



**WATERFRONT RESILIENCE PROGRAM**

**JOINT SF PORT / SFDEM  
DISASTER RESPONSE EXERCISE (6/2021)**

*BASED ON MHRA FINDINGS*

**SF LIFELINES COUNCIL UPDATE, 6/22/2022**



# TODAY'S AGENDA

## Overview



- WRP Disaster Response Exercise Overview
- Key Findings for Port Asset-Related and Emergency Response Planning
- Next Steps
- Questions



# WRP Disaster Response Exercise

## Overview



# DISASTER RESPONSE EXERCISE PURPOSE, SCOPE, AND OBJECTIVES

## Key Findings Summarized in “After Action Report”



- Increase San Francisco's resilience by promoting interagency coordination, communication, and cooperation between and among “Whole Port” stakeholders
- Inform early waterfront resilience investments
- Improve city’s emergency response planning by identifying and assessing gaps, resources, and assumptions in plans, policies, and procedures



# DISASTER RESPONSE EXERCISE SCENARIO

Digitally Hosted Discussions in June 2021

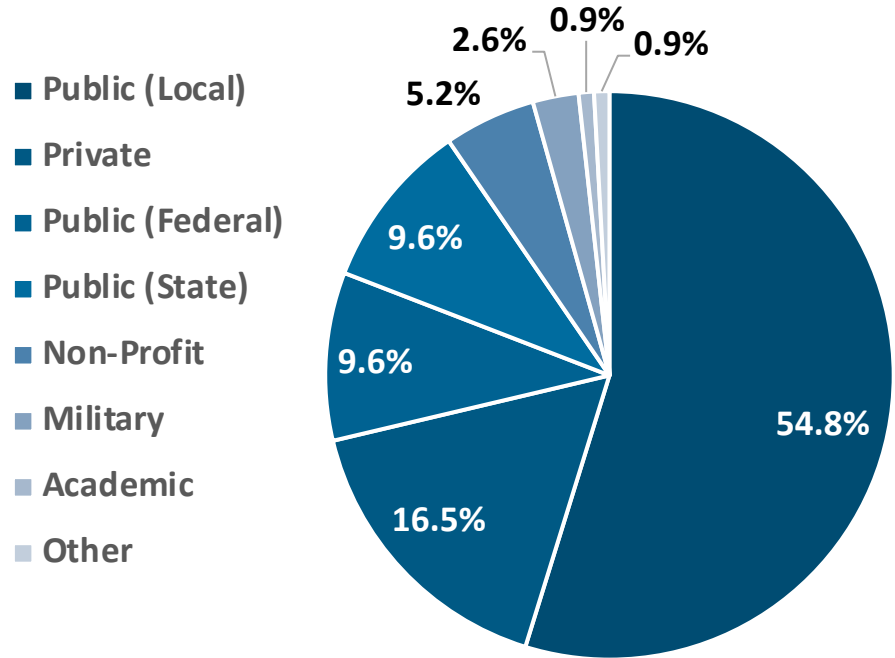


- Virtual Workshops and Stakeholder Engagement
- Fictional earthquake scenario similar to 1906
- Informed by new research and reports prepared by Port
- Shared key findings from the Embarcadero Multi-Hazard Risk Assessment (MHRA) and new research of earthquake and flood risk in central and southern waterfront

