

Protecting Our Critical  
Infrastructure:  
Massachusetts Port Authority

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ABC Panel

November 6, 2015

# Protecting Massport's Critical Infrastructure



## **Project Plan**

### **1. Threat Level Analysis**

- Hurricane Categories 1, 2, or 3 (Historical Analysis)
- Projected Sea Level Rise Next 50 Yrs
- Tide at Peak of Hurricane Storm Surge

### **2. Assets Classifications**

- Identifying Critical Infrastructure/Key Assets Required for Business Continuity

### **3. Assets Vulnerabilities**

- Applying Threat Level to Critical Assets to Assess Vulnerabilities and Potential Risks

### **4. Risk Based Prioritization**

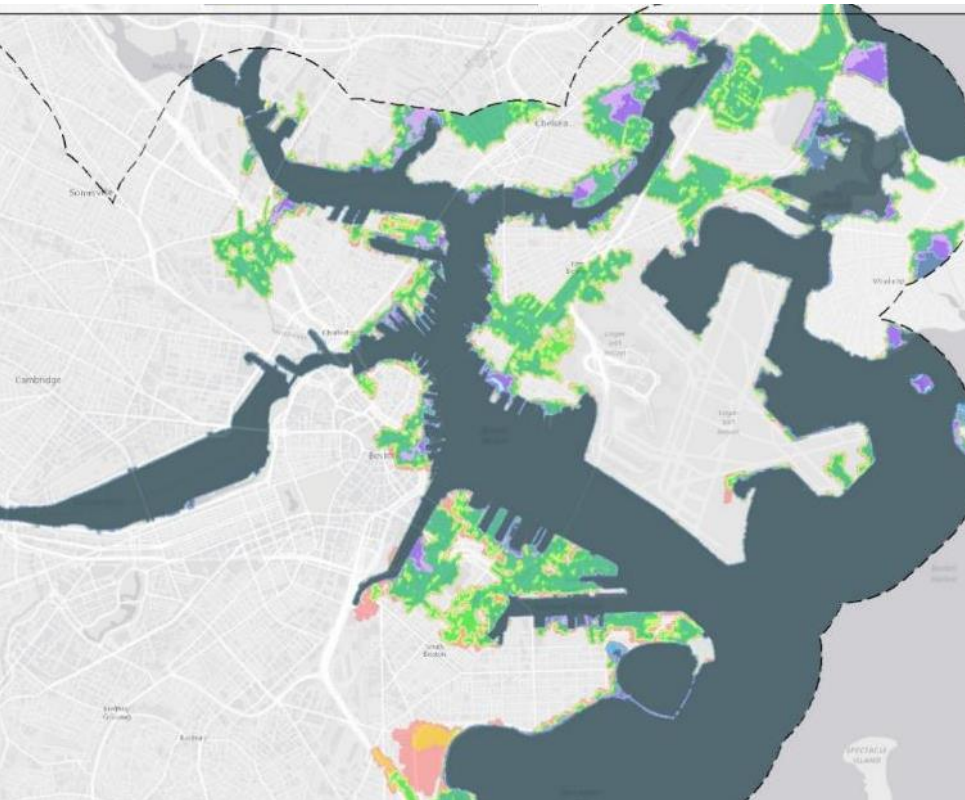
- Probability of Flooding/Depth of Flooding
- Consequences of Flooding

