

HEAVY WEATHER AND FLOOD OPERATIONS PLAN



FOR MASSPORT'S MARITIME FACILITIES

SECTION ONE

Heavy Weather and Flood Operations Plan for Massport’s Maritime Facilities

TABLE OF CONTENTS:

SECTION ONE – BACKGROUND INFORMATION

Table of Contents	1
Addendum Record	3
Introduction	4
Definitions & Abbreviations	5

SECTION TWO - THE PROCEDURES FOR ALL MARITIME FACILITIES

Description of Heavy Weather and Flood Operations Plan	13
Special Provisions for Forecasted Coastal Floods	14
The Storm or Coastal Storm is 72 hours from the Port of Boston	20
The Storm or Coastal Storm is 48 hours from the Port of Boston	26
The Storm or Coastal Storm is 24 hours from the Port of Boston	30
The Storm or Coastal Storm is 12 hours from the Port of Boston	34
The Storm or Coastal Storm is 6 hours from the Port of Boston	36
Post-Storm/Coastal Flood Operations	38
Maritime and Terminal Hurricane Conditions	40

SECTION THREE - THE PROCEDURES FOR CONLEY TERMINAL

Description of Conley Terminal	41
Prior to Heavy Weather.....	42
When Heavy Weather is Imminent.....	42
Securing Equipment and Machinery	42
Wharf Cranes	42
RTG Cranes	42
Reach Stackers/Top Loaders	43
Trucks and Baskets.....	43
Critical Stock, Tools, and Materials	43
Elevators	43
Electrical Equipment	43
IT Equipment.....	43
Other Gear	43
After the Storm	43

SECTION FOUR - THE PROCEDURES FOR FLYNN CRUISEPORT TERMINAL

Description of Flynn Cruiseport Terminal	44
Prior to Heavy Weather.....	44
When Heavy Weather is Imminent	44
Securing Equipment and Machinery	44
Manual Gangways/Forklifts	44
Trucks and Baskets	45

SECTION ONE

Heavy Weather Plan for Massport's Maritime Facilities

Background Information

Other Gear	45
Portable Propane Gas Tanks	45
PBB Gangway	45
Baggage Screening Equipment	45
Elevators	45
Electrical Equipment	45
IT Equipment	45
After the Storm	45
Responsibilities of Stevedores, Freight Handlers and Cruise Companies	46

SECTION FIVE - THE PROCEDURES FOR THE SEAPORT DISTRICT AND BOSTON FISH PIER

Description of the Seaport District and Boston Fish Pier	47
Prior to Heavy Weather.....	47
When Heavy Weather is Imminent	47
Securing Equipment and Machinery	48
Trucks and Forklifts	48
Other Gear	48
Sewage and Processing Waste Storage Tanks/Pumps	48
Elevators	48
Electrical Equipment	48
After the Storm	48
Responsibilities of Tenants and Boat Owners	48

SECTION SIX - THE PROCEDURES FOR EAST BOSTON PROPERTIES

Description of East Boston Properties	50
Prior to Heavy Weather	50
When Heavy Weather is Imminent	50
Securing Equipment and Machinery	50
Trucks and Forklifts	50
Other Gear	50
After the Storm	51
Responsibilities of Tenants	51

APPENDICES

Appendix 1: Captain of the Port Boston Guidance for Hurricanes & Severe Weather

Appendix 2: Flood-Related Actions and Timelines and Flood Risk Maps

Appendix 3: Temporary Flood Barrier Equipment Storage and Installation Plans

SECTION ONE

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *Background Information*

Introduction:

The purpose of this plan is to provide for the safe, secure and orderly cessation of terminal activities well in advance of various severe weather conditions and coordination during and afterwards, including:

- Snowstorms and Blizzards, in the winter;
- Tropical Storms and Hurricanes, in the Hurricane season;
- Gales and Nor'easters, which can occur in the greater Boston area at any time of the year; and
- Coastal Flooding, which can coincide with Tropical Storms, Hurricanes or Nor'easters.

This plan establishes policies and guidelines and includes notification forms regarding severe weather preparation and is intended to conform to the "Port of Boston Heavy Weather Plan", issued by the US Coast Guard, the "Continuity of Operations Plan", and the individual facility "Emergency Action Plan" issued by the Massachusetts Port Authority.

Throughout this plan, references, where appropriate, are made to the "Port of Boston Heavy Weather Plan". It should be noted that local weather conditions, at the facilities in this plan, can be more severe than the conditions forecast for the Port of Boston. *Operations and Property Managers are encouraged to take the steps necessary to ensure the safety and protection of the facility's employees, property and equipment when, in their professional opinion, it is prudent to do so. They are not required to wait for guidance from the US Coast Guard, the National Weather Service, the Governor's Office, the Executive offices of the Massachusetts Port Authority or the Port Director's office.*

This plan is divided into six main sections and three appendices: **Section One** includes the introduction and definitions of terms specific to this plan. In **Section Two** are the procedures for all Maritime Properties. In **Section Three** are the procedures for Conley Terminal. In **Section Four** are the procedures for the Flynn Cruiseport Terminal. In **Section Five** are the procedures for the Seaport District and Boston Fish Pier. In **Section Six** are the procedures for East Boston Properties. Additional Sections will be added as appropriate. All changes or additions to this plan will be approved by the Port Director, or their designee, and recorded in the Addendum Record on page 3 of Section One.

SECTION ONE

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *Background Information*

Definitions and Abbreviations:

The definitions included in the following section are from the above mentioned plans and terminal specific Emergency Plans, as appropriate. **Note:** The Captain of the Port (COTP) Boston's *Heavy Weather Plan* contains three Hurricane related terms (**Port Conditions, Hurricane Conditions, and Hurricane Categories**) that sound very similar to one another and may have similar definitions, but are very different as a whole.

- 1. Advisory:** Weather advisory messages are issued for tropical storms, hurricanes, and coastal floods. A tropical storm or hurricane advisory states the storm location, intensity, direction of travel, and speed. A coastal flood advisory states the flooding location, timing, likely impacts, astronomical tide elevations, storm surge height, total tide (astronomical tide plus storm surge), maximum forecasted total flood elevation, and estimated wave heights.
- 2. Blizzard:** A winter storm characterized by high winds, low temperatures, and driving snow; according to the official definition given in 1958 by the U.S. Weather Bureau, the winds must exceed 35 mph (56 km/h) and the temperature must be lower than 20 degrees F (-7 degrees C).
- 3. Bulletin:** A weather bulletin is a public release made during periods between advisories, announcing the latest details on the storm or hurricane.
- 4. Coastal Flood:** A coastal flood is defined for the purposes of this document to be an event during a storm in which the forecasted maximum water surface elevation (combination of tide and storm surge) in Boston Harbor is greater than or equal to 14.5 ft. MLLW, as measured at the Boston Harbor Tide Gauge located on the Fort Point Channel (NOAA Station ID: 8443970)
- 5. Coastal Flood Advisory:** A Coastal Flood Advisory is a weather statement issued by the National Weather Service (NWS) when minor or nuisance coastal flooding is imminent or occurring along the coast. Coastal flooding is caused by high tides, storm surges and/or heavy rains. A coastal flood advisory means that some roads and low-lying areas near the waterfront and shoreline may experience shallow flooding. For Boston Harbor, a Coastal Flood Advisory will be issued when maximum flood elevations, not including waves, are forecasted to be between elevation 12.5 ft. and 15.0 ft. MLLW.
- 6. Coastal Flood Risk Areas:** Figures 1-5 in **Appendix 2** depict the extents of flooding for a range of coastal flood elevations that might be forecasted, and show the locations of vulnerable Massport Maritime buildings and structures in South Boston under each flood scenario. These figures are not exact predictions, as a variety of

SECTION ONE

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *Background Information*

storm characteristics will influence the actual extent and depth of a given flood across Maritime facilities in South Boston.

- 7. Coastal Flood Risk Buildings/Equipment:** Table A in **Appendix 2** identifies the critical buildings and equipment at Maritime facilities in South Boston and East Boston that will likely be impacted under a range of forecasted coastal flood elevations. The table does not provide exact predictions, as a variety of storm characteristics will influence the actual extent and depth of a given flood across Maritime facilities in South Boston and East Boston. In Table A under a given coastal flood elevation, "E" indicates that a site is likely to only experience flooding outside and around the building, while a number in a box indicates the approximate water elevation at which the asset will start to flood. Even if flooding does not reach a sufficient elevation to enter a building, exterior flooding may temporarily isolate buildings making evacuation or re-entry during or immediately after the flood extremely dangerous.
- 8. Coastal Flood Warning:** A Coastal Flood Warning is a hazardous weather statement issued by the NWS. It indicates that coastal flooding is either imminent or occurring along the coast of the Atlantic Ocean. A Coastal Flood Warning is issued when moderate to major coastal flooding is imminent or occurring. This flooding poses a serious risk to life and property. For Boston Harbor, a Coastal Flood Warning will be issued when maximum flood elevations, not including waves, are forecasted to be greater than or equal to elevation 15.0 ft. MLLW.
- 9. Coastal Flood Watch:** A Coastal Flood Watch is issued by the NWS when coastal flooding along the coast of the Atlantic Ocean is possible, but threats are not yet imminent or occurring. Such flooding could potentially pose a serious risk to life and property, should it occur. For Boston Harbor, a Coastal Flood Watch will be issued when maximum flood elevations, not including waves, are forecasted to be greater than or equal to elevation 15.0 ft. MLLW.
- 10. COOP:** The Continuity of Operations Plan
- 11. COTP:** Captain of the Port; a United States Coast Guard Officer.
- 12. Forecasted Coastal Flood:** A forecasted coastal flood is a flood with a maximum forecasted water surface elevation at the Boston Tide Gauge (combination of tide and storm surge) greater than or equal to 14.5 ft. MLLW as predicted by the National Oceanic and Atmospheric Administration (NOAA) Extra-Tropical Storm Surge model at least thirty six (36) hours prior to its anticipated occurrence.

SECTION ONE

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *Background Information*

- 13. Gale Warning:** A warning of winds within the range of 39-54 mph (34-47 knots).
Note: Sustained wind speeds in this range will trip the safety devices on the Conley Terminal gantry cranes.
- 14. Gale Watch:** A watch for an increased risk of a gale force wind event for sustained surface winds, or frequent gusts, of 39-54 mph (34-47 knots), but its occurrence, location and/or timing is still uncertain.
- 15. Hurricane:** A hurricane is a violent storm originating over tropical waters, with winds near its center reaching 74 mph (64 knots) and higher. In size, the storm may range from 50 to 1,000 miles in diameter. Hurricane hazards come in many forms: storm surge, high winds, tornadoes, and flooding. The Saffir-Simpson Hurricane Scale is a 1-5 rating based on the hurricane's present intensity. This is used to give an estimate of the potential property damage and flooding expected along the coast from a hurricane landfall. Wind speed is the determining factor in the scale, as storm surge values are highly dependent on the slope of the continental shelf in the landfall region.
- 16. Hurricane Categories** – The NWS categorizes hurricanes using the 1 to 5 Saffir-Simpson Hurricane Scale, which provides a relative measure of storm intensity. Intensity is one of the most important considerations in determining potential loss of life and property in a hurricane emergency.
- 17. Hurricane Warning:** A warning which indicates that hurricane winds of **74 mph** (64 knots) and higher, or a combination of dangerously high water and rough seas, are expected to impact a specified coastal area. **A Hurricane Warning indicates that life-threatening conditions from a hurricane are expected within a specified coastal area within 36 hours.** When a warning is announced, it is of utmost importance that all precautionary measures be taken for protection of life and property.
- 18. Hurricane Watch:** An advance statement, not a warning, indicating that a hurricane is approaching and attention should be given to subsequent advisories. **A Hurricane Watch indicates that hurricane conditions are possible within a specified area. A Hurricane Watch is issued 48 hours in advance of the anticipated onset of tropical-storm-force winds in an area.** Precautionary action should be taken in case hurricane warnings are forthcoming.
- 19. Maritime Management Team:** Critical decision-making team comprised of the Maritime Operations Manager (or his/her appointee), Property Managers, the Deputy Port Director, and the Director of Maritime Security.

SECTION ONE

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *Background Information*

- 20. Maximum Flood Elevation:** The highest total water elevation (tide elevation plus storm surge height) forecasted to occur at the Boston Harbor Tide Gauge (NOAA Station ID: 8443970) for a given storm. For the purposes of this plan, elevations will be reported in ft. in the Mean Lower Low Water (MLLW) datum.
- 21. MLLW:** The NWS reports total water elevation forecasts in Mean Lower Low Water (MLLW) vertical datum. MLLW is the average height of the lowest tide recorded at a tide station each day during a 19-year recording period, known as the National Tidal Datum Epoch (NTDE). The present NTDE is based on data from 1983 to 2001.
Note: all elevations within this document are relative to the MLLW vertical datum to be consistent with the datum of NWS forecasts.
- 22. Missile Hazards:** A term used to describe loose equipment, spare parts, construction material or debris that can easily become airborne in high winds of 40 mph (35 knots) or more or waterborne in a coastal flood. Every effort should be made to secure these items to prevent them from causing damage or injuring personnel.
- 23. NAVD88:** The North American Vertical Datum of 1988 is the current official vertical datum for Massport. **Note: all elevations within this document are relative to the MLLW vertical datum to be consistent with the datum of NWS flood forecasts.** Conversion of NAVD88 elevation data to MLLW elevation may be necessary when referencing other data sources, such as Massport record drawings and external topographic data. To convert elevations from NAVD88 to MLLW datum, add 5.5 ft. to the nominal NAVD88 elevation (e.g., forecasted flood elevation of 10.0 ft. NAVD88 + 5.5 ft. = 15.5 ft. MLLW). Conversely, to convert elevations from MLLW datum to NAVD88, subtract 5.5 ft. from the nominal MLLW elevation (e.g., forecasted flood elevation of 15.5 ft. MLLW – 5.5 ft. = 10.0 ft. NAVD88).
- 24. Nor'easter or Northeast Winter Storm:** An extra-tropical strong low-pressure system that affects the Mid-Atlantic and New England states. It can form over land or over coastal waters. Nor'easters are notorious for producing heavy snow, rain, and tremendous waves that crash onto Atlantic beaches, often causing beach erosion and structural damage. Nor'easters can also produce high winds and significant storm surge resulting in flooding in coastal areas. A Nor'easter gets its name from the continuously strong northeasterly winds blowing in from the ocean ahead of the storm and over coastal areas.
- 25. NWS:** National Weather Service; an agency of the National Oceanographic and Atmospheric Administration (NOAA).
- 26. Port Conditions:** The COTP Boston sets Port Conditions for the entire COTP zone, in advance of an arriving hurricane or tropical storm which will affect the

SECTION ONE

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *Background Information*

Massachusetts coast. The COTP will make his/her decision based on predictions from the NWS Massachusetts Bay and Ipswich Bay (ANZ251) forecast zones in evaluating the need for establishing Port Conditions. **There are four Hurricane Port Conditions:** Whiskey, X-ray, Yankee and Zulu. These Hurricane Port Conditions are delineated as such to avoid confusion with the five Hurricane Categories set by the NWS. The four Port Conditions are described as follows, with further detail in **Appendix 1:**

- a. **WHISKEY:** Sustained gale force winds associated with tropical cyclone activity are predicted to arrive within **72 hours**.
- b. **X-RAY:** Sustained gale force winds associated with tropical cyclone activity are predicted to arrive within **48 hours**.
- c. **YANKEE:** Sustained gale force winds associated with tropical cyclone activity are predicted to arrive within **24 hours**. This condition is also used after the storm passes, because vessel traffic control measures will still be in effect.
- d. **ZULU:** Sustained gale force winds associated with tropical cyclone activity are predicted to arrive within **12 hours**.

27. Resiliency Application: The Massport Climate Resiliency Application is an interactive website that facilitates field data collection and management oversight of flooding or heavy precipitation events impacting Massport infrastructure. It automatically monitors and displays, in real-time, tidal flood elevation forecasts at the NOAA tide gauge in Boston Harbor (NOAA Station ID: 8443970) as reported by the National Oceanic and Atmospheric Administration (NOAA) National Water Prediction Service at: <https://water.noaa.gov/gauges/bhbm3>

28. Severe Local Storm: A convective storm that usually covers a relatively small geographic area, or moves in a narrow path, and is sufficiently intense to threaten life and/or property. Examples include severe thunderstorms with large hail, damaging wind, or tornadoes. Although cloud-to-ground lightning is not a criterion for severe local storms, it is acknowledged to be highly dangerous and a leading cause of deaths, injuries, and damage from thunderstorms. A thunderstorm need not be severe to generate frequent cloud-to-ground lightning. Additionally, excessive localized convective rains are not classified as severe storms but often are the product of severe local storms. Such rainfall can result in related phenomena (flash floods) that threaten life and property.

29. Severe Local Storm Watch: An alert issued by the National Weather Service for the contiguous U.S. and its adjacent waters of the potential for severe thunderstorms or tornadoes.

