City of Hermosa Beach

Information Item

DATE: January 18, 2023

TO: Honorable Mayor and Members of the City Council

FROM: Doug Krauss, Environmental Programs Manager

SUBJECT: Update and Summary for Climate Change Adaptation and Resiliency Measures (CCARM) Project and Report

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Executive Summary

In 2019, the City secured grant funding from the California Department of Transportation (CalTrans) to perform Climate Adaptation Planning. Specifically, the project studied three sites along Hermosa Avenue to evaluate previously identified capital improvement projects and develop concepts for improvements that address both mobility and adaptation to the effects of climate change. The City hired a consulting firm, MIG Inc., to analyze the sites, provide climate change forecasts, conduct outreach, and develop site concepts. The Climate Change Adaptation and Resiliency Measures to Address Coastal Flooding (CCARM) report is the product of this work and details the work performed to develop the project concepts **(Attached)**.

Background

In October 2018, Caltrans released a call for applications and an FY 2019–20 Grant Application Guide for Adaptation Planning Grants. This grant funding, authorized under Senate Bill 1, the Road Repair and Accountability Act of 2017, allocated $20 million over three fiscal years to support climate change adaptation planning to make California's transportation infrastructure including: roads; railways; bikeways; trails; bridges; ports; and airports more resilient to the impacts of natural hazards and climate change. This grant opportunity focused on planning and conceptual design and was not intended to fund full engineering design nor the construction of capital projects.

In reviewing the grant application guide, staff considered conceptual planning and community outreach work on several previously identified projects, involving entry corridors to the City on the Strand and Hermosa Avenue. These were packaged to create a competitive grant application that was selected by CalTrans for funding in an amount of $247,050. The City's matching fund requirement was $32,008.

Staff proposed to conduct conceptual design and community engagement efforts on the following projects which consider improvements that serve multiple modes of travel; are vulnerable to the effects of coastal flooding and sea level rise (SLR); and include opportunities to provide co-benefits such as stormwater capture, dune restoration, and improved safety for pedestrians and cyclists:

- Hermosa Avenue Green Street Project *(CIP 164)*

- Strand Bikeway and Walkway Improvements at 35th Street *(Current CIP: 17–188)*
- Hermosa Avenue Cycle Track and Greenwich Village Intersection Re-Design

In February 2021, Council approved the execution of a Professional Services Agreement with MIG Inc., to assist with implementation of the City's CalTrans Adaptation Planning Grant project. MIG, Inc. assisted with the development of a Constraints Analysis and Conceptual Design for a suite of green infrastructure and sea level rise resiliency improvements to be incorporated into planning for mobility enhancements in the aforementioned areas.

The Constraints Analysis analyzed the possible effects of projected sea-level rise on the City's coastal areas. It also analyzed hydrological data to account for effects of rain events and water table levels on the identified projects. The analysis looked at potential flooding risks from rain events, storm surges, and the effects of climate change both individually and in combination.

The Conceptual Design portion of the project incorporated data from the Constraints Analysis to develop two concepts for each of the three identified project locations. The concepts addressed mobility, flooding, and other multi-benefit elements at each site. The two concepts per site demonstrated a variety of options for the City to consider based on feedback from the community and stakeholders.

Outreach efforts included a number of meetings with key stakeholders and community members. Between Spring 2021 and Winter 2022, the City and MIG, inc. hosted six stakeholder meetings and three community meetings. Stakeholder meetings included representatives from neighboring jurisdictions, Los Angeles County Beaches and Harbors, Coastal Commission, Heal the Bay, and other groups that would potentially be involved in the implementation of these projects. Community meetings welcomed all interested parties and were advertised citywide via social media, the City's website, and via pop-up events at the project sites. All meetings besides the pop-ups were hosted virtually. These meetings all provided important input that helped shaped the conceptual designs.

A cost benefit analysis was also developed to provide information on potential costs from damage projected to result from a variety of flooding forecast scenarios. These estimates focus on property damage to private property. The analysis also provides estimates for construction costs for the six conceptual designs, as well as potential funding sources for the various projects. The multiple-benefits built into each conceptual design (i.e., climate adaptation, storm water pollution reduction, improving multi-modal transportation opportunities) improve the projects' potential for grants and other funding sources.

Conclusions and Next Steps

The final report provides a comprehensive summary of the constraints analysis, the various stakeholder meetings, the conceptual design process, and a cost benefit analysis. The report discusses many important considerations for each of the project sites and valuable discussion of overall flooding risks resulting from climate change. Perhaps the key takeaway from the report is that Hermosa Beach is generally not at immediate risk from the effects of any forecasted flooding events. Though a combination of factors (e.g., unusually high rainfall and exceptionally high tides) could produce significant flooding at any time, the forecasts over the short to long-term show very little chance of significant flooding. This is due largely to the presence of our wide sandy beaches which range from 275 to 550 feet in width. Even under the scenario of 6.7 feet of sea-level rise, the City's beaches are predicted to remain 175 to 450 feet wide.