### **5. Develop Short Term Plan and Long Term Plan**

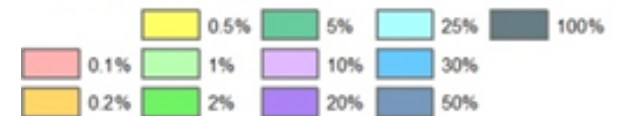
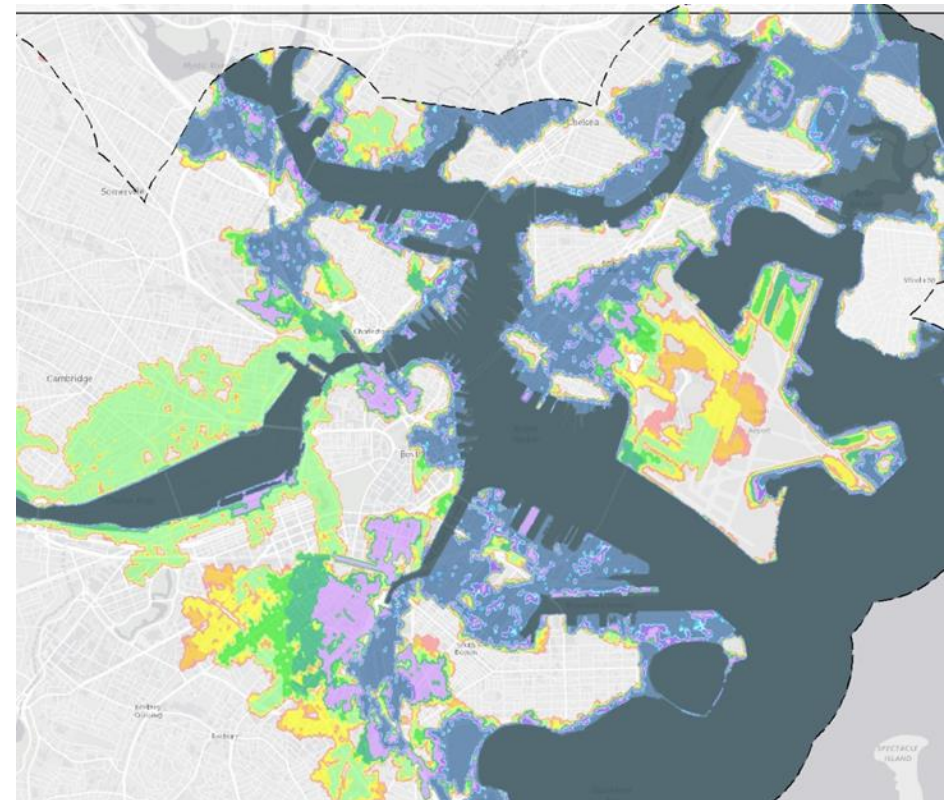
# Disaster Infrastructure Resiliency Planning (DIRP) - Flood Risk Model



