Port of
LONG BEACH
THE PORT OF CHOICE

# Climate Change Adaptation and Resilience Planning at the Port of Long Beach

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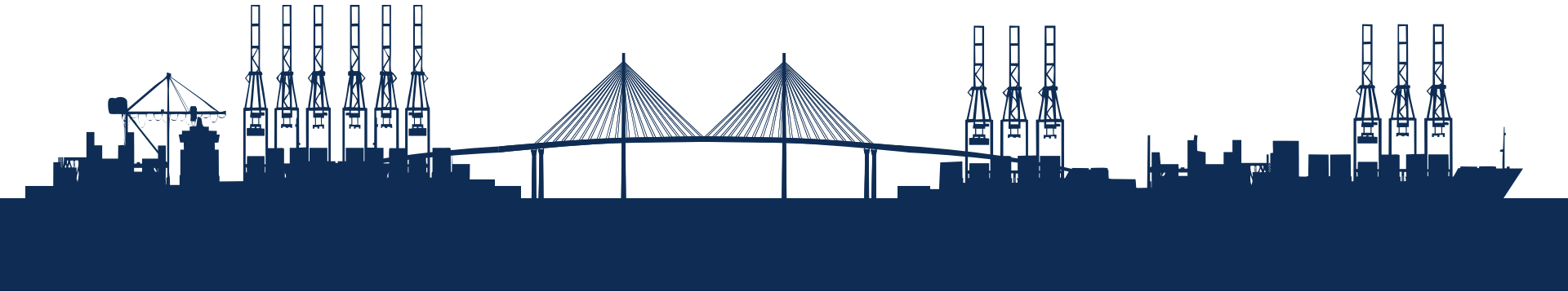


# Importance of Resilience at POLB

- **Climate stressors already impacting the Port Complex & SoCal region**
  - Sea level rise & storm surge
  - Greater frequency & magnitude of storms
  - Greater number of hot weather days
- **Decision making for port staff, tenants and stakeholders**
  - Prioritization of resource allocations
  - Investing in maritime infrastructure like Pier Wind, Pier B On-Dock Rail Facility, and other capital improvement projects
- **Energy resilience will be crucial as climate changes**
  - Potential for black- and brown-outs due to extreme 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 Resilience 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

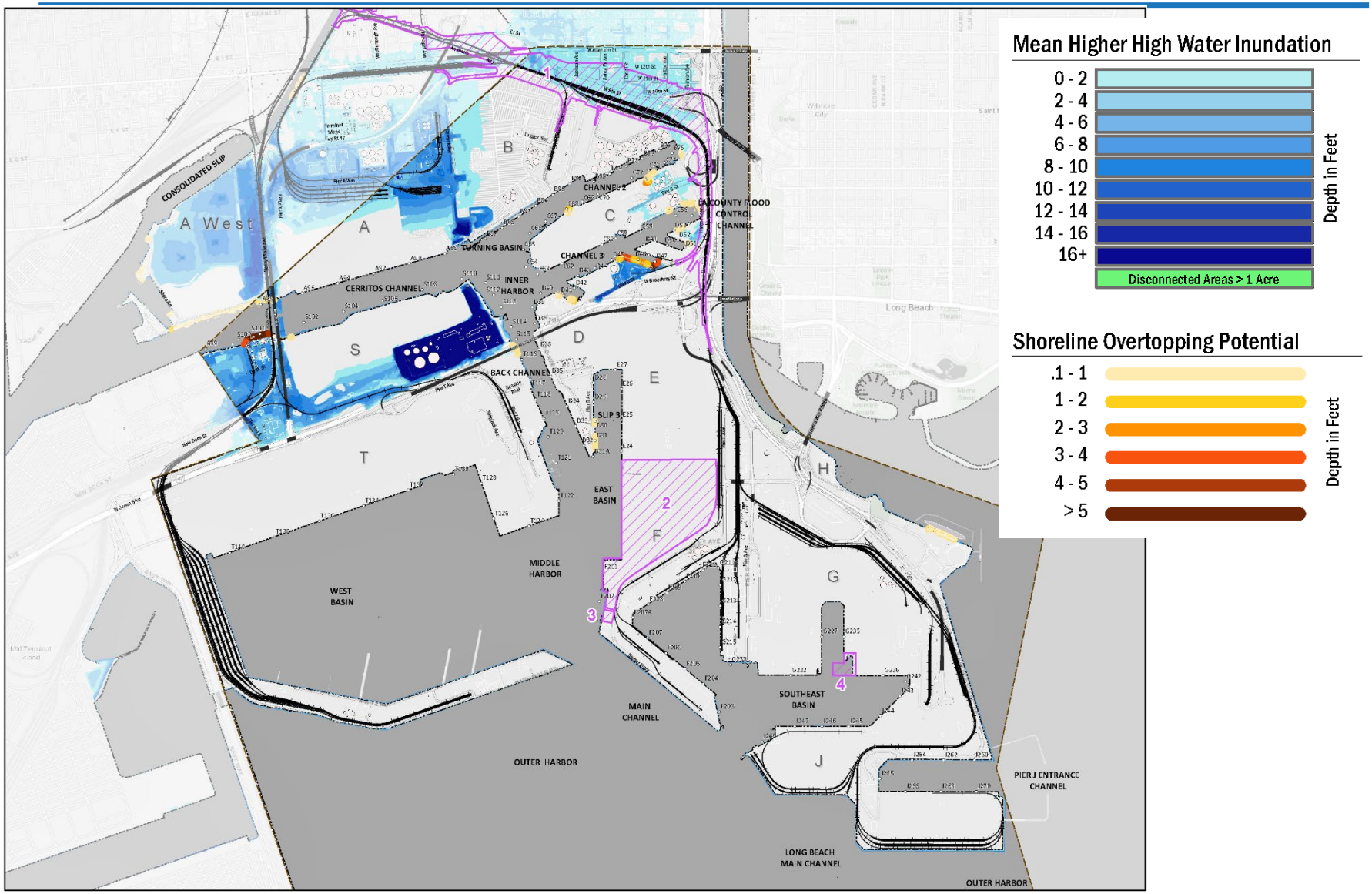
- Minimal impact to Port/City/SoCal (this time!)
- Incident Management Team coordination
- Pump station checks harbor-wide
- Temporary pumps installed
- Maintenance vehicle/equipment checks
- Stormwater BMP notifications to tenants

# Climate-Related Compliance to Date

- **Climate Adaptation and Coastal Resiliency Plan (CRP)**
  - Ensure resilience and business continuity and identify risks & adaptation strategies for Port infrastructure
  - Climate change considerations incorporated into Port Strategic Plan, Project Delivery Manual, Design & Electrical Guidelines, Risk Assessment Manual, Guidelines for Professional Consulting Services, etc.
  - Sea level rise vulnerability assessments in Harbor Development Permit and Coastal Development Permit applications
  - AB 691 compliance, including sea level rise risk & vulnerability assessments that include financial cost estimates on granted public trust lands

- **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 Port assets and project design

# SLR Inundation Mapping (2080)



# Climate-Related Efforts to Date

- **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
- **Multiple GHG Reduction Strategies**

- **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
  - Adapt together with other City departments