The three sea-level rise forecasts in the report are shown in the table below:

Sea-level Rise	Medium-High Risk (1 in 200 chance) Timeframe (Year)
3.3 feet	2050
6.7 feet	2080
16.4 feet	2130

In combination with extreme weather events and/or exceptionally high tides, the City still faces risks of flooding resulting from storm water outfalls being inundated from the ocean or from storm drains overburdened from unusually powerful rain events. These risks are forecasted as very unlikely in the near and mid-term.

Of the three project sites and the various project elements suggested, the extension of the Strand at 35th Street along with possible installation of vegetated dunes received the most community and stakeholder feedback. The three sites and a discussion of suggestions for each are detailed below:

Site 1 – Hermosa Avenue, from Herondo Street to 4th Street

This site faces the most significant risk of flooding, due to its lower elevation and its consequent high water table. Much of the flooding risk is due also to the lower elevations immediately south near the Redondo Beach harbor area. The project concepts provided for this area include a variety of storm water capture and mobility improvements, including biofiltration, reconfigured parking designs, and the addition of a bike lane.

The City is already in progress on a project to reduce storm water pollution in this same area. The Hermosa Avenue Green Street Project (CIP #164) will replace sections of existing concrete gutters at various locations in the vicinity of Hermosa Avenue with permeable concrete that will allow storm water to infiltrate into the soil and reduce run off reaching the ocean. This Green Street Project does not preclude potential future coordination with the improvements proposed in the CCARM for this area.

Site 2 – Hermosa Avenue and Greenwich Village

This site faces the lowest risk of future flooding due to its elevation. The topic that received the most community feedback on this site is possible reconfiguration of this intersection to improve mobility and alleviate safety concerns. The conceptual designs for this site focused on improving the intersection for all modes of transportation, including the adjacent bike lane on the west side of Hermosa Avenue. One conceptual design included a roundabout to help improve multi-modal movements at the intersection. Additionally, stormwater capture and filtration measures are proposed to be added within medians and traffic islands.

Site 3 – Hermosa Avenue at 35th Street and the Strand

This site and the consequent conceptual designs elicited the most feedback from the community and stakeholders. The proposed improvements are also some of the most time-sensitive and cost-effective of the three sites studied. There are three key elements to the proposed project and each of these elements could be implemented independently of the others:

1. Extension of the storm drain outfall – extending the outfall at 35th Street to the waterline is proposed as a strategy to reduce flooding risk, especially from inundation due to storm surges and eventual sea-level rise. This project has been previously identified by the City's Public Works team as an important capital project, separate from the analysis in the CCARM report;
2. Strand connection – This is an idea that has been discussed in the community for many decades. The goal would be to extend Hermosa Beach's section of the Strand to connect it with the Strand in Manhattan Beach. Currently the Strand is interrupted by stairs at 35th Street. The proposed connection would incorporate safety measures to improve coordination between pedestrians, cyclists, and other users. It could also include improvements to access for those with disabilities and could include amenities such as benches, bike racks, and drinking fountains. Community feedback was mixed on the need for this project and the best way to implement it. Conversations with staff from Los Angeles County and Manhattan Beach made clear the challenges to developing a design that meets the community's needs while prioritizing safety, but also offered suggestions for effectively addressing these challenges; and
3. Living shoreline – A living shoreline involves creating sand dunes and planting them with native vegetation. The dunes serve as a physical barrier to help reduce potential storm surge from reaching the neighboring residences and vegetation helps keep the dunes in place. The living shoreline offers potential habitat for native flora and fauna. A number of jurisdictions along Santa Monica Bay have recently installed living shoreline features, including neighboring Manhattan Beach. The living shoreline concept is relatively inexpensive and

there are many funding agencies currently supporting such projects. It is also worth noting that a number of residents in properties adjacent the site raised issues of site lines being obstructed, visitors gathering at the site, maintenance concerns, and more. The City would need to consider strategic communications with the community should it seek to pursue any of the living shoreline project elements proposed for this site.

Staff looks forward to City Council's feedback on this report and the project consultant is available for any questions. The report offers concepts and suggestions for future capital projects but does not prescribe any specific or urgent actions. The three previously identified capital improvement projects studied are all still scheduled to be addressed by City staff as part of the Capital Improvement Plan.