2030



2070

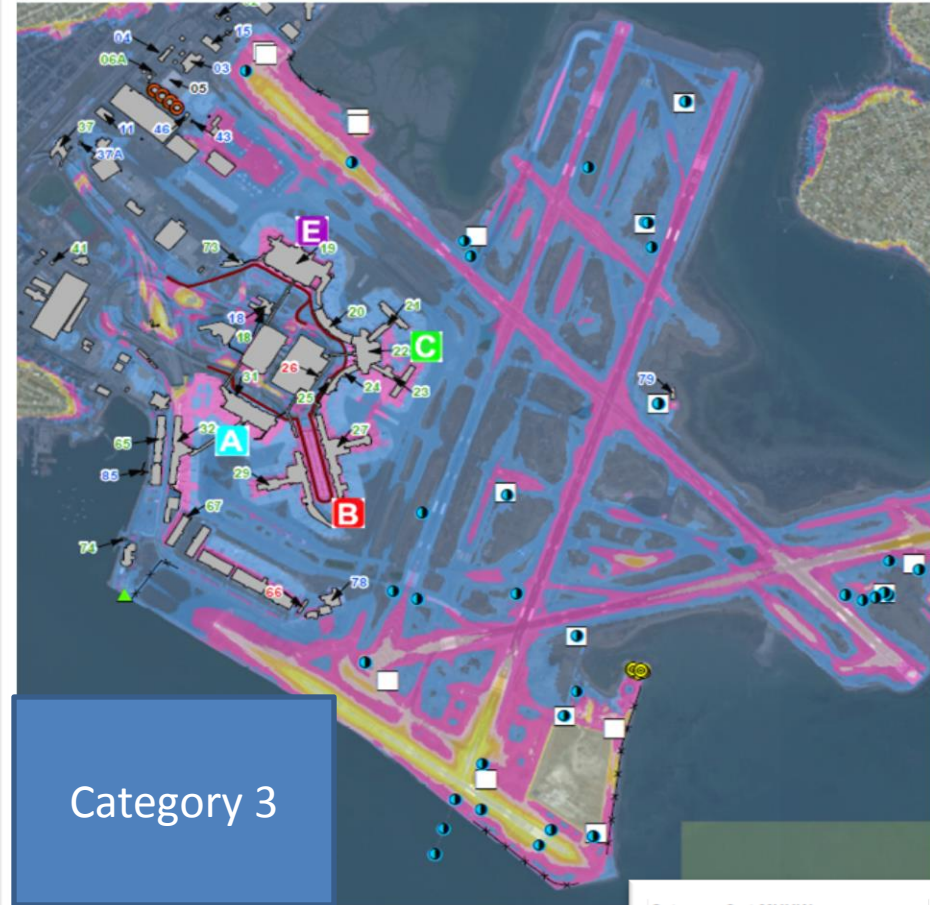


# Disaster Infrastructure Resiliency Planning (DIRP) – Probability of Flooding Prioritization (2030 Model)



Facility	Asset Name(s)	Critical Functions	Consequence of Flooding Score	Probability of Flooding (BH-FRM)
<b>TIER 1: HIGHER PROBABILITY OF EXPOSURE (FLOODING IN BH-FRM 2030 SCENARIO)</b>				
<b>TIER 1A</b>	<b>HIGHER CONSEQUENCE (SCORE = 8-12)</b>			<b>(2030)</b>
Fish Pier	East Building, West Building, Electrical	Multiple	12	2%
Conley	Site Switch House	Electrical	9	2%
Logan	Fire-Rescue II	Public Safety	8	2%
Logan	Porter Street Substation	Electrical	12	0.2%
Conley	Wharf Switch Houses 1-3, Marine Operations	Electrical	9	0.2%
Logan	MPA Pumping Station, Electrical Building, Ge	Water	8	0.2%
Logan	State Police & TSA Building	Public Safety	8	0.2%
Logan	Wood Island Substation	Electrical	12	0.1%
Logan	Marine Fire-Rescue	Public Safety	8	0.1%
<b>TIER 1B</b>	<b>INTERMEDIATE CONSEQUENCE (SCORE = 4-7)</b>			<b>(2030)</b>
Logan	Facilities III	Maintenance	4	1%
Conley	Berths 11-12	Access	6	0.2%
Conley	Rubber Tire Gantry Cranes	Cargo	4	0.2%
Conley	Vessel Cranes 1-6	Cargo	4	0.2%
Logan	West Outfall (Bar Screen Building)	Drainage	4	0.2%
Conley	Fuel Island and USTs	Fuel	6	0.1%
Logan	Facilities II	Maintenance	6	0.1%
<b>TIER 1C</b>	<b>LOWER CONSEQUENCE (SCORE = 1-3)</b>			<b>(2030)</b>
Haul Road	Haul Road Sump Pump	Drainage	2	5%
Conley	Interchange Facility	Cargo	1	5%
Conley	Reefer Building and Yard	Electrical	1	5%

# Disaster Infrastructure Resiliency Planning (DIRP) - Inundation Simulation



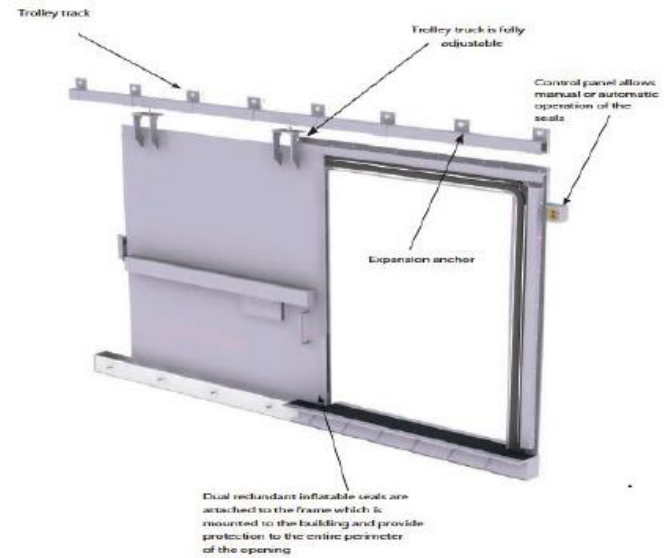
Category 3 at MHHW  
Depth of flooding above ground (ft)

0 - 1
1 - 2
2 - 3
3 - 4
4 - 6
6 - 8
> 8

# Floodproofing Design Guidelines



# Flood Barriers



Type C1  
(< 4 ft. Water)

Type C2  
(> 4 ft. Water)



# Dual-Aim of the Resiliency Program at Massport