# STRONG PARTICIPATION

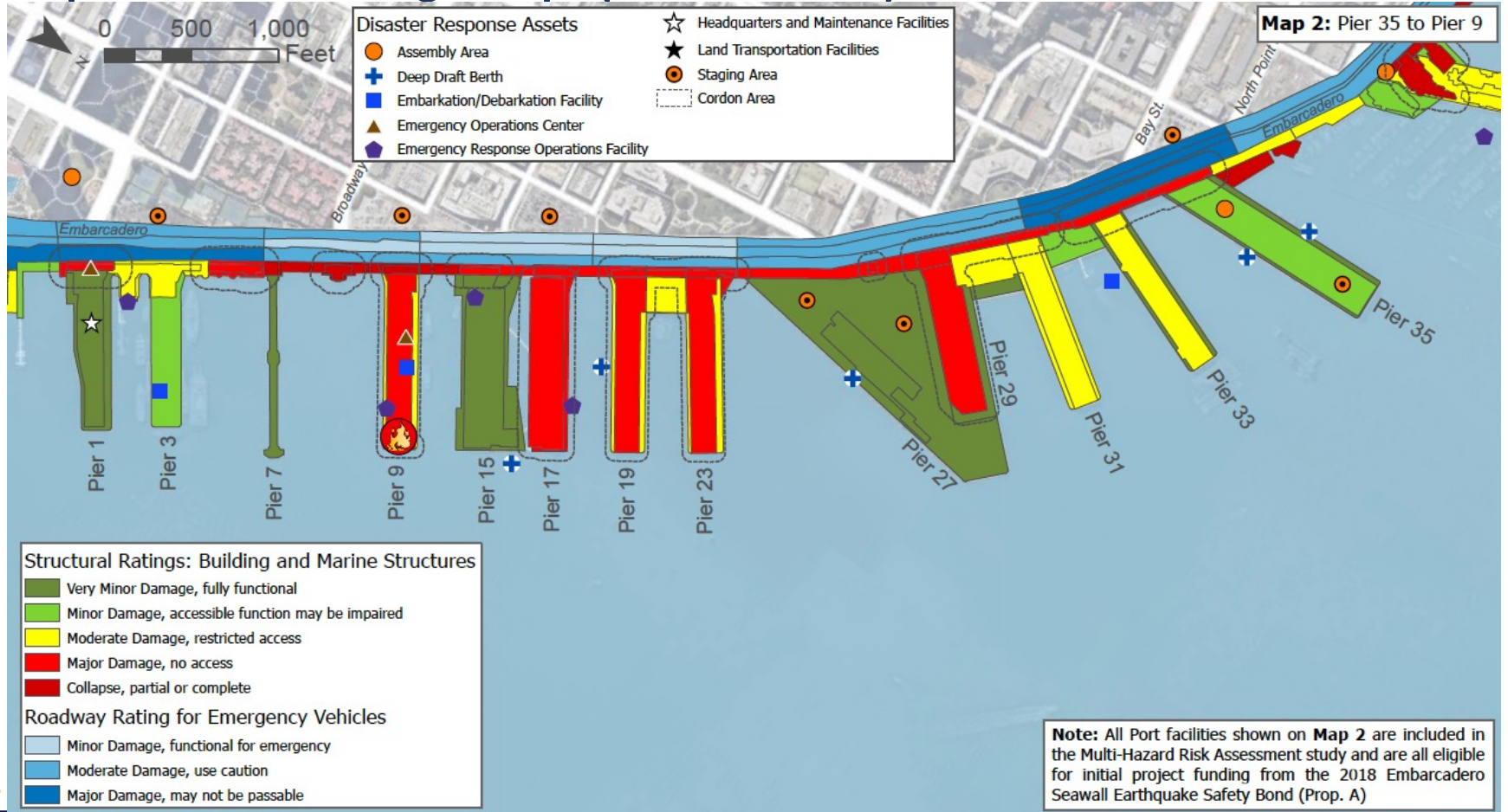
“Whole Port” Approach – emergency management practitioners, organizational and community leaders, private companies, nonprofit sector partners, and government officials

- 115 Participants
- 10 Multi-Agency Discussion Groups
- 64 Participating Agencies
- Attendees included representatives from private businesses

