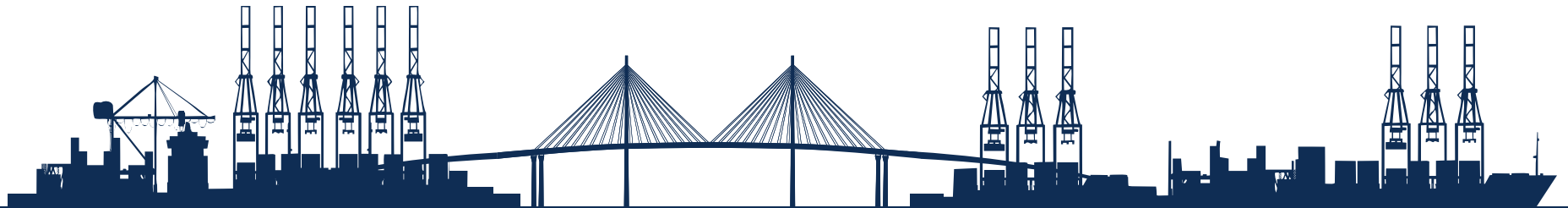




Port of
LONG BEACH
THE PORT OF CHOICE

Climate Change Adaptation and Resiliency Planning at the Port of Long Beach

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Importance of Resiliency at POLB

- **Climate stressors are already impacting the Port Complex & Southern California region**
 - Sea level rise & storm surge
 - Greater frequency and magnitude of storms
 - Greater number of hot weather days
 - Stress on the electrical grid
- **Decision making for port staff, tenants, and stakeholders**
 - Prioritization of resource allocations
 - Investing in maritime infrastructure like Pier Wind, Pier B On-Dock Rail Support Facility, and other large capital improvement projects
- **Energy resilience will be crucial as climate changes**
 - Potential for black- and brown-outs due to extreme and/or prolonged heat
 - Strategies to address energy concerns underway
 - Power systems resilience programs in place to support to marine terminals
 - Projects underway to add renewable energy generation, energy storage, and power systems controls to enhance resilience at critical Port response facilities

Importance of Resiliency at POLB

Hurricane Marie – August 2014

- Damage at Navy Mole & Pier F shorelines
 - \$7M in repairs
- Significant damage to breakwater
 - 3 large holes & multiple breeches
 - \$21M in repairs
- Access restricted to rail operations, critical facilities, fueling stations, etc.

