



Midpeninsula Regional
Open Space District

R-21-147
Meeting No. 21-31
November 10, 2021

SPECIAL MEETING AGENDA ITEM 1

AGENDA ITEM

Stevens Creek Shoreline Nature Study Area and Shoreline Resilience Planning

GENERAL MANAGER'S RECOMMENDATIONS *den*

1. Consider four long-term management alternatives for the Stevens Creek Shoreline Nature Study Area to contribute to San Francisco Bay restoration initiatives.
2. Approve a phased approach that initially makes habitat improvements for snowy plovers and defers the decision on restoring to a tidal marsh until regional restoration efforts and needs are more developed to inform management priorities for the Stevens Creek Shoreline Nature Study Area in the context of larger San Francisco Bay restoration efforts.

SUMMARY

The Stevens Creek Shoreline Nature Study Area (SCSNSA) is owned by the Midpeninsula Regional Open Space District (District) and located in unincorporated Santa Clara County adjacent to the city of Mountain View along the San Francisco Bay (Bay) shoreline between Stevens Creek and Moffett Field. It functions as a contained, open water pond that is part of a larger stormwater retention basin for Moffett Field under the management of the National Aeronautics and Space Administration (NASA). The SCSNSA opportunistically provides habitat for breeding western snowy plovers (plovers) and allows for multi-use recreational opportunities along a levee-top segment of the Bay Trail.

There are currently several multi-agency initiatives to restore the San Francisco Bay to a more natural and resilient ecosystem capable of countering the effects of climate change and sea level rise. Actions include converting retired salt evaporation ponds back to tidal marsh, refurbishing salt ponds to manage as intentional habitat for non-marsh species like breeding plovers, and reestablishing transition zones to provide high tide refuge habitat for marsh species like the salt marsh harvest mouse.

The District has an opportunity to establish management priorities and plans for the SCSNSA to align with regional ecological productivity. These priorities should incorporate site-specific objectives, ongoing bayfront restoration efforts for natural resources, partner and stakeholder input, and future public access opportunities. In 2020, Natural Resources staff hired a consultant to develop a Feasibility Study to identify different management options for the SCSNSA. Staff distilled this information into four high level alternatives for Board of Directors (Board) review.

Based on findings from the Feasibility Study and recent discussions with key stakeholders and advocacy groups, the General Manager recommends a phased approach beginning with

Alternative 1B – low-intensity site enhancements to support breeding plovers, followed by the structural implementation of Alternative 2 – to transition into providing managed habitat for all waterbirds. Based on ongoing implementation of long-term shoreline resiliency plans across the bay, the District would determine at a later date whether to maintain Alternative 2 or implement Alternative 3. The estimated timeline to begin implementing Alternative 3 is 20 years at minimum.

DISCUSSION

Stevens Creek Shoreline Nature Study Area

The Stevens Creek Shoreline Nature Study Area (SCSNSA) is a 55-acre parcel, donated to Peninsula Open Space Trust from the Leslie Salt Company and subsequently acquired by the District in 1980. It is bordered by raised levees on its north, south, and west perimeter. The low-lying site fills with stormwater on a seasonal basis and evaporates during the dry season; the site is completely dry by the end of summer. The property is part of the larger Storm Water Retention Pond (SWRP) for Moffett Field due to a long-standing informal land-use arrangement between the District and NASA that was likely initiated by their respective predecessors in interest.

In 2012, the Navy conducted an assessment and removal of hazardous materials within the entire SWRP, which included the SCSNSA. This remediation effort met cleanup standards intended to support a future tidal marsh restoration scenario. In 2017-2018, NASA performed clean-up of the Superfund site known as “Site AO14,” immediately adjacent to SCSNSA, which consisted of three peninsulas of contaminated soil fill that extended into the NASA owned portion of the SWRP. District staff were consulted for review of project plans, coordination, and site access.

Local wildlife have been documented using the variety of habitats at SCSNSA, including the following listed species: salt marsh harvest mouse, California black rail, California least tern, and western snowy plover, which is regularly observed breeding during the summer. The San Francisco Bay Trail (Bay Trail) provides walking, biking, and wildlife viewing access on a 0.6-mile segment located on top of the north and west levees. This segment of Bay Trail around the District’s SCSNSA is an important link providing contiguous access along the shoreline from Alviso in San Jose to East Palo Alto, and the east bay via the Dumbarton Bridge ped/bike path.

