

**MEMORANDUM**

Public Works Department

DATE: December 1, 2021**TO:** Council Sustainability Committee**FROM:** Raymond Wong, Senior Project Manager
Lisa Au, Assistant Public Works Director
Dawn S. Cameron, Public Works Director**SUBJECT:** Sea Level Rise Planning and Regional Collaboration Efforts**RECOMMENDATION**

Receive an update on the City's sea level rise planning and regional collaboration efforts.

BACKGROUND

The City of Mountain View is susceptible to fluvial (river or creek) flooding from watershed runoff and coastal flooding from high tide and waves from the San Francisco Bay, especially at the low-lying areas north of U.S. 101 in the North Bayshore Area. Properties in the area are within the Federal Emergency Management Agency's (FEMA's) 100-year special flood hazard zone. Flood risk for the area north of U.S. 101 can be attributed to the following water bodies:

- San Francisco Bay from the north which introduces coastal flood risk; and
- Permanente Creek and Stevens Creek (including the City storm drain system which discharges to the two creeks) which introduces fluvial flood risk.

The projected climate change and sea level rise in the San Francisco Bay will increase the San Francisco Bay water level and coastal flood risk to the northern part of the City.

In 2012, in response to the existing flood risk in the North Bayshore Area and the anticipated sea level rise flood risk, the City prepared the Shoreline Regional Park Community Sea Level Rise Study (2012 Study). The study developed a Sea Level Rise Capital Improvement Program (CIP) to address the existing and the projected Year 2067

coastal flood risk. The CIP consisted of 12 projects, and since that time, staff has been planning and implementing the CIP based on project priorities and coordination with other City and regional projects.

In 2018, the California Ocean Protection Council updated the sea level rise estimates and provided planning resources for coastal communities to develop strategies to address sea level rise adaptation (Sea Level Rise Guidance 2018). Based on the updated sea level rise projections and estimates for exceedance probabilities, the low and high ends of the sea level rise scenarios for the City were updated as follows:

- Low Sea Level Rise. Twenty-three inches (23") of sea level rise between 2000 and 2070 (1% still water level = 12.5' North American Vertical Datum (NAVD)).
- High Sea Level Rise. Forty-two inches (42") of sea level rise between 2000 and 2070 (1% still water level = 14.1' NAVD).

With the new sea level rise protections, staff updated the 2012 Study by reanalyzing sea level rise impacts to the City and updating the CIP project list. The updated 2021 Sea Level Rise CIP has 14 projects (Figure 1), with a planning-level program cost estimate of \$121.8 million in year-of-construction dollars (\$96.6 million in 2021 dollars) under the high sea level rise scenario.

Staff presented the update to the City Council on June 22, 2021, and Council directed staff to use the high sea level rise risk level for the City's sea level rise planning and CIP design criteria. The June 22 Council report is provided as Attachment 1 and contains background information about sea level rise projections and the updated CIP.

