MEMORANDUM

May 4, 2018

TO: MEMBERS, PORT COMMISSION
Hon. Kimberly Brandon, President
Hon. Willie Adams, Vice President
Hon. Gail Gilman
Hon. Victor Makras
Hon. Doreen Woo Ho

FROM: Elaine Forbes
Executive Director

SUBJECT: Informational Presentation on Waterfront Plan Working Group Resilience Recommendations produced in Part 2 of the Waterfront Plan Update public planning process

DIRECTOR'S RECOMMENDATION: Informational Presentation

Executive Summary

On February 27, 2018, Port staff provided an informational presentation on the policy guidance recommendations generated from Part 2 of the Waterfront Plan Update process. The recommendations were produced by the Waterfront Plan Working Group's (Working Group) three subcommittees - Land Use, Transportation, and Resilience – and were accepted by the full Working Group on December 6, 2017. At the February 27th meeting, the Port Commission asked Port staff to schedule follow-up Port Commission briefings to allow time for more focused consideration and discussion of the recommendations. This staff report focuses on the Resilience recommendations. A separate briefing on Land Use recommendations took place at the Port Commission's April 10, 2018 meeting. A briefing on the Transportation recommendations is tentatively scheduled for the Port Commission's June 12th meeting. All Part 2 policy guidance recommendations are described in the Waterfront Plan Update Part 2 Final Summary Report.[1]

THIS PRINT COVERS CALENDAR ITEM NO. 13A

Footnote 1 Link to the *Part 2 Final Report – Working Group Subcommittee Recommendations* ***(Part 2 Final Report)*** which details the Part 2 process, Working Group Guiding Principles, and the recommendations that each Subcommittee produced, which the full Working Group ultimately accepted, as revised.

This staff report extracts the Resilience recommendations from that Report, organizes them by topic, and provides further details about the thinking and discussions that led up to the recommendations. Appendix A provides links to detailed meeting agendas, background reports, minutes, and presentations that support the Part 2 Report recommendations. Port staff welcomes the opportunity to receive comments and answer questions, and ensure the Port Commission has a full understanding of the intent of the recommendations.

As described during the February 27th Port Commission meeting, public walking tours and workshops are underway for Part 3 of the Waterfront Plan Update public process, which will be completed by June 2018. Port staff will report back to the Port Commission on public comments received during Part 3 meetings. Together, the Part 2 Working Group recommendations and a summary of Part 3 public comments will document public values, goals, aspirations, and needs that should be addressed in the Waterfront Plan Update. Port staff will seek Port Commission endorsement of these recommendations and direction before producing draft Waterfront Plan amendments for Port Commission and public review and comment. Final Waterfront Plan amendments cannot be approved by the Port Commission until completion of an environmental review public process pursuant to the California Environmental Quality Act (CEQA). As authorized by the Port Commission on March 13, 2018, Port staff will be issuing a Request for Proposals in late May to hire a CEQA environmental consultant to carry out this work.

The Waterfront Plan sets forth long-term goals and policy objectives to maintain and improve Port lands. Throughout the update process, the Working Group and public discussions have considered the Port's financial and operational plans, including the 10-Year Capital Plan, capital budget process, and Strategic Plan. These, along with the Waterfront Plan, provide the integrated policy and operational framework that guides Port staff work. Staff has emphasized to the public the importance of following future updates to the Port Strategic Plan and 10-Year Capital Plan and capital budget because they establish the shorter-term priorities and actions that will help bring the aspirations of the Waterfront Plan to fruition.

Strategic Plan

The Waterfront Plan Update supports the following Strategic Plan goals and objectives:

- **Port Renewal** – "*Develop community-supported recommendations to update the Waterfront Land Use Plan, including land use policy direction for the Northeast and South Beach waterfront areas*".
- **Public Engagement** – "*Promote the richness the Port has to offer through education, marketing, and maintaining strong relationships with Port users and stakeholders*."
- **Livability** – "*Ensure Port improvements result in advances in the environment, social equity, and quality of life for San Francisco residents and visitors*."
- **Resiliency** – "*Lead the City's efforts in addressing threats from earthquakes and flood risks through research and infrastructure improvements to the Seawall and Port property*."

- **Sustainability** – "*Limit climate change impacts and employ strong environmental stewardship principles through implementation of Port-wide practices that protect the environment and promote ecological balance*."
- **Stability** – "*Maintain the Port's financial strength for future generations…"*
- **Economic Vitality** – *"Attract and retain maritime and non-maritime commerce to contribute to the long-term viability of the Port and the City*."

The Resilience Subcommittee

The Resilience Subcommittee, chaired by Pia Hinckle, focused on developing two new goals and related policies for the Waterfront Plan Update - Environmental Sustainability and Resilience – over the course of 5 public meetings and one "Designing for Resilience" workshop. The Subcommittee was supported in its efforts by Resilience Advisory Team members and staff from many public agencies, including the San Francisco Planning Department, Bay Conservation and Development Commission (BCDC), Association of Bay Area Governments, Water Emergency Transportation Authority (WETA), San Francisco Department of the Environment, San Francisco Department of Emergency Management, San Francisco Neighborhood Empowerment Network, San Francisco Office of Resilience and Recovery, and representatives from the City's Neighborhood Emergency Response Team (NERT). A roster of Resilience Subcommittee members, including the Resilience Advisory Team members who participated in the Subcommittee's discussions, is attached as Appendix B. Unlike the work of the other two subcommittees, the Resilience Subcommittee focused almost exclusively on guiding development of new Waterfront Plan content.

