Based Climate Adaptation**, the recommended grant will implement one multi-benefit wetland restoration which will restore and conserve habitat, improve coastal processes such as sediment flushing and provide benefits to coastal water quality.

CEQA COMPLIANCE:

The environmental effects of the project were evaluated in the Tijuana Estuary Tidal Restoration Program II Phase I Final Environmental Impact Report / Environmental Impact Statement (Final TETRP II Phase 1 EIR) which was certified by DPR on March 24, 2023 pursuant to the California Environmental Quality Act (“CEQA”) (See Exhibit 3). At its June 1, 2023 meeting, the Conservancy considered the environmental effects of this project as identified in the Final TETRP II Phase 1 EIR and made findings regarding this project in connection with its decision to separately authorize funding for a planning project which includes design and permitting of this project. The Conservancy found that the project will have significant, unavoidable effects in the areas of Hydrology and Water Quality (temporary), Biological Resources (temporary), Air Quality (temporary, cumulatively temporary), and Noise (cumulatively temporary). The Conservancy adopted a Statement of Overriding Conditions because the project has numerous region-wide environmental benefits, social benefits, and public health and safety benefits that substantially outweigh the unavoidable temporary adverse environmental effects of the project. The project remains substantially unchanged from its description in the Final TETRP II Phase I EIR, and no new environmental information or change in circumstances require a re-evaluation of the potential environmental effects of the project (14 Cal Code. Regs. Section 15162(b)).

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