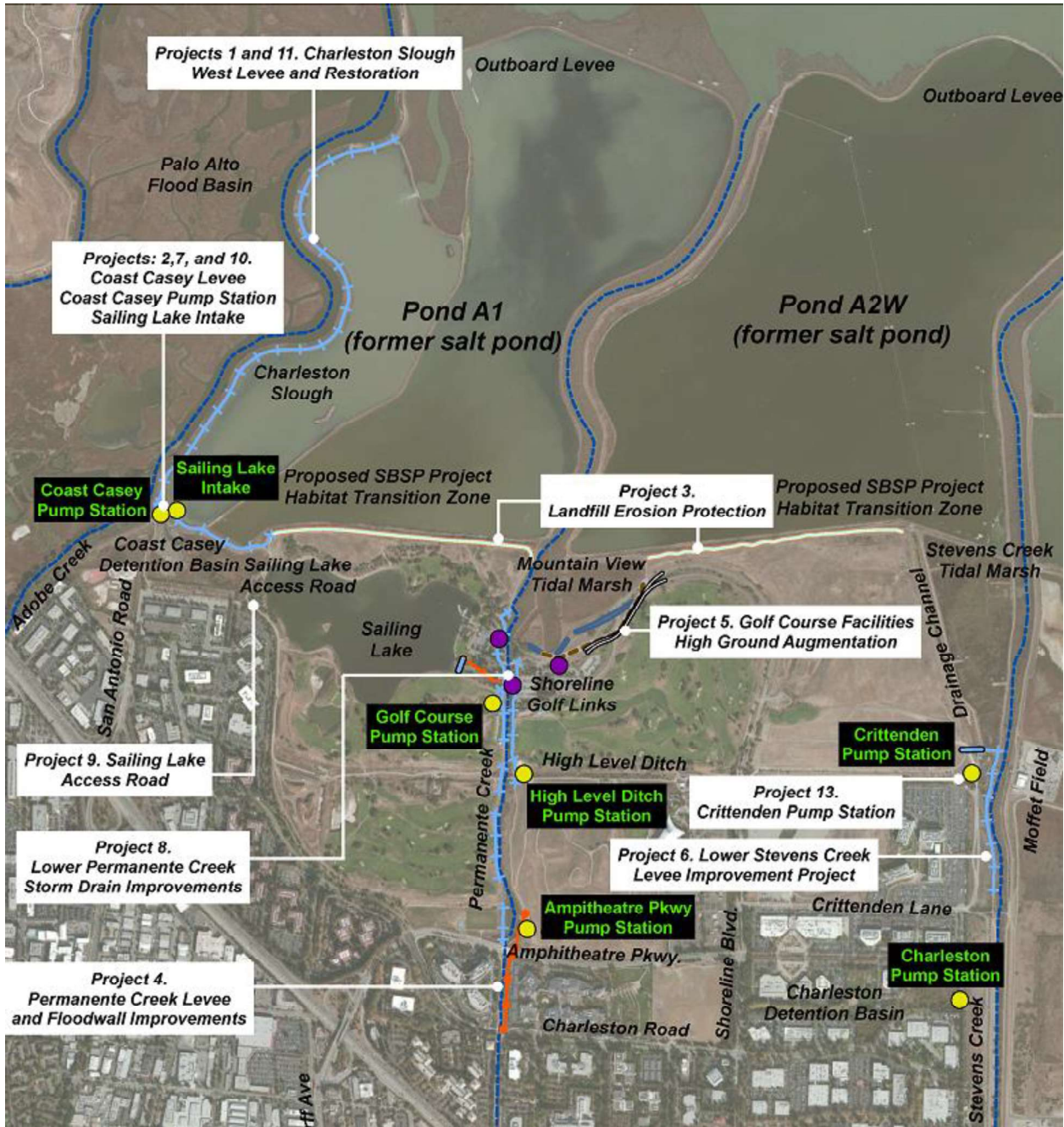


Figure 1: 2021 Sea Level Rise Capital Improvement Program Projects

SEA LEVEL RISE STUDY UPDATE – NEXT STEPS

In the 2021 Sea Level Rise Study Update, staff proposed a number of next steps to plan and implement sea level rise adaptation for the City. The following lists the next steps from Attachment 1 and a current progress update for each item.

1. Update the design criteria of the existing Sea Level Rise CIP projects that are currently in progress based on the 2070 High Sea Level Rise planning scenarios, where feasible.

Based on the 2012 Study, staff has been implementing sea level rise CIP projects. The status of each project is summarized in Attachment 1, Table 2. Updates since the June 2021 report, related to applying the high sea level rise scenario to the projects, are provided below:

Project 2, Coast-Casey North Levee Improvement

As a part of the South Bay Salt Pond Restoration Project, a draft design for Coast-Casey North Levee Improvement is being developed by Ducks Unlimited, a project partner with the California State Coastal Conservancy (CSCC) and U.S. Fish and Wildlife Services (USFWS). Staff will review the proposed project design to assess if it meets the updated sea level rise design criteria and update the design criteria as needed.

Project 3, North Landfill Erosion Protection

This project will use the habitat transition zone that will be established along Pond A2W and Pond A1, as part of the South Bay Salt Pond Restoration Project, as a base for the City to continue building up the levee north of the landfill for sea level rise protection. Staff has begun working on the North Landfill Erosion Protection project and will use the updated sea level rise design criteria.

Project 6, Lower Stevens Creek Levee Improvements

The draft alternative analysis and preliminary design at the 30% level is completed based on the design criteria from the 2012 study. With the updated sea level rise design criteria, the levee will require additional improvements to meet both the freeboard¹ requirements, and stability and seepage design criteria. Staff is developing an approach to update the alternative analysis and preliminary design,

¹ Freeboard is the distance between the normal water level and the top of a structure or mass that rises out of the water, such as a dam or levee.

which will form the basis for environmental permitting, coordination with other agencies, and engineering design for the project.