San Francisco Bay - Habitats and Historic Land Use

Historically, the San Francisco Bay was composed of a rich mosaic of habitats with a vastly different hydrological condition from today. Historical tidal marshes, panne areas of salt crust, and wet meadows created a complex transition zone between tidal and terrestrial habitats. This provided abundant feeding and breeding areas for wildlife, as well as high-tide and storm refuge for marsh species. The historical San Francisco Bay also provided groundwater filtration and recharge, carbon storage, and protected the upland habitats from storms and flooding.

Beginning in the 1850s, agriculture and development altered the natural Bay by draining and filling marshes, constructing levees to contain water, and realigning creeks and stream channels. Levees were built around natural tidal marshes to create commercial salt evaporation ponds for salt production. In less than 100 years, nearly 95% of the San Francisco Bay’s historical habitat and ecosystem function was lost.

The current Bay shoreline is made up of salt ponds, creeks with limited wetlands, and reduced tidal flow. Though vastly different from historical conditions, many species now rely on the current unique ecosystem that has existed for more than a century. The San Francisco Bay and its man-made ponds are a critical stopover along the Pacific Flyway, providing habitat for more than one million migrating waterbirds each year and for many resident breeding shorebirds including the federally protected western snowy plover.

Regional Restoration Planning Initiatives

Several multi-agency planning initiatives are underway along the shoreline that may affect the ecological values and associated management preferences for the SCSNSA. Staff is seeking direction from the Board to inform ongoing participation in the following key regional projects: South Bay Salt Pond Restoration Project, Shoreline Study, and the Sunnyvale Shoreline Resilience Vision.

South Bay Salt Pond Restoration Project

The [South Bay Salt Pond Restoration Project](#) (SBSPRP) began in 2003 and is the largest tidal wetland restoration project on the West Coast. Comprised of several agencies and collaborative relationships, the project aims to restore 15,000 acres of retired salt evaporation ponds in the south San Francisco Bay into a mosaic of tidal wetlands and managed habitats. Restoration will support a variety of species and ecosystem functions. Many of these ponds are now managed by the U.S. Fish and Wildlife Service (USFWS) and are slated for restoration through the SBSPRP.

Balancing Benefits During Restoration

Restoring salt ponds to tidal marsh is valuable for marsh species. However, other waterbird species now rely on the salt ponds for migratory and breeding habitat because they are struggling with habitat loss elsewhere. For example, shorebirds like plovers require bare dry ground for nesting. These birds are typically found on coastal sandy beaches where they struggle to persist among recreational uses, sea level rise and other human caused factors. Historically, plovers also nested on small salt pannes (bare areas in the marsh that dry out in the summer) in the San Francisco Bay, and now rely on salt ponds for similar habitat. Restoring salt ponds to tidal marsh removes nesting habitat for the federally threatened western snowy plover and favors marsh dependent species like the federally endangered Ridgway's rail.

Many waterbird species rely on existing salt pond habitat. This creates the need to provide both managed pond habitat and tidal marsh to support multiple native species that rely on the Bay. This is a management balance widely recognized by regional restoration stakeholders and informed by visioning and planning efforts. The SBSPRP's EIS/EIR states that the San Francisco Bay's breeding plover population has been declining over the last several decades and the SBSPRP would have a significant impact on this listed species if SBSPRP activities, like habitat conversion, resulted in further declines. SBSPRP objectives (Project Objectives) explicitly include enhancing habitats of sufficient size and structure to restore native special-status species, and to maintain migratory bird species that use existing salt ponds and levee structures; ongoing control of predators is also needed to reduce the nest-habitat displacement and depredation of plovers.

The 2015 Baylands Ecosystem Habitat Goals Science Update's assessment of the Mountain View segment of shoreline (which includes SCSNSA) states that enhancing managed ponds would provide foraging and roosting habitat for shorebirds and waterfowl, and nesting habitat for plover and other resident shorebirds and terns. A solution has been to simultaneously 1) re-engineer existing ponds to provide waterbird habitat through the management of water levels in the pond, and 2) to restore existing ponds back to their historic tidal marsh habitat.

The SBSPRP has a minimal target of restoring 50% of its project area to tidal marsh habitat. If significant impacts to pond-dependent waterbirds, like plovers, can be mitigated, the project's ratio could be increased to restoring up to 90% of tidal marsh habitat. This double-benefit would maximize project success by restoring more tidal marsh habitat while also supporting stable waterbird populations. An assessment of Project Objectives performed in 2020 found that restoration targets for plovers and other breeding shorebirds are not being met, and that future phases of tidal restoration may further impact these species without improved management. Predation pressure and habitat suitability were found to be the strongest factors influencing plover success, and therefore achievement of Project Objectives and species recovery goals. The assessment also found that restoration targets for other migratory waterbirds are trending toward meeting Project Objectives, however, uncertainty and concern remain that future tidal restoration will cause substantial declines. SBSPRP managers are adapting their plans with new waterbird habitat opportunities to determine how much habitat can be fully restored while meeting Project Objectives.

