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TO: Design Review Board Members

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SUBJECT: **Regional Shoreline Adaptation Plan Guidelines**
(For Design Review Board consideration June 10, 2024)

Project Summary

Project Representatives
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Project Background
Coastal adaptation to rising sea level is a state priority to avoid devastating impacts to people, the economy, and natural habitats. Despite having only one-third of the state's coastline, two-thirds of California's economic losses due to rising sea level are forecast to occur in the nine-county Bay Area, absent adaptation actions. The San Francisco Bay is a state-protected resource that is the largest estuary on the West Coast of the Americas, a key part of the Pacific Flyway for migrating waterfowl, and a critical economic driver of the State's economy.

With the assistance and leadership of BCDC, significant progress has been made in the Bay Area by cities and counties to plan for a changing shoreline and establish shoreline ecosystem restoration and other flood protection projects. Yet many of the adaptation plans and projects already occurring within the Bay Area are disconnected and disjointed. Absent regional collaboration and a shared vision, we risk: disproportionate impacts to less affluent, disadvantaged communities; a patchwork of protective actions with varying levels of protection; inconsistent interpretation and application of the best statewide science; competition, not collaboration, for limited funding; near-term loss of wetlands; and, no way to measure collective progress.

BCDC created and continues to lead Bay Adapt — a collaborative regional planning program to develop a consensus-driven strategy to protect people and the built and natural environments from a rising Bay. The Bay Adapt Joint Platform lays out guiding principles, priority actions, and tasks whose implementation will enable the region to adapt faster, better, and more equitably to a rising Bay.

The Regional Shoreline Plan (RSAP) is one of the initiatives coming out of Bay Adapt with the aim of implementing multiple tasks in the Joint Platform. The RSAP consists of a) a One Bay Vision for what successful shoreline adaptation will include to ensure long-term equity, protection, and prosperity, informing specific priorities, guidelines, and standards, b) Strategic Regional Priorities that identify key adaptation opportunity areas and projects throughout the Bay Area using the One Bay Vision to guide

priority criteria and direct jurisdictions to consider regional priorities within their Subregional Shoreline Resiliency Plans, c) guidelines that lay out consistent regional standards and practices for Subregional Shoreline Resiliency Plans and projects (guidelines), and d) an Online Mapping Platform that will provide data, guidance, and region-wide analysis to help support local jurisdictions in creating Subregional Resiliency Plans (Mapping Platform).

The RSAP describes the vision, goals and local guidelines for how the 46 cities and nine counties surrounding San Francisco Bay can collectively plan for this unprecedented challenge. The guidelines will be used by local jurisdictions for developing Subregional Implementation Plans that effectively address local and regional climate risks.

Senate Bill (SB) 272: Sea level Rise Planning and Adaptation

Senate Bill (SB) 272 (Laird 2023): Sea level Rise Planning and Adaptation now requires all local governments in the State's coastal zone to address sea level rise (SLR) through Local Coastal Programs or San Francisco Bay Shoreline Resiliency Plans by January 1, 2034. Jurisdictions that complete this requirement will be prioritized for state funding. Vulnerability assessments and adaptation plans will be based on best available science, cover specified priorities, and will get updated on a timeline agreed upon by the local governments and the Coastal Commission or BCDC. The measure also requires the Commission and BCDC to collaborate with the Ocean Protection Council (OPC) and the Sea Level Rise State and Regional Support Collaborative on the establishment of guidelines to assist local governments in this work by December 31, 2024.

Implementing SB 272 in the San Francisco Bay will require a new era of regional and local collaboration to protect and enhance San Francisco Bay for this and future generations from rising sea level. To ensure that people, infrastructure, and habitat are protected, Bay-wide and local plans must work in coordination with one another to provide large-scale regional protection and avoid conflict among jurisdictions. Local plans must embed social equity and environmental justice, prioritize and protect the natural environment, be developed with both local and regional priorities, be action-oriented and implementable, and meet State policy and standards.