Hurricane Hilary – August 2023

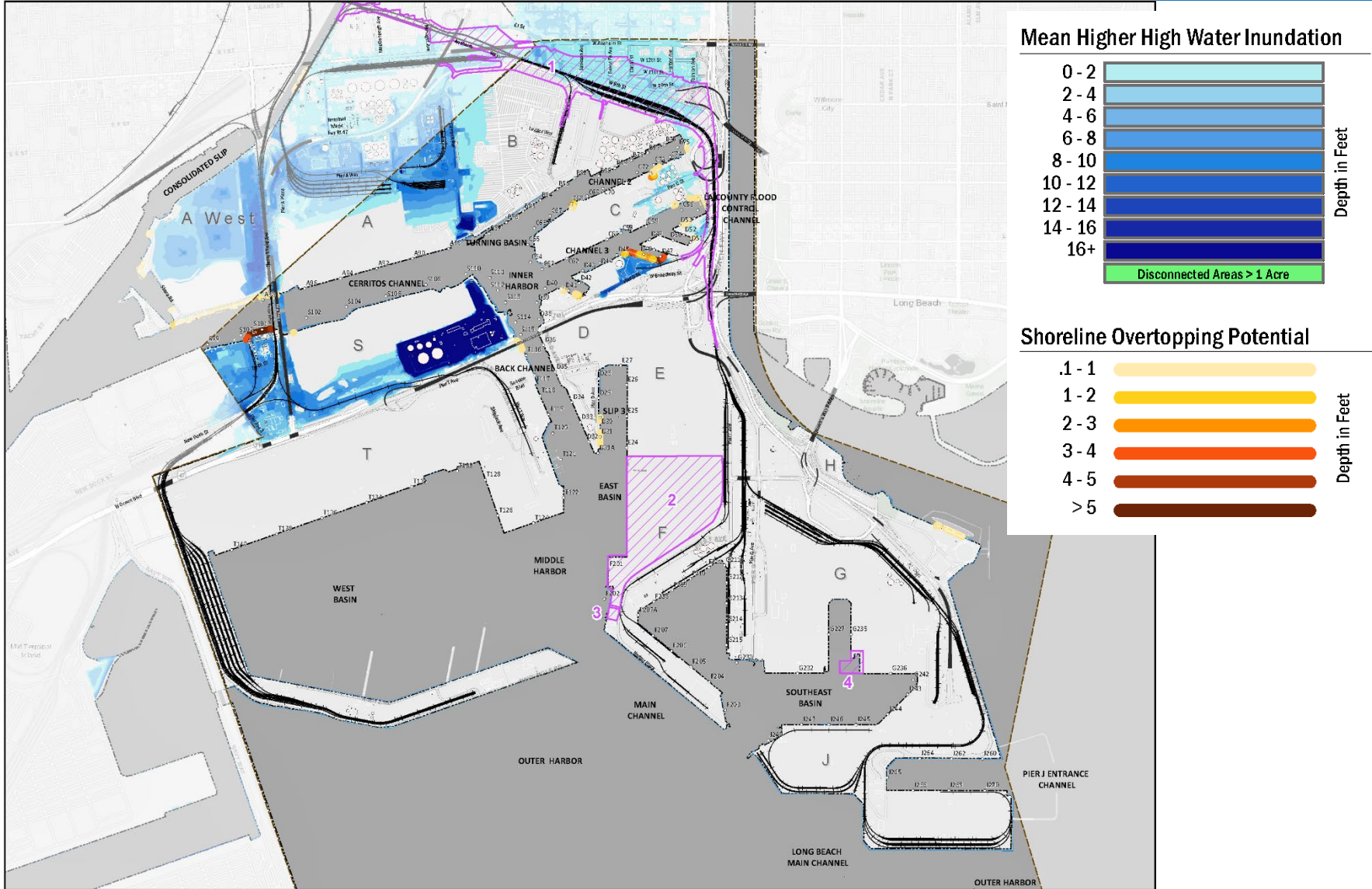
- Minimal impact to Port/City/SoCal (this time!)
- Incident Management Team coordination
- Pump station checks harbor-wide
- Temporary pumps installed
- Maintenance vehicle/equipment checks
- Stormwater BMP notifications to tenants



Climate-Related Compliance—Adaptation

- **Climate Adaptation and Coastal Resiliency Plan (CRP)**
 - Ensure resilience and business continuity and identify risks, vulnerabilities, and adaptation strategies for Port infrastructure
 - Climate change/SLR considerations incorporated into Port Strategic Plan, Project Delivery Manual, Design & Electrical Guidelines, Risk Assessment Manual, Guidelines for Professional Consulting Services, Stormwater Infrastructure Master Plan, etc.
 - Sea level rise vulnerability assessments in Harbor Development Permit and Coastal Development Permit applications
 - Applicants use vulnerability maps to determine if project is subject to temporary or permanent inundation
- **Updated sea level rise inundation maps**
 - Incorporated in December 2022 to comply with latest climate guidance from State agencies
 - Planning horizons for 2030, 2050, 2080, 2100, and 2120 at low, medium-high, and extreme risk aversion scenarios (MHHW & 100-year storm tide)
 - Focus on 2080 (+4.3 ft. of rise) for most Port assets and project design
 - Currently assessing newest draft 2024 OPC guidance for CA

SLR Inundation Mapping (2080-MHHW)



Climate-Related Efforts—Mitigation

- **Clean Air Action Plan Update (CAAP)**
 - Reduce GHGs to 40% below 1990 levels by 2030 and 80% below 1990 levels by 2050
 - Transition to zero emissions cargo handling equipment by 2030
 - Transition to zero emission drayage trucks by 2035
- **Zero Emissions Energy Resilient Operations (ZEERO) Policy**
 - Establishes a comprehensive Capital Improvement Program to achieve a resilient zero-emissions future
 - Integrates energy assets to ensure continuity and resilience of critical port operations
 - Accelerates deployment of low carbon alternatives for ocean going vessels
 - Supports state and federal efforts to develop and supply renewable energy
- **Numerous GHG Reduction Strategies & Efficiency Measures**
 - Deployment of zero emissions CHE, trucks, and locomotives and clean technologies for vessels and harbor craft
- **City of Long Beach Climate Action Plan**
 - Goals to reduce local impacts from worsening climate change impacts such as extreme heat, poor air quality, drought, flooding, and sea level rise
 - Plan and adapt together with other City departments