South San Francisco Bay Shoreline Study

The [South San Francisco Bay Shoreline Study](#) (Shoreline Study) is a congressionally authorized study by the United States Army Corps of Engineers (USACE), in collaboration with Santa Clara Valley Water District (Valley Water) and the State Coastal Conservancy. The goal of the Shoreline Study is to identify projects that promote flood risk management, ecological restoration, and public access in the South San Francisco Bay area that should receive federal funds for implementation. One of the Shoreline Study's objectives is to design and develop a large tidal flood risk management levee (Shoreline Levee) to counter sea level rise along the south bay shoreline. It is structured in three Phases. The Phase III portion of the Shoreline Study focuses on the Sunnyvale shoreline, including the SCSNSA, and will begin with a Feasibility Study performed by USACE that was expected in Fiscal Year 2021-22 (FY22) but is currently pending with at least a one-year delay. Since the SCSNSA is along the Sunnyvale Shoreline Study area, the District has an opportunity to inform the Study and play a valuable collaborative role in the planning of Shoreline Levee alignments and habitat balance.

Sunnyvale Shoreline Resilience Vision

The Sunnyvale Shoreline Resilience Vision is a multi-agency group led by the San Francisco Estuary Institute (SFEI). They are collaboratively managing large-scale planning efforts along the Sunnyvale shoreline, including the Shoreline Study. They developed potential alignments of the Shoreline Levee and performed their own cost-benefit analysis of the Sunnyvale shoreline for USACE's consideration. A Stormwater Working Group has also been created to discuss the re-engineering of stormwater management infrastructure and its integration with pond restoration. The District began participating in this collaborative visioning in December 2020. The Board's selection of

SCSNSA management priorities is a crucial next step in continuing to collaborate in this regional visioning process.

Local Planning Efforts

The SCSNSA is located within unincorporated Santa Clara County and is adjacent to the City of Mountain View and the City of Sunnyvale. Notable local planning efforts are described below for surrounding context.

Moffett Park Specific Plan

The approximately 1,156-acre [Moffett Park Specific Plan](#) area is located in the northern portion of the City of Sunnyvale. The plan area is bounded by State Route 237 and U.S. Highway 101 to the south, Moffett Federal Airfield to the west, Caribbean Drive to the north, and Sunnyvale Baylands Park to the east. The Moffett Park Specific Plan area is located approximately 1.5 miles east of the SCSNSA and is separated from the SCSNSA by Moffett Field. The City of Sunnyvale adopted the Moffett Park Specific Plan in 2004 and authorized an update in 2019 to address new housing, improve non-automotive transportation, promote walkable and bikeable environments, and create an eco-innovation district. A technical report for the Moffett Park Specific Plan Urban Ecology acknowledges tidal wetlands and managed ponds outside of the Specific Plan area that serve as special resources to migratory and resident waterfowl. The report also mentions plans for the restoration of the retired south bay salt ponds that would further enhance the potential ecological value of Moffett Park's adjacent landscapes and urban greening efforts.

Google North Bayshore Master Plan

In September 2021, Google submitted an application to the City of Mountain View for the [Google North Bayshore Master Plan](#) to create a mixed-use neighborhood in the North Bayshore Precise Plan area. The 127-acre Master Plan includes the area bounded by Charleston Road to the north, Stevens Creek to the east, Space Park Way to the south and Huff Avenue to the west. The intent of the Master Plan is to identify the framework of new development in the 127-acre area, including general building locations, uses, and forms, transportation improvements (including parking), utilities, and public spaces, with phased multi-year implementation. The Master Plan area is located less than one mile south of the SCSNSA.

Stevens Creek Trail Implementation

The approximately five-mile-long section of Stevens Creek Trail in Mountain View starts at the northwest corner of SCSNSA. The regional trail continues south along the levee bank of the creek until it passes under Highway 101. The north end of the trail connects with the San Francisco Bay Trail, and leads to the trail system at Shoreline Park. A map of the Mountain View section of Stevens Creek Trail is available **online**.

The four cities of Cupertino, Los Altos, Mountain View and Sunnyvale are implementing the [Stevens Creek Trail Feasibility Study \(2015\)](#), which would complete the regional Stevens Creek Trail along approximately four miles of creek corridor from the Dale / Heatherstone pedestrian overcrossing in Mountain View south to Stevens Creek Boulevard in Cupertino over time. The Feasibility Study does not identify any future trails plans within the vicinity of the SCSNSA. The District's Vision Plan and Measure AA funding includes a partnership project to complete the upper portion of the Stevens

Creek Trail between Monte Bello Open Space Preserve and Stevens Creek County Park and support for the completion of the middle section of the trail.