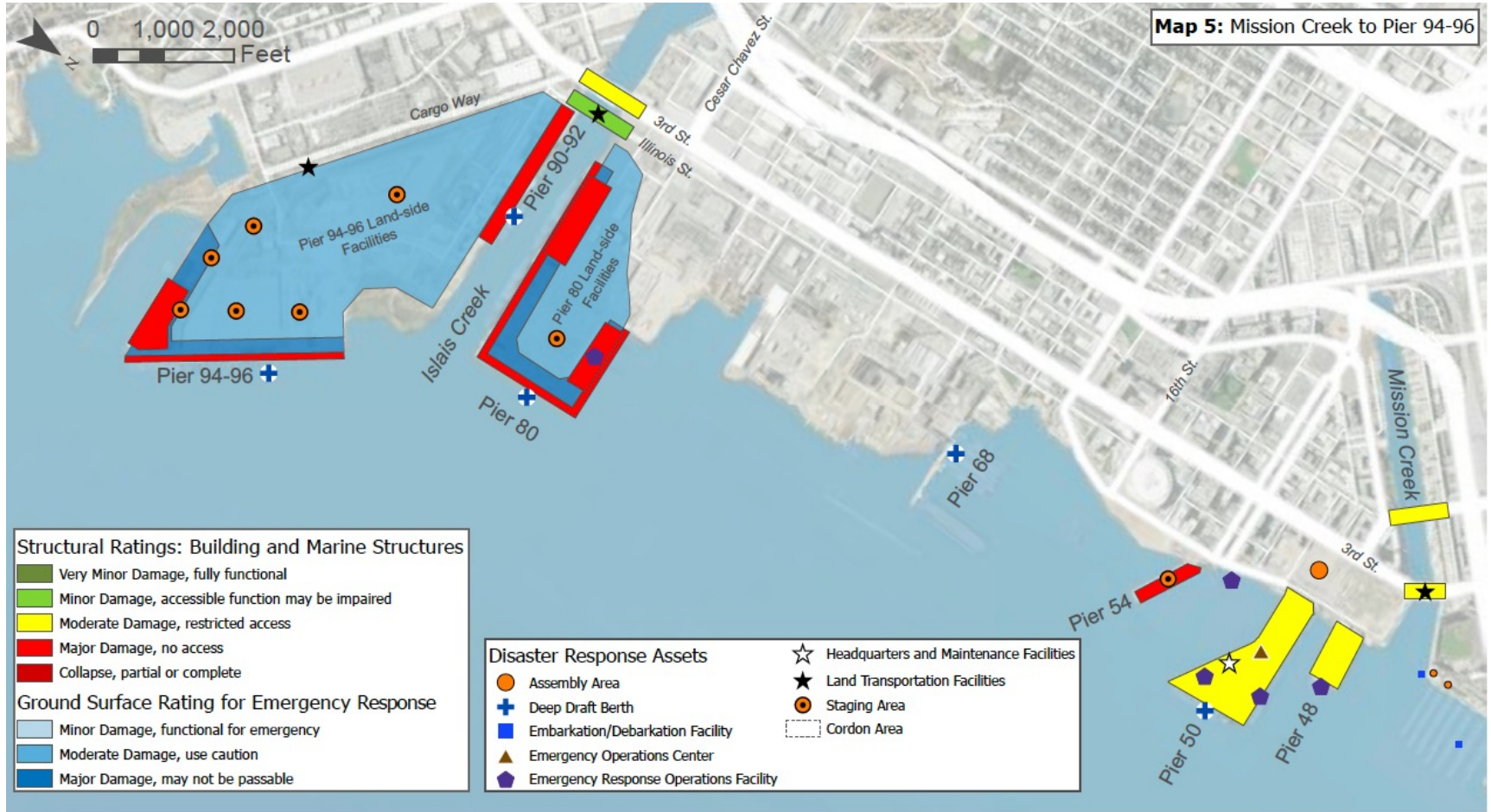




# Comprehensive Damage Maps (Section 2 of 6)



# Comprehensive Damage Maps (Section 5 of 6)





# EQ Damages – Roadways



## MINOR DAMAGE

### Emergency Response

- Veh: Reduced Speed
- Peds: Some ADA Issues
- Utility: Some Breaks/Leaks

### Recovery

- Repairable (temp & permanent)



## MAJOR DAMAGE

### Emergency Response

- Veh: Restricted
- Peds: Moderate
- Utility: Many Breaks/Leaks

### Recovery

- Temp Repairs followed by major Restoration



## SEVERE DAMAGE

### Emergency Response

- Veh: Impassable
- Peds: Difficult
- Utility: Many Breaks/Leaks

### Recovery

- Temp Utility repairs, street closed, Full Reconstruction



# Key Findings

Port Asset-Related and Emergency Response Planning





# DISASTER RESPONSE EXERCISE

## Key Findings RE: Port Asset-Related



### Emergency Fire Water System (formerly AWSS)

Essential post-earthquake fire system for City.

Waterfront components include pump station intakes, fireboat manifolds, and distribution piping to supply Bay water.



### Ferry Building Area

Ferry system critical for regional disaster worker movement & mass evacuation.

Ferry Building area is highest priority site in northern Bayfront.



### Reliable Deep Draft Berths with Roll-On/Roll-Off Capability

Maritime facilities essential for receiving supplies & equipment.

Prioritize facilities with logistics space and landside transportation routes.



### Embarcadero Transportation & Lifelines Corridor

Important corridor for movement of emergency vehicles, equipment & people.

Contains lifeline utilities including critical City-wide wastewater infrastructure.

# DISASTER RESPONSE EXERCISE

## Key Findings RE: Port Asset-Related



### Pier 94/96 Maritime Terminal

Unique facility at high earthquake risk.

Deep draft berths, large backlands, and truck/rail access to support debris management, supplies and logistics.



### Pier 50 Port Maintenance Facility

Critical facility that houses Port workers, supplies, and equipment needed for inspections and emergency repairs.



### Marine Fuel Supplies

Marine Fuel is needed to support inspections, transportation, and repairs.

Facility resilience, alternate planning, and additional options are required.