The RSAP is BCDC's answer to fulfill SB 272. Staff is on track to complete guidelines and seek Commission approval by the end of 2024. Since the Subregional Shoreline Resiliency Plans are new and have never been developed by local governments, BCDC staff anticipates that staff will need to work closely with local governments to ensure that guidelines are applied consistently and that local governments have the capacity, data, and resources they need to interpret the guidelines. Staff also anticipate learning from local governments how effective the guidelines are, which can inform how guidelines are updated in the future.

Review by the Board

Last August, the Design Review Board received a briefing on Bay Adapt, the Joint Platform, and an early discussion of the RSAP. The Boards were generally supportive of reimagining the role of BCDC in the region; commending the ambition in stepping up and taking a leadership role. The Boards expressed favor for continuing to engage in regular meetings to provide input and guidance. Board members stated they appreciate staying informed so to better fulfill their roles as technical advisors. The Boards also expressed that direction on societal values is necessary, design and engineering are simple but society needs to provide guidance on values and priorities.

Staff have been drafting the visions and priorities guided by input from Commissioner and local elected working groups, community groups, and public engagement. The RSAP is now progressing to the development of guidance for writing and implementing the Subregional Shoreline Resiliency Plans. With this review, staff are seeking feedback on the Adaptation Strategy and Pathway Standards section of the draft document.

Regional Shoreline Adaptation Plan Outline

One Bay Vision
The regional One Bay Vision defines and articulates what successful adaptation should like for Bay Area shoreline communities to ensure long-term equity, protection, and prosperity and from which specific targets, guidelines, and standards flow from. The One Bay Vision language was presented to and received support from the Commission in February of this year.

Strategic Regional Priorities
This section identifies key adaptation opportunity areas throughout the region using the "One Bay" vision to guide priority criteria and directs local jurisdictions to consider adaptation land use decisions and projects in certain beneficial areas.

Developing a Subregional Adaptation Plan
This section defines what a subregional plan is, who leads, and the BCDC submission and approval process.

Plan Elements Guidelines
The Plan Element Guidelines lay out regionally consistent practices and standards that direct and guide users on how to develop Subregional Adaptation Plans, including minimum standards, recommendations, and best practices for adaptation land use and project planning decisions. This section defines seven plan elements with Guidelines that provide direction on what needs to included and submitted in the plan.

Minimum Standards and Recommendations
This section includes detailed standards that set requirements for how to meet the Guidelines. Recommendations are included in certain sections that reflect best industry practices but not required to meet the Guideline. The Adaptation Strategy and Pathways Standards are what we are seeking feedback on from the Board.

Adaptation Strategy and Pathway Standards

This section of the document will describe the minimum required standards and suggested recommendations on best practices to be applied when developing initial and final adaptation strategies and pathways for Subregional Resiliency Plans, as identified in Plan Element D. The Adaptation Strategy and Pathway Standards provide direction and guidance for how to identify *what types of adaptation strategies should be considered and where* to support the local and regional One Bay Vision. The standards criteria are identified either as required or recommended: minimum standards are required to be used in Subregional Resiliency Plans to meet the Guidelines and are identified by the (**R**), and local jurisdictions are encouraged to consider the additional recommended practices in their plans but they are not required to meet the Guidelines.

There are three sets of Minimum Standards in this section.

- **(A).** The first applies to **Adaptation Strategies and Pathways.** Adaptation *strategies* refer to the initial set of adaptation approaches in each location, while adaptation *pathways* refer to the change in those initial strategies over time. Adaptation pathways can include adjustments to existing strategies, the creation of new strategies needed to address increasing coastal and flood hazard risks, and/or the removal of adaptation approaches that no longer function to address increased flood risk.
- **(S).** The second set applies to locations that contain **RSAP Strategic Regional Priorities**. To ensure that these regional priorities are met, additional minimum standards apply.
- **(D)**. The third set applies to **Adaptation Project Design**, which are applicable only when a Subregional Adaptation Plan includes adaptation strategies and/or pathways with site-specific and/or project-level design detail. Plans that include only conceptual-level adaptation strategies and pathways do not need to include these standards.