It is important to note that Resilience Subcommittee attendees discussed policy ideas that affect a broad range of Port activities (operations, maintenance, development, leasing, procurement, etc.), with the expectation that some recommendations would be referred to other Port plans and policy documents, such as the Port Strategic Plan and the Emergency Operations Plan (EOP). For convenience of review, policy recommendations that related to Port plans other than the Waterfront Plan are excerpted from the Part 2 Report and attached to this staff report as Appendix C. Although this staff report focuses on the recommendations that are intended to guide policy development for the Waterfront Plan, staff is prepared to discuss and answer questions about all the Resilience recommendations, including those destined for consideration as part of other Port plans and projects.

At the Port Commission's February 27th meeting, Port Executive Director Elaine Forbes provided an update on the Port's Strategic Plan. In response to a query about whether there were topics under consideration for future updates to the Strategic Plan, she flagged safety and security – "the day-to-day work we do to keep our visitors and everyone who comes to the waterfront safe" - as one such area, along with some maintenance operations. The Resilience recommendations that are flagged for the Strategic Plan and EOP provide an excellent starting point for consideration during the next Strategic Plan update effort.

Environmental Sustainability

The Resilience Subcommittee began by discussing Environmental Sustainability. The 1997 Waterfront Plan includes goals, policies and development standards throughout the Plan that address environmental concerns, but with a relatively light touch, as summarized in **1997 Waterfront Plan Goals, Policies and Development Standards that Address Environmental Sustainability**. Some have been accomplished (particularly site-specific goals noted in linked summary). Others continue to apply and will be incorporated into the Waterfront Plan Update.

Since 1997, the City and County of San Francisco ("City") and the Port have developed many more environmental policies and programs that apply to the Port's maintenance, leasing, and redevelopment activities; shoreline habitat and public access projects; and ongoing efforts to remediate environmental contamination and protect water quality. The City is exceptionally progressive in its environmental policies, making San Francisco a leader in environmentally sustainable local government. As a City department subject to these requirements, the Port incorporates as standard practice sustainability measures that would be considered leading-edge elsewhere. In addition to these City-wide efforts, the Port also has adopted environmental policies and practices unique to its own operations, including goals articulated in the Port's Strategic Plan 2017-2022. See the Environmental Sustainability Background Report for further detail.

Current efforts to seismically strengthen and incorporate sea level rise adaptation for the Embarcadero Seawall provide the City, the Port, and the public with unprecedented opportunities to ensure that environmental sustainability and waterfront resilience principles are prioritized in Port planning, development, and infrastructure projects for decades to come, an opportunity welcomed by the Subcommittee.

As a result of these changes and opportunities, Port Staff recommended a new environmental sustainability goal and related policies for the Waterfront Plan Update to:

- Elevate environmental stewardship as a key value and goal of the Waterfront Plan;
- Incorporate existing City and Port environmental sustainability requirements that affect planning, development and construction into the Waterfront Plan;
- Align with the Port's 2017-2022 Strategic Plan Sustainability Goal, "*Limit climate change and employ strong environmental stewardship principles … that protect the environment and promote ecological balance*", and the objectives that address environmental sustainability; and
- Ensure that the Port's land use and planning decision-making processes reflect environmental priorities.

The Subcommittee welcomed this opportunity and developed recommendations, organized into the following environmental sustainability topics, which are further detailed below: 1) Climate Change and Air Quality; 2) Water Quality and Conservation; 3) Natural Resources; and 4) Green Building, Leasing and Development.

Across all environmental sustainability topics, the recommendations promote:

- Pushing beyond minimum requirements
- Better data collection
- More Bay-wide/regional collaborations
- Cleaner fuels, greener infrastructure and technology, waste reduction, and multi-benefit projects
- Improvements to habitat, biodiversity and ecosystem function
- Education and partnerships to expedite action

Prior to hearing the Resilience Subcommittee recommendations on February 27, 2018, the Port Commission approved updates to the 2016-Strategic Plan which included:

- *"Develop San Francisco's GreenPort Program to advance environmental regulatory compliance and stewardship initiatives to meet or exceed City environmental sustainability policies and standards for maritime, industrial, commercial, and recreational facilities and operations*."

The Resilience Subcommittee recommendations will provide a firm foundation for this work.

1. Climate Change & Air Quality Recommendations

Echoing the existing Strategic Plan "Sustainability" goal, the Resilience Subcommittee and members of the public prioritized reduction of greenhouse gas emissions through energy efficiency and use of clean and renewable fuels as a goal for the Waterfront Plan Update. This value is also reflected in the policy recommendations related to the Green Building and Sustainable Development recommendations below, all of which would contribute toward the goal of reducing greenhouse gas emissions from Port land and operations.

1. Continue to minimize carbon and other greenhouse gas emissions and maximize carbon capture and sequestration by the Port and its tenants and development partners; consider incentives for carbon emissions reduction measures (e.g. energy efficiency and use of cleaner fuels and technologies), above those already mandated by existing regulations, in Port leasing and development activities. **Staff will coordinate with Transportation Recommendations.**
2. Explore new opportunities and funding sources to improve energy efficiency; generate and use solar, wind or other renewable power; and facilitate use of alternative fuels, consistent with the City's 0-50-100-Roots policy (e.g., the California Air Resources Board and Department of Conservation may be funding sources for greenhouse gas reduction projects).

2. Water Quality & Conservation Recommendations

Protecting Bay water quality is a very high priority for the Resilience Subcommittee members and the public, as expressed in the following policy recommendations. These recommendations reflect the common theme through many of the resilience topics that the Port's environmental sustainability goals could best be served through collaboration with other public agencies, research institutions, tenants, development partners, and the public.

