

San Francisco Bay Conservation and Development Commission

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TO: Bay Fill Working Group Committee Members

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SUBJECT: Projects with Adjacent Low Lying Areas Policy Background
(For Bay Fill Work Group consideration on November 17, 2016)

BCDC Policies

The Bay Fill Working Group will receive a briefing on communities and projects that have vulnerabilities due to low-lying areas, either within the project boundaries or adjacent to proposed projects. Commission staff, Ms. Lindy Lowe, Acting Chief of Planning, will give a presentation on this topic based on assessments from the Adapting to Rising Tides (ART) Project. In preparation for this meeting and discussion, staff has provided the applicable policies from the San Francisco Bay Plan policy excerpts that would likely be applicable to projects that may impact low-lying areas within or adjacent to the project site.

Questions for the work group to consider:

1. Would projects that raise elevations within the project footprint create additional flooding hazards to adjacent areas?
2. Are their shoreline protection measures that would reduce potential flooding adjacent areas, including nature-based solutions.
3. What is the best way, prior to developing a regional rising seas adaptation plan, to ensure projects that may create additional flooding to adjacent properties, minimize this potential impact?
4. How should the Commission evaluate projects that would likely become “islands” with rising sea levels due to connectivity issues?
5. Should the Commission consider policies specifically to address adjacent low-lying area flooding and connectivity?

San Francisco Bay Plan Policies

Water Quality

To protect the Bay and its tributaries from the water quality impacts of nonpoint source pollution, **new development should be sited and designed consistent with standards in municipal stormwater permits and state and regional stormwater management guidelines, where applicable, and with the protection of Bay resources.** To offset impacts from increased impervious areas and land disturbances, vegetated swales, permeable pavement materials, preservation of existing

trees and vegetation' planting native vegetation and other appropriate measures should be evaluated and implemented where appropriate.

Tidal Marsh and Tidal Flats

1. Tidal marshes and tidal flats should be conserved to the fullest possible extent. Filling, diking, and dredging projects that would substantially harm tidal marshes or tidal flats should be allowed only for purposes that provide substantial public benefits and only if there is no feasible alternative.

Climate Change

1. The Commission intends that the Bay Plan Climate Change findings and policies will be used as follows:
 - a. The findings and policies apply only to projects and activities located within the following areas: San Francisco Bay, the 100-foot shoreline band, salt ponds, managed wetlands, and certain waterways, as these areas are described in Government Code section 66610, and the Suisun Marsh, as this area is described in Public Resources Code section 29101;
 - b. For projects or activities that are located partly within the areas described in subparagraph a and partly outside such area, the findings and policies apply only to those activities or that portion of the project within the areas described in subparagraph a;
 - c. For the purposes of implementing the federal Coastal Zone Management Act, the findings and policies do not apply to projects and activities located outside the areas described in subparagraph a, even if those projects or activities may otherwise be subject to consistency review pursuant to the federal Coastal Zone Management Act; and
 - d. For purposes of implementing the California Environmental Quality Act, the findings and policies are not applicable portions of the Bay Plan for purposes of CEQA Guideline 15125(d) for projects and activities outside the areas described in subparagraph a and, therefore, a discussion of whether such proposed projects or activities are consistent with the policies is not required in environmental documents.
2. When planning shoreline areas or designing larger shoreline projects, a risk assessment should be prepared by a qualified engineer and should be based on the estimated 100-year flood elevation that takes into account the best estimates of future sea level rise and current flood protection and planned flood protection that will be funded and constructed when needed to provide protection for the proposed project or shoreline area. A range of sea level rise projections for mid-century and end of century based on the best scientific data available should be used in the risk assessment. Inundation maps used for the risk assessment should be prepared under the direction of a qualified engineer. The risk assessment should identify all types of potential flooding, degrees of uncertainty, consequences of defense failure, and risks to existing habitat from proposed flood protection devices.
3. To protect public safety and ecosystem services, within areas that a risk assessment determines are vulnerable to future shoreline flooding that threatens public safety, all projects—other than

repairs of existing facilities, small projects that do not increase risks to public safety, interim projects and infill projects within existing urbanized areas—should be designed to be resilient to a mid-century sea level rise projection. If it is likely the project will remain in place longer than mid-century, an adaptive management plan should be developed to address the long-term impacts that will arise based on a risk assessment using the best available science-based projection for sea level rise at the end of the century.