SECTION ONE

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *Background Information*

30. Severe Thunderstorm: A thunderstorm that produces a tornado, winds of at least 58 mph (50 knots), and/or hail at least $\frac{3}{4}$ " in diameter. Structural wind damage may imply the occurrence of a severe thunderstorm. A thunderstorm wind equal to or greater than 40 mph (35 knots) and/or hail of at least $\frac{1}{2}$ " is defined as approaching severe.

31. Severe Thunderstorm Warning: This is issued when either a severe thunderstorm is indicated by the WSR-88D radar or a spotter reports a thunderstorm producing hail $\frac{3}{4}$ inch or larger in diameter and/or winds equal to or exceeding 58 mph (50 knots); therefore, people in the affected area should seek safe shelter immediately. Severe thunderstorms can produce tornadoes with little or no advance warning. Lightning frequency is not a criterion for issuing a severe thunderstorm warning. They are usually issued for a duration of one hour. They can be issued without a Severe Thunderstorm Watch being already in effect.

Like a Tornado Warning, the Severe Thunderstorm Warning is issued by the NWS local forecast office, which is located in Taunton, MA. Severe Thunderstorm Warnings will include where the storm is located, what towns will be affected by the severe thunderstorm, and the primary threat associated with the severe thunderstorm warning. If the severe thunderstorm will affect the nearshore or coastal waters, it will be issued as the combined product - Severe Thunderstorm Warning and Special Marine Warning. If the severe thunderstorm is also causing torrential rains, this warning can also be combined with a Flash Flood Warning. If there is an ampersand (&) symbol at the bottom of the warning, it indicates that the warning was issued as a result of a severe weather report.

After the Severe Thunderstorm Warning has been issued, the affected NWS local forecast office will follow it up periodically with Severe Weather Statements. These statements will contain updated information on the severe thunderstorm, and they will also let the public know when the warning is no longer in effect.

32. Severe Thunderstorm Watch: This is issued by the NWS when conditions are favorable for the development of severe thunderstorms in and close to the watch area. A severe thunderstorm by definition is a thunderstorm that produces $\frac{3}{4}$ -inch hail or larger in diameter and/or winds equal to or exceeding 58 mph (50 knots). The size of the watch can vary depending on the weather situation. They are usually issued for a duration of 4 to 8 hours. They are normally issued well in advance of the actual occurrence of severe weather. During the watch, people should review severe thunderstorm safety rules and be prepared to move to a place of safety if threatening weather approaches.

SECTION ONE

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *Background Information*

A Severe Thunderstorm Watch is issued by the Storm Prediction Center (SPC) in Norman, Oklahoma. Prior to the issuance of a Severe Thunderstorm Watch, SPC will usually contact the affected NWS local forecast office, and they will discuss what their current thinking is on the weather situation. Afterwards, SPC will issue a preliminary Severe Thunderstorm Watch and then the affected NWS local forecast office will then adjust the watch (adding or eliminating counties/parishes) and then issue it to the public by way of a Watch Redefining Statement. During the watch, the NWS local forecast office will keep the public informed on what is happening in the watch area and also let the public know when the watch has expired or been cancelled.

- 33. State of Emergency:** Is a declaration, issued by the Governor that alerts citizens to change their normal behaviors, or order government agencies to implement emergency preparedness plans. Such declarations usually come during a time of natural or manmade disaster.
- 34. Storm Center:** A storm center is a pre-designated location that is used by Massport staff and partners, including State Police, as a local base of operations before, during, and immediately after a storm event. At the discretion of the Maritime Management Team, storm centers are established when conditions, such as coastal flooding, are expected that will make it unsafe to occupy other Massport buildings that are normally used for operations. A storm center is **not intended to be used as a shelter**, it is meant **for operational use only**. Maritime facilities and their pre-designated storm centers for forecasted maximum flood elevations are listed on Page 21.
- 35. Storm Conditions:** A storm condition is set to advise U.S. Coast Guard commands within Sector Boston of severe weather other than that associated with hurricanes. Storms may contain high and gusty winds, heavy rain, snow and/or hail and are often accompanied by unusually high tides. **Storm condition will be set when sustained winds of 58 mph (50 knots) or greater are forecasted.** These include Nor'easters or Northeast Winter Storms, Blizzards and all other weather conditions not meeting the criteria to be classified as a hurricane.
- 36. Storm Warning:** A warning of sustained winds, or frequent gusts, in the range of 55 to 73 mph (48-63 knots), either predicted or occurring, and not directly associated with a tropical cyclone.
- 37. Storm Watch:** A watch for an increased risk of a storm force wind event for sustained surface winds, or frequent gusts, of 55 to 73 mph (48-63 knots), but its occurrence, location, and/or timing is still uncertain.

SECTION ONE

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *Background Information*

- 38. Terminal Condition:** Terminal Conditions are designated periods of time during which specific actions will be taken to prepare for or recover from heavy weather and coastal flooding, as described in this plan. This plan is divided into six Terminal Conditions. The first four Terminal Conditions align with the USCG Port Conditions. The fifth condition is 6 hours prior to arrival of a storm. The sixth condition is a guide to post-storm activities.
- 39. Unified Command:** Massport has adopted a Unified Command system for controlling the implementation of the *Logan International Airport Coastal Flood Operations Plan* and the broader *Airport Emergency Plan*. The Unified Command structure gives shared decision-making authority to the heads of Massport Aviation Operations, State Police Troop F, and Massport Fire-Rescue. The Unified Command will be supported by an Emergency Operations Center, which includes representatives from external agencies and partners, and a Departmental Operations Center, made up of Massport departmental representatives. Massport has not adopted a Unified Command system for implementation of the *Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities*. However, decision-making authorities and procedures for coordination between Maritime and the Unified Command have been outlined in this plan.
- 40. Warning:** A warning is issued when a hazardous weather or hydrologic event is occurring, is imminent, or has a very high probability of occurring. A warning is used for conditions posing a threat to life or property.
- 41. Watch:** A watch is used when the risk of a hazardous weather or hydrologic event has increased significantly, but its occurrence, location, and/or timing is still uncertain. It is intended to provide enough lead time so that those who need to set their plans in motion can do so.

END OF SECTION ONE

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

Description of Heavy Weather and Flood Operations Plan

When the U.S. National Weather Service (NWS) predicts a tropical storm, hurricane, nor'easter, or other heavy weather event which might affect the Boston area, a strategy meeting or conference call will be called with the Maritime Management Team, including the Operations Manager, or his/her appointee, Property Managers, the Deputy Port Director, and the Director of Maritime Security, to discuss the Port and Terminal specific plans. A person from each department will be assigned to coordinate preparations for their respective area. If the event is forecasted to pose a risk of coastal flooding to Massport Maritime facilities, a representative from Capital Programs (CP) will participate in the conference call.

Employees with questions about attendance during a storm period should be referred to their managers, who will follow the COOP Procedures. Employees will be notified by their managers using the Maritime Department COOP Emergency Notification list. The Massport-wide Automatic Notification System will notify all employees of emergency situations via home phone, personal cell phone, email, Massport cell phone and/or office phone.

Maritime facilities will continue to receive and deliver cargo and passengers as long as it is safe to do so, but if a storm is imminent the guidance in this document should be followed. Remember, this timeline is only a guide, and it is to be moved forwards or backwards depending on the severity and the expected arrival of the storm.

It should be noted that Massport retains the right to decide when to shut down vessel operations and to put its equipment into storm position.

Hurricane season in the Northeast extends from June 1 through November 30, and nor'easters occur during the remainder of the year. Every year, prior to the onset of Hurricane season, Massport Operations and Property Managers and critical staff will meet to review the Heavy Weather and Flood Operations Plan and amendments will be made as necessary. The Property Manager will perform an inventory of emergency supplies and purchase anything not on hand or that needs to be replaced. The Operations and Property Managers will also be responsible for checking their facilities to make sure all portable buildings are properly secured. All tenants will be notified in writing to be sure that extra care is being taken in their usual housekeeping and securing of their facilities.

The procedures in this section shall be followed at all Maritime Department properties and facilities. This section conforms to the USCG COTP Guidance for Hurricanes & Severe Weather for the Port of Boston (**Appendix 1**). This section is divided into **6 terminal conditions**. The first four terminal conditions align with the USCG Port Conditions. The Operations Manager or Property Manager should use these condition procedures as a guide when Heavy Weather, such as – but not limited to a Blizzard, Gale, Nor'easter, Tropical Storm, Hurricane, or Coastal Flood – is forecast for the Port

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

of Boston. The fifth terminal condition is 6 hours prior to arrival of a storm. The sixth terminal condition is a guide to post storm activities.

Special Provisions for Forecasted Coastal Floods

In the event of a forecasted coastal flood, additional emergency operations will be required to protect life and property from flood hazards. A key component of Massport's emergency flood operations strategy is to monitor flood forecasts and use the data they provide, along with risk mapping and identification tools in **Appendix 2**, to formulate, time, and implement response and recovery actions. Scaling the level of actions to the level of threat posed by forecasted coastal floods will make emergency flood operations more effective, less costly, and less operationally disruptive.

Flood Forecast Monitoring and Notifications

The Massport Climate Resiliency Application is an interactive website that facilitates field data collection and management oversight of flooding or heavy precipitation events impacting Massport infrastructure. It automatically monitors and displays, in real-time, tidal flood elevation forecasts at the NOAA tide gauge in Boston Harbor (NOAA Station ID: 8443970) as reported by the National Oceanic and Atmospheric Administration (NOAA) National Water Prediction Service at: <https://water.noaa.gov/gauges/bhbm3>

In addition to tidal flooding alerts, the application monitors and displays NWS precipitation forecasts within the system.

The Massport Climate Resiliency Application website provides a simple-to-use interface for staff to gain situational awareness of flooding events and the impact across Massport critical infrastructure. In the field, a mobile application can be used to record information before and during an event, as well as for managers overseeing the status of infrastructure preparation, conditions during an incident, and recovery from any flooding impacts. Massport personnel can access the Massport Climate Resiliency Application using a computer, smart phone, or tablet, with the following link and their normal Massport log in credentials:

<https://experience.arcgis.com/experience/7449ced659504c578bc46000da962f32>

Once logged in, the Massport Climate Resiliency Application provides Massport staff with the following capabilities:

1. Facilitate management oversight of flooding or heavy precipitation events impacting Massport infrastructure.
2. Inform decision-making during a flood event where Massport flood operations plans may or have been activated.

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

3. Enable select Massport personnel to post real-time field photos and status updates to a shared online dashboard, including:
 - a. Flood water encroachment
 - b. Barrier and resource deployments
 - c. Operational issues encountered
 - d. Equipment status or "positive" activity milestones (i.e., all clear, action completed, etc.)
 - e. Site inspections
4. Contribute to after-event reporting using the date/time stamps of entered statuses, photographs, information and observations.

When flood elevation forecasts exceed 13.0 ft. MLLW (combination of tide and storm surge), the application will automatically send real-time notifications via email to a predetermined distribution list of Massport staff. ***As a precaution, this notification trigger is 1.5 ft. lower than the elevation at which actions in Appendix 2 are triggered for the most vulnerable Maritime assets.*** Setting a lower notification threshold allows the Maritime Management Team and Capital Programs to become aware of potential flood events and to consider taking precautionary actions, such as notifying other Massport departments and units and putting their flood barrier deployment contractor on notice in advance of a potential event.

To verify and supplement the NOAA flood forecasts, Capital Programs will also manually monitor other public websites that provide flood, wind, and storm forecast information, including:

- NOAA Extra-Tropical Storm Surge at the following web link:
<https://slosh.nws.noaa.gov/etsurge/index.php?page=stn®ion=ne&datum=mllw&list=&map=0-48&type=both&stn=mabos>
- Boston Station ETSURGE Hydrographs (for Nor'easters)
<https://slosh.nws.noaa.gov/etsurge2.0/index.php?stid=8443970&datum=MLLW&show=1-1-1-1-0>
- NOAA National Hurricane Center – Atlantic Tropical Cyclones and Disturbances
<https://www.nhc.noaa.gov/?atlc>
- NOAA Coastal Inundation Dashboard (integrates NWS Storm Surge Watch/Warning and Coastal Flood Advisory/Watch/Warning information)
<https://tidesandcurrents.noaa.gov/inundationdb/#>
- Windfinder - Boston Harbor Forecast (wind speed, maximum gusts)
https://www.windfinder.com/forecast/boston_harbor

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

- The Weather Channel - Boston
<https://weather.com/weather/today//USMA0046:1:US>
- Weather Underground – Boston (Logan Airport station)
<https://www.wunderground.com/weather/KBOS>
- Local television newscasts and news radio also provide extensive coverage of any storm that may threaten our area (TV channels 4, 5, 7, and 25; radio station 1030 AM).

When Capital Programs staff receive an automatic notification from the Massport Climate Resiliency Application that a forecasted flood elevation is forecast to exceed a specific threshold that is determined to pose a potential risk to Maritime assets, Capital Programs will develop a Coastal Flood Forecast Advisory and hold a conference with the Maritime Management Team – including the Operations Manager, or his/her appointee, Property Managers, the Deputy Port Director, and the Director of Maritime Security.

The Coastal Flood Forecast Advisory will include the following information:

1. Date and time of each advisory.
2. Date and time of forecasted coastal flood arrival at Boston Harbor when water surface elevation at the Boston Tide Gauge is expected to reach an elevation of 14.5 ft. MLLW or higher. The NOAA forecast data are reported in local Eastern Standard Time or Eastern Daylight Savings Time, as appropriate. To avoid potential errors in reporting morning or afternoon times, a 24-hour clock will be utilized to report all times.
3. Maximum flood elevation (combination of tide and storm surge) forecasted at the Boston Harbor Tide Gage (NOAA Station ID: 8443970). Elevations will be provided in MLLW datum.
4. Range of anticipated wave heights forecasted at Boston Harbor and the eastern-facing sections of the airport at the time of maximum flood elevation arrival, in feet, if available.
5. Date and time of forecasted maximum flood elevation arrival at Boston Harbor.
6. Date and time of forecasted flood recession when the water surface is expected to fall below and remain below elevation 14.5 ft. MLLW.
7. Forecasted total flood duration (hours and minutes). The time will be cumulative and will be calculated as the total time from the first time that the water surface is forecast to exceed an elevation of 14.5 ft. MLLW to the last

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

time that the water surface is forecast to drop below elevation 14.5 ft. MLLW, taking into account multiple tidal cycles.

8. Forecasted maximum wind gust speed and direction (miles per hour).
9. Forecasted maximum sustained wind speed and direction (miles per hour).

Example Coastal Flood Forecast Advisory

Maritime Management Team Recommendation:	
DESCRIPTION	FLOOD FORECAST DATA
Date and time of advisory	10/30/15 13:00
Date and time of arrival of flood elevation greater than or equal to 14.5 ft. MLLW	10/31/15 12:30
Maximum flood elevation forecasted (ft. MLLW)	16.5 ft. MLLW
Anticipated wave height at maximum flood elevation (ft.) (if available)	Harbor: 2-3 ft. East-Facing Airport: 7 - 9 ft.
Forecasted precipitation	2 in. per hour, or 5 in. in 24 hours
Date and time of maximum flood elevation	10/31/15 14:00
Date and time of recession of flood to elevation below 14.5 ft. MLLW	10/31/15 18:00
Duration of predicted flooding above elevation 14.5 ft. MLLW from start to recession	5 hours, 30 minutes
Forecasted maximum wind gust speed and direction	92 mph, NE
Forecasted maximum sustained wind speed and direction	78 mph, NE

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

Decision-Making

The Maritime Management Team, in consultation with Capital Programs, will determine the selection, location, and timing of emergency flood response and recovery actions to be implemented. The Maritime Management Team and Capital Programs will use the following procedure, tools, and information to guide decision-making:

1. Coastal Flood Forecast Advisory information to be provided by Capital Programs
2. Flood risk table and maps in **Appendix 2**:
 - Table A – Maritime South Boston Buildings and Structures at Risk of Flooding
 - Figures 1 to 5 – Maritime Facilities at Risk of Flooding (Maps)
3. Guidance on actions and timelines included in SECTIONS TWO through SIX of this plan, summarized in **Appendix 2**:
 - Tables B1 to B6 – Flood-Related Actions and Timelines for Conley Terminal (shows actions and associated timelines for various flood scenarios)
 - Tables C1 to C4 – Flood-Related Actions and Timelines for Flynn Cruiseport (shows actions and associated timelines for various flood scenarios)
 - Tables D1 to D2 – Flood-Related Actions and Timelines for Boston Fish Pier (shows actions and associated timelines for various flood scenarios)
 - Tables E1 to E2 - Flood-Related Actions and Timelines for Piers Park Sailing Center Building (shows actions and associated timelines for various flood scenarios)

Note: State Police Troop F, in conjunction with the Massport Police, shall direct law enforcement and first responder activities at Maritime properties.