3. Pursue leadership opportunities and deepen partnerships with regulatory agencies, research institutions, and advocacy groups (e.g., Regional Water Quality Control Board, California Coastal Conservancy, Bay Planning Coalition, BCDC, SF Baykeeper, Mission Creek Conservancy, Save the Bay, etc.) to improve water quality in the Bay through research, data collection and sharing, and broader public education and communication.
4. Engage City Agencies and private development partners to maintain and repair existing, and construct new wastewater infrastructure (e.g., wastewater storage, transport, treatment and discharge structures to reduce combined sewer overflows (CSOs) and make such infrastructure more resilient to sea level rise and extreme weather). Continue to implement the City's existing Stormwater Management Requirements and, whenever feasible, stretch beyond them to incorporate additional "green infrastructure" to reduce the volume of CSOs and improve the quality of sewer and stormwater runoff and reduce the spread of garbage into the Bay.
5. Continue to remove deleterious fill from the Bay and shoreline, particularly where such fill degrades habitat or water quality (e.g. un-engineered shoreline debris, creosote-treated wood).
6. Promote remediation, redevelopment, and reuse of contaminated sites, particularly where such redevelopment can protect such sites from erosion or inundation.
7. Implement State and local water conservation and water reuse requirements and policies for new construction, renovation, parks and open spaces, and operations and maintenance.
8. Implement City requirements for new and redevelopment projects to design and construct infrastructure to use recycled water from off-site and reuse stormwater and wastewater on-site.
9. Educate maritime tenants and visitors about the water quality risks associated with waterborne invasives (e.g., seaweeds, worms, mollusks, crabs, etc.) and regulations adopted to reduce the spread of invasive species. Where feasible, implement leasing policies, services and facilities to help reduce their spread. The Port will distribute educational materials at boat launches as well as marinas.

3. Natural Resources Recommendations

Resilience Subcommittee members and the public value preservation and enhancement of Bay and shoreline habitat, including diversity of species and habitat types.

10. Protect and maintain existing natural shorelines and habitat areas, including managing impacts of invasive species, predators, and public access. **Staff will coordinate with Land Use Recommendations.**
11. Incorporate multi-benefit green infrastructure in stormwater management, flood control, and public realm improvements to promote biodiversity and provide ecological value
12. Seek opportunities to build natural infrastructure (e.g. wetlands, horizontal levees, and "living shorelines") and habitat into shoreline stabilization or improvement projects; prioritize "soft" waterfront edges where feasible and appropriate. **Staff will coordinate with Land Use Recommendations.**
13. Seek opportunities to create a mosaic of different kinds of in-water and shoreline habitat; consider opportunities to integrate habitat into design and construction of in-water structures such as oyster baskets, or textured vertical surfaces.
14. Seek partnerships and funding to support research and implementation of innovative habitat restoration methods that will improve biodiversity and ecological function around the Port and the Bay.
15. Seek locations and opportunities for new and expanded programs and signage along the waterfront to engage and educate local communities and visitors (e.g., existing and planned marinas, boat launches, etc.)

4. Green Building, Leasing, and Development Recommendations

Commercial and residential buildings generate from 10% to nearly 40% of carbon dioxide emissions in the United States each year[1], even more than transportation or industry. Most of these emissions come from the combustion of fossil fuels for heating, cooling and lighting, and to power appliances and electrical equipment. Although San Franciscans are blessed with a temperate climate and easy access to zero carbon energy from the San Francisco Public Utilities Commission, new and re-development projects provide opportunities to substantially reduce our contribution to climate change, especially when implemented on a large scale, as can be achieved in new district-scale development. The Resilience Subcommittee and public endorse meeting the City's and Port's green building and environment code standards as an important goal, reflected in the following policy recommendations:

16. Continue to implement the Port's Green Building Standards and applicable provisions of the City's Environment Code in new construction and renovation to meet LEED standards, conserve water, and improve energy efficiency, and use healthier or environmentally preferred building materials.
17. Work toward Zero Waste by implementing Port and City requirements and policies that promote reuse, recycling, and composting in construction and operations.
18. Implement the City's Better Roofs Ordinance, which requires new commercial and residential buildings to install rooftop solar for heat or electricity or a living roof.
19. Seek opportunities to plan land uses and lease Port property to promote "district level" sustainability measures, such as those occurring within the Port's Maritime Eco-Industrial Center, to promote reuse and recycling of materials, and reduce transportation and related air emissions from construction activities on and off Port lands. **Staff will coordinate with Land Use and Transportation Recommendations.**
20. Monitor evolving best practices and explore new technologies to achieve progressively higher levels of resource efficiency and sustainability in leasing and development projects over time; seek opportunities to incorporate new environmental requirements and best management practices in "older" Port leases and lease extensions.

Resilience

Resilience is a new subject for the Waterfront Plan Update. Although the 1997 Waterfront Plan touched on some of the policy issues often included in resilience policies today (e.g. preservation of important characteristics and functions of the San Francisco Waterfront, diversity and equity), the 1997 Waterfront Plan preceded current understanding about the nature and extent of the Port's climate change, seismic, and public safety challenges.

Over the past decade, resilience goals and policies have increasingly made their way into land use planning documents of cities and ports throughout the United States and beyond. Although such policies vary depending on the unique attributes, challenges and priorities of different jurisdictions, common themes include how to prevent, withstand, respond to, and recover from sudden shocks (e.g. earthquakes, tsunamis, terrorism) as well as slower moving or evolving threats (e.g. sea level rise, more frequent and severe storms, and other impacts of climate change, lack of social cohesion and equity, etc.)

[1] Estimates vary. USEPA 2016 estimates 11%. U.S. Green Building Council 2015 estimates 39%.

Early in the Resilience Subcommittee deliberations, Port staff recommended and the Subcommittee agreed to consider new Waterfront Plan policies that would build upon and align with the Port Strategic Plan's Resiliency Goal: "*Lead the City's efforts in addressing threats from earthquakes and flood risks through research and infrastructure improvements to the Seawall and Port property.*" Rather than starting from scratch, staff first reviewed and shared with the Subcommittee and the public information culled from resilience plans & policies of other Bay area and US cities, ports, and regional agencies, as well as from the City's Resilient SF Plan which was discussed during the Working Group Part 1 meetings. See Appendix D for a list of Resilience Planning Resources Reviewed.