6. The Commission, in collaboration with the Joint Policy Committee, other regional, state and federal agencies, local governments, and the general public, should formulate a regional sea level rise adaptation strategy for protecting critical developed shoreline areas and natural ecosystems, enhancing the resilience of Bay and shoreline systems and increasing their adaptive capacity.

The Commission recommends that: (1) the strategy incorporate an adaptive management approach; (2) the strategy be consistent with the goals of SB 375 and the principles of the California Climate Adaptation Strategy; (3) the strategy be updated regularly to reflect changing conditions and scientific information and include maps of shoreline areas that are vulnerable to flooding based on projections of future sea level rise and shoreline flooding; (4) the maps be prepared under the direction of a qualified engineer and regularly updated in consultation with government agencies with authority over flood protection; and (5) particular attention be given to identifying and encouraging the development of long-term regional flood protection strategies that may be beyond the fiscal resources of individual local agencies.

Ideally, the regional strategy will determine where and how existing development should be protected and infill development encouraged, where new development should be permitted, and where existing development should eventually be removed to allow the Bay to migrate inland. The entities that formulate the regional strategy are encouraged to consider the following strategies and goals:

- a. advance regional public safety and economic prosperity by protecting: (i) existing development that provides regionally significant benefits; (ii) new shoreline development that is consistent with other Bay Plan policies; and (iii) infrastructure that is crucial to public health or the region's economy, such as airports, ports, regional transportation, wastewater treatment facilities, major parks, recreational areas and trails;
- b. enhance the Bay ecosystem by identifying areas where tidal wetlands and tidal flats can migrate landward; assuring adequate volumes of sediment for marsh accretion; identifying conservation areas that should be considered for acquisition, preservation or enhancement; developing and planning for flood protection; and maintaining sufficient transitional habitat and upland buffer areas around tidal wetlands;
- c. integrate the protection of existing and future shoreline development with the enhancement of the Bay ecosystem, such as by using feasible shoreline protection measures that incorporate natural Bay habitat for flood control and erosion prevention;

- d. encourage innovative approaches to sea level rise adaptation;
 - e. identify a framework for integrating the adaptation responses of multiple government agencies;
 - f. integrate regional mitigation measures designed to reduce greenhouse gas emissions with regional adaptation measures designed to address the unavoidable impacts of climate change;
 - g. address environmental justice and social equity issues;
 - h. integrate hazard mitigation and emergency preparedness planning with adaptation planning by developing techniques for reducing contamination releases, structural damage and toxic mold growth associated with flooding of buildings, and establishing emergency assistance centers in neighborhoods at risk from flooding;
 - i. advance regional sustainability, encourage infill development and job creation, provide diverse housing served by transit and protect historical and cultural resources;
 - j. encourage the remediation of shoreline areas with existing environmental degradation and contamination in order to reduce risks to the Bay's water quality in the event of flooding;
 - k. support research that provides information useful for planning and policy development on the impacts of climate change on the Bay, particularly those related to shoreline flooding;
 - l. identify actions to prepare and implement the strategy, including any needed changes in law; and
 - m. identify mechanisms to provide information, tools, and financial resources so local governments can integrate regional climate change adaptation planning into local community design processes.
7. Until a regional sea level rise adaptation strategy can be completed, the Commission should evaluate each project proposed in vulnerable areas on a case-by-case basis to determine the project's public benefits, resilience to flooding, and capacity to adapt to climate change impacts. The following specific types of projects have regional benefits, advance regional goals, and should be encouraged, if their regional benefits and their advancement of regional goals outweigh the risk from flooding:
- a. remediation of existing environmental degradation or contamination, particularly on a closed military base;
 - b. a transportation facility, public utility or other critical infrastructure that is necessary for existing development or to serve planned development;
 - c. a project that will concentrate employment or housing near existing or committed transit service (whether by public or private funds or as part of a project), particularly within those Priority Development Areas that are established by the Association of Bay Area Governments and endorsed by the Commission, and that includes a financial strategy for flood protection

that will minimize the burdens on the public and a sea level rise adaptation strategy that will adequately provide for the resilience and sustainability of the project over its designed lifespan; and

- d. a natural resource restoration or environmental enhancement project.