### SFPD Marine Unit

SFPD Marine unit has unique capabilities to support marine over-water search and rescue and over- and under-water inspections. Headquarters and equipment is in high-risk area.

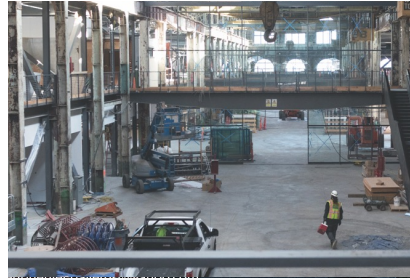
# DISASTER RESPONSE EXERCISE

## Key Findings RE: Port Asset-Related



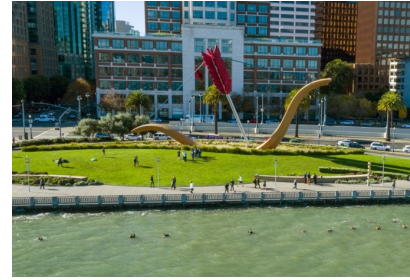
### ADA Needs

Ensure ADA needs are planned for and addressed in immediate disaster response services.



### Prioritize Reliability

High reliability of sites and capabilities is vital to emergency planning and response



### Open Space for Evacuation Points, Mass Care, Staging, Logistics and Air Operations

Open space is a constrained resource in San Francisco. Prioritize open spaces near deep draft berths, ferry berths, and reliable roadways.



### State-of-the-Art PA System tied to Multi-Lingual Translation

Low-cost and reliable method to improve critical communications along the waterfront and adjacent vulnerable/at-risk neighborhoods



# DISASTER RESPONSE EXERCISE

## Key Findings RE: Emergency Response Planning



### Inspectors

All operations are dependent upon inspections. The number of inspectors is severely underestimated in plans, and Port facilities must be prioritized. Inspectors must be identified as priority staff with first responders



### Evacuation and Mass Care

Improve Capability to Support Temporary Evacuation Points & Mass Care Sites at Port.



### Communications

Improve Post-Disaster Communications Systems needed for agency coordination, maritime operations, and public information.



### Socially Vulnerable Neighborhoods

Prioritize equity investments in mitigation and coordinated response planning and preparedness efforts in vulnerable areas near the Port.

# DISASTER RESPONSE EXERCISE

## Key Findings RE: Emergency Response Planning



### **Increase Dedicated Port Emergency Management Staff**

The Port requires multiple full-time emergency management staff positions to ensure adequate and consistent emergency preparedness capabilities.



### **Partner with Port Tenants & Businesses to Improve Disaster Response**

Significant resources exist in the private sector. Plan and conduct "whole port" exercise to increase coordination and collaboration.



### **Increase Coordination among Regional Planning Efforts**

Ongoing coordination and planning among other ports, waterfront cities/counties, and water transit agencies in the Bay Area will benefit disaster response, especially for coordinating movement of people and equipment.



### **Encourage FEMA to add pre-planned Mission Assignments for Evacuation/ Transportation/ Mass Care**

Pre-planned DSCA-related deployments increase shared understanding of capabilities, expectations, and associated costs.





# Next Steps

## Port Asset-Related and Emergency Response Planning





# NEXT STEPS

Based on After Action Report Key Findings



## Update Port, City, regional, state and federal plans

- Work with Cal OES & FEMA on updates to Bay Area Earthquake Plan (& Pre-scripted MAs)
- SFDEM Planning Team work to determine next steps for ESF Plan Updates reflecting exercise lessons learned
- Update Port Emergency Response Plans to include lessons learned
- Continue to discuss corrective action planning efforts with "Whole-Port" partners

# NEXT STEPS

Based on After Action Report Key Findings



## Inform development of Early Projects and Adaptation Strategies including Bond A investments

- Ferry Building Area EQ Resilience Project, Ferry System and Staging Area (Bond A)
- Pier 27 EQ Resilience Project, Deep Draft Berth with Staging Area (Bond A)
- Pier 30/32 Development Project, Deep Draft Berth with Landside Access
- *Disaster Resilient Corridor Workshop: Upcoming workshop to advance concept of disaster resilient corridors including Citywide input on performance objectives for damage, disaster response, and restoration*

## Seek additional funding to advance key asset & planning

- Pier 50: secured ARPA Funding to advance EQ Resilience of Port Maintenance and Deep Draft Berth
- Pier 94/96: seeking FEMA HMGP to advance EQ Resilience of critical facility
- Embarcadero Masterplan: seeking FEMA & MTC funding for improved resilient corridor

# Thank You!

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Waterfront Resilience Program