Adaptation Strategies and Pathways (A)

Adaptation Strategy and Pathway Minimum Standards (**R**): the following are required to be evaluated for each shoreline reach and for the planning area as a whole and applied when identifying and developing adaptation strategies. The application of these standards must be present in the conceptual plan(s) and descriptions of preferred adaptation strategies. When necessary, include descriptions of why specific standards could not be met.

When identifying what the adaptation strategies are, planners must:

A-1. **First identify opportunities to avoid future harm to people and ecosystems and reduce the need for new adaptation protections.** Reduce future exposure and risk through land use decisions that site new development or infrastructure outside flood risk locations. This is essential for areas suitable for future habitat migration space, open space, public access, and other floodable design spaces. In the preferred adaptation strategies and pathways, demonstrate and describe where avoidance strategies are utilized. **R**

A-2. **Identify and incorporate nature-based adaptation suitable to the landscape to greatest extent feasible *before* using new gray or traditional hardscape approaches.** Identify nature-based adaptation suitability, which can be found in the SFEI Adaptation Atlas. Where nature-based adaptation is deemed infeasible, integrate green elements such as habitat enhancements into traditional gray infrastructure (i.e. a hybrid approach). In the preferred adaptation strategies and pathways, demonstrate and describe what nature-based adaptation strategies are used, and if not included, why they were deemed infeasible and what hybrid approach was developed instead. **R**

A-3. **Maintain or increase the spatial extent of Baylands habitats through protecting, restoring, and/or enhancing existing habitats and designating migration space for habitat transition areas over time.** Ensure the distribution of habitat types, functions and services can be maintained or improved as sea levels rise and that adaptation pathways provide opportunities for the long-term survival of Baylands habitats. Demonstrate and describe how Baylands habitats and their characteristics are expected to change from the existing conditions due to the adaptation strategies. **R**

A-4. **Identify opportunities to connect Baylands habitats to one another and to sustainable sources of water and sediment supply that will support natural adaptation processes.** Incorporate Creek to Baylands connections, where applicable, which can be found in the SFEI Adaptation Atlas. Identify opportunities for beneficial sediment re-use rather than clean fill in adaptation actions. Consider using SediMatch (or similar platform) to promote balance in sediment supply and demand. See BCDC's Sediment Roadmap for guidance on how to utilize beneficial sediment re-use for habitats. In the preferred adaptation strategies and pathways, demonstrate and describe what actions were taken to connect habitats and sediment supply. **R**

A-5. **Provide flood risk reduction for assets and services identified as vulnerable along the shoreline through their end-of-life cycle**. Short to medium term strategies should incorporate risk reduction for existing infrastructure, while medium to longer term strategies should consider opportunities to reduce long-term future risk. This includes utilizing land use policies such as sea level rise overlay zones, which can support the phasing of current land uses to resilience zones. In the preferred adaptation strategies and pathways, demonstrate and describe what assets and services are being protected from flooding impacts. **R**

A-6. **Utilize approaches that avoid, minimize, and reduce Bay fill for new gray or traditional hardscape shoreline protection.** Protection approaches must consider, evaluate, and reduce the need for Bay fill – and adaptations that may require future Bay fill needs – when identifying adaptation hardscape protection structures to respond to rising sea levels. Bay fill for the purposes of habitat restoration and nature-based adaptation should be encouraged when intended to protect and preserve Baylands habitats into the future. In the preferred adaptation strategies and pathways, demonstrate and describe how Bay fill for shoreline protection is being minimized, and if Bay fill is proposed, how compensatory mitigation would be achieved consistent with the standards for restoration. **R**

A-7. **Identify opportunities to increase zoning density in areas outside of coastal and flood hazard risk zones, while reducing density in areas with severe flooding risks.** Consider use of upzoning, transfers of development rights, and/or other incentives to provide increased opportunities to place housing outside current and future flood zones and implement housing planning processes that are transparent and inclusive. In the preferred adaptation strategies and pathways, demonstrate and describe policies to reduce flood risk on future populations. **R**