Like for environmental sustainability, the City and County of San Francisco (CCSF) has taken a leadership role in resilience planning for the City. The Port actively participates in City-wide efforts, while also pursuing compatible policies and projects to protect its unique waterfront assets and businesses. Successful resilience planning for climate change, sea level rise, disaster response, and social equity also requires that local entities, like the Port, collaborate with agencies beyond their jurisdictional boundaries.

The Subcommittee therefore hosted presentations from and asked questions of a range of professionals and Advisory Team members working in the fields of resilience planning, homeland security, and disaster response and recovery, including staff from WETA, BCDC, the Port, SF Planning, SF Department of the Environment, SF Department of Emergency Management, SF Neighborhood Empowerment Network, and SF Office of Resilience and Recovery.

The takeaway from this deep dive into resilience planning, was that although resilience plans vary, common themes include how to prevent and recover from sudden shocks (like earthquakes and terrorism) as well as slower moving or evolving threats (like sea level rise and more frequent and severe storms). Recognizing that the City's Office of Resilience and Recovery oversees City-wide resilience planning (and the wide range of housing, social services, public works, communications, and other functions required to bounce back from disasters), the Subcommittee narrowed in on how the Waterfront Plan's new resilience policies should address the Port's unique challenges, public trust mission, and geography.

For this purpose, the Subcommittee defined "resilience" as "the capacity of the Port to maintain its function and vitality in the face of natural or human caused disruptions" and focused on developing policy recommendations that would:

- Elevate resilience as a key value and goal of the Waterfront Plan;
- Incorporate existing City and Port resilience, emergency preparation and disaster recovery requirements that affect waterfront land use, planning, development and construction;
- Guide the Port's land use and resilience planning decisions to ensure they reflect public values about environmental, urban design, transportation, historic preservation, economic, and sustainability values; and
- Inform and coordinate with City and regional resilience planning efforts.

The resilience recommendations first addressed 3 primary topics, described further below: 1) Emergency Preparedness and Disaster Recovery; 2) Seismic Safety, including

recommendations that have been forwarded for consideration as part of the Port's Seawall Earthquake Safety Program and are included in Appendix C; and 3) Sea-level rise and flood protection.

1. Emergency Preparedness & Disaster Recovery Recommendations

Presentations by and discussions with Port, City and regional agency experts in disaster recovery emphasized how critical Port lands and operations will be after a natural (e.g. earthquake) or human-caused (e.g. terrorism) disaster. The Port is one of only a few locations where the City can be accessed by water for FEMA-planned water-dependent disaster recovery operations if/when a disaster damages regional bridges or BART. The City and Port need to ensure docks, piers or wharves for loading/unloading a wide range of vessels, and space to stage people and emergency food, water and other resources are available. Debris removal and import of rebuilding supplies could also be required. With careful planning, "flexible" Port open spaces like parks, parking lots, and some maritime industrial lands can serve this secondary emergency function. The Resilience recommendations therefore promote maintaining flexible areas for staging disaster response and recovery operations; improving the capacity and flexibility of ferry and other vessel landing facilities; and strengthening planning and funding partnerships with tenants, emergency managers, and transportation providers. At the same time, the Port should continue to monitor the effect of climate change and sea level rise on its critical facilities, integrating the latest science and best practices into project design.

21. When evaluating development and leasing options, consider availability of Port facilities and lands needed for the movement of people, goods and debris after an emergency. **Staff will coordinate recommendations 1-5 with Land Use and Transportation Recommendations.**
22. Retain waterside access for loading/unloading vessels, and space to stage people and resources.
23. Maintain flexible areas of Port lands (parks, parking lots, under-developed industrial lands) that can be used for staging response and recovery operations after a disaster.
24. Improve the Port's ability to facilitate evacuations by strengthening the structures and improving the capacity and flexibility of existing ferry, water-taxi, and other vessel landing facilities and protecting access to them.
25. Continue to monitor and integrate climate change projections into the Port's emergency planning and preparedness efforts, and assess how SLR may affect critical facilities.
26. Work closely with the SFMTA, BART, WETA, Golden Gate Ferries, and other regional transportation providers to increase the resiliency of Port, City, and regional transportation facilities and ensure continuity of operations to serve the Port. **Staff will coordinate with Transportation Recommendations.**
27. Continue coordination with emergency managers, tenants, water transit agencies, ferries and private boat operators to facilitate safe and efficient water transport and maritime evacuations; collaborate with regional partners to maximize water-borne movement of supplies, reconstruction materials and debris. **Staff will coordinate with Transportation Recommendations.**
28. Seek state and federal funding for critical disaster mitigation projects, collaborating with other local and regional agencies as needed to maximize success.
29. Utilize green building practices and ensure quality design in rebuilding projects.

2. Seismic Safety, Sea Level Rise (SLR) & Flood Protection Recommendations

The Resilience Subcommittee and public discussions about seismic safety (#30-33), and sea level rise and flood protection (# 34-43) were framed by Working Group Guiding Principle #1, developed by the full Working Group before subcommittee deliberations began:

> *"The Waterfront Plan Update should guide the Port while long-range adaptation planning, engineering, and financing studies to respond to sea level rise and strengthen the Seawall are undertaken by the Port, along with appropriate City, State, regional, and other authorities."*

This guidance reflects the Working Group's understanding that City and regional studies required for the Port to successfully adapt to long-term sea level rise and repair the Embarcadero Seawall will extend beyond the timeframe for the Waterfront Plan Update process. Resilience Subcommittee public discussions therefore focused on defining the public values, criteria and/or other policy guidance that should underlie and support these longer term resiliency planning efforts, without prescribing specific solutions. The Subcommittee and public emphasized:

- Improving earthquake safety of the historic seawall, vulnerable buildings and historic structures;
- An agile, adaptive management approach to planning and implementing resilience projects; varying strategies to reflect each area's unique character;
- A multi-benefit approach to each resilience project. For example, whenever possible, Port resilience projects should incorporate historic and cultural resource preservation, green building practices, and habitat protection, and improvements to ecological functioning, mobility, design, and access; and
- Education and partnerships to expedite resilience planning and projects.