The following specific types of projects should be encouraged if they do not negatively impact the Bay and do not increase risks to public safety:

- a. repairs of an existing facility;
- b. a small project;
- c. a use that is interim in nature and either can be easily removed or relocated to higher ground or can be amortized within a period before removal or relocation of the proposed use would be necessary; and
- d. a public park.

Safety of Fill

- 2. Even if the Bay Plan indicates that a fill may be permissible, no fill or building should be constructed if hazards cannot be overcome adequately for the intended use in accordance with the criteria prescribed by the Engineering Criteria Review Board.
- 4. Adequate measures should be provided to prevent damage from sea level rise and storm activity that may occur on fill or near the shoreline over the expected life of a project. The Commission may approve fill that is needed to provide flood protection for existing projects and uses. New projects on fill or near the shoreline should either be set back from the edge of the shore so that the project will not be subject to dynamic wave energy, be built so the bottom floor level of structures will be above a 100-year flood elevation that takes future sea level rise into account for the expected life of the project, be specifically designed to tolerate periodic flooding, or employ other effective means of addressing the impacts of future sea level rise and storm activity. Rights-of-way for levees or other structures protecting inland areas from tidal flooding should be sufficiently wide on the upland side to allow for future levee widening to support additional levee height so that no fill for levee widening is placed in the Bay.

Shoreline Protection

- 1. New shoreline protection projects and the maintenance or reconstruction of existing projects and uses should be authorized if: (a) the project is necessary to provide flood or erosion protection for (i) existing development, use or infrastructure, or (ii) proposed development, use or infrastructure that is consistent with other Bay Plan policies; (b) the type of the protective structure is appropriate for the project site, the uses to be protected, and the erosion and flooding conditions at the site; (c) the project is properly engineered to provide erosion control and flood protection for the expected life of the project based on a 100-year flood event that takes future sea level rise into account; (d) the project is properly designed and constructed to prevent significant

impediments to physical and visual public access; and (e) the protection is integrated with current or planned adjacent shoreline protection measures. Professionals knowledgeable of the Commission's concerns, such as civil engineers experienced in coastal processes, should participate in the design.

3. Authorized protective projects should be regularly maintained according to a long-term maintenance program to assure that the shoreline will be protected from tidal erosion and flooding and that the effects of the shoreline protection project on natural resources during the life of the project will be the minimum necessary.
4. Whenever feasible and appropriate, shoreline protection projects should include provisions for nonstructural methods such as marsh vegetation and integrate shoreline protection and Bay ecosystem enhancement, using adaptive management. Along shorelines that support marsh vegetation, or where marsh establishment has a reasonable chance of success, the Commission should require that the design of authorized protection projects include provisions for establishing marsh and transitional upland vegetation as part of the protective structure, wherever feasible.
5. Adverse impacts to natural resources and public access from new shoreline protection should be avoided. Where significant impacts cannot be avoided, mitigation or alternative public access should be provided.

Public Access.

5. Public access should be sited, designed, managed and maintained to avoid significant adverse impacts from sea level rise and shoreline flooding.
6. Whenever public access to the Bay is provided as a condition of development, on fill or on the shoreline, the access should be permanently guaranteed. This should be done wherever appropriate by requiring dedication of fee title or easements at no cost to the public, in the same manner that streets, park sites, and school sites are dedicated to the public as part of the subdivision process in cities and counties. Any public access provided as a condition of development should either be required to remain viable in the event of future sea level rise or flooding, or equivalent access consistent with the project should be provided nearby.

Other Uses of the Bay and Shoreline

1. Shore areas not proposed to be reserved for a priority use should be used for any purpose (acceptable to the local government having jurisdiction) that uses the Bay as an asset and in no way affects the Bay adversely. This means any use that does not adversely affect enjoyment of the Bay and its shoreline by residents, employees, and visitors within the site area itself or within adjacent areas of the Bay or shoreline.
3. Wherever waterfront areas are used for housing, whenever feasible, high densities should be encouraged to provide the advantages of waterfront housing to larger numbers of people.