A-8. **Consider incorporating phased zoning and land use changes to allow for intentional and gradual transitions of assets and development out of areas at high future flood risk.** When considering long-term land use changes, utilize temporary uses, conditional use permits, and lease terms to allow beneficial uses on an interim basis with the requirement that the uses and structures be removed or adapted due to sea level rise. In the preferred adaptation strategies and pathways, demonstrate and describe land use and/or policy changes that support phased adaptation. **R**

A-9. **Protect and maintain existing open spaces for shoreline resilience**. Existing open spaces can serve to provide space for adaptation protection structures and/or can serve as habitat migration space. In the preferred adaptation strategies and pathways, demonstrate and

describe where existing open spaces are being preserved and designated for shoreline resilience. **R**

A-10. **Integrate multiple benefits through adaptation projects whenever possible.** Where opportunities exist to use adaptation projects to improve public access, connections to public access and open spaces, improve Baylands habitat functions or connectivity, and/or meet other local or One Bay Vision goals, those benefits should be integrated into the planning-scale design of the adaptation strategies. In the preferred adaptation strategies and pathways, demonstrate and describe where multiple benefits from adaptation are occurring. **R**

A-11. **Include policies that describe how infrastructure will be removed at its end-of-life cycle from areas designated to become future habitat and/or open space.** Include policies, regulations and/or financial incentives that require and facilitate the removal of structure foundations after the useful life of structures to ensure that aging and dilapidated development does not lead to future Bay fill and contamination. **R**

A-12. **Maintain, increase, and/or enhance public access and connectivity to the shoreline**. In locations near disadvantaged communities with limited to no shoreline public access, this should be prioritized. In the preferred adaptation strategies and pathways, demonstrate and describe where and how public access is being maintained or enhanced and how communities will access the shoreline. **R**

A-13. **Minimize any increases in the release of greenhouse gas emissions, which exacerbate and worsen future sea level rise impacts.** Protect and increase Baylands habitats that sequester and store carbon. For new protection approaches, evaluate the cost and impacts of short and long-term energy needs, such as the use of pumping or other energy-intensive requirements associated with the strategy. **R**

A-14. **Establish standards and codes for climate-responsive design and implementation of strategies.** This could include wet and dry flood proofing, increased design heights, climate-adapted vegetation, and increased capacity for stormwater infrastructure and systems that consider urban drainage, extreme precipitation, SLR and groundwater rise. **R**

A-15. **Evaluate, consider, and minimize the consequences of failure of flood protection structures.** Any protection structures must include a description flood impacts in the event of a failure and strategies to safeguard and minimize risks. **R**

Strategic Regional Priorities (S)

Strategic Regional Priority Minimum Standards (**R**): Required to be included as part of the adaptation strategies and pathways for any shoreline reach or planning area that contains a Strategic Regional Priority. The application of these standards must be present in the conceptual plan(s), descriptions of preferred adaptation strategies, and where necessary, additional descriptions of why specific standards could not be met.

If the reach and/or planning area contains a *RSAP Strategic Regional Priority***, the adaptation strategies must also include the following:**

S-1. *Regionally significant infrastructure:* **Include protection of existing critical infrastructure and demonstrate how future changes to infrastructure will reduce and minimize future flood risk.** Future changes can include significant upgrades to infrastructure, maintenance and repairs, and siting of new infrastructure. Include details on the number and distribution of people served by critical infrastructure and how strategies will ensure continuity of service as sea level rise. **R**

S-2. *Priority wetland enhancement area:* **Include land use policies that designate current and future land use areas necessary for the long-term survival of habitats.** For areas with existing development that hinders ecosystem migration, consider land use policies such as overlay zones that can transition land uses to wetlands migration space following end-of-life or redevelopment. **R**

S-3. *High-hydrologically connected area:* **Include actions for addressing multi-jurisdictional flooding risks.** This can include the development of collaborative multi-jurisdictional adaptation management approaches, ranging from regularly scheduled meetings to more formal collaborative structures such as Joint Powers Authorities (JPA), Memorandums of Understanding (MOUs), and/or new legislative partnerships. **R**