An important theme throughout the public discussions was that the Port and City need to encourage "big ideas" that could emerge as San Franciscan's grapple with how essential functions and qualities of the waterfront can be preserved in the face of climate change or other threats. Working Group Guiding Principle # 6 provided that:

> *"The Waterfront Plan Update should continue to include aspirational goals, but also recognize that choices and trade-offs must be considered to determine priority improvements and investments given the many competing needs for limited Port resources. The Working Group should discuss best alternatives for resilience, transportation, and land use, even if they might not seem acceptable within the existing regulatory framework or with current financial resources. The Working Group also should consider the merits of accessing other public and private financing and funding sources, given that the Port waterfront serves as an important City, regional, State and national resource.*"

The Resilience recommendations for the Waterfront Plan respond to this direction, while also calling for new, deeper efforts focused on identifying short, mid, and long-term resilience plans and projects, work that must continue with key Port, City, State, and other agency and community partners long after the Waterfront Plan Update is complete.

30. Improve earthquake safety of the historic Embarcadero Seawall and reduce the potential for seismic damage and disruption to Port facilities, and City transportation and utilities within The Embarcadero and upland properties, without delay. Develop a planning framework so that near-term Seawall seismic improvements are informed by an outlook and strategy for short-, mid-, and long-term sea level rise adaptation.
31. Reduce structural and nonstructural hazards to life safety and minimize property damage resulting from future seismic events.
32. Continue to seismically retrofit vulnerable Port buildings, piers and other infrastructure.
33. Reduce risks to life safety while still preserving the architectural character of buildings and structures important to the unique visual image of the San Francisco waterfront, and increase the likelihood that historically valuable structures will survive future earthquakes.

34. The Waterfront Plan goals and policies should guide the Port while long-range adaptation planning, engineering, and financing studies to respond to sea level rise and strengthen the Seawall are undertaken by the Port, along with appropriate City, State and Regional and other authorities.
35. Develop a strategy that includes short, mid- and long-term planning and implementation timeframes and guidelines to ensure that new Port land uses are appropriate in light of rising seas and that new Port projects include appropriate flood protection and SLR adaptations that advance the Port's and City's goals; develop near-term adaptation plans for higher risk assets and areas.
36. Take an agile adaptive management approach to planning and implementing SLR adaptations that reflect evolving best practices and changing conditions; evaluate costs and benefits, monitor results, and adjust future actions accordingly.
37. Consider a wide range of strategies for managing SLR, including armored edges, elevated land or floors, floating development, floodable development, living shorelines or wetlands, limiting land uses, and managed retreat; choose multi-benefit strategies that reflect the unique character, location, and land uses of adjacent neighborhoods as well as the need to maintain resilience in the face of sea-level rise potentially increasing storm intensity and frequency.
38. Seek to achieve a broad range of Waterfront Plan urban design, historic preservation, public access, transportation, maritime, ecological, and recreational goals and other public benefits when designing and constructing Port projects to adapt to sea-level rise; encourage exploration and consideration of long-term aspirational, holistic, multi-benefit solutions.
39. Clean up contaminated lands in ways that consider inundation caused by rising seas.
40. Work closely with the historic preservation community, SHPO, and other interested stakeholders to integrate protection of the Port's historic and cultural resources with resilience planning and design. Develop guidelines for acceptable changes and interventions to maximize protection of historic resources.
41. Leverage existing intergovernmental alliances with City, regional, state and federal partners and form innovative, new partnerships to catalyze policy changes, pilot projects and spur investments to meet the Port's most pressing resilience challenges.
42. Promote public understanding of resilience challenges and opportunities (e.g., SLR adaptation, earthquakes and other disasters, protection of the historic, cultural, and ecological resources) and develop support for planning, funding and implementing resilience improvement measures.
43. When evaluating design alternatives for Port projects, consideration should be given to the following priorities:
    a. Avoid major changes to the existing form of the waterfront that may prove unnecessary; instead design to support future adaptations, if/when needed.
    b. Maximize protection of existing working waterfront berthing and dockside operations and future use/adaptation of the waterfront's edge for vessel docking, berthing or tie-ups,

including for emergency response operations and water recreation. **Staff will coordinate with Land Use Recommendations.**

c. Maximize protection of the Port's historic and cultural resources.
d. Avoid significant impediments to existing physical and visual public access and/or provide new or enhanced public access, views, and connections to the Bay. **Staff will coordinate with Land Use Recommendations.**
e. Preserve and enhance existing natural shoreline edges to the maximum feasible extent.
f. Integrate existing SLR adaptations with retrofits that slow down, capture and reuse water that flows into creeks and the Bay from Port and upland areas.
g. Use materials for new shoreline edges and in-water structures that foster a rich marine habitat, promote ecological functioning, and enhance the Bay.
h. Provide inviting connections to and between waterfront public access and open spaces. **Staff will coordinate with Land Use Recommendations**
i. Incorporate resilience best practices for raising structures or ground floors; protecting and elevating critical power, mechanical, hazardous material, fuel and trash storage and other infrastructure; cladding and bolstering vulnerable building exteriors.
j. Minimize short-term, construction impacts and maximize long-term improvements to the waterfront's multi-modal transportation network. **Staff will coordinate with Transportation Recommendations**

3. Social Equity and Cohesion Recommendations

The important role of "social equity and cohesion" in Port resilience planning emerged from discussions among Subcommittee members, agency staff, and the public. Research shows that the ability of a community to withstand and recover from disasters and other challenges is linked to its access to jobs, transportation, education and resources, including participation in planning, as well as to the strength of the community's cultural life and sense of identity and meaning.

