



DATE: May 5, 2020

TO: Mayor and City Council

FROM: Director of Development Services
Director of Public Works

SUBJECT: Hayward Shoreline Master Plan: Review and Discuss Preliminary Design Alternatives

RECOMMENDATION

That Council reviews, discusses, and provides direction on the Preliminary Design Alternatives identified for the Shoreline Master Plan.

SUMMARY

The Hayward Area Shoreline Planning Agency (HASPA) is preparing a Shoreline Master Plan to make the shoreline more resilient to the effects of sea level rise. Staff seeks the Council's comments and direction on the Preliminary Design Alternatives identified for the Plan.

BACKGROUND

HASPA is a joint powers authority whose mission is to coordinate agency planning activities and plan for sea level rise to ensure the Hayward Regional Shoreline's natural, recreational, and man-made resources are protected for future generations. Established in 1970, HASPA's member agencies are the City of Hayward, the Hayward Area Recreation and Park District (HARD), and the East Bay Regional Park District (EBRPD). Council member Mendall serves as Hayward's representative on the HASPA Board of Trustees. In addition, HARD and EBRPD each have one Board member serving on the Board of Trustees. HASPA's Technical Advisory Committee (TAC) is made up of staff from the three agencies.

HASPA has completed two vulnerability assessments for the shoreline, which identified vulnerable assets and potential adaptation strategies. The *Preliminary Study of the Effect of Sea Level Rise on the Resources of the Hayward Shoreline*, which outlines four long-term adaptation strategies to protect critical assets, was completed in 2010. The *Hayward Resilience Study*, which was an extension of the Adapting to Rising Tides Project led by the San Francisco Bay Conservation and Development Commission (BCDC), was completed in 2014.

Both studies are available on the project webpage¹. The Hayward Shoreline Master Plan will build off these past studies to identify specific adaptation strategies, policies, and design alternatives to protect identified vulnerable assets.

On July 24, 2018², on behalf of HASPA, Council authorized the receipt of grant funds from Caltrans to prepare the Hayward Regional Shoreline Master Plan. On December 18, 2018³, Council authorized, on behalf of HASPA, a contract with SCAPE. SCAPE is a landscape architecture firm with extensive experience preparing adaptation plans to address sea level rise.

SCAPE began work in early 2019 with the preparation of a *Background Report* which identified ecological resources, cultural resources, critical infrastructure, land use patterns, and demographics within the site area. Concurrently, SCAPE produced the *Data Collection and Sea Level Rise Mapping Report*, which gathered data on sea level rise and updated the inundation maps for the Hayward Shoreline Area. Maps exhibited inundation from 2 feet, 4 feet, and 7 feet of sea level rise as well as groundwater emergence and the 100-year storm surge. Both reports are available on the project webpage.

In late 2019, staff from the three HASPA agencies worked with SCAPE to prepare a *Goals and Policies Memo*. The Project Goals outlined in that report were:

- Create a Resilient Shoreline Environment for People and Ecology
- Enhance the Shoreline Environment to Reduce Risk to Critical Infrastructure and Built Assets
- Build Social Resilience in the Community
- Build Capacity for Future Generations to Adapt to climate change

Concurrently, HASPA staff and SCAPE produced the *Adaptation Strategies Report* that outlines potential adaptation strategies including nature-based, engineered, and non-structural strategies. The nature-based strategies include:

- Gravel Beaches to reduce erosion to levees and provide critical nesting habitat for shorebirds.
- Tidal Marsh Restoration to restore tidal action to marshes in order to accrue sediment, create habitat, and adapt with sea level rise.
- Diked Pond Management which identify diked ponds that could be used as marshlands, stormwater storage, and/or endangered species habitat.
- Fine Sediment Augmentation to maximize the potential of marshes to maintain themselves with sea level rise. Various methods were explored including adding sediment through shallow water placement, upland pipelines or barges.

¹ <https://www.hayward-ca.gov/shoreline-master-plan>

² <https://hayward.legistar.com/LegislationDetail.aspx?ID=3582257&GUID=A2889995-AD55-4F83-81BD-A08B5B8C3CE5&Options=&Search=>

³ <https://hayward.legistar.com/LegislationDetail.aspx?ID=3784499&GUID=3BAB6DE9-C3AF-407D-A69A-0DD563977C96&Options=&Search=>

The engineered strategies include:

- Levee Improvements to raise and repair levees therefore providing greater flood protection.
- Horizontal Levees to treat stormwater and wastewater, provide critical infrastructure, and enhance marsh migration space.
- Tide Gate and Water Control Structures to provide flood protection and limit maximum elevation of water.
- Improvements to the San Mateo Bridge Landing to include flood walls, flood protection levees, elevated land, and raising the landing on piles.