Note: Port Conditions and Terminal Conditions are structured as timelines in relation to the onset of gale force winds in Boston Harbor, which may not necessarily align with timelines for the onset of flooding. Therefore, **emergency flood action timelines (72, 48, 24, 12, and 6 hours in advance) in SECTION 2 and SECTION 3 of this plan should be implemented with respect to the forecasted arrival time of coastal flooding OR the arrival of gale force winds – whichever is forecasted to occur first.**

Management Oversight and Field Reporting

The Massport Climate Resiliency Application website provides a simple-to-use interface for staff to gain situational awareness of flooding events and the impact across Massport critical infrastructure. In the field, a mobile application can be used to record information before and during an event, as well as for managers overseeing the status

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

of infrastructure preparation, conditions during an incident, and recovery from any flooding impacts.

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

The Storm or Coastal Flood is **72 hours** from the Port of Boston
USCG Port Condition **WHISKEY**
Terminal Condition **ONE**

- 1) Begin coordinated team communication with Massport, State Police Troop F, USCG, Pilots, Labor Unions, Trucking Companies, Tenants, and Terminal Users.
 - a. Review latest Coastal Flood Forecast Reports disseminated by Capital Programs. Determine which facilities, areas, and buildings are forecasted to flood based on the forecasted maximum flood elevation and Figures 1-5 and Table A in **Appendix 2**. Share risk information through coordinated team communication.
 - b. Operations and Property Managers will submit their operations plans and vessel schedules to the Port Director and to the Unified Command of the *Logan International Airport Coastal Flood Operations Plan, if applicable*.
- 2) The Operations and Property Managers, or their designees, are to follow the COTP Guidance for Hurricanes & Severe Weather (**Appendix 1, page 15**):
 - a. Alert personnel to commence heavy weather preparations to ensure compliance with all Designated Waterfront Facility and Waterfront facility action requirements at least 12 hours before impending severe weather makes landfall.
 - b. Advise the COTP on the status of present and expected facility cargo operations by calling the Facilities Branch at (617) 223-3010/5768 during normal business hours and during non-business hours contact (617) 223-5757. **In addition, complete and submit the Pre-Storm/Hurricane Assessment Survey (Appendix 1, Annex C).**
 - c. Waterfront Petroleum and Hazardous Material Facilities shall inventory contents/amounts in each storage tank, locate and review data on age/structural integrity of all storage tanks.
 - d. Review facility contingency plans for severe weather and advise the COTP on intended actions regarding vessels calling at terminal, safeguarding of facility personnel, staffing during the severe weather, and preparations for possible flooding due to high tides/heavy rains.
 - e. Review operational schedules to identify and reduce shipments of Cargoes of Particular Hazards, Hazardous Materials, and/or Dangerous Cargoes arriving via highway or rail vehicles. Facility operators shall notify the COTP of any

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

- labeled dangerous cargo that must remain in open areas due to insufficient shed space or stowage regulations. Items such as drums should be banded on pallets not more than two tiers high or laid horizontally with secure dunnage.
- f. Notify the COTP at (617) 223-5757 for all vessels in a "Lay-up" status and ensure that vessels are prepared for severe weather conditions.
 - g. Evaluate the extent that a 96-hour interruption of cargo operations, during and after storm passage, will interrupt strategic public safety, energy, or transportation needs. If a significant interruption is expected, report it to the COTP.
 - h. Regions may be impacted with sporadic power outages; it is recommended to keep laptops, phones, radios and backup power supplies fully charged to avoid disturbances in communications. If a coastal flood is forecasted, this equipment shall be inventoried.
- 3) Determine the intentions of vessels moored at the facility. Vessels wishing to remain at the berth during a heavy weather event **must** complete the Remaining in Port checklist in **Appendix 1, Annexes A and B**. This form must be signed by the master or person in charge of the vessel before Massport grants permission for the vessel to remain at the berth.
- a. For a forecasted coastal flood with a maximum forecast water elevation of 14.5 ft. MLLW or greater, the Maritime Management Team will consider forecasted flood and wind conditions and decide whether vessels will be allowed to remain moored at Massport Maritime facilities as they may pose a potential safety hazard. Vessel masters, or persons in charge, shall be notified to make arrangements and be prepared to leave the berth before COTP Port Condition YANKEE/Terminal Condition THREE, or 24 hours prior to the arrival of coastal flooding, whichever occurs first.
- 4) Call all vendors to remove dunnage and scrap metal and pump out waste oil.
- 5) Critical files and applications stored on local hard drives of laptops and desktop computers should be backed up automatically onto the Massport network or, where relevant (e.g., ITOS), the network of a third-party hosting service.
- 6) A safe location should be designated as the storm center.
- a. Maritime facilities and their pre-designated storm centers for forecasted maximum flood elevations are as follows:

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

- **Fish Pier:**
 - Boston Convention and Exposition Center (if maximum flood elevation equal to or greater than 15.0 MLLW)
 - Separate from the storm center, shelter locations for essential employees should be designated at the discretion of the Maritime Management Team (if maximum flood elevation equal to or greater than 15.0 MLLW)

 - **Flynn Cruiseport Terminal:**
 - Main Terminal building (if maximum flood elevation less than 15.5 MLLW)
 - Boston Convention and Exposition Center (if maximum flood elevation equal to or greater than 15.5 MLLW)
 - Separate from the storm center, shelter locations for essential employees should be designated at the discretion of the Maritime Management Team (if maximum flood elevation equal to or greater than 15.5 MLLW)

 - **Conley Terminal:**
 - Conley Administration Building (if maximum flood elevation is less than 15.5 MLLW)
 - Boston Convention and Exposition Center (if maximum flood elevation equal to or greater than 15.5 MLLW)
 - Separate from the storm center, shelter locations for essential employees should be designated at the discretion of the Maritime Management Team (if maximum flood elevation equal to or greater than 15.5 MLLW)
- 7) Marine Operations shall test pump systems, air compressors, all emergency lights and generators, and fill all associated fuel tanks to capacity.
- 8) Verify inventory of emergency supplies to ensure adequate quantities of rope, plywood, masking tape, flashlights, batteries, cables, turnbuckles, jersey barriers, etc. required for lashing down cranes, heavy equipment, and loose items that must remain outside, and boarding up and taping of windows.
- 9) For a forecasted coastal flood, the responsible Massport entities shall implement site-specific actions during the specified timelines as shown in Tables B1 to B6, C1 to C4, D1 to D2 and E1 to E2 in **Appendix 2** for buildings, structures and areas forecasted to flood based on the maximum forecasted flood elevation. General actions include the following:

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

- a. Capital Programs, in consultation with the Maritime Management Team, will notify the temporary flood barrier deployment term contractor to begin mobilization.
- b. Advise vessels that they might not be allowed to stay berthed at Massport facilities if forecasts continue to indicate that flooding above elevation 14.5 ft. MLLW will occur.
- c. Begin assessing the appropriate cut-off time when vessels will be required to leave Massport berths.
- d. Run all sewage, seafood processing waste, and ejector pumps until tanks/wells are empty. Then fill them with freshwater for ballast.
- e. Inventory critical tools, stock, equipment, and materials located in areas and buildings forecasted to flood that would be needed for implementing recovery actions, and develop a plan to relocate or elevate them prior to COTP Port Condition YANKEE/Terminal Condition THREE, or 24 hours prior to the arrival of coastal flooding, whichever occurs first. Examples include:
 - Critical infrastructure noted in Sections Three, Four and Five
 - Spare pumps and utility fans
 - Equipment that could be used for debris removal
 - Pollution response equipment (hazardous spill kits)
 - Power and hand tools
 - Compressed air tanks
 - Lumber and construction materials
 - Spare parts for specialized equipment forecasted to flood
 - Laptop and desktop computers
 - First aid supplies
 - Safety cones
 - Portable generators
 - Portable radios and chargers
 - Personal protective equipment
 - Cots and bedding
- f. Inspect IT infrastructure that is forecasted to flood and develop a managed shutdown plan in coordination with the Massport IT and Electrical

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

departments and the respective utility providers as needed. IT infrastructure potentially at risk of flooding include:

- Conley White Fuel Building
 - Conley Administration Building
 - Flynn Cruiseport Terminal
- g. Develop a plan in coordination with the Massport IT department, considering feasibility and timing, for temporary disconnection and relocation of IT equipment to building upper levels beginning in COTP Port Condition ZULU/Terminal Condition FOUR, or 12 hours prior to the arrival of coastal flooding, whichever occurs first.
- h. Review plans for a managed shutdown of electrical equipment to prevent catastrophic failure, beginning in COTP Port Condition YANKEE/Terminal Condition THREE, or 24 hours prior to the arrival of coastal flooding, whichever occurs first. Coordinate shutdown plans directly with the electric utility and with the Massport IT and Electrical departments.
- i. The People and Culture Department shall begin planning employee notifications regarding work schedules, home-based work authorization (if any), time-keeping, and payroll.
- j. Managers shall begin forecasting staffing and labor needs and coordinating with the People and Culture Department to update essential employee contact information and review availability for re-call. Re-call policies should consider whether essential employees live in coastal areas where homes may become flooded.
- k. Operations Managers and Property Managers shall assess the need for emergency contractors, consultants, equipment, stock, or materials to be called in to support response and recovery actions during Terminal Condition TWO through SIX and communicate their needs to the Operations/Property Manager, Deputy Port Director, Director of Maritime Security, and the Unified Command (if applicable).
- l. The Maritime Management Team shall coordinate the following activities through the Unified Command Structure of the *Airport Emergency Plan* and the Logan Airport Emergency Operations Center (if established):
- Coordination with State Police Troop F on law enforcement and first responder activities.
 - Coordination with utility service providers (electric, water, sewer, natural gas, telecommunications) to prioritize protection/restoration of Maritime utility services anticipated to be at risk.
 - Requests for assistance from Mutual Aid partners and Massport Fire-Rescue Department.

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

- m. Maritime Operations and Capital Programs Program Managers (i.e., Resiliency, Maritime, A/E) shall update and print contact information for on-call and term contractors including, but not limited to, the following types:
 - Temporary flood barriers
 - Electrical
 - Hydraulics
 - Structural
 - Mechanical
 - HVAC
 - Drainage
 - Fencing
 - Water and sewer
 - Environmental services (i.e., hazardous materials)
 - Heavy equipment operations
 - Equipment rental (loaders, cranes, trucks, fuel delivery, pumps, emergency generators)
 - Bulk provisions (potable water, hot and cold meals)
- n. Activate existing term and on-call contracts as required on an emergency basis for the implementation of infrastructure protection and recovery, in coordination with Capital Programs Program Managers (i.e., Resiliency, Maritime, A/E).
- o. Secure and apply additional (beyond existing term and on-calls) outside resources for the implementation of infrastructure protection and recovery actions, in coordination with Capital Programs Program Managers (i.e., Resiliency Maritime, A/E).
- p. Log status updates, issues, and photos in the Massport Climate Resiliency Application.

10) Each department shall inspect their areas of responsibility for compliance.

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

The Storm or Coastal Flood is **48 hours** from the Port of Boston
USCG Port Condition **XRAY**
Terminal Condition **TWO**

- 1) Continue coordinated team communication.
 - a. Review latest Coastal Flood Forecast Reports disseminated by Capital Programs. Adjust previous determination of which facilities, areas, and buildings are forecasted to flood based on the most recent forecasted maximum flood elevation and Figures 1-5 and Table A in **Appendix 2**. Share risk information through coordinated team communication.
 - b. Senior managers will submit their updated operations plans, vessel schedules, and tenant preparedness status to the Port Director and the Unified Command of the *Logan International Airport Coastal Flood Operations Plan, if applicable*.
 - c. In coordination with Maritime Operations and Corporate Security, the People and Culture Department will notify employees of modified work schedules, issue essential employee re-calls, non-essential home-based work authorizations as appropriate, and time-keeping and payroll instructions, and share employee assistance program information, safety information, and home preparedness guidance.
- 2) The Operations and Property Managers, or their designees, are to follow the COTP Guidance for Hurricanes & Severe Weather (**Appendix 1, pages 15-16**):
 - a. Continue to perform Condition WHISKEY action requirements.
 - b. Advise COTP on the status of severe weather preparations and estimated time for suspension of all cargo operations.
 - c. Advise COTP on status of storage tank inventory, data available on structural integrity of all tanks and intentions for ballasting of empty storage tanks (N/A).
 - d. Operations and Property Managers and vessel masters should anticipate completion of cargo-handling operations in time to allow vessels to depart the port and proceed well clear of the impending storm.
 - e. Operations and Property Managers should anticipate that the COTP will order suspension of cargo handling operations during Condition YANKEE/Terminal Condition THREE (24 hours prior to landfall). Facilities should hire and schedule labor accordingly.

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

- f. Loose materials may become a missile hazards and shall be removed from waterfront facilities, piers and docks or properly secured.
 - g. Container stacks shall be reorganized in accordance with the facility's heavy weather plan.
 - h. Operations and Property Managers shall address any deficiencies noted during port surveys and waterfront facility inspections conducted by the COTP personnel and notify the COTP when they are corrected.
 - i. Operations and Property Managers shall ensure that laid-up vessels are not breasted.
- 3) Determine which vessels desiring to remain in port will be granted permission by the COTP. The vessel may be directed to proceed to sea, anchorage or take certain precautions to correct conditions that threaten the port or the environment.
- a. For a forecasted coastal flood with a maximum forecast water elevation of 14.5 ft. MLLW or greater, the Maritime Management Team will consider forecasted flood and wind conditions and decide whether vessels will be allowed to remain moored at Massport Maritime facilities as they may pose a potential safety hazard. Vessel masters, or persons in charge, shall be notified to make arrangements and be prepared to leave the berth before COTP Port Condition YANKEE/Terminal Condition THREE, or 24 hours prior to the arrival of coastal flooding, whichever occurs first.
- 4) Determine when to close terminal facilities to incoming trucks so that all remaining trucks can depart prior to the onset of hazardous conditions. Notify managers, trucker unions, etc., using the phone tree, text, website, and other available communications channels.
- 5) Capital Programs Project Managers and Resident Engineers shall complete preparations to demobilize and secure vulnerable project staging areas and construction sites.
- 6) Clear all catch basins and drains, including roof drains.
- 7) Any missile hazards and loose gear not in use on the terminal shall be moved inside or secured. This includes portable signs, flags, banners, barrels, antennas and cameras.

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

- 8) Lash down non-essential gear and equipment that must remain outside, recheck lashing of portable buildings.
- 9) Any daily use materials that carry a warning label (solvents, cleaning agents, paint, pesticides, etc.) shall be put into their lockers and secured.
- 10) For a forecasted coastal flood, the responsible Massport entities shall implement site-specific actions during the specified timelines as shown in Tables B1 to B6, C1 to C4, D1 to D2 and E1 to E2 in **Appendix 2** for buildings/equipment and areas forecasted to flood based on the maximum forecasted flood elevation. General actions include the following:
 - a. Review the status of tenant emergency preparations and personnel accountability measures, including marinas, sailing center, outdoor dining, and others, and ensure conformance with official directives and safe practice.
 - b. Capital Programs, in coordination with the Maritime Management Team, shall direct their term contractor to retrieve temporary flood barrier crates, portable access ladders, and temporary catch basin enclosures from their storage locations and deliver them to their designated critical facility locations. Deployable barriers and associated equipment for Conley Terminal are stored at the Passport Building at Conley Terminal and for Fish Pier are stored at 55 Haul Road in South Boston, MA.
 - c. State Police, in conjunction with the Massport Police, shall begin evacuation planning and bring extra cruisers to the Seaport if needed for traffic management and first response activities.
 - d. If directed by the Maritime Management Team, in coordination with State Police, Massport Police, and Capital Programs, establish the temporary storm center at the Boston Convention and Exposition Center and prepare to move the State Police and Massport Police vehicles to the elevated roadway on World Trade Center Blvd.
 - e. If directed by the Maritime Management Team, prepare for sheltering of essential employees and standby contractors, as needed, at a location on site or nearby that is not forecasted to flood. Separate from designated storm centers, these shelter locations should be designated if forecasted maximum flood elevation are equal to or greater than the following thresholds:
 - o Fish Pier: 15.0 ft. MLLW
 - o Flynn Cruiseport Terminal: 15.5 ft. MLLW
 - o Conley Terminal: 15.5 ft. MLLW.
 - f. Sheltering preparations shall include:

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

- Hotels or other suitable accommodations
 - Hot and cold meals
 - Pallets of potable water
 - Bulk purchases of food and other supplies at wholesale stores
- g. Log status updates, issues, and photos in the Massport Climate Resiliency Application.
- 11) Each department shall inspect their areas of responsibility for compliance.

