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Sea Level Rise Adaptation Funding & Investment Framework: Project Conclusion

Subject:

Summarizing the conclusion of the Sea Level Rise Adaptation Funding and Investment Framework, including high level analysis outputs, key findings, and next steps.

Background:

In December 2021, MTC/ABAG and BCDC launched the Sea Level Rise Adaptation Funding and Investment Framework (Framework), a priority action identified by MTC/ABAG’s Plan Bay Area 2050, BCDC’s Bay Adapt Joint Platform, and the San Francisco Estuary Partnership’s Estuary Blueprint. Working with a monthly Technical Advisory Group throughout 2022, this effort sought to (1) update and improve regional accounting of anticipated sea level rise adaptation projects, (2) study how revenues for sea level rise adaptation can be raised most equitably, and (3) explore how existing and future funding mechanisms can advance adaptation planning and implementation.

The Framework helps the region prepare for near-term state and federal funding opportunities, improve our advocacy for state and federal resources, and provide data-informed findings for local and regional leaders to weigh approaches to future funding decisions. In addition to several updates to relevant MTC/ABAG and BCDC committees, as well as to the BARC Board, during the project’s development, staff are now sharing the final findings and potential next steps with each entity at this juncture in spring 2023.

Local Shoreline Project Inventory & Estimating the Cost of Adaptation:

The local shoreline project inventory catalogs all known sea level rise adaptation projects across the region. The inventory includes a range of project stages, from concept to more advanced planning, engineering, and implementation, and detects areas with no known projects that would benefit from capacity building. The inventory was developed to calculate a high-level regional cost estimate for sea level rise adaptation, building off of previous regional analysis in MTC/ABAG’s Plan Bay Area 2050 and BCDC’s Adaptation Funding White Paper. Where no known projects were identified, or where projects were considered not sufficiently protective through 2050, “placeholder” adaptation needs were determined by assuming the protection of the shoreline in place.

The inventory was sourced from local plans and project studies, as well as from project data tracked by BCDC’s Shoreline Adaptation Project Mapping Program. Adaptation projects recorded in the inventory range from green to grey, including marsh restoration, ecotone levees, and seawalls, and they are in many different stages, from conceptual plans to design and construction. Local information was reviewed and updated from local outreach across all nine counties in fall 2022. The resulting inventory has 192 projects, over 75 percent of which were updated by the local outreach, with 47 new projects identified.

The Framework estimates that the regional cost of sea level rise adaptation through 2050 is **approximately \$110 billion** in year of expenditure (YOE) dollars. This estimate is a significant increase from Plan Bay Area 2050’s \$19 billion estimate, primarily due to a higher planning assumption to

protect areas up to 4.9 feet of inundation rather than 2.0 feet¹, as well as the short- and long-term impacts of higher inflation. Importantly, there is a mix of green and grey projects in planning, with most of the region planning for hybrid, or multi-benefit projects. The level of local planning and the amount of local resources vary widely across the region, with over half of the estimated cost in San Mateo, Marin, and Alameda counties alone. Further breakdowns of the cost can be found in **Attachment A**.

However, it is not anticipated that this is the singular value that is needed by the region over the next three decades, but rather an order-of-magnitude estimate based on the best available information available today. The estimate assumes protection in place for all vulnerable shoreline, including low density areas and agricultural land. The estimate also does not account for alternative strategies such as managed retreat, which may change the cost estimate for adaptation in some areas, or for local policy and building code adjustments. Future analyses will work to prioritize investments more strategically, and will integrate new data when regionally available, such as riverine and groundwater adaptations, and adaptation plans identified by utilities.

Estimating Existing Revenues:

The Framework sea level rise adaptation revenue estimate through 2050 is **\$5.5 billion**, including projected public revenue from the local, regional, state and federal levels. The revenue has been updated from previous analysis in Plan Bay Area 2050 and the BCDC Adaptation Funding White Paper, which previously estimated \$3.2 billion in forecasted revenues. The Framework estimate includes updates from new revenue measures, particularly from new state and federal programs. . While the proposed 2023 Governor’s Budget indicates potential reductions in some of these areas, the proposed changes have not been integrated as they have yet to be approved by the Legislature.

There is a significant funding gap of **over \$104 billion** identified, which will require a number of strategies moving forward. These are likely to include including increasing revenues, discouraging new developments in highly vulnerable areas, facilitating faster permitting and construction of adaptation projects, and identifying alternative strategies for adaptation, such as identifying areas suitable for managed retreat. For additional information on forecasted revenue sources, please refer to **Attachment A**.

Exploring New Revenues:

To address this substantial funding gap, the region will need to increase available adaptation revenues. The region should of course advocate for additional federal and state funding, but it may also be beneficial to raise revenue locally or regionally to provide a match for state or federal funds. The Framework analyzed new revenues at a high, exploratory level to provide resources for future regional or local discussions on new revenue sources.

Staff analyzed three different types of revenue measures based on their overall feasibility and regional precedence: parcel taxes, ad-valorem property taxes/general obligation bonds, and assessment districts. The research was focused on revenue generation potential, bond issuance potential, and the initial equity implications for “who pays?”. Parcel and ad-valorem property taxes were analyzed at both the county and regional scales, whereas assessment districts were analyzed at the district scale using hypothetical case studies across the region.

While not surprising, the Framework did find that none of these potential revenue measures would be capable of addressing the funding gap alone. Rather, using multiple types of funding streams could help

¹ The planning height was adjusted to account for updated state guidance from the Ocean Protection Council to plan for a minimum of 3.5 feet of inundation. The 4.9 foot assumption is based on OPC’s 2018 5% projections for 2050, plus flooding from a 100 year storm.

to balance the tax burden across counties. Furthermore, parcel taxes were found to be less socially equitable than an ad-valorem tax at both the regional and county scales, as they placed a higher share of the tax burden on socially vulnerable areas.

Next Steps:

While the Framework effort wraps up this spring, MTC/ABAG and BCDC will continue to work together on sea level rise adaptation in the coming months. MTC/ABAG will advance Plan Bay Area 2050+ – including prioritization of sea level rise adaptation projects identified in the Framework – and explore strategic opportunities to integrate resilience into envisioned regional measures in 2024 and 2026. BCDC will continue the maintenance and development of the Shoreline Adaptation Map to ensure that the region has access to an updated regional project inventory going forward, while also advancing its Regional Shoreline Adaptation Plan leveraging Framework outputs. Lastly, BCDC and MTC/ABAG will work in partnership with other agencies, including BARC, to advocate for a higher proportion of funding at the state and federal level and to seek input from elected officials about identifying lead agency roles for sea level rise going forward.

Attachments:

- Attachment A: Presentation