The non-structural strategies include:

- Relocation of the Bay Trail to enhance recreational opportunities and adapt the trail to sea level rise.
- Marsh and Mudflat Migration Planning to allow the marsh to migrate inland and adapt over time.
- Relocation of the Hayward Shoreline Interpretive Center to protect against inundation.
- Building Scale Strategies to increase standards for new construction, provide incentives for resilient new construction or retrofits, provide technical support and remove regulatory impediments.

The *Adaptation Strategies report* is available on the project webpage and discusses all strategies in greater detail. These strategies were presented to the HASPA Board of Trustees at their meeting on January 9, 2020⁴ and to the Council Sustainability Committee on January 13, 2020⁵.

DISCUSSION

Building upon the *Adaptation Strategies Report* and the *Master Plan Assumptions*, staff from the three HASPA agencies and SCAPE developed three Preliminary Design Alternatives for the Hayward Shoreline. The Alternatives include three different approaches intended to reduce risk by considering perimeter protection for critical assets and an adaptive approach for shoreline ecosystems. These Alternatives will be implemented over the next 40 to 50 years; a phasing strategy will be identified in the next stage of the Plan.

Staff seeks the Council's input on the three Preliminary Design Alternatives identified by the HASPA TAC and SCAPE. The Preliminary Design Alternatives refine and combine the different adaptation strategies presented in the *Adaptation Strategies Report*, but they are still *preliminary*. Staff has not completed detailed studies about the potential impacts of the alternatives on the City's infrastructure. The three alternatives, labeled *Closer to the Bay*, *Down the Middle*, and *Further Inland*, are summarized in Attachment II and described in more detail in the *Preliminary Design Alternatives* report, which is available on the project webpage.

⁴ <https://hayward.legistar.com/MeetingDetail.aspx?ID=740425&GUID=C0317152-BC90-42F0-A64C-B7DC760F42BD&Options=&Search=>

⁵ <https://hayward.legistar.com/LegislationDetail.aspx?ID=4300976&GUID=BDF0B4F4-E8BA-4A6C-81E4-A75B20B71FC7&Options=ID%7cText%7c&Search=sustainability>

Closer to the Bay considers an alignment that reduces risk for a larger portion of the shoreline with a more conservative line of protection aligned closer to the Bay. In the north end of the project area, the line of protection ties back along the San Lorenzo Creek channel and wraps in front of the Oro Loma Sanitary District wastewater treatment plant to protect it in place. It then cuts through the middle of Oro Loma Marsh and ties back to high ground at the two existing landfills. In the south, the alignment follows the western edge of the City's wet weather storage ponds and cuts immediately south through Hayward and HARD Marsh. A raised access road along Highway 92 ties back to high ground at the intersection of Clawiter Road. This line of protection places a larger extent of marsh inland of the line of protection where it is less vulnerable to inundation from sea level rise.

Down the Middle is an alternative alignment that seeks to balance risk reduction and ecological enhancement with a line of protection that runs through the middle of the shoreline area. The line of protection is pulled back in the north along the rail corridor and ties back to high ground at the San Lorenzo Creek channel. It then ties back to high ground at the two existing landfills and follows the western extent of the wet weather storage ponds to the south. The alignment pulls back in the southern portion of the site and cuts through the middle of the Salt Marsh Harvest Mouse Preserve, then ties back along a new levee along the access road for Highway 92. This alternative maintains a larger extent of tidal marsh, while still reducing risk to critical infrastructure.

Further Inland explores an alignment that is pulled the furthest inland to maximize ecological restoration along the shoreline and layer risk reduction infrastructure. In the north, the line of protection is pulled back along the rail corridor and ties back to high ground at the San Lorenzo Creek channel. It then aligns to the eastern edge of Frank's East and ties back to high ground at the two existing landfills. It is pulled to the east of the wet weather storage ponds, which would eventually be converted to wastewater treatment marsh. The treatment marsh, along with the solar photovoltaic field and biosolid drying beds would be protected by a raised levee. The line of protection then follows the eastern extent of the diked Baylands to the south before tying back to high ground with a levee parallel to Highway 92. This alternative prioritizes a larger extent of connected tidal marsh that is bayward of the line of protection and incorporates ecological and risk reduction infrastructure along a wider extent of Baylands.

The *Further Inland* alternative may not be acceptable in terms of impacts to the City's Water Pollution Control Facility (WPCF) and related infrastructure. Staff is currently evaluating whether the proposed "Levee Raising" would be sufficient to protect the City's solar photovoltaic field and biosolid drying beds. Staff is also evaluating the potential viability of converting the wet weather storage ponds to a treatment marsh in the long term.

The three Preliminary Design Alternatives and their approximate fiscal costs will be presented in detail during the Council meeting.