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

The Storm or Coastal Flood is **24 hours** from the Port of Boston
USCG Port Condition **YANKEE**
Terminal Condition **THREE**

- 1) Continue coordinated team communication.
 - a. Review latest Coastal Flood Forecast Reports disseminated by Capital Programs. Adjust previous determination of which facilities, areas, and buildings are forecasted to flood based on the most recent forecasted maximum flood elevation and Figures 1-5 and Table A in **Appendix 2**. Share risk information through coordinated team communication.
 - b. Senior managers will submit their updated operations plans, vessel schedules, and tenant preparedness status to the Port Director and the Unified Command of the *Logan International Airport Coastal Flood Operations Plan, if applicable*.
 - c. In coordination with Maritime Operations and Corporate Security, the People and Culture Department will notify employees of any updates to modified work schedules, essential employee re-calls, non-essential home-based work authorizations as appropriate, time-keeping and payroll instructions, and other information (e.g., ordered evacuations).
- 2) Operations and Property Managers, or their designees, are to follow the COTP Guidance for Hurricanes & Severe Weather (**Appendix 1, pages 16-17**):
 - a. Continue to perform Condition WHISKEY and X-RAY action requirements.
 - b. Terminate all nonessential cargo operations upon notice from the COTP. All drain manifolds, lines and cargo hoses shall be blanked and secured upon securing of transfer operations.
 - c. Load/ballast/secure storage tanks as necessary to withstand heavy winds and high tides.
 - d. Promote vessel safety by ensuring that vessels remaining at dock during severe weather have adequate mooring arrangements.
 - e. Promote safety of facility personnel by conducting preparations for possible flooding due to high winds/tides/rain.
 - f. Secure, move, or elevate hazardous materials and dangerous cargoes to a safe location that is not forecasted to flood. Individual drums of hazardous material should be palletized, and banded. When palletized

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

drums are stowed inside they should be elevated off the floor in a well-ventilated warehouse. When stowed outside, palletized drums should be sheltered from the weather as much as possible, and in no case stacked more than two high. Stacked pallets of drums should also be braced and dunnaged to prevent shifting and/or toppling. **(NOTE: 49 CFR Parts 171-178 should be used as a stowage and segregation guide, if the drums to be consolidated contain hazardous materials from different Hazard Classes/Divisions).**

- 3) Operations or Property Managers are to ensure they have a signed copy of the Remaining in Port checklist in **Appendix 1, Annexes A and B**, for each vessel wanting to remain at the dock during the heavy weather event. Vessels refusing to sign the checklist shall be ordered to leave the berth.
 - a. If a coastal flood is forecasted with a maximum forecast water elevation of 14.5 ft. MLLW or greater, the Maritime Management Team will consider forecasted flood and wind conditions and decide whether vessels will be allowed to remain moored at Massport Maritime facilities as they may pose a potential safety hazard. If so decided, any remaining vessels shall be ordered to leave the berth.
- 4) Management shall determine if it will be necessary to move desks, files, office equipment, and furniture away from uncovered windows or move them from first floors to upper floors. Put all papers in file cabinets or drawers along with telephones.
- 5) Management shall determine if computers, copiers, and fax machines should be moved to a safe location that is not forecasted to flood. Make sure they are marked with names and departments to hasten redistribution after the storm.
- 6) Secure all facility cranes against high winds and move them away from any vessels remaining at the facility.
- 7) Secure all cargo operations and equipment; cranes should be in tie downs.
- 8) Make sure all building and empty container doors are closed and secured.
- 9) Move vehicles and equipment to a safe location. Service them with fuel, lubricants, etc. so that they can be used after the storm. This includes ground machines, yard tractors and forklifts.
 - a. For a forecasted coastal flood, safe areas for storage shall be determined based on the forecasted maximum flood elevation and the information in

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

Figures 1-5 and Table A in **Appendix 2**. If the forecasted maximum flood elevation is greater than or equal to 17.5 ft. MLLW, movable equipment should not be left at Conley Terminal as the site will experience widespread flooding.

- b. For a forecasted coastal flood, the US Customs and Border Control screening machines shall be moved to Hanscom Airport or to a Massport-owned elevated roadway (e.g., World Trade Center Blvd or Logan Airport departure level) or an upper level of a garage (e.g. South Boston Waterfront Transportation Center).

10) Fill mobile fueling trucks and keep them topped off.

11) Service all vehicles with fuel.

12) For a forecasted coastal flood, the responsible Massport entities shall implement site-specific actions during the specified timelines as shown in Tables B1 to B6, C1 to C4, D1 to D2 and E- to E2 in **Appendix 2** for buildings, equipment, and areas forecasted to flood based on the maximum forecasted flood elevation. General actions include the following:

- a. The designated term contractor or designated Massport staff shall unpack temporary flood barriers from their crates at designated critical facility locations. Lay out barriers and portable access ladders in position according to their respective deployment plans, which are stored inside the crates and posted inside the critical facilities to be protected. Install temporary catch basin enclosures at designated sites according to the deployment plan. See **Appendix 3** for temporary flood barrier installation plans.
- b. Notify tenants when buildings need to be vacated. Access to critical facilities shall be maintained by leaving one section of deployable barrier laying flat or not-installed at each building access point until Port Condition ZULU/Terminal Conditions FOUR to FIVE, or 6 hours prior to the arrival of coastal flooding, whichever occurs first. The Maritime Management Team, in consultation with Capital Programs, may order buildings to be vacated and the barriers to be raised sooner at their own discretion.
- c. The designated term contractor shall deploy (install) fully fueled portable pumps and cross-over stairs to temporary flood barrier installations.
- d. Relocate or elevate critical tools, stock, equipment, and materials located in flood risk areas and buildings.

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

- e. As directed by the Maritime Management Team, begin to implement managed shutdown of electrical equipment needed to prevent catastrophic failure. Action should be completed by COTP Port Condition ZULU/Terminal Condition FOUR, or 12 hours prior to the arrival of coastal flooding, whichever occurs first. The Electrical department shall coordinate shutdown plans directly with the electric utility and with the Massport IT department.
 - f. Fully charge laptops, phones, radios and backup power supplies for post-flood communications.
 - g. Log status updates, issues, and photos in the Massport Climate Resiliency Application.
- 13) Each department shall inspect their areas of responsibility for compliance.

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

The Storm or Coastal Flood is within **12 hours** of the Port of Boston
USCG Port Condition **ZULU**
Terminal Condition **FOUR**

- 1) Continue coordinated team communication.
 - a. Review latest Coastal Flood Forecast Reports disseminated by Capital Programs. Adjust previous determination of which facilities, areas, and buildings are forecasted to flood based on the most recent forecasted maximum flood elevation and Figures 1-5 and Table A in **Appendix 2**. Share risk information through coordinated team communication.
 - b. Senior managers will submit their updated operations plans, vessel schedules, and tenant preparedness status to the Port Director and to the Unified Command of the *Logan International Airport Coastal Flood Operations Plan, if applicable*.
 - c. In coordination with Maritime Operations and Corporate Security, the People and Culture Department will notify employees of any updates to modified work schedules, essential employee re-calls, non-essential home-based work authorizations as appropriate, time-keeping and payroll instructions, and other information (e.g., ordered evacuations).
- 2) Operations and Property Managers, or their designee, shall follow the COTP Guidance for Hurricanes & Severe Weather (**Appendix 1, page 17**):
 - a. Continue to perform Condition WHISKEY, X-RAY and YANKEE action requirements.
 - b. Complete final preparations for the storm and/or coastal flood.
 - c. When directed by the COTP, suspend all but COTP-approved operations.
 - d. Inspect all pollution response equipment to ensure its safety and readiness for deployments after the passage of the severe weather.
 - e. All small crafts owned by the facility, that can be hauled out or trailered, shall be removed from the water and secured well away from the effects of possible surge and high tides/winds. Operations and Property Managers shall take into account other hazards, such as finger piers, that may come adrift and take appropriate mitigating actions.

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

- f. Alert the COTP to any unsafe conditions at the facility or within local ports and waterways.
- 3) Ensure tenants have secured their areas.
- 4) Secure all electrical power sources not required for minimum operation. Electrical equipment should be turned off and unplugged; interior lights should be turned off.
- 5) For a forecasted coastal flood, the responsible Massport entities shall implement site-specific actions during the specified timelines as shown in Tables B1 to B6, C1 to C4, D1 to D2 and E1 to E2 in **Appendix 2** for buildings, equipment, and areas forecasted to flood based on the maximum forecasted flood elevation. General actions include the following:
 - a. As directed by the Maritime Management Team, implement shutdown and temporary elevation/relocation of IT equipment forecasted to flood to building upper levels, in coordination with the Massport IT and Electrical departments.
 - b. As directed by the Maritime Management Team, complete managed shutdown of electrical equipment needed to prevent catastrophic failure, in coordination with the electric utility and the Massport IT and Electrical departments.
 - c. Begin evacuating and securing buildings and areas at risk of flooding, in cooperation with Massport Police and State Police Troop F.
 - d. Log status updates, issues, and photos in the Massport Climate Resiliency Application.
- 6) Each department shall inspect their areas of responsibility for compliance.
- 7) All other hurricane preparations should be completed. Excuse all non-essential personnel.

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

The Storm or Coastal Flood is within **6 hours** of the Port of Boston
Terminal Condition **FIVE**

- 1) Continue coordinated team communication.
 - a. Review latest Coastal Flood Forecast Reports disseminated by Capital Programs. Adjust previous determination of which facilities, areas, and buildings are forecasted to flood based on the most recent forecasted maximum flood elevation and Figures 1-5 and Table A in **Appendix 2**. Share risk information through coordinated team communication.
 - b. Senior managers will submit their updated operations plans, vessel schedules, and tenant preparedness status to the Port Director and to the Unified Command of the *Logan International Airport Coastal Flood Operations Plan, if applicable*.
 - c. In coordination with Maritime Operations and Corporate Security, the People and Culture Department will notify employees of any updates to modified work schedules, essential employee re-calls, non-essential home-based work authorizations as appropriate, time-keeping and payroll instructions, and other information (e.g., ordered evacuations).
- 2) **Storm coordinators should make their last check of facilities to ensure that nothing has been missed and evacuate facilities if temporary barriers will be deployed.** Any last-minute preparations should be completed. Critical Massport Communications, Massport Police, and State Police vehicles should be parked in a designated safe area.
 - a. For a forecasted coastal flood, Massport Police vehicles and State Police vehicles should be parked on the World Trade Center Blvd elevated roadway in the Seaport District, at the South Boston Waterfront Transportation Center, or other elevated roadway, as directed by the Maritime Management Team.
- 3) For a forecasted coastal flood, the responsible Massport entities shall implement site-specific actions during the specified timelines as shown in Tables B1 to B6, C1 to C4, D1 to D2 and E1 to E2 in **Appendix 2** for buildings/equipment and areas forecasted to flood based on the maximum forecasted flood elevation. General actions include the following:
 - a. Complete temporary flood barrier system installations:
 - o **Ensure that all areas to be protected by temporary barriers are clear of all occupants** (Note: in some cases, temporary barriers

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

*may only service a portion of buildings – refer to **Appendix 3** for deployment of barriers at each building).*

- Ensure that portable pumps and cross-over stairs at temporary barrier installations are in place, and that portable pumps are fully fueled and operational. Portable pumps shall be fueled and operated by Maintenance Operations and deployed by the designated term contractor.
 - Implement final checks of all flood barrier deployments, emergency access stairways, and catch basin enclosures.
 - Prior to blocking any egress, verify that buildings are fully vacated, then raise all temporary flood barrier panels to the up position to complete perimeter protection.
- b. Raise all elevator cabs to the second floor or higher and disable further use if flood forecast is greater than 15.5 ft. MLLW.
 - c. Log status updates, issues, and photos in the Massport Climate Resiliency Application.
- 4) If essential employees are required to remain on premises during the storm event, they should remain indoors at the designated storm center or sheltering location to which they are assigned by the Director of Maritime Security. Be sure they have adequate food, drinking water, clothing and emergency supplies (radio, flashlight, batteries, first aid kit, etc.). Monitor the weather information, including notifications from Capital Programs. Modified work schedules for essential staff who are in a union are coordinated by Aviation management with the assistance of the Labor Relations Department to ensure that Unions who represent the unionized employees are properly notified.
- 5) The Massport-wide Automatic Notification System will also notify all employees of emergency situations via home phone, personal cell phone, email, Massport cell phone and/or office phone.

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

Post-Storm/Coastal Flood Operations

Terminal Condition **SIX**

- 1) Massport will issue advisories to departments regarding their responsibilities.
(Refer to COOP)
- 2) Re-staff entrances to keep out vandals and sightseers.
- 3) Survey for property damage and injured personnel. Assist any injured personnel as necessary.
- 4) Assess damage to terminal property. Provide the Deputy Port Director of Operations a written report accompanied by photographs.
- 5) Advise Deputy Port Director of Operations of the terminal's status and plans after the storm. **Operations and Property Managers, or their designees, shall fill out the COTP Facility Post Storm/Hurricane Assessment Survey (Appendix 1, Annex D)** and submit to the Deputy Port Director of Operations.
- 6) Prioritize cleanup and repairs:
 - a. Remedy dangerous or hazardous conditions (e.g. fire/explosion hazards, oil/hazardous material spills, etc.)
 - b. Remove debris
 - c. Perform temporary repairs
 - d. Perform permanent repairs
- 7) After a coastal flood, the responsible Massport entities shall implement site-specific actions as described in Tables B2, B4, B6, C2, C4, D2 and E2 in **Appendix 2** for buildings/equipment and areas based on the maximum forecasted flood elevations encountered. General actions include the following:
 - a. Determine the ownership of damaged containers and schedule an onsite inspection by a third-party surveyor.
 - b. Demobilize temporary flood barrier installations:
 - Clean temporary flood barriers, pumps, temporary access stairs, and catch basin enclosures with fresh water, if subjected to contact with flood water or hazardous materials. Remove fuel from pumps.
 - Inspect temporary flood barriers, pumps, temporary access stairs, and catch basin enclosures for damage and report any damaged or missing parts to Capital Programs.

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

- o Re-pack temporary flood barriers with all parts and deployment plans, once dried, into crates and transport crates, stairs, and catch basin enclosures back to their designated storage locations.
 - c. Return critical tools, stock, equipment and materials to the facility to facilitate repairs and recovery actions.
 - d. Implement managed restart of electrical systems in coordination with the electrical utility and the Massport Electrical department. Extreme caution should be observed as flooding can create electrocution hazards.
 - e. Return IT equipment to normal operating locations once they have been inspected and cleared by the Massport IT department.
- 8) The Massport-wide Automatic Notification System will inform employees of procedures for returning to work via home phone, personal cell phone, email, Massport cell phone and/or office phone.
- 9) Maintain documentation of pre/post conditions, actions taken, and expenses incurred for post-event accounting, insurance, and disaster aid. Utilize the Massport Climate Resiliency Application to document and record with photographs, logs and other materials to document damages and associated costs to repair/restore damages.

SECTION TWO

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for All Massport's Maritime Facilities*

Maritime and Terminal Hurricane Conditions

Projected Storm Path and Seasonal Considerations	Maritime Hurricane Conditions	Terminal Conditions
1 December – 31 May	Other Severe Weather Alerts	Other Severe Weather Seasons
1 June – 30 November	SEASONAL ALERT (set automatically)	HURRICANE SEASON (set automatically)
Hurricane force winds are expected within 72 hours of the Port of Boston	CONDITION WHISKEY	TERMINAL CONDITION ONE
Hurricane force winds are expected within 48 hours of the Port of Boston	CONDITION XRAY	TERMINAL CONDITION TWO
Hurricane force winds are expected within 24 hours of the Port of Boston	CONDITION YANKEE	TERMINAL CONDITION THREE
Hurricane force winds are expected within 12 hours of the Port of Boston	CONDITION ZULU	TERMINAL CONDITION FOUR
Hurricane force winds are expected within 6 hours of the Port of Boston	CONDITION ZULU (continues until storm passes)	TERMINAL CONDITION FIVE
After the storm passes or when projected storm path will not impact the Port of Boston	CONDITION YANKEE in immediate storm aftermath and then Return to SEASONAL ALERT	TERMINAL CONDITION SIX

END OF SECTION TWO

SECTION THREE

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for Conley Terminal*

Description of Conley Terminal:

Paul W. Conley Container Terminal is a marine terminal consisting of 101 acres with 60 acres of open container storage. It is open for truck operations Monday through Friday from 8 a.m. to 5 p.m., with the last inbound truck accepted at 4:15 p.m. To find out if a container is available, carriers, truckers, brokers, and forwarders can easily access Massport's website and use Conley Terminal's Gate and Yard Automated System. Notices of terminal closings are posted on the home page of this site. The terminal is open for shipping operations 7 days of the week. Berths 11 and 12 serve as the two locations where ships berth to be discharged and loaded, with a total length of 2,000 ft. Conley Terminal has nine STS gantry cranes with retractable horizontal booms. Cranes 1 and 2 have a lifting capacity of 40 long tons. Cranes 3, 4, 5 and 6 have a lifting capacity of 50 long tons. Cranes auto shut off at winds of 40 mph. Truck traffic at Conley Terminal will continue at the Operations or Property Manager's discretion, until the Governor declares a "State of Emergency", the Mayor of the City of Boston closes roads, or COTP orders the terminal closed.