District Feasibility Study for SCSNSA and Recommendations

Given the complex regional planning and collaborative opportunity, staff and the General Manager recommend that the District establish long term management objectives for the SCSNSA. In 2020, the District hired San Francisco Estuary Institute (SFEI) to perform a Feasibility Study (Attachment 1) to assess management options for the SCSNSA. SFEI identified seven potential options for future uses of the parcel. District staff then narrowed the seven Feasibility Study options to the following four general management Alternatives (see also Attachment 2):

Alternative 1 involves the continued use of the SCSNSA by NASA as a stormwater retention basin and no intentional participation in regional shoreline resilience planning.

Alternative 1B involves low-intensity site enhancements and predator management within SCSNSA to support breeding plovers while staff continue coordinating with NASA toward future infrastructure changes.

Alternative 2 would place the SCSNSA inside of a future Shoreline Levee and would involve active District management to provide enhanced breeding and foraging habitat for waterbirds by managing water levels via upgrades to existing and/or newly installed water gates and levees.

Alternative 3 would place the SCSNSA on the bayside of a future Shoreline Levee and would involve modifying existing infrastructure to restore the SCSNSA to natural tidal marsh function in coordination with regional restoration plans along the Sunnyvale shoreline.

Alternatives 1B, 2 and 3 create opportunities for the District to achieve its Resource Management Policy goals of providing ecosystem and native species benefits, and by participating in regional resilience planning. Alternatives 2 and 3 both require infrastructure changes to provide a physical separation of the SCSNSA from the remainder of the NASA SWRP. If these changes are made, the District may become responsible for any remaining and/or future contaminants associated with the parcel. See Attachments 1 and 2 for further discussion.

General Manager's Recommendation for a Phased Approach

Based on feedback from the Planning and Natural Resources Committee, and further discussion with regional stakeholders and advocacy groups, the General Manager recommends the following phased sequence of actions over the next 20 years:

Phase 1 – Near term

Begin with Alternative 1B, which aligns with the plover habitat goals of Alternative 2 but involves low-intensity site enhancements that would not disrupt the current function of the SWRP. Enhancements can be implemented over the next 1-5 years while the USACE finalizes its Shoreline Levee Feasibility Study and while District staff continue coordinating with regional stakeholders. These low-intensity enhancements have been implemented in other plover breeding habitats with success and have boosted annual plover breeding rates where plovers are present. Enhancing habitat for plovers in a location they currently use would fill an immediate regional need that works toward the balanced habitats solution. However, without the ability to

control water levels or separating from the SWRP, the SCSNSA management is limited by annual precipitation and natural evaporation.

Phase 2 – Mid Term

Within 3-6 years, proceed with planning and implementing Alternative 2, which includes structural changes to the SCSNSA, like installing water control structures and building an inner berm to separate it from the SWRP. This would benefit all waterbirds because water levels could be controlled year-round. This stage to provide managed pond habitat could begin once stormwater management needs have been analyzed and planned out. Alternative 2 provides essential habitat for breeding plovers and one million migrating waterbirds that rely on the San Francisco Bay each year. Maintaining pockets of managed pond habitat will provide refuge for waterbirds, interspersed throughout a complex of restored tidal marsh to achieve multiple regional ecological goals and objectives. The District has an opportunity to join the efforts of neighboring agencies and land managers to responsibly support all species and habitat functions in our region, not simply at the preserve scale. This pond management would fill a pressing regional need that allows for tidal restoration to be focused elsewhere, thereby maximizing the benefit of the SCSNSA.

Phase 3 – Outer Years

Finally, in the outer years, proceed with evaluating whether to maintain Alternative 2 or implement Alternative 3 to restore the SCSNSA to tidal function, based on the Shoreline Levee's development, timeline, and alignment planning. While Alternative 2 is implemented, District staff would simultaneously continue to participate in planning with regional stakeholders to determine if the long-term status of SCSNSA should be tidal marsh habitat and identify triggers to determine if and when that restoration is actionable based on surrounding shoreline infrastructure development. Otherwise, the SCSNSA would remain a managed pond (Alternative 2) in perpetuity to benefit waterbirds and the Shoreline Levee would be designed around it. This level of planning is estimated to take 20 years at minimum. See Attachment 2 for further discussion.

