Resiliency
Port of San Diego

Karen Holman, Director, Environmental Protection
Prevention First 2018 Symposium.
September 25, 2018
Overview

• Introduction to the Port of San Diego
• Resiliency and Climate Action Planning
• Climate Adaptation & Coastal Resiliency
Jurisdiction

- 5 member cities
- 22 public parks
- 2 cargo terminals
- 2 cruise ship terminals

- 34 miles of waterfront
- 2,403 acres of land
- 3,535 acres of water

Port Tidelands
Submerged Tidelands
Regional Economic Role

$8.3 BILLION
9% increase from 2013 to 2015
Climate Action Plan

• Climate Action Plan adopted in 2013

• Improved guidance and science regarding adaptation to impacts of climate change

• Current focus, developing a framework for addressing coastal resiliency
Climate Adaptation & Coastal Resiliency
Coastal Flooding
Drivers for Climate Adaptation & Coastal Resiliency

- Water-dependent resource
- Existing flooding impacts
- Business continuity
- Regulatory requirements (Assembly Bill 691 State Lands)
- Coastal Commission Guidance
- Port Master Plan Update
AB691 and Port Master Plan Update

**AB691**
- Vulnerability Assessment
  - Exposure to Impacts
  - 2030, 2050, 2100
- Adaptation Strategies
- Financial Impacts
- Adaptive Management
  - Monitoring
  - Triggers for Action

**PMPU PEIR**
- Vulnerability Assessment
  - Exposure to Impacts
- Mitigation Measures
- Adaptive Management
  - Monitoring
  - Triggers for Action

**PMPU**
- Goals and policies to address sea level rise
  - Protect
  - Preserve
  - Adjust
- Adaptive Management
  - Monitoring
  - Triggers for Action

Submittal to State Lands Commission due June 30, 2019

Disclose Potential Impacts through Environmental Review

Expected for Coastal Commission Certification

AB691 and Port Master Plan Update through Environmental Review

Disclose Potential Impacts through Environmental Review

AB691 and Port Master Plan Update through Environmental Review

Disclose Potential Impacts through Environmental Review

AB691 and Port Master Plan Update through Environmental Review

Disclose Potential Impacts through Environmental Review
Sea Level Rise Planning Process

Plan and prepare for potential coastal flooding and inundation related to sea level rise.
Sea Level Rise Ad-Hoc Committee

**Members**
- Department of Navy
- Center for Sustainable Energy
- Port Tenants Association
- San Diego State University
- University of California, San Diego
- Shelter Island Marina
- US Fish and Wildlife
- Environmental Health Coalition
- Southwest Wetlands Interpretative
- California Coastal Commission
- Member Cities & Agencies

**Advisors**

*Scripps Institution of Oceanography*
Dr. Julie Kalansky

*United States Geological Survey*
Dr. Juliette Finzi-Hart

*ICF International*
Dr. Robert Kay

*Nexus Planning & Research*
Dennis Larson
# Sea Level Rise Ad-Hoc Committee

<table>
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<th>Year</th>
<th>Tasks</th>
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| 2017 | - Background on sea level rise science  
      - Review recommended sea level rise projections  
      - Review recommended coastal model  
      - Identify assets to be analyzed |
| 2018 | - Review vulnerability assessment hazard maps  
      - Review adaptive management approach  
      - Review adaptation planning process including adaptation scenario decision criteria  
      - Review recommended monitoring performance metrics |
Memorandum of Agreement
Coordinate on Sea Level Rise Planning
Planning Initiatives

- Port is evaluating impacts of sea level rise pursuant to Assembly Bill 691.
- Planning for nature-based solutions to protect coastal resources.
- DOD has conducted over 700 assessments of flooding at coastal installations worldwide.
- Navy has forged partnerships with state and local governments to advance sea level rise planning.
Memorandum of Agreement

First MOA between Navy and Port on the West Coast. Appoints qualified staff to:

- Coordinate sea level rise planning initiatives
- Share sea level rise policies, assessments, and guidance
- Re-evaluate science every five years
- Identify complimentary adaptation strategies
- Implement pilot projects as feasible
Accommodation Adaption Strategies
1. BUFFERS
- Buffers range from 50' to 200’ feet
- Allow for opportunities for adaptive management of rising sea levels in this area

2. ELEVATE STRUCTURES
- 535 acre master planned development
- Soil added to raise elevation in response to sea level rise
Living Shoreline
Living Shoreline

Native Oyster Reefs

- Native oyster recruitment
- Unarmored shoreline
- Adjacent to marshland
- Moderate to high wave energy environment
- 2,300 linear feet of shoreline
“Living shorelines utilize natural habitat elements to protect shorelines from erosion while providing critical habitat for fish, wetlands and aquatic plants, as well as wildlife.”

**Partners include:**
- Port of San Diego
- California Coastal Conservancy
- US Fish & Wildlife Service Coastal Program
- Technical Advisory Committee
Stormwater Treatment Control System
Stormwater Treatment Control System

- Water quality treatment constructed as part of the project has been expanded beyond regulatory requirements from 9.3 acres to the entire drainage area of 41.4 acres.

- Provides opportunity for stormwater catchment associated with storm surge and wave overtopping.
Adaptive Management Process

Periodically incorporate updated science, consider revised guidance, and respond to new and existing regulations.
Questions / Discussion

Karen Holman
kholman@portofsandiego.org
619-725-6073