Again, the Subcommittee looked at how best to further City-wide efforts to boost community resilience, in this case through improvements to social equity and cohesion, given the Port's relatively narrow geographic jurisdiction and specific public trust responsibilities. The recommendations that emerged promote:

- Identification and protection of the maritime, historic and cultural assets that are most critical to the Waterfront's sense of place and meaning;
- Improved connections and participation in resilience planning among the Port, its tenants, stakeholders and neighbors, especially with more vulnerable communities; and
- Continuing to meet or exceed City/Port goals for more equitable access to Port jobs and business opportunities, as well as recreational opportunities for underserved areas or populations.

Port staff recommends providing existing Port Advisory Groups with information about city-wide disaster recovery plans to improve disaster planning partnerships and community cohesion among Port tenants and neighbors, and to strengthen response and recovery capabilities.

44. Identify and protect the maritime, cultural, environmental, and historic assets that are most critical to the Waterfront's sense of place and meaning. **Staff will coordinate with Land Use Recommendations.**
45. Ensure that the Port's resilience strategies consider the needs of the most vulnerable people who depend on the Port for jobs, housing, transportation, and recreation.
46. Continue cooperative efforts among agencies at all levels to ensure needed redundancy in utility, transportation, and other emergency response and recovery capabilities, especially for the most vulnerable people and places. **Staff will coordinate with Transportation Recommendations.**
47. Promote the development and operation of maritime, industrial and other Port uses in a manner that protects the health and well-being of surrounding communities, businesses and local workers. **Staff will coordinate with Land Use Recommendations.**
48. Continue to implement the Southern Waterfront Community Benefits and Beautification Policy.
49. Meet or exceed mandates for affordable housing in new waterfront communities at Pier 70 and SWL 337. **Staff will coordinate with Land Use Recommendations.**
50. Ensure resilience projects are designed and implemented with meaningful involvement from all community members; ensure transparency and accountability to all stakeholders and the public.
51. Diversify access to economic opportunities at the Port by:
    1. Continuing to meet and, whenever feasible, exceed mandates for Local Hire in all current and future construction projects;
    2. Increasing outreach to and partnerships with underserved communities for lease and economic development opportunities;
    3. Promoting use of Port industrial facilities for local manufacturing businesses that keep light industrial jobs and business opportunities in San Francisco; and
    4. Retaining affordable business space to maintain opportunities for non-profit entities and local and small businesses in the Port's diverse business portfolio.
52. Provide more equitable access along the waterfront by increasing the number of free or low cost activities and events along the waterfront, including activities that promote physical activity, connection with nature, and healthful living for visitors of all ages. **Staff will coordinate with Land Use Recommendations.**
53. Complete the Blue Greenway to bring more waterfront recreation opportunities to the Southern Waterfront. **Staff will coordinate with Land Use Policies.**

Next Steps

Port staff continues to welcome the opportunity to receive comments and answer questions about the Working Group's Part 2 Recommendations. The next briefing will focus on the Transportation Recommendations; it is tentatively scheduled for June 12, 2018.

In the meantime, as described during the February 27th Port Commission meeting, public walking tours and workshops have been taking place for Part 3 of the Waterfront Plan Update public process, which will be completed by June 2018. Port staff will then report back to the Port Commission on public comments received from the Part 3 meetings.

Together, the Part 2 Working Group recommendations and a summary of Part 3 public comments will document public values, goals, aspirations, and needs that should be addressed in the Waterfront Plan Update. Port staff will seek Port Commission endorsement of these recommendations and direction before producing draft Waterfront Plan amendments for Port Commission and public review and comment. Final Waterfront Plan amendments cannot be approved by the Port Commission until completion of an

environmental review public process pursuant to the California Environmental Quality Act (CEQA); procedural or administrative improvements that are not subject to CEQA could be implemented earlier, if desired. As authorized by the Port Commission on March 13, 2018, Port staff will be issuing a Request for Proposals in late May to hire a CEQA environmental consultant to carry out the CEQA work.

Prepared by:

Carol Bach, Environmental & Regulatory Affairs Manager
Anne Cook, Waterfront Plan Special Project Manager

For:

Diane Oshima, Deputy Director, Planning & Environment

APPENDIX A

List and Links to Subcommittee Supporting Documents and Meeting Information

Resilience Documents - Links

For further details regarding the Resilience Subcommittee Meetings, please click on the following documents or contact Anne Cook at anne.cook@sfport.com or Carol Bach at carol.bach@sfport.com.