Through this recommended phased approach, the District has an opportunity to take immediate action that would provide multi-species and multi-project benefits for the next 10-15 years, while shoreline planning continues to develop. The selection of a phased approach, focusing on Alternatives 1B and 2 in the near term would maximize the ecological potential of the SCSNSA.

Discussions with Regional Stakeholders

District staff presented Alternatives 1 through 3 to the USFWS, NASA, SBSRP, San Francisco Bay Bird Observatory, Citizens Committee to Complete the Refuge, SFEI, Valley Water, and a representative on the Moffett Field Restoration Advisory Board for input and recommendations. There is overall support for Alternative 1B and 2 (i.e., some level of waterbird habitat enhancement while stormwater operations planning is developed). The recommended phased action approach has been successfully implemented by the SBSRP and is integral to their adaptive management strategy. See Attachment 3 for details.

Of particular note, USFWS Don Edwards National Wildlife Refuge (DENWR) staff advise that they are unlikely to accept a transfer of ownership and/or management of the SCSNSA parcel due to USFWS budget and staff limitations. USFWS staff also recommend that SCSNSA not be in federal ownership in case the site is needed to serve as a local match to federal funding as part of the Shoreline Project to protect community assets at risk.

FISCAL IMPACT

Preliminary cost estimates for each option are shown on page 47 of the Feasibility Study (Attachment 1). The estimated total one-time cost ranges from \$15.9 million to \$47.6 million. The largest cost factor under all options is the Shoreline Levee starting at \$14.0 million, which stakeholders assume would be paid through the Shoreline Study and is not the fiscal responsibility of the District. Staff stress that these estimates are highly preliminary and theoretical, and do not include design or permitting costs; more accurate fiscal impacts would be calculated when planning efforts are further developed. Alternative 1B's near term low-intensity enhancements are estimated to cost \$50,000. If the Board approves implementation of Alternative 1B enhancements, those costs will be refined, and funding may be requested during FY23 Action plan and Budget review process to begin the first year of work.

The District would seek to share the costs of activities with other agencies whenever practical. Several local and state grant funding sources have been identified to support future actions, including competitive grant programs offered through Valley Water, the San Francisco Bay Restoration Authority, and the State Coastal Conservancy San Francisco Bay Area Program. Additional federal opportunities could be considered such as a request through the Community Projects Program working with Congresswoman Anna Eshoo's office or application for USFWS funding. Future project actions and funding would be proposed in future year Capital Improvement and Action Plans as the project and regional partnership efforts progress and as grant funding is secured.

BOARD AND COMMITTEE REVIEW

This item was discussed with the [Planning and Natural Resource Committee \(R-21-83, minutes\)](#) on June 15, 2021. Directors Holman spoke in support of Alternative 2 and Kishimoto spoke in support of Alternative 3 (the two Directors in attendance). Both Directors moved to present Alternatives 2 and 3 to the full Board and to include options to phase either or both Alternatives while regional planning continues. The recommendation before the full Board is consistent with this phased approach. Directors directed staff to include further discussion of neighboring area plans and to identify possible funding sources.

PUBLIC NOTICE

Public notice was provided as required by the Brown Act.

CEQA COMPLIANCE

Low-intensity enhancements under Alternative 1B will require CEQA review, however, they may qualify for an exemption or be covered under District programmatic permit actions. Alternatives 2 through 3, if and when implemented, will also require CEQA and permitting review. Review of Alternative 3 actions could be included in the larger Shoreline Study and Levee planning.

NEXT STEPS

Upon direction from the Board, staff will continue participating in regional project conversations and will advocate for District interests in long term uses of the SCSNSA. Staff will continue to

engage with the Board as future Shoreline Levee alignment, designs, and neighboring partnerships develop over the next several years. If the General Manager's recommendation is approved, staff will begin pursuing Alternative 1B (low-intensity habitat enhancement options) like vegetation management, spreading of camouflaging materials, and predator management. Funds for these actions would be proposed in a future year budget and action plan.

Staff work beyond participation in regional planning efforts is not planned in the current Capital Improvement and Action Plan, which includes FY22 and FY23. If external planning efforts progress to the point where it would be useful, the General Manager will recommend the addition of geotechnical and hydrologic studies to the action plan, to determine the integrity of the SCSNSA's levees and basin, and impacts to NASA stormwater operations. This information would also inform regional restoration planning opportunities and the USACE's Feasibility Study for the Sunnyvale Shoreline area.

Attachments

1. Stevens Creek Shoreline Nature Study Area Restoration Feasibility Study
2. Feasibility Study Executive Summary
3. Regional Stakeholder Feedback and Recommendations
4. Area and Preserve Maps

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