Project 9, Sailing Lake Access Road Improvement

Construction activities for this project started in November 2021. This project focuses on improving the Sailing Lake Access Road located between Sailing Lake and the Coast-Casey Forebay. The project will improve the safety and reliability of the Sailing Lake, provide reliable operations and maintenance access, and provide access and fortify the road in support of the anticipated soil transport for the South Bay Salt Pond Restoration Project. During the design phase, City staff learned that the road is actually a dam, due to its location between the two bodies of water with varying water service elevations, and that the dam falls under the regulatory jurisdiction of the California Division of Safety of Dams. Since the dam is not hydraulically connected to the San Francisco Bay, the updated sea level rise design criteria do not have a direct impact to the project design criteria.

Project 10, Sailing Lake Intake Pump Station Modification

This project is located next to Pond A1 and is currently on hold as the City is working with the CSCC to first implement the South Bay Salt Pond Project at Pond A2W. The project is anticipated to restart in 2022. The alternative analysis and engineering design will be based on the updated sea level rise design criteria.

Project 12, Sea Level Rise Assessment

The project updates the sea level rise assessment presented in Attachment 1. Staff is currently preparing a technical memorandum to document the sea level rise projection estimates, flood risk vulnerability, proposed improvements, implementation plan, detail cost estimate, and budget proposal for each sea level rise CIP project.

2. For pending and upcoming Sea Level Rise CIP projects, prepare feasibility analysis and develop performance-based criteria to prioritize the projects and develop an implementation plan and schedule.

Staff is developing an implementation approach and schedule for the pending projects listed in Attachment 1, Table 2, and new Projects 11 to 14 recommended in the 2021 Sea Level Rise Study Update. Staff will conduct additional analyses of these projects to develop scopes of work and refined cost estimates. Depending on the

timing needs of each project, selected projects will be added for funding consideration in the City's future CIP budget preparation.

3. Assess potential changes in long-term groundwater impacts due to sea level rise, especially the need to revisit its potential effects to the closed landfill operation at Shoreline at Mountain View.

As part of the City's ongoing landfill postclosure operation and South Bay Salt Pond Restoration Project, there have been studies on the City's groundwater system in the North Bayshore Area. These studies have provided analyses and information to quantify the existing groundwater condition. Staff is currently evaluating the need to develop new analyses and studies to assess potential groundwater impacts due to sea level rise, either as a part of Project 12, Sea Level Rise Assessment and Monitoring, or as a separate project.

4. Develop recommendations to update the City policy on sea level rise adaptation.

As part of Project 12, Sea Level Rise Assessment and Monitoring, staff will develop a technical framework to form the basis to recommend updating City policies to take sea level rise adaptation into consideration by making adjustments on how the City manages flood risk, infrastructure operations, and land use planning. The Policy recommendations may affect the City's review of proposed developments in the North Bayshore Area and Shoreline at Mountain View management.

5. Continue to participate and collaborate on regional planning efforts and projects.

Staff has been and will continue to participate and collaborate on regional planning efforts and projects. Additional information is provided in the Regional Cooperation section below.

6. Identify additional funding sources for Sea Level Rise CIP implementation.

Staff has been actively identifying and seeking external funding opportunities for sea level rise project implementation and will collaborate and coordinate with the City's legislative consultant to assist with these efforts. Potential external funding opportunities range from regional grant programs such as Measure AA, Federal grant programs such as FEMA Hazard Mitigation Grant Program, and cost sharing in regional collaboration efforts such as the South Bay Salt Pond Restoration Project. In addition, staff is working with the Valley Water to cost-share the Coast-Casey North Levee Improvement, as part of the coordination for the Pond A1 component of the South Bay Salt Pond Restoration Project. Based on input from the City Council

in June 2021, staff will also consider funding sources and collaboration with businesses and new developments in the City, especially in the North Bayshore Area.

7. Monitor sea level rise impacts to the City and update the Sea Level Rise CIP in five years.

This objective is being implemented as a part of Project 12, Sea Level Rise Assessment and Monitoring, to provide monitoring. Staff started the preparation this past summer, completed a survey, and established monitoring points along the existing shoreline levees to monitor levee elevations and long-term subsidence. In addition, staff is setting up water elevation monitoring at the Mitigation Channel this winter to monitor water elevation changes and the hydrologic connection between Mitigation Channel and Pond A2W. Staff will continue to develop a plan to monitor sea level rise impacts to the City.