The terminal also has 16 RTGs (rubber tire gantry cranes), which are used to transfer containers between trucks and the container piles. Six of the 16 RTG are hybrid.

During the preparation for a storm, Conley Terminal is responsible for all critical infrastructures that are listed below:

- **Pier cranes** – 9 cranes along Berths 11 and 12
- **Yard cranes** – 16 RTGs (rubber tire gantry cranes)
- **Ground machines** – Top loaders, reach stackers, bomb carts, hustlers, etc.
- **Transformer Stations** – 7 Transformer Stations; Reefer Yard, Customs, Marine Managers Building, and the Front Gate
- **Emergency Generators** – 10 Emergency Generators (two of which are located on STS gantry cranes 3 and 4 and wight of which are located on the ground);
- **Perimeter Fencing** – Along William J. Day Boulevard to Castle Island and a fence surrounding the MWRA, Massachusetts Water Resources Authority.
- **USCBP Screening Equipment** – The U.S. Customs and Border Patrol (USCBP) screening vehicle **Note:** the terminal assists USCBP in securing.
- **Fueling Equipment** – Fueling truck
- **Underground Fuel Tanks & Fuel Island** – Used to fuel all Massport equipment, including Massport Police and USCBP vehicles.
- **IT Equipment** – Data rooms on the first floor of the Conley Administration Building and the White Fuel Building (Massport Police Pro Shop) contain critical IT equipment used to run the Integrated Terminal Operating System (ITOS).
- **Critical Stock, Tools, and Materials** – Items that would be required to repair systems or critical equipment that could be damaged by wind or flooding, including electrical, hydraulic, or mechanical systems. Critical stock is that, which if damaged, would be very costly or take a long lead time to replace. This includes custom stock that is only used for equipment/systems at Conley Terminal.

SECTION THREE

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for Conley Terminal*

Prior to Heavy Weather

Inventory emergency equipment. Order any shortfall in emergency equipment. Back up computer files and applications to the Massport network (Note: critical files should be backed up *automatically*) or, where relevant (e.g., ITOS), the network of a third-party hosting service. Update the names of key contact people. Clean out crane tie downs.

For forecasted coastal flooding, implement emergency coastal flood response actions within 72 and 48-hour timelines as described in Tables B1, B3, and B5 in **Appendix 2**, based on the forecasted maximum flood elevation and the information in Figures 1-5 and Table A in **Appendix 2**. This could include inventorying and retrieving temporary flood barriers and associated catch basin enclosures, emergency ladders and pumps.

When Heavy Weather is Imminent

Secure loose gear and equipment. Top off all equipment with fuel, refill fuel trucks, stack down containers, stow electrical equipment in safe places, put cranes and RTGs in tie downs. If necessary, designate a safe area of the facility for anyone riding out the storm.

For a forecasted coastal flood, and as directed by the Maritime Management Team, in coordination with State Police, Massport Police, and Capital Programs, establish a storm center for operations and identify separate locations for sheltering essential employees in buildings that are not forecasted to flood, based on the forecasted maximum flood elevation and the information in Figures 1-5 and Table A in **Appendix 2**. If the forecasted maximum flood elevation is less than 15.5 ft. MLLW, the storm center shall be the Conley Administration Building. If it is greater than or equal to 15.5 ft. MLLW, the shelter shall be located at the Boston Convention and Exposition Center.

For forecasted coastal flooding, implement emergency coastal flood response actions within 24, 12, and 6-hour timelines as described in Tables B1 to B6 in **Appendix 2**. This could include installing temporary flood barriers and associated, portable crossover stairs and pumps. See **Appendix 3** for temporary flood barrier installation plans.

Securing Equipment and Machinery

Wharf Cranes: All 9 STS cranes should be boomed in and the legs pinned into position on the dock, and put into the tie downs. The spreader bars should be lowered all the way down with the full weight of the bar on the dock.

RTG Cranes: The RTG cranes should be put into a location where the spreader bars can be locked into a loaded container on the ground with the full weight of the bar on the container. Each crane should be topped off with fuel, plugged in and wheels turned. For a forecasted coastal flood, see additional procedures in Tables B1 to B6 in **Appendix 2**.

SECTION THREE

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for Conley Terminal*

Reach Stackers/Top Loaders: The Maintenance Manager shall decide a safe area for storage of this equipment during a storm. The spreader bar shall be locked into a loaded container on the ground with the full weight of the bar on the container. Each piece of equipment should be topped off with fuel and the brake set. For a forecasted coastal flood, safe areas for storage shall be determined based on the forecasted maximum flood elevation and the information in Figures 1-5 and Table A in **Appendix 2**.

Trucks and Baskets: The Maintenance Manager shall decide a safe area for the storage of this equipment. Trucks should be topped off with fuel and the brakes set. For a forecasted coastal flood, safe areas for storage shall be determined based on the forecasted maximum flood elevation and the information in Figures 1-5 and Table A in **Appendix 2**.

Critical Stock, Tools, and Materials: For a forecasted coastal flood, see additional procedures in Tables B1 to B6 in **Appendix 2**.

Elevators: For a forecasted coastal flood, see additional procedures in Tables B1 to B6 in **Appendix 2**.

Electrical Equipment: For a forecasted coastal flood, see additional procedures in Tables B1 to B6 in **Appendix 2**.

IT Equipment: For a forecasted coastal flood, see additional procedures in Tables B1 to B6 in **Appendix 2**.

Other Gear: Any loose equipment or loose gear should be moved indoors or secured to remain outside. All drums of oil, hydraulic fluid, solvents, or other liquid stored in drums should be moved to a safe location to prevent leakage or spillage.

After the Storm

Survey and note damage and take pictures. Upload pictures and location to the Massport Climate Resiliency Application. Report damages to the Facilities Manager, inspect equipment for damages and safety of operations, make necessary repairs, clean terminal of debris, and re-staff terminal. See Terminal Condition 6 Section TWO.

After a forecasted coastal flood, implement emergency coastal flood response and recovery actions as described in Tables B2, B4 or B6 in **Appendix 2**, depending on the actual flood levels experienced.

END OF SECTION THREE

SECTION FOUR

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for Flynn Cruiseport Terminal*

Description of the Flynn Cruiseport Terminal:

The Flynn Cruiseport Terminal services cruise ships during the Cruise Season which is presently from April to November. Ships use Berths 4-9 to dock during their call. The Terminal first opened in 1986. Presently, the Flynn Cruiseport services over 100 ships with over 300,000 passengers in the 8-month period. This means that providing the terminal with the proper safety procedures during a severe storm event is very important. The terminal also includes Berths 1 and 2 (Cement Operation).

Prior to Heavy Weather

Inventory emergency equipment. Order any shortfall in emergency equipment, back up computer programs and store in safe place, update the names of key contact people and secure outside buildings.

For forecasted coastal flooding, implement emergency coastal flood response actions within 72- and 48-hour timelines as described in Tables C1 and C3 in **Appendix 2**, based on the forecasted maximum flood elevation and the information in Figures 1-5 and Table A in **Appendix 2**.

When Heavy Weather is Imminent

Secure loose gear and equipment, top off all equipment with fuel, refill fuel trucks, stow electrical equipment in safe place. If necessary, designate safe area of the building for anyone riding out the storm.

For a forecasted coastal flood, and as directed by the Maritime Management Team, in coordination with State Police, Massport Police, and Capital Programs, establish a storm center for operations and identify separate locations for sheltering essential employees in buildings that are not forecasted to flood, based on the forecasted maximum flood elevation and the information in Figures 1-5 and Table A in **Appendix 2**. If the forecasted maximum flood elevation is less than 15.5 ft. MLLW, the storm center shall be the Main Terminal Building at Flynn Cruiseport Terminal. If it is greater than or equal to 15.5 ft. MLLW, the storm center shall be at the Boston Convention and Exposition Center on Summer Street in South Boston.

For forecasted coastal flooding, implement emergency coastal flood response actions within 24-, 12-, and 6-hour timelines as described in Tables C1 to C4 in **Appendix 2**, based on the forecasted maximum flood elevation and the information in Figures 1-5 and Table A in **Appendix 2**.

Securing Equipment and Machinery

Manual Gangways/Forklifts: The Property Manager shall decide a safe area for storage of this equipment during a storm. Each piece of equipment should be topped off with fuel and the brakes set. For a forecasted coastal flood, safe areas for storage shall be determined based on the forecasted maximum flood elevation and the information in

SECTION FOUR

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for Flynn Cruiseport Terminal*

Figures 1-5 and Table A in **Appendix 2**. See additional procedures in Tables C1 to C4 in **Appendix 2**.

Trucks and Baskets: The Property Manager shall decide a safe area for the storage of this equipment. Trucks should be topped off with fuel and the brakes set. For a forecasted coastal flood, safe areas for storage shall be determined based on the forecasted maximum flood elevation and the information in Figures 1-5 and Table A in **Appendix 2**.

Other Gear: Any loose equipment or loose gear should be moved indoors or secured to remain outside. All drums of oil, hydraulic fluid, solvents, or other liquid stored in drums should be moved to a safe location to prevent leakage or spillage. For a forecasted coastal flood, safe areas for storage shall be determined based on the forecasted maximum flood elevation and the information in Figures 1-5 and Table A in **Appendix 2**.

Portable Propane Gas Tanks: Are to be placed in the appropriate cage and locked.

PBB Gangway: Secure gangway by placing jersey barriers around each leg then strap down gangway to barriers. For a forecasted coastal flood, see additional procedures in Tables C1 to C4 in **Appendix 2**.

Baggage Screening Equipment (if present): For a forecasted coastal flood, see additional procedures in Tables C1 to C4 in **Appendix 2**.

Elevators: For a forecasted coastal flood, see additional procedures in Tables C1 to C4 in **Appendix 2**.

Electrical Equipment: For a forecasted coastal flood, see additional procedures in Tables C1 to C4 in **Appendix 2**.

IT Equipment: For a forecasted coastal flood, see additional procedures in Tables C1 to C4 in **Appendix 2**.

After the Storm

Survey and note damage and take pictures. Upload pictures and location to the Massport Climate Resiliency Application. Report damages to Facilities Manager. Inspect equipment for damages and safety of operations, make necessary repairs, clean terminal of debris and re-staff terminal. See Terminal Condition 6 Section TWO.

After a coastal flood, implement emergency coastal flood response and recovery actions as described in Table C2 or C4 in **Appendix 2**, depending on the actual flood levels experienced.

SECTION FOUR

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for Flynn Cruiseport Terminal*

Responsibilities of Stevedores, Freight Handlers and Cruise Companies

Stevedores and freight handlers at the Flynn Cruiseport Terminal are currently required to have a Heavy Weather Plan in place that is consistent with this section and are required to prepare their areas prior to heavy weather or in the event that a storm is imminent. Massport recommends that stevedores and freight handlers incorporate flood operations procedures consistent with this document in their existing plans.

The following is a list of what the Massachusetts Port Authority expects from stevedores, freight handlers, and cruise companies at all times, especially during the hurricane season:

- Keep areas free of debris.
- Remove hazardous waste in a timely manner.
- Notify the Massachusetts Port Authority immediately of malfunctioning doors and/or structural problems within the buildings.

In the event that a storm or hurricane threatens the Flynn Cruiseport Terminal and surrounding areas, stevedores, freight handlers, and cruise companies shall:

- Secure cargo.
- Store all loose tools, wires, bandings, or any other supplies in a secure area.
- Secure cargo handling equipment.
- The terminal will continue to operate as long as it is safe to do so. Freight handlers and cruise companies shall follow Massachusetts Port Authority's cut-off times for receiving and delivering cargo and passengers.

Once the storm has passed, stevedores, freight handlers, and cruise companies are responsible for:

- Assessing damage to cargo, freight handling and/or passenger equipment and reporting the damages to the Flynn Cruiseport Terminal Property Manager.
- Cleaning up areas of responsibility.

END OF SECTION FOUR

SECTION FIVE

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for the Seaport District and Boston Fish Pier*

Description of the Seaport District and Boston Fish Pier:

The Seaport District is comprised of properties in the South Boston Waterfront area that support and enhance Massport's core missions of operating the Port of Boston and Boston Logan International Airport. The Seaport District includes Commonwealth Flats, which is approximately 50 acres of Massport's waterfront property north of Summer Street, west of the Ted Williams Tunnel, and east of 'B' Street. The Boston Fish Pier, which opened in 1915, provides berthing space with shore-to-ship power for the region's fishermen, as well as seafood processing and office space in the East and West buildings. Although alternative uses have been introduced to the Boston Fish Pier, fishing and fish processing remain the primary functions.

Prior to Heavy Weather

Inventory emergency equipment. Order any shortfall in emergency equipment. Back up computer programs and store in safe places. Notify warehouses. Get the names of key contact people. Secure outside buildings.

For forecasted coastal flooding, implement emergency coastal flood response actions for Boston Fish Pier within 72- and 48-hour timelines as described in Table D1 in **Appendix 2**, based on the forecasted maximum flood elevation and the information in Figures 1-5 and Table A in **Appendix 2**. This could include inventorying and retrieving temporary flood barriers, emergency stairs and pumps from their designated storage locations at 55 Haul Road, South Boston, MA.

When Heavy Weather is Imminent

Notify tenants via email. Secure loose gear and equipment, top off all equipment with fuel, refill fuel trucks, stow electrical equipment in safe place, designate safe area of the building for anyone riding out the storm.

For a forecasted coastal flood with a maximum flood elevation greater than 15.0 ft. MLLW, Boston Fish Pier will be flooded and will not be a safe area for anyone riding out the storm. At their discretion, the Maritime Management Team, in coordination with State Police, Massport Police, and Capital Programs, shall establish a storm center for operations and identify separate locations for sheltering essential employees in buildings that are not forecasted to flood, based on the forecasted maximum flood elevation and the information in Figures 1-5 and Table A in **Appendix 2**. The storm center shall be located at the Boston Convention and Exhibition Center on Summer Street in South Boston, MA.

For forecasted coastal flooding, implement emergency coastal flood response actions for Boston Fish Pier within 72-, 48-, 24-, 12-, and 6-hour timelines as described in Tables D1 and D2, **Appendix 2**, based on the forecasted maximum flood elevation and the information in Figures 1-5 and Table A in **Appendix 2**. This could include installing temporary flood barriers, emergency stairs and pumps. See **Appendix 3** for temporary flood barrier installation plans.

SECTION FIVE

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for the Seaport District and Boston Fish Pier*

Securing Equipment and Machinery

Trucks and Forklifts: The Property Manager shall decide a safe area for the storage of this equipment. Trucks should be topped off with fuel and the brakes set. For a forecasted coastal flood, safe areas for storage shall be determined based on the forecasted maximum flood elevation and the information in Figures 1-5 and Table A in **Appendix 2**. See additional procedures in Table D1 in **Appendix 2**.

Other Gear: Any loose equipment or loose gear should be moved indoors or secured to remain outside. All drums of oil, hydraulic fluid, solvents, or other liquid stored in drums should be moved to a safe location to prevent leakage or spillage. For a forecasted coastal flood, safe areas for storage shall be determined based on the forecasted maximum flood elevation and the information in Figures 1-5 and Table A in **Appendix 2**.

Sewage and Processing Waste Storage Tanks/Pumps: For a forecasted coastal flood, see additional procedures in Table D1 in **Appendix 2**.

Elevators: For a forecasted coastal flood, see additional procedures in Table D1 in **Appendix 2**.

Electrical Equipment: For a forecasted coastal flood, see additional procedures in Table D1 in **Appendix 2**.

After the Storm

Survey and note damage and take pictures. Upload pictures and location to the Massport Climate Resiliency Application. Report damages to Facilities. Inspect equipment for damage and safety of operations, make necessary repairs, clean area of debris.

After a coastal flood, implement emergency coastal flood response and recovery actions as described in Table D2 in **Appendix 2**, depending on the actual flood level experienced.

Responsibilities of Tenants and Boat Owners

Tenants of the Seaport District are currently required to have a Heavy Weather Plan in place consistent with this section and are required to prepare their areas prior to heavy weather and in the event that a storm is imminent. Massport recommends that tenants and boat owners incorporate flood operations procedures consistent with this document in their existing plans.

The following is a list of what the Massachusetts Port Authority expects from tenants and boat owners at all times, especially during the hurricane season:

- Keep areas free of debris.
- Remove hazardous waste in a timely manner.

SECTION FIVE

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for the Seaport District and Boston Fish Pier*

- Notify the Massachusetts Port Authority immediately of malfunctioning doors and/or structural problems within the buildings.