Meeting #1 - November 2, 2016: Environmental Sustainability

- Agenda | Meeting Notes
- Draft Resilience Subcommittee Meeting Plan
- Environmental Sustainability Background Report
- PPT Presentation
- Draft Outline for Waterfront Plan Environmental Sustainability Goal & Policies

Meeting #2 - November 30, 2016: Emergency Preparedness & Disaster Recovery, Collaborations Required for Successful Resilience Planning

- Agenda | Meeting Notes | PPT Presentation on Preparedness and Sea Level Rise Planning
- Sea Level Rise Action Plan
- Water Emergency Transportation Authority 2016 Strategic Plan
- BCDC Staff Report - Workshop Series on Rising Sea Levels

Meeting #3 – February 1, 2017: Environmental Sustainability

- Agenda | Final Meeting Notes
- Draft Resilience Subcommittee Status Report
- Summary of Environmental Policy Discussions to Date
- Policy and Discussion Ideas for Environmental Sustainability

March 1, 2017: Working Group Designing for Resilience Workshop

- Agenda
- Presentation on Designing for Resilience
- Summary of Table Reports and Wall Notes

Meeting #4 - March 29, 2017: Emergency Preparedness & Disaster Recovery, Sea Level Rise & Flood Protection, Seismic Safety

- Agenda and Supporting Links
- Final Meeting Notes
- Resilience Policy Ideas for Discussion

Meeting #5 - April 19, 2017: Social Equity and Cohesion

- Agenda and Supporting Links
- Final Meeting Notes
- Policy Ideas for Discussion - Social Equity and Cohesion

APPENDIX B

Waterfront Land Use Plan Update

Working Group Resilience Subcommittee Roster

Pia Hinckle (chair)
• The FruitGuys Community Fund Board
• Dolphin Swimming & Boating Club

Grant Ballard
• Ecologist, Point Blue Conservation Science
• Baylands Ecosystem Habitat Goals Update steering committee
• Our Coast Our Future project leader

Mike Buhler/Aaron Hyland Mike Buhler
• SF Heritage, Executive Director
• National Trust for Historic Preservation

Aaron Hyland (alternate)
• SF Historic Preservation Commissioner
• AIASF president

Earl James
• Geologist/environmental consultant (Erler & Kalinowski)
• Cole Valley resident

Peter Summerville
• Treasure Island Development Authority, Project Manager
• Richmond District resident

John Tobias
• Interest in housing and social justice
• Hunters Point/Bayview resident

Dilip Trivedi
• Coastal & Marine Engineer, Moffatt & Nichol
• SF Sea Level Rise Committee; BCDC Policies for a Rising Bay

Other Working Group Members
• **Janice Li,** Working Group Co-chair
• **Rudy Nothenberg,** Working Group Co-chair
• **Reid Boggiano,** State Lands Commission

Port Staff Contacts
• Carol.Bach@sfport.com
• Anne.Cook@sfport.com

Resilience Advisory Team Members
- **Max Loewenstein**
- **Keith Primdahl**
- **Justin Semion**
- **Bill Tremayne**
- **Anthony Veerkamp**

APPENDIX C

Resilience Subcommittee Recommendations for Port Strategic Plan and Other Port Plans/Projects

Climate Change and Air Quality

Recommendations for Port Strategic Plan

- Evaluate "carbon neutrality" as a goal for Port operations; continue to measure progress toward that goal through the Port's Climate Action Plan.
- Continue and expand efforts to reduce emissions and promote the use of clean technology for water transportation and maritime operations (e.g. shoreside power, alternative fuels, etc.)
- Enhance data collection and sharing to establish baselines and better measure impacts of climate action policies and projects. To the extent possible, align metrics used to evaluate climate action measures in the Port's Climate Action Plan with those used by the California Air Resources Board.
- Collaborate with City and regional agencies to share information, pursue joint projects and jointly seek state and federal funding to meet Climate Action goals.

Water Quality and Conservation

Recommendations for Port Strategic Plan

- Expedite the Port's ongoing program of inspection and repair of under-pier utilities to reduce discharges of wastewater and potable water to the Bay; seek additional opportunities to relocate utilities above-board during renovation or new construction. Prioritize beneficial reuse of dredged materials at approved facilities over in-Bay, ocean, or upland disposal.
- Develop design, maintenance, and operational tools (e.g. solar-powered Big Bellies) to reduce the spread of garbage into the Bay.

Natural Resources

Recommendations for Port Strategic Plan

- Work with partners to remediate contaminated sediment and support Bay-wide efforts to improve sediment quality and healthy fishing in the Bay.
- Continue to work with partners to offer environmental education and community activities at Heron Head's Park and Pier 94.
- Encourage and collaborate with local stakeholders (tenants, community groups, schools, non-profits and other institutions) to broaden the volunteer and stewardship base, further engage the public in improving the health of the waterfront, and instill a conservation ethic.

Green Building, Leasing, and Development

Recommendations for Port Strategic Plan

- Implement integrated pest management practices in Port and tenants' facilities and operations to reduce use of toxic materials in indoor and outdoor environments.
- Market and message a green SF Port in Port development and leasing activities.

Emergency Preparation Planning, Training & Mitigation

Recommendations for Port Strategic Plan

- Identify where additional facilities may be needed; determine if existing waterfront infrastructure could be modified to enable emergency ferry access (e.g., openings in railings, mooring features, and dual docking capacity).
- Complete Tenant Emergency Guidelines to educate tenants about the nature of potential emergencies and disasters at the Port including how to evaluate their earthquake risks. Work closely with City agencies, first responders, Port tenants and neighbors to maximize emergency preparedness and disaster recovery operations at the Port; foster tenant-to-tenant and tenant-to-neighbor connections to advance disaster readiness and response.
- Identify and protect vulnerable infrastructure and critical service lifelines in high-risk areas (e.g., areas of the Embarcadero roadway subject to inundation in the near term).

Recommendations for Port Emergency Operations or Recovery Plan

- Maintain and update the Port's Emergency Response Plan, in compliance with applicable City, state and federal regulations.
- Integrate protection of the Port's historic and cultural resources in the Port EOP for all phases of emergency response and disaster recovery and reconstruction efforts.
- Develop and maintain mutual aid agreements and regional joint exercises with local, regional, and state governments, as well as other relevant agencies.