REGIONAL COOPERATION

As summarized in the Regional Planning Efforts section of Attachment 1, staff has been coordinating closely with members of other agencies and working on regional efforts that affect the City's sea level rise mitigation efforts. In addition to participating in regional planning efforts such as the San Francisco Bay Regional Coastal Hazards Adaptation Resiliency Group (CHARG), staff has been working with CSCC, USFWS, and Ducks Unlimited on Phase II of the South Bay Salt Pond Restoration Project. The project will restore Pond A1 and Pond A2W to tidal marshes and reestablish tidal flow connection with South San Francisco Bay by breaching segments of outboard levees. The proposed gently sloped Habitat Transition Zone will reduce erosion risk along the City shoreline, which is a vulnerability under anticipated sea level rise conditions.

Listed below is the current status of the City's efforts to support the South Bay Salt Pond Restoration Project:

- Soil Import Permit and License – The City issued an excavation permit and license agreement in July 2021 to Ducks Unlimited for soil import to the USFWS property Pond A2W for Habitat Transition Zone construction. Typically, this permit and license would have been issued after the project itself is fully approved, including the design plans and agreements, with all regulatory agency permits. However, the City issued the permit and license in advance of these project milestones to assist in keeping the project moving forward. Issuing the excavation permit and license required extensive coordination with Ducks Unlimited, park operations in Shoreline at Mountain View, other development projects in North Bayshore, and Traffic

Engineering to prepare for and accommodate the large volume of soil import truck traffic that will impact local traffic and park users.

- Project Agreements—Staff is working collaboratively with CSCC and USFWS to prepare agreements for the full Pond A2W project. The terms of a Memorandum of Agreement (MOA) and a Habitat Easement Deed and Habitat Maintenance Agreement (Habitat Agreement) are scheduled for City Council consideration and approval at the December 14, 2021 Council meeting, pending concurrence from USFWS. The MOA stipulates the individual project responsibilities for the City and the USFWS. The Habitat Agreement allows the USFWS to construct part of the Habitat Transition Zone on City property.
- Design Plans—The Ducks Unlimited design team is currently working to finalize the design plans for Pond A2W. To help move the project forward, City staff proposed that the City, pending Council approval, design and construct additional erosion protection along the City's shoreline levee at Pond A2W to meet sea level rise (described under Project 3 previously) and improve the Bay Trail segment across the Mitigation Channel to address the immediate project impacts to the City's infrastructure. CSCC plans to cost-share some of the improvement costs and will execute a cost-share agreement with the City.

In addition to the South Bay Salt Pond Restoration Project, staff has also been coordinating with the United States Army Corps of Engineers (USACE), Valley Water, the City of Palo Alto, and other agencies on the South San Francisco Bay Shoreline Project (Shoreline Project) at the Palo Alto Flood Basin. Led by USACE, the project team is currently working on environmental clearance and studying the feasibility of various options. The option chosen will affect the City's plans for protection in this area; thus, close coordination is warranted.

Staff is also engaging with neighboring and regional agencies, such as Valley Water, City of Sunnyvale, NASA Ames Research Center, City of Palo Alto, and San Francisquito Creek Joint Power Authority, to develop and coordinate sea level rise adaptation plans and solutions that are consistent across the region and to identify opportunities to leverage funding and collaboration opportunities.

SUMMARY

Due to climate change and the threats from sea level rise, the City of Mountain View has been in the forefront of planning and implementing projects to prepare the City for these changes. These projects are of interest to many stakeholders and have a range of potential impacts in terms of the environment, wildlife, Shoreline at Mountain View, businesses,

residents, park and trail users, and the closed landfill. The proposed projects and plans are carefully analyzed to mitigate sea level rise with the needs of the stakeholders. Due to the size and technical issues associated with the projects, staff has engaged stakeholders and collaborated with neighboring agencies and regulatory agencies in planning the project scopes and timing. Staff continues to be involved in regional planning efforts to seek collaboration, coordinate projects, and identify funding sources such as grants and cost-sharing opportunities.

RW-LA-DSC/SA/2/MGR
620-12-01-21M

Attachment: 1. Council Report, June 22, 2021, 2021 Shoreline Sea Level Rise Study Update, Project 21-54

cc: CSD, F/c (21-54)