In the event that a storm or hurricane threatens the Seaport District, Boston Fish Pier and surrounding areas, tenants and boat owners shall:

- Secure cargo.
- Store all loose tools, wires, bandings, or any other supplies in a secure area.
- Secure equipment.
- The Boston Fish Pier will continue to operate as long as it is safe to do so. Fish processors shall be prepared to follow Massachusetts Port Authority's cut-off times for receiving and delivering cargo.
- Boat owners might be required to leave Massport berths in advance of a storm if coastal flooding is forecasted with a maximum flood elevation equal to or greater than 14.5 ft. MLLW, or as otherwise directed by the Port Director or the COTP.

Once the storm has passed, tenants are responsible for:

- Assessing damage to the interior and exterior of their space and reporting the damages to the Property Manager.
- Cleaning up areas of responsibility.
- Restoring their own equipment and gear stored outside.

END OF SECTION FIVE

SECTION SIX

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for East Boston Properties*

Description of East Boston Properties:

Maritime industrial property in East Boston consists of the berth surrounding Pier 1 and the East Boston Shipyard including, Building 11, Piers Park, Bremen St. Park and Festa Field. The East Boston Shipyard and Marina is located on Marginal Street in East Boston between Piers Park and the site of the former Navy Fuel Pier. The shipyard was a major shipbuilding and repair site during and after World War II and was purchased by Massport in 1985. Today it is the only ship repair facility in Boston Harbor equipped to serve mid-sized commercial vessels. Features include: 9 acres of backland, including 4 piers and approximately 20 acres of water sheet; 200,000 square feet of commercial office and industrial building area in 12 structures; and 2,500 linear feet of commercial berthing space, graving dock and 180 marina slips (the graving dock is not currently operational). Piers Park includes the Piers Park Sailing Center Building.

Prior to Heavy Weather

Inventory emergency equipment. Order any shortfall in emergency equipment. Back up computer programs and store in safe place. Notify warehouses. Get the names of key contact people. Secure outside buildings.

When Heavy Weather is Imminent

Notify tenants via email. Secure loose gear and equipment, top off all equipment with fuel, refill fuel trucks, stow electrical equipment in safe places, designate safe areas (if any exist) for anyone riding out the storm. If no safe areas exist, evacuate the facility.

For forecasted coastal flooding, implement emergency coastal flood response actions for the Piers Park Sailing Center within 72-, 48-, 24-, 12-, and 6-hour timelines as described in Tables E1 and E2, **Appendix 2**, based on the forecasted maximum flood elevation and the information in Figures 1-5 and Table A in **Appendix 2**. Inventory and stage temporary flood barriers and associated equipment for the Piers Park Sailing Center building from their storage box located in the adjacent pavilion. Deployable barriers shall be installed in doorways at least 12 hours prior to the anticipated start of flooding by Massport Park maintenance staff. The Sailing Center Building shall be closed once barriers are installed.

Securing Equipment and Machinery

Trucks and Forklifts: The Property Manager shall decide a safe area for the storage of this equipment. Trucks should be topped off with fuel and the brakes set.

Other Gear: Any loose equipment or loose gear should be moved indoors or secured to remain outside. All drums of oil, hydraulic fluid, solvents, or other liquid stored in drums should be moved to a safe location to prevent leakage or spillage. Power service to water fountains, irrigation systems and other exterior equipment that are susceptible to flooding, shall be shut off at their respective electrical service panels.

SECTION SIX

Heavy Weather and Flood Operations Plan for Massport's Maritime Facilities *The Procedures for East Boston Properties*

After the Storm

After a coastal flood, implement emergency coastal flood response and recovery actions as described in Table E2 in **Appendix 2**, depending on the actual flood level experienced. Survey and note damage and take pictures. Upload pictures and location to the Massport Climate Resiliency Application. Report damages to Facilities Managers. Inspect equipment for damages and safety of operations, make necessary repairs, clean areas of debris.

Responsibilities of Tenants

Tenants of East Boston Properties are currently required to have a Heavy Weather Plan in place consistent with this section and are required to prepare their areas prior to heavy weather and in the event that a storm is imminent. Massport recommends that tenants incorporate flood operations procedures consistent with this document in their existing plans.

The following is a list of what the Massachusetts Port Authority expects from tenants at all times, especially during the hurricane season:

- Remove hazardous waste in a timely manner.
- Notify the Massachusetts Port Authority immediately of malfunctioning doors and/or structural problems within buildings.

In the event that a storm or hurricane threatens Massport's East Boston Properties and surrounding areas, tenants shall:

- Secure cargo.
- Store all loose tools, wires, bandings, or any other supplies in a secure area.
- Secure equipment.
- Facilities will continue to operate as long as it is safe to do so.
- Move loose items indoors, wherever possible.

Once the storm has passed, tenants are responsible for:

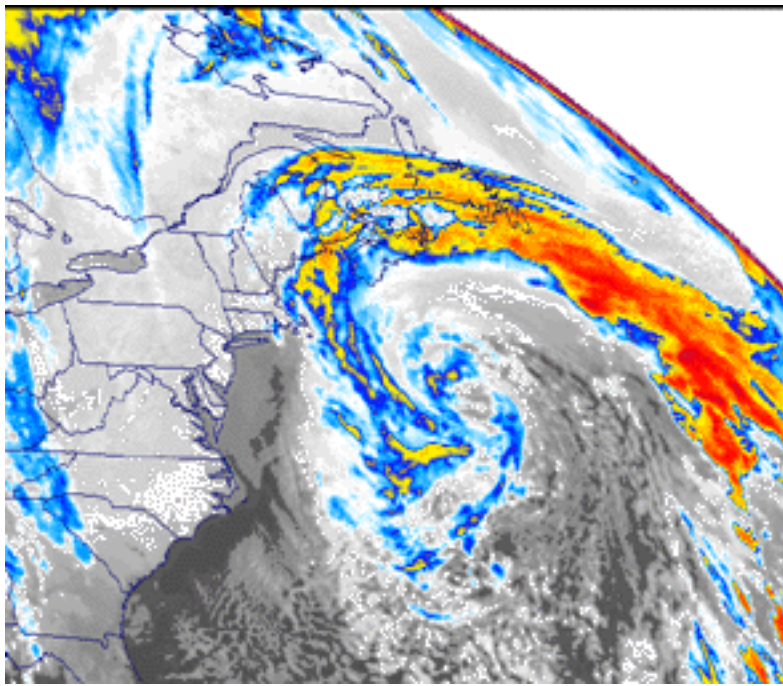
- Assessing damage to the interior and exterior of their spaces and reporting damages to the Property Manager.
- Cleaning up areas of responsibility.
- Restoring their own equipment and gear stored outside.

END OF SECTION SIX

APPENDIX 1

Captain of the Port Boston Guidance for Hurricanes & Severe Weather

Captain of the Port Boston Guidance for Hurricanes & Severe Weather



This publication is provided in continuing partnership with maritime stakeholders within the Sector Boston Area of Responsibility and is not intended to be all-inclusive. Any suggestions for improvement can be sent to:
SECBOSWATERWAYS@uscg.mil

This document is not a substitute for U.S. Code, U.S. Code of Federal Regulations or International Conventions; nothing herein modifies or supersedes the contents of those texts.

Table of Contents

Topic	Page
Table of Contents.....	2
Record of Changes.....	2
 INTRODUCTION	
Background	3
Authority.....	3
Applicability and Purpose.....	4
Amendments.....	4
Distribution.....	4
References.....	4
 COTP ACTIONS AND DECISIONS	
General.....	5
Storm / Port Conditions.....	6
Information Sources.....	7
Specific Pre-Storm Actions.....	8
Specific Post-Storm Actions.....	11
 RECOMMENDED STORM PREPARATIONS	
General	12
Vessels, Pilots, and Tug Companies Action Requirements	13
Facility Owner and Operators Action Requirements.....	14
Notification Requirements.....	18
 Annex A –Remaining in Port Checklist, Vessels Over 500 GT	
Annex B –Remaining in Port Checklist, Tug and Barge Combination Over 500GT	
Annex C –Facility Pre-Storm/Hurricane Assessment Survey	
Annex D –Facility Post Storm/Hurricane Assessment Survey	
Annex E –Facility Request of Alternative Compliance Form	
Annex F –Facility Noncompliance Reporting Form	
Annex G–Abbreviations List	

Record of Changes

Change No.	Date of Change

INTRODUCTION

Background

This document has been developed to provide hurricane and severe weather guidance for the maritime community in the Captain of the Port of Boston’s area of responsibility.

Whereas Hurricane Season spans from June 1st to November 30th, the New England Region is prone to severe weather ranging from Blizzards, Nor’easters, tornados, and severe thunderstorms throughout the year. These types of severe weather can cause significant property damage as well as pose a serious risk to the safety of life and the environment.

Our ports are particularly vulnerable to the hazards associated with hurricanes. Flooding and hurricane force winds can combine to cause substantial damage and challenges to the Maritime Transportation System within our port, including:

- ◆ disruption of cargo operations
- ◆ disruption of ferry operations
- ◆ bridge damage;
- ◆ vessel groundings, allisions, and collisions;
- ◆ oil spill and hazardous substance releases;
- ◆ waterfront facility damage;
- ◆ cargo handling equipment damage;
- ◆ clog critical waterways with debris;
- ◆ disruption to aids to navigation;
- ◆ topple stacks of containers and petroleum and chemical storage tanks; and
- ◆ undermine the structural integrity of piers and wharfs.

Proper liaison and planning among maritime interests can mitigate the threats presented by impending severe weather, as well as facilitate the restoration of port operations.

NOTE: Any reference to “vessel” implies both self and non self-propelled, except where noted. For non self-propelled, the term also implies to supporting tugs associated with barges.

Authority

This plan is derived from the authorities contained in 14 U.S.C. 88, U.S. Coast Guard marine Safety Manual Volume VII (Port Security), Coast Guard First District OPLAN 9710-06, Executive Order (E.O.) 10173, Executive Order (E.O.) 12656, and the Ports and Waterways Safety Act of 1972 (PWSA). It supports the policies of the Commandant; the Commander, Atlantic Area; and the Commander, First Coast Guard District. The provisions of Title 33, Code of Federal Regulations (CFR), Parts 160 and 165, describe the authority that Coast Guard Captains of the Port (COTPs) can use to ensure the safety of their ports.

Applicability and Purpose

This plan is applicable to all waterfront facilities, vessels and barges within the Captain of the Port (COTP) of Boston Zone defined in Title 33, CFR, Part 3.05-10. Its purpose is:

- ◆ To advise the maritime community of the sequence and timing of COTP decisions and actions during periods when the port is threatened by severe weather; and,
 - ◆ To provide guidance and directions for preparedness to minimize damage and to protect lives and property in the event of severe weather; and,
 - ◆ To aid in the restoration of normal maritime operations subsequent to a severe weather event.
-

Amendments

Amendments will be incorporated into this plan by U.S. Coast Guard Sector Boston following a formal annual review. However, suggestions and changes may be offered at any time, especially following the implementation of the plan during exercises or actual severe weather emergencies.

Distribution

This plan is available on the USCG Internet Portal Homeport – Homeport.uscg.mil. Select Boston from the list of Port Directories. We believe this is the best way to distribute the plan to all interested parties. Paper copy distribution will be limited, but copies may requested by calling the Waterways Management Divisions at (617) 223-5445.

References

(a) 2011 Sector Boston Heavy Weather Plan, SECBOINST 16601.1

COTP ACTIONS AND DECISIONS

General

General weather patterns in New England can result in varying degrees of severe weather in the COTP Boston area of responsibility (AOR). The most common event in this region is a storm with high winds from the Northeast which are sometimes referred to as “Northeasters” or “Nor’easters”. These storms may result in damage to the Maritime Transportation System (MTS) and coastal infrastructure as due to the impact of high winds, high seas and associated storm surge. During the winter, strong storms may result in heavy snowfall and potential blizzard conditions making terrestrial and maritime navigation challenging. While these storms may result in damage, they are rarely life threatening.

Generally, the scalable “Port Condition” scheme, as noted below, is not initiated by the COTP for non-tropical based storms. However, preparation expectations and restrictions for operations within the region’s MTS may be initiated by the COTP dependant on risk associated with the forecasted impact of a non-tropical based storm.

During the late summer and early fall seasons, tropical based hurricanes and tropical storms can impact the New England region exposing the MTS to the risk of catastrophic damage [*Note: the Atlantic hurricane season is June 1st through November 30th*]. Hurricanes are highly dangerous weather events and necessitate diligent forethought and preparation in advance of storm impact.

To facilitate preparation within the MTS “Port Conditions” are set by the COTP in advance of an arriving hurricane or tropical storm based on the forecasted timing of the impact of gale force winds associated with the storm. Gale force winds are defined as sustained winds in excess of 34 knots (39 mph). In general, the COTP will utilize forecasted conditions derived from the National Weather Service’s (NWS) Massachusetts Bay and Ipswich Bay (ANZ251) forecast zone in evaluating the need for establishing “Port Conditions”.

There are four Hurricane “Port Conditions”: Whiskey, X-ray, Yankee and Zulu. Additionally, a separate “Storm Condition” has been established to ensure the safety of the COTP Boston AOR in the event of strong non-tropical storms in which sustained winds of 50 knots or greater are forecasted.

NOTE: Port Conditions can be set for any geographic area within the COTP Boston AOR or for the whole AOR depending on where the risk of tropical cyclone activity is predicted by the NWS track forecast. Port status (OPEN/OPEN WITH RESTRICTIONS/CLOSED) should be updated on Homeport as it changes.

**Storm
Conditions**

Storm Condition:

- ◆ Severe weather conditions other than hurricanes.
 - ◆ Winds of 50 knots or greater are forecasted.
 - ◆ These include Nor'easters or Northeast Winter Storms, Blizzards and all other weather conditions not meeting the criteria to be classified as a hurricane.
-

**Port
Conditions**

The four Hurricane Port Conditions are:

- ◆ WHISKEY: Sustained gale force winds associated with tropical cyclone activity are predicted to arrive at the within 72 hours.
 - ◆ X-RAY: Sustained gale force winds associated with tropical cyclone activity are predicted to arrive within 48 hours.
 - ◆ YANKEE: Sustained gale force winds associated with tropical cyclone activity are predicted to arrive within 24 hours. This condition is also used after the storm passes, because vessel traffic control measures will still be in effect.
 - ◆ ZULU: Sustained gale force winds associated with tropical cyclone activity are predicted to arrive within 12 hours.
-

Information Sources

The COTP will make information about changes in Port Conditions applicable to a multitude of varying severe weather events available to the port community in the following ways:

- ◆ The COTP will initiate a conference call 72 hours in advance of severe weather to facilitate a dialogue pertaining to current maritime operations and intended actions.
- ◆ Vessels will be notified via a Broadcast Notice to Mariners (BNM). Hurricane BNMs will be broadcast on Channel 16 and Channel 22A VHF-FM. These notices will be issued 72 hours, 48 hours, 24 hours, and 12 hours in advance of the estimated arrival of gale force winds.
- ◆ Additional notices, bulletins, and other outreach methods may be sent by Sector as local circumstance or significant developments require.
- ◆ An electronic copy of this plan and any other pertinent storm information can be accessed on the USCG Internet Portal HOMEPORT at <http://homeport.uscg.mil/boston>.
- ◆ **For questions concerning Port Conditions and to report navigation hazards, please contact the Sector Command Center (SCC), who can be reached 7 days a week, 24 hours a day, at (617) 223-5757.**
- ◆ **To receive electronic messages, please subscribe to the Listserv mailing list by using the following link: <http://cgls.uscg.mil/mailman/listinfo/sector-boston-all-port> and following the steps listed to subscribe on the website. For questions, please contact Sector Boston Waterways Management Division at (617) 223-5445.**

NOTE: Prior to hurricane season, Sector Boston will engage facility and vessel owners and operators in discussions to outline industry responsibilities and the COTP's plan of action during the approach of a hurricane or severe weather. This is usually accomplished through various regularly held port stakeholder forums such as the Plymouth to Salisbury Area Committee, Massachusetts Bay Harbor Safety Committee and the Port Operators Group meetings.

Specific Pre-Non-Tropical Storm Actions

The COTP may take actions such as the following in advance of a non-tropical based storm with winds forecasted in excess of 50 knots impacting the region:

- a. The COTP will initiate a conference call in advance of severe weather to facilitate a dialogue pertaining to current maritime operations and intended actions.
- b. Owners, operators or agents of all self-propelled oceangoing vessels over 500 GT and all barges and their supporting tugs may be requested to report their intention to depart or remain in port. Additionally, the COTP may require the submission of a REMAINING IN PORT CHECKLIST (Annex A, B).
- c. The COTP or designee may contact waterfront facilities to determine the intention of operating and any vessels or oceangoing barges moored thereto.
- d. Waterfront Facilities may be required to complete Pre-Storm Facility Assessment (Annex C) and to submit them to the COTP.
- e. U. S. Coast Guard assets will conduct random checks (as circumstances permit) of facilities and provide recommendations to them to assist in preparing for an impending severe weather event. 3
- f. The COTP may establish Limited Access Areas, such as a Regulated Navigation Area (RNA), to control or prohibit vessel movement.