ECONOMIC IMPACT

The shoreline and the San Francisco Bay Trail provide an estimated \$490,000 in annual revenue to the local and regional economy. The Hayward Shoreline Interpretive Center generates more than \$60,000 in annual revenue for HARD. The Plan will identify strategies to protect these assets and the related economic activity. Furthermore, this plan aims to protect the City's Industrial Technology and Innovation Corridor, ensuring this critical part of Hayward's economy is resilient to climate change

STRATEGIC ROADMAP

This agenda item supports the Strategic Priority of "Combat Climate Change". Specifically, this item relates to the implementation of the following project:

Project 9: Complete Shoreline Master Plan

FISCAL IMPACT

Preparation of the Shoreline Master Plan is funded by a Caltrans Adaptation Planning Grant of \$509,000. The grant requires a local match of \$175,000, which will be provided through in-kind-services and will be shared by the three agencies. The three agencies contributed an additional \$37,000 to expand the Shoreline Master Plan's scope of work to include cost estimation. Also, the three HASPA agencies have committed to contributing \$80,000 each to fund the preparation of an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA). Having an EIR adopted along with the Plan will put HASPA in a more competitive position to pursue grant funding and implement projects identified in the Plan.

SUSTAINABILITY FEATURES

The Hayward Regional Shoreline Master Plan will provide a framework for resiliency to sea level rise and support the following sustainability related General Plan Goals.

NR-1.4 The City shall coordinate with the Hayward Area Shoreline Planning Agency, Bay Conservation and Development Commission, and California Coastal Commission to conserve, protect, and enhance natural and cultural resources along the San Francisco Bay shoreline by balancing uses that support multiple community needs, such as recreation, tourism, cultural resource preservation, and natural resource protection

NR-3.2 The City shall coordinate with Hayward Area Shoreline Planning Agency, East Bay Regional Park District, Bay Conservation and Development Commission, California Coastal Commission, and other Federal, State, and regional agencies to identify methods for acquiring and restoring baylands and marsh habitats, expanding the National Wildlife Refuge, and funding the purchase and restoration of wetland habitats.

- HAZ-4.1 The City shall monitor information from regional, State, and Federal agencies on rising sea levels in the San Francisco Bay to determine if additional adaptation strategies should be implemented to address flooding hazards
- HAZ-4.3 The City shall coordinate with the Hayward Area Shoreline Planning Agency, the Bay Conservation Development Commission, and other agencies involved in the Adapting to Rising Tides Project to develop and implement a Regional Shore Realignment Master Plan.
- HQL-9.9 The City shall support plans, standards, regulation, incentives, and investments to reduce the impacts of climate change on those populations most vulnerable to the impacts of climate change
- HQL-11.1 City shall establish and maintain an integrated recreational corridor system that connects regional trails (e.g., Bay Trail), Baylands (i.e., Hayward Regional Shoreline), local creeks and open space corridors, hillside areas, and EBRPD and HARD parks.

PUBLIC CONTACT

In March of 2019, a survey was conducted to assess the public's general understanding of the Hayward shoreline, sea level rise, potential flooding, and participants' feelings, concerns, and predictions regarding these issues. The survey was completed by approximately 900 people and the results are summarized in the *Background Report*. On October 27, 2019, the public was invited to attend a Shore Tour which highlighted different sea level rise adaptation strategies.

SCAPE and HASPA hosted two stakeholder workshops on May 16, 2019 and October 28, 2019 to gather critical input on the Plan. Additionally, a series of stakeholder meetings were held on the week of January 6, 2020 with Alameda County Flood Control District, Caltrans, East Bay Discharge Authority, Oro Loma Wastewater Treatment Plant, Hayward Public Works, Russell City Energy, and the San Francisco Bay Conservation and Development Commission to discuss different adaptation strategies.

Another series of stakeholder meetings was held virtually during the week of April 6, 2020 to receive input on the three Preliminary Design Alternatives. This included stakeholders from the previous meetings and new stakeholders including California Fish and Wildlife, South Bay Salt Ponds, and the Bay Trail.

NEXT STEPS

Staff will work with HARD, EBRPD, and SCAPE to incorporate the Council's comments into the Shoreline Master Plan. Following the refinement of the Preliminary Design Alternatives, a Preferred Alternative will be prepared. The Preferred Alternative will be a long-term vision to be implemented over the next 40 to 50 years. Once a preferred alternative is

selected, then a series of interim strategies will be identified. The Preferred Alternative will also include a phasing strategy, potential funding sources and an analysis of the Plan over various time scales.

Following the development of the Preferred Alternative, a Request for Proposals for the Environmental Impact Report (EIR) will be prepared. The Preferred Alternative will inform the project description of the Request for Proposals. A draft Plan will be available in late 2020 and is scheduled to be finalized by February 2021. The Environmental Impact Report (EIR) will extend beyond February 2021.

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