San Francisco Bay Conservation and Development Commission
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TO: Bay Fill Policies Working Group Members

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SUBJECT: Bay Fill Working Group Suggested Fill Issues for Built Environment Projects

A. **Working Group Charge.** Bay Fill Working Group Chair, Barry Nelson directed staff to prepare an inventory of key issues for built environment projects regarding climate change adaptation and Bay fill for its July meeting. Staff reviewed the Bay Fill meeting summaries; the Commission Sea Level Rise Workshop recommendations; the San Francisco Bay Plan (Bay Plan); and met with a subset of regulatory and planning staff members to develop the following inventory of issues. However, because the Bay Fill Working Group has not yet thoroughly examined the issues faced by built environment, this list is less developed than the information provided on the habitat based projects.

B. **Inventory of Key Issues Related to Climate Change Adaption, Bay Fill and Bay Plan Policies addressing the Built Environment.**

1. Fill in the Shoreline Band - Analyzing and regulation of fill in the shoreline band is limited to the nexus of maximum feasible public access so it is difficult to address SLR adaptability and resiliency for shoreline development beyond the public access requirements. (Treasure Island).
2. Maximum Feasible Public Access over Time. How does the Commission assure that currently authorized or new authorized public access is adaptable to sea level rise, or does not become a barrier to tidal exchange in areas where it is desirable.
3. Shoreline Protection – The Commission has limited ability to address regional shoreline protection. Currently, analysis is completed on a project by project basis, and it is difficult to assess impacts to adjacent property or require measures that are protective of adjacent property. This project by project approach has the potential to mismatch shoreline protections between projects. How might the Commission ensure that current proposals are adaptable to future regional approaches to shoreline protection?
4. Flood Protection - How should flood protection projects adapt to SLR over time? The current response is simply building higher levees, which technically meets the Commission's SLR requirements, but are not particularly adaptive. (Foster City) In some locations there is an opportunity to expand flood plains laterally as well? (San Francisquito Creek) Limited jurisdiction reduces ability of the Commission to address these issues.

What does the Commission see as its role in determining flood protection methods in the Bay Area?

5. Tidal Barriers – It is likely that in the near future the Commission will see proposals to place tide gates and other barriers at or near the months of tidal creeks to limit Bay waters from traveling inland or limiting riverine flow during high tide. Over the long term, the Commission may see proposals to place larger barriers at the Golden Gate, Carquinez Strait and other locations that may limit flows between embayments. These areas are highly productive ecological zones, where nutrients and sediments enter and leave the Bay, and would likely require significant engineering and fill. How should the Commission consider and prepare for such proposals on the small to large scale and in the short term and longer term?

6. Adjacent Existing Low Lying Areas – The island effect. Building up shoreline elevations at project site may reduce impacts from SLR, but the adjacent low lying areas may limit access over time to the project site, or worse be flooded as a result of lack of elevation and/or protection. How does the Commission address areas outside of the project boundaries that would be inundated overtime and prevent the use of the project? (Blue Harbor).

7. Transportation Corridors and Flood Protection – Several of the Bay Area's large freeways and trailways are located adjacent to the Bay, and are often the only physical barrier to tidal action. Can these transportation corridors serve the dual purpose of flood protection and highways? Should they be adaptable to sea level rise through use of causeways, elevated sections or other means. When in areas of marsh habitat, should they allow tidal flow to areas below and behind the roadway? How would the Commission work with CalTrans, the USACE and the Flood Protection Agencies to align these purposes, and where is it appropriate?

7. Green to Gray Infrastructure – Should the Commission approach SLR adaptation measures with the same approach as "avoid, minimize and mitigate" but with a SLR approach of: "don't place in harms way, adapt structures, green infrastructure, gray/green and gray" process of evaluating options? The Commission could consider providing direction to the region about that spectrum of adaptation responses.

8. Mitigation Banking – As project proponents take measures to adapt to sea level rise, it is likely that there will be an increased need for mitigation in the region. In the past, mitigation has been provided primarily on a project-by-project basis, resulting in smaller, potentially less effective and productive restoration projects. The Commission may consider promoting more mitigation banking in the region. This approach may provide an opportunity to create more extensive habitat restoration projects and that are adaptive to sea level rise. Challenges include locating available space for larger scale mitigation banking and identifying mitigation banks that are appropriate to different kinds of impacts. The Commission should also be aware that there are federal requirements for mitigation banking and would need to be considered.