In addition to setting port conditions, the COTP will take the following actions commensurate with each Port Condition:

- ◆ **WHISKEY** (gale force winds within 72 hours):
 - a. Port Status: open to all commercial traffic.
 - b. The COTP may initiate a conference call to facilitate a dialogue pertaining to current maritime operations and intended actions.
 - c. Owners, operators or agents of all self-propelled oceangoing vessels over 500 GT and all barges and their supporting tugs report their intention to depart or remain in port.

When not mooring or anchoring in a pre-approved area or using a pre-arranged mooring or anchorage plan, the COTP may require owners, operators, or certified agents of all self-propelled oceangoing vessels over 500 GT and all barges and their supporting tugs remaining in port to either complete a REMAINING IN PORT CHECKLIST, (Annex A, B), and submit this checklist to the COTP within 24 hours for acceptance, or contact the cognizant Sector Boston command center and make an appointment to provide an oral brief.

At this appointment, the COTP or designee shall establish with the owner, operator or agent the conditions for the safe mooring of the vessel in the port and should consider issuing a COTP order establishing these conditions as a requirement.

- d. The COTP or designee will contact waterfront facilities to determine the intention of operating and any vessels or oceangoing barges moored thereto.
- e. Waterfront Facilities to complete Pre-Storm Facility Assessment (Annex C) and to submit them to the COTP.
- f. U.S. Coast Guard assets will conduct random checks (as circumstances permit) of facilities and provide recommendations to them to assist in preparing for an impending severe weather event.
- g. The COTP will advise port stakeholders of intentions for setting next port condition (X-RAY).

◆ **X-RAY** (gale force winds within 48 hours):

- a. Port Status: open to all commercial traffic.
- b. The COTP may initiate a conference call to facilitate a dialogue pertaining to current maritime operations and intended actions.
- c. All required REMAIN IN PORT CHECKLISTS or oral briefs provided to the COTP or his/her designee for approval. COTP individually assess vessels desiring to remain in port as necessary and issue COTP orders as appropriate.
- d. The COTP will individually assess waterfront facilities Pre-Storm Facility Assessments and follow up as necessary.
- e. U.S. Coast Guard assets will conduct random checks (as circumstances permit) of facilities and provide recommendations to them to assist in preparing for an impending severe weather event.
- f. The COTP will advise port stakeholders of intentions for setting next port condition (YANKEE).

◆ **YANKEE** (gale force winds within 24 hours):

- a. Port Status: vessel traffic control measures in effect.
- b. The COTP will initiate a conference call to facilitate a dialogue pertaining to current maritime operations and intended actions.
- c. The COTP or his/her designee to accept or direct as necessary final mooring arrangements for vessels remaining in port. Post storm, COTP controls movements of vessels he/she deems necessary.

- d. The COTP will close all anchorages and commercial mooring in the COTP Boston zone, and prohibit all vessels from anchoring within the Territorial sea.
 - e. The COTP will establish a safety zone controlling vessel movements and activities as appropriate. Example: No inbound vessel traffic. Notification of zone made via BNM and Port Bulletins.
 - f. U.S. Coast Guard assets will conduct random checks (as circumstances permit) of facilities and provide recommendations to them to assist in preparing for an impending severe weather event.
 - g. The COTP will advise port stakeholders of intentions for setting next port condition (ZULU).
- ◆ **ZULU** (gale force winds within 12 hours):
- a. Port Status: vessel traffic control measures in effect.
 - b. The COTP will initiate a conference call to facilitate a dialogue pertaining to current maritime operations and intended actions.
 - c. The COTP will continue prohibitions on all ports, waterways, anchorages, and deny any vessel the COTP has not authorized into the zone.
-

Specific Post-Storm Actions (Non-Tropical & Hurricane / Tropical)

As soon as practicable following the passage of the storm, the COTP may do the following:

- ◆ Conduct an assessment of the MTS to amend the port condition (if applicable) as necessary. This assessment will include a post-storm ATON survey.
- ◆ Establish and enforce a Safety Zone restricting vessel movements until the navigation channels can be surveyed and declared safe for passage.
- ◆ Coordinate completion of channel surveys to determine impact of shoaling and waterway obstructions.
- ◆ Conduct maritime damage and risk assessments emphasizing channels, bridges, anchorages, piers and wharves.
- ◆ Organize a post-severe weather meeting (conference call) with regional MTS stakeholders to assess pertinent issues, challenges, or concerns in the COTP Boston zone. This may include:
 - Army Corps of Engineers (ACOE)
 - Boston Harbor Pilots Association
 - Federal Emergency Management Agency (if appropriate)
 - Marine Transportation System Recovery Unit
 - Massachusetts agencies, as appropriate
 - Massachusetts Bay Harbor Safety Committee
 - National Oceanic and Atmospheric Administration
 - Port Operations Group
 - Salvage Companies
 - USCG Marine Safety Center Salvage Engineering Response Team (SERT)
 - U.S. Navy Supervisor of Salvage (SUPSALV)

For further detailed information regarding post-storm actions by the COTP, reference Chapter 3 of the Sector Boston Heavy Weather Plan.

RECOMMENDED STORM PREPARATIONS

General

This part of the plan contains general recommended precautionary measures that vessels and waterfront facilities can take to reduce the potential for loss of life, injury, or property damage from hurricanes or other severe weather. The safety precautions contained in this part are not the only precautions that may be necessary to fully prepare a vessel or facility from the risks associated with severe weather. The unique characteristics of the vessel or facility, and the unique attributes of the storm may dictate the need for additional measures and/or modifications to the measures contained in these recommendations.

The recommended precautionary measures are categorized by Port Condition. Generally, the scalable “Port Condition” scheme is not initiated by the COTP for non-tropical based storms. However, preparation expectations and restrictions for operations within the region’s MTS may be initiated by the COTP dependant on risk associated with the forecasted impact of a non-tropical based storm.

The COTP will continuously review the status of all hurricane and severe weather preparations (vessel and facility) and direct the correction of dangerous conditions. The COTP will issue orders only to those vessels or facilities that fail to initiate appropriate action.

Nothing in these recommendations shall be construed as relieving the masters, owners, operators, and agents of vessels or the owners, operators, and persons-in-charge of waterfront facilities from their primary responsibility for the safety of such vessels or waterfront facilities during severe weather. Similarly, in no way should any of these recommendations be understood as the COTP advocating personnel being placed in life threatening situations to secure property.

**Vessels, Pilots,
and Tug
Companies**

- ◆ **WHISKEY** (gale force winds within 72 hours):
 - a. Owners, operators or agents of all self-propelled oceangoing vessels over 500 GT and all barges and their supporting tugs report their intention to depart or remain in port. Vessels remaining in a hurricane mooring or anchorage pre-arranged with the COTP Boston AOR should make note of this when reporting their intentions.
 - b. When not mooring or anchoring in a pre-approved area or using a pre-arranged mooring or anchorage plan, the COTP may require owners, operators, or certified agents of all self-propelled oceangoing vessels over 500 GT and all barges and their supporting tugs remaining in port to either complete a **REMAINING IN PORT CHECKLIST**, (Annex A, B), and submit this checklist to the COTP within 24 hours for acceptance, or contact the cognizant Sector Boston command center and make an appointment to provide an oral brief at the COTP's or his/her designee's office within a 24 hour period. At this appointment, the COTP or designee shall establish with the owner, operator or agent the conditions for the safe mooring of the vessel in the port and should consider issuing a COTP order establishing these conditions as a requirement.
 - c. Vessels leaving port should begin making preliminary preparations for departure from port including Customs and Border Protection (CBP) clearance, pilot/tug arrangements, take on water/bunker/lube oil, etc.
 - d. All cruise ships planning to embark passengers shall report their intentions. This includes all cruise ships currently docked in the COTP Zone and those planning to arrive before full passage of the storm.
 - e. All laid-up vessels should activate their heavy weather contingency plan.
 - f. Alert COTP to potential hazards from the approaching severe weather.
 - g. Monitor Channel 16 VHF-FM for changes in port conditions and initiation of appropriate COTP restrictions relating to vessel movement control.
 - h. Vessel masters should anticipate storms may strengthen and movements may accelerate between "conditions" and cargo/vessel operations should be planned accordingly.
 - i. Regions may be impacted with sporadic power outages; it is recommended to keep laptops, phones, radios and backup power supplies fully charged to avoid disturbances in communications.
- ◆ **X-RAY** (gale force winds within 48 hours):
 - a. Continue to perform Condition WHISKEY action requirements.
 - b. Submit **REMAINING IN PORT CHECKLIST**, Annex A or B, to the COTP for approval.
 - c. Vessel masters and shipping agents should expect pilots will deny

their services during threatening wind conditions.

- d. Vessel masters should anticipate storms may strengthen and movements may accelerate between “conditions” and cargo/vessel operations should be planned accordingly.

◆ **YANKEE** (gale force winds within 24 hours)

- a. Continue to perform Condition WHISKEY and X-RAY action requirements.
- b. Notify the COTP immediately upon suspension of vessel related services.
- c. Comply expeditiously with all pertinent COTP directives: Vessels and barges not remaining in port during severe weather must depart port within 12 hours of setting Port Condition YANKEE. Vessels remaining in port shall finalize preparations for heavy weather, and strictly adhere to established COTP mooring requirements.
- d. Vessels departing before the severe weather must provide the COTP with accurate estimate, based on tide, availability of pilot/tug, CBP clearance, loading stores/water/fuel/lube oil, etc., as to earliest possible time vessel can depart port.
- e. Notify the COTP immediately of any hazardous condition threatening the safe navigation of vessels, safety of the environment, or the personal safety of pilot/tug personnel.

◆ **ZULU** (gale force winds within 12 hours)

- a. Continue to perform Condition WHISKEY, X-RAY and YANKEE action requirements.
- b. Complete final preparations for the approaching severe weather.
- c. When directed by the COTP, suspend all but COTP approved operations.
- d. Tug companies and piloting organizations should keep the COTP apprised on status/availability of service, and tug companies should provide a list of light tugs available for emergency response.

Waterfront Facilities

- ◆ **WHISKEY** (gale force winds within 72 hours):
 - a. Alert personnel to commence heavy weather preparations to ensure compliance with all Designated Waterfront Facility and Waterfront facility action requirements at least 12 hours before impending severe weather makes landfall.
 - b. Advise the COTP on the status of present and expected facility cargo operations by calling the Facilities Branch at (617) 223-3010/5768 during normal business hours and during non-business hours contact (617) 223-5757. In addition complete and submit the Pre-Storm Facility Assessment.
 - c. Waterfront Petroleum and Hazardous Material Facilities shall inventory contents/amounts in each storage tank, locate and review data on age/structural integrity of all storage tanks.
 - d. Review facility contingency plans for severe weather and advise the COTP on intended actions regarding vessels calling at terminal, safeguarding of facility personnel, staffing during the severe weather, and preparations for possible flooding due to high tides/heavy rains.
 - e. Review operational schedules to identify and reduce shipments of Cargoes of Particular Hazards, Hazardous Materials, and/or Dangerous Cargoes arriving via highway or rail vehicles. Facility operators shall notify the COTP of any labeled dangerous cargo that must remain in open areas due to insufficient shed space or stowage regulations. Items such as drums should be banded on pallets not more than two tiers high or laid horizontally with secure dunnage.
 - f. Notify the COTP at (617) 223-5757 for all vessels in a “Lay-up” status and ensure that vessels are prepared for severe weather conditions.
 - g. Evaluate the extent that a 96-hour interruption of cargo operations, during and after storm passage, will interrupt strategic public safety, energy, or transportation needs. If a significant interruption is expected, report it to the COTP.
 - h. Remove hazardous materials from areas prone to flooding.
 - i. Ensure all open areas of docks, wharves and piers are cleared of all missile hazards.
 - j. Regions may be impacted with sporadic power outages; it is recommended to keep laptops, phones, radios and backup power supplies fully charged to avoid disturbances in communications.

- ◆ **X-RAY** (gale force winds within 48 hours):
 - a. Continue to perform Condition WHISKEY action requirements.
 - b. Advise COTP on the status of severe weather preparations and estimated time for suspension of all cargo operations.

- c. Advise COTP on status of storage tank inventory, data available on structural integrity of all tanks and intentions for ballasting of empty storage tanks.
 - d. Facility managers and vessel masters should anticipate completion of cargo-handling operations in time to allow vessels to depart the port and proceed well clear of the impending storm.
 - e. Facility managers should anticipate that the COTP will order suspension of cargo handling operations during Condition YANKEE (24 hours prior to landfall). Facilities should hire and schedule labor accordingly.
 - f. Loose materials may become a missile hazards and shall be removed from waterfront facilities, piers and docks or properly secured. Container stacks shall be reorganized in accordance with the facility's heavy weather plan.
 - g. Facility managers shall address any deficiencies noted during port surveys and waterfront facility inspections conducted by the COTP personnel, and notify the COTP when they are corrected.
 - h. Facility managers shall ensure that laid-up vessels are not breasted.
- ◆ **YANKEE** (gale force winds within 24 hours)
- a. Continue to perform Condition WHISKEY and X-RAY action requirements.
 - b. Terminate all nonessential cargo operations upon notice from the COTP. All drain manifolds, lines and cargo hoses should be blanked and secured upon securing of transfer operations.
 - c. Remove potential pollutants, HAZMAT, and missile hazards from the dock area.
 - d. Load/ballast/secure storage tanks as necessary to withstand heavy winds and high tides.
 - e. Secure facility truck loading areas as necessary.
 - f. Promote vessel safety by ensuring that vessels remaining at dock during severe weather have adequate mooring arrangements.
 - g. Promote safety of facility personnel by conducting preps for possible flooding due to high winds/tides/rain.
 - h. Secure or move hazardous materials and dangerous cargoes to a safe location. Individual drums of hazardous material should be

palletized, and banded. When palletized drums are stowed inside they should be elevated off the floor in a well ventilated warehouse. When stowed outside, palletized drums should be sheltered from the weather as much as possible, and in no case stacked more than two high. Stacked pallets of drums should also be braced and dunnaged to prevent shifting and/or toppling. **(NOTE: 49 CFR Parts 171-178 should be used as a stowage and segregation guide, if the drums to be consolidated contain hazardous materials from different Hazard Classes/Divisions).**

- ◆ ZULU (gale force winds within 12 hours)
 - a. Continue to perform Condition WHISKEY, X-RAY and YANKEE action requirements.
 - b. Complete final preparations for the hurricane.
 - c. When directed by the COTP, suspend all but COTP approved operations.
 - d. Inspect all pollution response equipment to ensure its safety and readiness for deployments after the passage of the severe weather.
 - e. All small crafts owned by the facility that can be hauled out or tailored, should be removed from the water and secured well away from the effects of possible surge and high tides/winds. Facility managers should take into account other hazards, such as finger piers, that may come adrift and take appropriate mitigating actions.
 - f. Secure all facility cranes against high winds and move the away from any vessels remaining at the facility.
 - g. Alert the COTP to any unsafe conditions at the facility or within local ports and waterways.
-

Notification Requirements

Advance Notice of Transfer

The COTP requires waterfront facility operators to notify the COTP of the time and place of each transfer operations at least 4 (four) hours before it begins.

Forms are to be faxed to 617.223.8219. For questions contact 617.223.3010/5768. For nonbusiness hours, call 617.223.5757.

Reference: 33 CFR 156.118

Alternatives

Waterfront facilities that require operating under alternative methods (safety procedures) must request and receive approval from the COTP prior to proceeding with alternative operating measures.

Requests can be made by phone, fax, or e-mail. Requests can be faxed to 617.223.8219. Normal business hours call 617.223.3010/5768. For nonbusiness hours, call 617.223.5757. Please send e-mails to SecBosFac@uscg.mil.

Reference: 33 CFR Part 127 and/or Part 154.

Marine Casualty

Immediately after the addressing of resultant safety concerns, the owner, agent, master, operator, or person in charge, shall make notification of the marine casualty.

Notifications can be made by contacting 617.223.3353 or 617.590.9545. E-mails can be made to BostonIO@uscg.mil.

Reference: 46 CFR 4.05-1.

Noncompliance When a waterfront facility must temporarily deviate from the requirements of 33 CFR Part 101-105, the facility owner or operator must notify the COTP, and request to either suspend operations or request and receive permission from the COTP to continue operating.

Requests can be made by phone, fax, or e-mail. Requests can be faxed to 617.223.8219. Normal business hours call 617.223.3010/5768. For nonbusiness hours, call 617.223.5757. Please send e-mails to SecBosFac@uscg.mil.

Reference: 33 CFR Part 101-105.

Pollution

Report all discharge or releases of oil and/or chemical to the National Response Center (NRC). Reports can be made by phone (800.424.8802) or by using the on-line reporting tool at <http://www.nrc.uscg.mil>.