S-4. *At-risk Transit Oriented Community (TOC):* **Include land use policies that shift density to areas outside hazard risk area and/or demonstrate protection of TOC areas as sea levels rise.** Protection approaches should critically evaluate risks beyond sea level rise, including shallow groundwater rise, earthquakes, and liquefaction on the efficacy and safety of flood protection structures to ensure that protection does not inadvertently increase the risks of catastrophic failure to populations. **R**

S-5. *At-risk urban displacement area:* **Include actions that mitigate displacement risk.** This can include housing and rental policies and anti-gentrification measures. **R**

S-6. *Regionally significant park and trails:* **Incorporate changes to trails and park areas that maintain existing access while increasing connectivity to other trails.** This includes completing missing trail segments and increasing or enhancing regional public access and recreation networks. **R**

S-7. *Contaminated sites within or adjacent to Environmental Justice Communities:* **Include remediation of sites and actions that reduce risks of toxic materials mobilization and vaporization to communities.** **R**

S-8. *Regionally significant transportation infrastructure:* **Include protection of transportation routes and/or demonstrate how functionality of future infrastructure will support the region.** Future changes to transportation infrastructure may mean changes in spatial location, while the services provided by the transportation asset should be maintained over time. Additionally, include actions on coordination with appropriate transportation agencies and align adaptation plans and projects. For example, this may include the California Department of Transportation (Caltrans), Bay Area Rapid Transit (BART), Ports, Airports, Water Emergency Transportation Authority (WETA) and other agencies. **R**

Adaptation Design (D)

Adaptation Design Minimum Standards (**R**): Required to be included in project-level design of adaptation strategies.

When designing project-scale adaptation strategies (Design Standards), the adaptation designs must:

D-1. **Integrate 4 feet of freeboard above FEMA Base Flood Elevation.** New or re-development, if sited in areas at risk of future coastal flood hazards, should incorporate additional height to freeboard elevation to accommodate future coastal hazards.

D-2. **Consider a setback from the shoreline.** New or re-development, if sited in areas at risk of future coastal flood hazards, should consider appropriate development setbacks that allow space for adaptation.

D-3. **Consider integrating features into new, retrofit, or rebuilt infrastructure that allows for adaptations to the structure when conditions require.** For example, when designing flood protection structures such as levees, consider widening the base to accommodate raising levees to address future flood risk.

D-4. **Incorporate current and future shallow groundwater rise risks on new or re-development.** This includes limiting below ground and ground floor uses, elevating or floodproofing water and salt sensitive components and equipment (e.g. heating and cooling units, generators, electrical controls), including temporary deployable flood management measures or improving urban drainage and stormwater management.

Board Questions

Staff requests the Board frame its remarks on the proposed planning guidance with regard to professional practice in implementing the proposed requirements and recommendations, and in consideration to the objectives found in the Commission's Public Access Design Guidelines and the Commission's policies on sea level rise, and environmental justice and social equity. The seven objectives for public access are:

1. Make public access **PUBLIC**.
2. Make public access **USABLE**.
3. Provide, maintain, and enhance **VISUAL ACCESS** to the Bay and shoreline.
4. Maintain and enhance the **VISUAL QUALITY** of the Bay, shoreline, and adjacent developments.
5. Provide **CONNECTIONS** to and **CONTINUITY** along the shoreline.
6. Take advantage of the **BAY SETTING**.
7. Ensure that public access is **COMPATIBLE WITH WILDLIFE** through siting, design, and management strategies.

Staff also has the following specific questions for the Board's consideration:

1. Are there any components of the adaptation strategy and pathways standards that are missing or that are too burdensome?
2. Are we asking people to consider the right questions when identifying adaptation strategies?
3. How should people evaluate strategies to come up with preferred alternatives?
4. How detailed should adaptation strategies be in this plan, and what are the key pieces of information people need to identify to get to implementation?