Disaster Response & Recovery

Recommendations for Port Strategic Plan

- Develop a long-term recovery plan to bridge the gap between emergency response and long-term recovery of Port activities/operations, including focused attention on cost recovery.
- Continue participation in the San Francisco Lifelines Council and support development of a regional lifelines council of Bay Area cities and agencies; water, energy, transportation, and communication and other "lifeline" providers; and non-governmental organizations, to improve communication and collaboration, share disaster response and recovery planning, and coordinate restoration of lifeline systems as quickly as possible after a disaster; maximize protection of Port assets and

operations by partnering with Port public and private neighbors (e.g. National Park Service, business and neighborhood organizations, property managers, etc.) to maximize emergency preparedness and disaster response.

Seismic Safety

Recommendations for Port Strategic Plan

- Provide information and guidance to help tenants incorporate earthquake safety in their uses and operations of Port facilities.
- Work with City officials, design professionals, and community members as they develop higher standards for building safety and post-earthquake re-occupancy, ensuring their applicability to the Port's unique structures.
- Create a database of vulnerable Port buildings, seismic evaluations, and seismic retrofits to track progress, record inventories, and evaluate and report on retrofit data.

Recommendations for Seawall Resilience Project

- Improve earthquake safety of the historic Embarcadero Seawall and reduce the potential for seismic damage and disruption to Port facilities, and City transportation and utilities within The Embarcadero and upland properties, without delay. Develop a planning framework so that near-term Seawall seismic improvements are informed by an outlook and strategy for short-, mid-, and long-term sea level rise adaptation.
- Implement feasible near-term measures that can improve life safety, protect critical infrastructure and assets, and control damage of historic structures.
- Recognize and support the public commitment to maintenance and rehabilitation of structures in the Embarcadero Historic District (including the Seawall), which is a defining feature of San Francisco.
- Include opportunities for ecological and environmental enhancements to the Bay in the Seawall Resilience Project.
- Limit disruption during construction, especially to business and transportation, and especially to legacy and maritime tenants.
- Seek a wide variety of local, state, federal and private funding sources.
- Ensure transparency and accountability to the public and all stakeholders.

Sea Level Rise (SLR) & Flood Protection

Recommendations for Port Strategic Plan

- Continue to examine the risk of flooding due to the effects of climate change, including storm surges, changes in precipitation patterns, and SLR, to develop a more-detailed, site-specific understanding of the Port's vulnerability and prioritize action areas.

- Work closely with FEMA and State and City agencies to accurately reflect current flood risks, assess future flood risks, and prepare for extreme disaster events at the Port.
- Develop a publicly-vetted cost benefit analysis framework to evaluate and prioritize public benefits that should be achieved in major resilience and public infrastructure improvements.
- Work proactively with Port maritime and non-maritime tenants, legacy businesses, and development partners to identify early investments in resilience projects, including interim measures that would eliminate or reduce later, more costly repairs or optimize the life of Port assets; explore innovative leasing, financial and other incentives to bring them to fruition.
- Prioritize protection of City and regional transportation and utility networks (e.g., BART, MUNI, Ferry System, sewer and stormwater systems.)

Social Cohesion and Equity

Recommendations for Port Strategic Plan

- Utilize the Port's existing advisory group framework, and seek new opportunities to build community and partnerships among Port tenants and adjacent non-Port businesses, neighbors, and community groups to help Port stakeholders understand, prepare for, respond to, and recover from climate change impacts and natural and human caused disasters.
- Educate Port Tenants, employees and advisory group members and other Port stakeholders about the Port's plans and their own responsibilities and capabilities before, during and after disasters; encourage their participation in the SF Fire Department's Neighborhood Emergency Response Team (NERT) Training, and the SFPD Auxiliary Law Enforcement Response Team (ALERT) training to assist first responders during disasters; work with the City to identify "resilience hubs" or "disaster preparedness zones" where waterfront residents, workers and visitors can gather to receive and share information and services during emergencies
- Maximize local business opportunities and jobs in Port resilience projects.
- Identify and engage representatives from maritime and waterfront businesses at risk because of climate change, evaluate vulnerabilities (e.g., effects of climate change on the health and location of fisheries and the fish trade; effects of potential loss of historic fabric on waterfront businesses); and consider planning and development strategies to support the most vulnerable sectors and locations.
- Grow tenant participation in the City's Business Occupancy Resumption Program (BORP) to ensure Port businesses and tenants can resume operations more quickly after a disaster.

APPENDIX D

Resilience Planning Resources Reviewed

The Waterfront Plan's new resilience policies should be consistent with the significant resilience planning and policy work in place and underway in the City, Bay area and beyond. In addition to information and discussions shared in Working Group and Subcommittee meetings, Port staff reviewed a wide range of policy documents as it developed policy ideas and guidance for Subcommittee discussion. They include:

- Association of Bay Area Governments, Regional Resilience Initiative - Policy Agenda for Recovery, March 2013
- Community Safety Element of the San Francisco General Plan, October 2012
- Climate Change Hits Home and other resilience research papers from SPUR
- Central SOMA Plan and Implementation Strategy, SF Planning, 2016
- Resilient San Francisco, 2016
- San Francisco Bay Conservation and Development Commission, Policies for a Rising Bay Project Final Report, November 2016
- Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning, FEMA, May 2005
- San Francisco Bay Conservation and Development Commission, San Francisco Bay Plan, 2012
- San Francisco Sea Level Rise Action Plan, March 2016
- San Francisco Bay Area Water Emergency Transportation Authority, 2016 Strategic Plan
- Port of San Francisco Climate Action Plan, March 2014
- Port of San Francisco Waterfront Plan Update Vision Workshop Summary & Online Survey, 2016
- Treasure Island/Yerba Buena Island Sustainability Plan, June 2011
- pLAn, Los Angeles Sustainable City Plan
- Resilient Berkeley, 2016 and Resilient Oakland, 2016
- Waterfront Seattle Concept Design and Framework Plan, 2012
- Vision 2020 - New York City Comprehensive Waterfront Plan, March 2011, and Waterfront Revitalization Program