Reference: 40 CFR Part 300

APPENDIX 2

FLOOD-RELATED ACTIONS AND TIMELINES AND FLOOD RISK MAPS

- Table A – Maritime South Boston Buildings and Structures at Risk of Flooding
- Table B1 – Flood-Related Actions and Timelines for Conley Terminal
14.5 ft. ≤ El. < 15.50 ft. MLLW: Pre-Flood: 72 hours to 6 hours
- Table B2 - Flood-Related Actions and Timelines for Conley Terminal
14.5 ft. ≤ El. < 15.50 ft. MLLW: Post-Flood: 12 hours to > 48 hours
- Table B3 - Flood-Related Actions and Timelines for Conley Terminal
15.5 ft. ≤ El. < 16.50 ft. MLLW: Pre-Flood: 72 hours to 6 hours
- Table B4 - Flood-Related Actions and Timelines for Conley Terminal
17.5 ft. ≤ El. < 16.50 ft. MLLW: Post-Flood: 12 hours to > 48 hours
- Table B5 - Flood-Related Actions and Timelines for Conley Terminal
El. > 16.50 ft. MLLW: Pre-Flood: 72 hours to 6 hours
- Table B6 - Flood-Related Actions and Timelines for Conley Terminal
El. > 16.50 ft. MLLW: Post-Flood: 12 hours to > 48 hours

- Table C1 - Flood-Related Actions and Timelines for Flynn Cruiseport
El. < 16.50 ft. MLLW: Pre-Flood: 72 hours to 6 hours
- Table C2 - Flood-Related Actions and Timelines for Flynn Cruiseport
El. < 16.50 ft. MLLW: Post-Flood: 12 hours to > 48 hours
- Table C3 - Flood-Related Actions and Timelines for Flynn Cruiseport
El. > 17.50 ft. MLLW: Pre-Flood: 72 hours to 6 hours
- Table C4 - Flood-Related Actions and Timelines for Flynn Cruiseport
El. > 17.50 ft. MLLW: Post-Flood: 12 hours to > 48 hours

- Table D1 - Flood-Related Actions and Timelines for Boston Fish Pier
El. > 14.50 ft. MLLW: Pre-Flood: 72 hours to 6 hours
- Table D2 - Flood-Related Actions and Timelines for Boston Fish Pier
El. > 14.50 ft. MLLW: Post-Flood: 12 hours to > 48 hours

- Table E1 - Flood-Related Actions and Timelines for Piers Park Sailing Center
El. > 19.50 ft. MLLW: Pre-Flood: 72 hours to 6 hours
- Table E2 - Flood-Related Actions and Timelines for Piers Park Sailing Center
El. > 19.50 ft. MLLW: Post-Flood: 12 hours to > 48 hours

- Figure 1 – Maritime Facilities at Risk of Flooding Below 14.5 MLLW
- Figure 2 – Maritime Facilities at Risk of Flooding Below 15.5 MLLW
- Figure 3 – Maritime Facilities at Risk of Flooding Below 16.5 MLLW
- Figure 4 – Maritime Facilities at Risk of Flooding Below 17.5 MLLW
- Figure 5 – Maritime Facilities at Risk of Flooding Below 18.5 MLLW

TABLE A - MARITIME SOUTH BOSTON BUILDINGS AND STRUCTURES AT RISK OF FLOODING

APPENDIX 2

Name	Water Elevation Ranges							Priority
	< 14.5 ft	14.5 ≤ El. < 15.5 ft	15.5 ≤ El. < 16.5 ft	16.5 ≤ El. < 17.5 ft	17.5 ≤ El. < 18.5 ft	18.5 ≤ El. < 19.5 ft	19.5 ≤ El. < 20.5 ft	
BOSTON FISH PIER								
Berths	E	14.51						Moderate
Fish Pier East & West Buildings		15.40						Moderate
Eversource Switch (at Guard House)		14.91						High
CONLEY TERMINAL								
Interchange Facility	14.29							Lower
Reefer yard		14.50						Lower
Rubber Tire Gantry Cranes		E	15.69					Moderate
Vessel Crane 1-9		E	15.90					Moderate
Wharf Switch Houses No. 1-3		E	15.90					High
Berth 11 & 12		E	15.90					High
Diesel Underground Storage Tank/ Fuel Island			16.27					Moderate
Gasoline Underground Storage Tank/ Fuel Island			16.18					Moderate
Marine Operations Center		E	16.44					High
Administration Building			E	16.95				Moderate
Administration Building Substation			E	17.22				Moderate
Operations Building			E	17.16				Moderate
White Fuel Building			E	17.32				Moderate
Administration Building Generator					17.81			Moderate
Gate Switch House					17.98			High
Massport Police Main Gate Building (Guard House)					18.40			Moderate
Reefer Unit Substation No. 1					E	E	20.00	Lower
Reefer Unit Substation No. 2					E	E	20.00	Lower
Reefer East Substation					E	E	20.00	Lower
US Customs and Border Patrol Building (Non-MPA)						19.4		
FLYNN CRUISEPORT								
Berths				16.88				Lower
Gangway / PBB				16.88				Lower
Main Building				E	18.46			Moderate
Haul Road Sump Pump	14.13							Lower
Piers Park Sailing Center Building				E	E	E	19.5	Moderate

Boxes marked with E indicate exterior flooding that may restrict egress/access

Numbers in chart indicate water elevations at which asset is likely flooded

TABLE B1 - FLOOD-RELATED ACTIONS AND TIMELINES FOR CONLEY TERMINAL

Pre-Flood

APPENDIX 2

Activity	Pre-Flood					Responsible Party
	72 hours	48 hours	24 hours	12 hours	6 hours	
Monitor flood forecasts and distribute building/area flood risk information and checklists						CP
						MPA Comm Ctr.
Update Terminal status via website and distribution lists to Customs, Coast Guard, Truckers, SSL's, Labor and employees. (Frequency of alerts TBD)						Maritime Ops
Senior managers to submit operations plans, vessel schedules, tenant preparedness status to Port Director for transmittal to CEO and Logan Airport Unified Command						All Maritime
Establish the storm center at a safe location (Administration Building or Boston Convention Center)						Security
Contact critical vendors for pre/post flood response						Maritime Ops
Inventory hazardous materials and review storage locations						Maritime Ops
						CP
Take actions to secure construction sites and project staging areas from wind and flood hazards						CP
Inventory and replenish as needed emergency supplies: quantities of rope, plywood, masking tape, flashlights, batteries, cables, turnbuckles, etc						Maintenance Ops
Inventory critical stock, equipment, tools, materials forecast to flood and develop relocation/elevation plan						Maintenance Ops
Inventory and test communications equipment (radios, phones, laptops, etc) and backup power supplies						All Maritime
Review electrical shut-down plan for Reefer Yard, Interchange Facility, Switch Houses 1, 2 & 3, and yard/maintenance areas at risk of flooding, if required						Electrical
Plan and communicate contingencies for modified work schedules, home-based work, employee assistance program, safety and preparedness information, time-keeping and payroll						Maritime Ops
						People and Culture
Review staffing availability/schedule and contact information						People and Culture
						All Maritime
Perform pre-storm conditions survey						CP
						Term Contractor
Facility check of catch basins and drains, including roof drains						Maintenance Ops
Remove missile hazards from area and tie down trailers: barrels, flags, banners, outside furniture, cameras, antennas						Maritime Ops
Test and fuel all pump systems, emergency lights, and generators						Maintenance Ops
Determine when to close the terminal to incoming trucks; notify managers, truckers union, and others						Maritime Ops
Fuel all vehicles and equipment						Maintenance Ops
Move all vehicles and equipment away from hazards and water's edge (see Figure 2) to higher ground (e.g., WTC Blvd) or indoors.						Maintenance Ops
						Maintenance Ops
Secure, move, and/or elevate hazardous materials in outdoor areas and buildings at risk of flooding						CP
Raise and secure all loose equipment and supplies off floor and secure all doors and other openings						Maritime Ops
Block stow container stacks, tie down Pier Cranes, Secure RTG's with Loaded Container, review reefer monitoring measures						Maritime Ops
Begin electrical shut down of Reefer Yard, Interchange Facility, Switch Houses 1, 2 & 3, and yard/maintenance areas at risk of flooding, if required						Electrical
Terminate non-essential cargo operations upon notice from the COTP						Maritime Ops
Charge communications equipment and backup power supplies						All Maritime
Suspend all but COTP approved operations when directed by COTP						Maritime Ops
Inspect all pollution response equipment for post-flood deployment						Maintenance Ops
Deploy temporary pumps to areas at risk of flooding						Maintenance Ops
Close and secure all building and empty container doors						Maintenance Ops
Turn on temporary pumps and leave running						Maintenance Ops

Pre-Flood: 72 Hours to 6 Hours

14.5 ft. ≤ El. < 15.50 ft. MLLW

TABLE B2 - FLOOD-RELATED ACTIONS AND TIMELINES FOR CONLEY TERMINAL

Activity	During Flood	Post-Flood					Responsible Party
		12 hours	24 hours	36 hours	48 hours	> 48 hours	
Re-staff entrance to Conley Terminal							State Police Security
Survey for injured persons and safety hazards							Maritime Ops State Police Security
Assess condition of facility post-flood and make recommendations for priority cleanup and repairs - enter damage data in MPA Climate Resiliency App							Maritime (Safety) Maintenance Ops Term Contractor
Determine ownership of damaged containers and determine timeline for third party survey							Maritime Ops
Perform required cleanup and repair work							Maintenance Ops Term Contractor
Return all vehicles and equipment to normal storage/operating locations							Maintenance Ops
Contact critical vendors for post flood response if needed							Maintenance Ops

Post-Flood: 12 Hours to > 48 Hours

14.5 ft. ≤ EI. < 15.5 ft. MLLW

TABLE B3 - FLOOD-RELATED ACTIONS AND TIMELINES FOR CONLEY TERMINAL

Activity	Pre-Flood					Responsible Party
	72 hours	48 hours	24 hours	12 hours	6 hours	
Monitor flood forecasts and distribute building/area flood risk information and checklists						CP
Update Terminal status via website and distribution lists to Customs, Coast Guard, Truckers, SSL's, Labor and employees. (Frequency of alerts TBD)						MPA Comm Ctr.
Senior managers to submit operations plans, vessel schedules, tenant preparedness status to Port Director for transmittal to CEO and Logan Airport Unified Command						Maritime Ops
Inventory temporary barriers and portable access ladders and get ready for deployment at Conley Wharf Switch Houses 1-3, Marine Operations Building and Fuel Island						All Maritime
Establish the storm center at a safe location (Administration Building or Boston Convention Center)						CP
Contact critical vendors for pre/post flood response						Term Contractor
Put term contractor on notice for deployment of temporary barriers at Conley Wharf Switch Houses 1-3, Marine Operations Building and Fuel Island						Security
Inventory hazardous materials and review storage locations						Maintenance Ops
Take actions to secure construction sites and project staging areas from wind and flood hazards						CP
Inventory and replenish as needed emergency supplies: quantities of rope, plywood, masking tape, flashlights, batteries, cables, turnbuckles, etc						Term Contractor
Inventory vehicles and equipment in yard/maintenance areas at risk of flooding and develop relocation/elevation plan						Maritime Ops
Inventory and test communications equipment (radios, phones, laptops, etc) and backup power supplies						Maritime (Safety)
Review electrical shut-down plan for Reefer Yard, Interchange Facility, Wharf Switch Houses 1, 2 & 3, Marine Operations Building, Fuel Island, and yard/maintenance areas at risk of flooding						CP
Plan and communicate contingencies for modified work schedules, home-based work, employee assistance program, safety and preparedness information, time-keeping and payroll						Maintenance Ops
Prepare accommodations for sheltering essential employees and standby contractors (beds, food, potable water, etc)						Maintenance Ops
Review staffing availability/schedule and contact information						All Maritime
Retrieve and transport temporary barriers, portable access stairs and stage for deployment at Conley Wharf Switch Houses 1-3, Marine Operations Building and Fuel Island						Term Contractor
Perform pre-storm conditions survey						CP
Facility check of catch basins and drains, including roof drains						Term Contractor
Remove missile hazards from area and tie down trailers: barrels, flags, banners, outside furniture, cameras, antennas						Maintenance Ops
Test and fuel all pump systems, air compressors, emergency lights, and generators						Maintenance Ops
Relocate US Customs screening machines to WTC Blvd, Hanscom, or Logan Airport elevated roadways						Maintenance Ops
Deploy temporary barriers, portable access ladders and portable pumps at Conley Wharf Switch Houses 1-3, Marine Operations Building and Fuel Island. Leave at least one set of panels/barriers at key entrances open to allow for egress into and out of areas until just before arrival of flood water.						Maritime Ops
Fuel all vehicles and equipment. Fill mobile fueling trucks and keep topped off.						Term Contractor
Move all vehicles and equipment away from hazards and waters edge to higher ground (e.g., SBWTC Blvd) or indoors.						Maintenance Ops
Secure, move, and/or elevate hazardous materials in outdoor areas and buildings at risk of flooding						Maintenance Ops
Raise and secure all loose equipment and supplies off floor and secure all doors and other openings						Maintenance Ops
Block stow container stacks, tie down Pier Cranes, Secure RTG's with loaded container, review reefer monitoring measures.						Maritime (Safety)
Begin electrical shut down of Reefer Yard, Interchange Facility, Wharf Switch Houses 1, 2 and 3, Fuel Island, and yard/maintenance areas at risk of flooding						Maintenance Ops
Load/ballast/secure storage tanks as necessary						Maritime Ops
Terminate non-essential cargo operations upon notice from the COTP						Maintenance Ops
Charge communications equipment and backup power supplies						Maritime Ops
Close and secure all building and empty container doors						All Maritime
Complete electrical shut down of Reefer Yard, Interchange Facility, Wharf Switch Houses 1, 2 and 3, Fuel Island, and yard/maintenance areas at risk of flooding						Maintenance Ops
Suspend all but COTP-approved operations when directed by COTP						Electrical
Inspect all pollution response equipment for post-flood deployment						Electrical
Begin evacuating and securing buildings and areas at risk of flooding						Maritime Ops
Turn on temporary pumps and leave running						Maintenance Ops
Ensure that all facilities at risk of flooding are unoccupied and that all doors are securely closed; Deploy any remaining temporary barriers at egress routes; and perform final check of temporary barrier system						Maritime Ops
Oversee the sheltering of essential employees and standby contractors						State Police
						Term Contractor
						Security
						State Police
						Security

Pre-Flood: 72 Hours to 6 Hours

15.5 ft. ≤ El. < 16.5 ft. MLLW

TABLE B4 - FLOOD-RELATED ACTIONS AND TIMELINES FOR CONLEY TERMINAL

Activity	During Flood	Post-Flood					Responsible Party
		12 hours	24 hours	36 hours	48 hours	> 48 hours	
Monitor temporary pumps and refuel as needed							Term Contractor
							Maintenance Ops
Re-staff entrance to Conley Terminal							State Police
							Security
Survey for injured persons and safety hazards							Maritime Ops
							State Police
							Security
							CP
Perform Initial condition assessment of facility post-flood and make recommendations in Flood App for further assessments, clean-ups or repairs							Maintenance Ops
							Term Contractor
Determine ownership of damaged containers and determine timeline for third party survey							Maritime Ops
Contact critical vendors for post flood response if needed							Maintenance Ops
Perform required cleanup and repair work prior to reenergizing electrical system and reoccupying buildings							Maintenance Ops
							Term Contractor
Return all vehicles, equipment, stock, tools, and materials to normal storage/operating locations							Maintenance Ops
Restart electrical systems and reoccupy buildings							Electrical
Remove, clean and repackage for storage temporary barriers, portable access stairs and pumps							Term Contractor
Transport and place into storage temporary barriers, portable access stairs and pumps							Term Contractor
Prepare documentation on costs associated with flood for possible future disaster reimbursement and record in Flood App							Maritime Finance

Post-Flood: 12 Hours to >48 Hours

15.5 ft. ≤ El. < 16.5 ft. MLLW

TABLE B5 - FLOOD-RELATED ACTIONS AND TIMELINES FOR CONLEY TERMINAL

Pre-Flood

APPENDIX 2

Activity	Pre-Flood					Responsible Party
	72 hours	48 hours	24 hours	12 hours	6 hours	
Monitor flood forecasts and distribute building/area flood risk information and checklists						CP
Update Terminal status via website and distribution lists to Customs, Coast Guard, Truckers, SSL's, Labor and employees. (Frequency of alerts TBD)						MPA Comm Ctr.
Senior managers to submit operations plans, vessel schedules, tenant preparedness status to Port Director for transmittal to CEO and Logan Airport Unified Command, if applicable						All Maritime
Inventory temporary barriers and portable access stairs and get ready for deployment at Conley Wharf Switch Houses 1-3, Marine Operations Building and Fuel Island						CP
Establish the storm center at a safe location (Administration Building or Boston Convention Center)						Term Contractor
Contact critical vendors for pre/post flood response						Security
Put term contractor on notice for deployment of temporary barriers at Conley Wharf Switch Houses 1-3, Marine Operations Building and Fuel Island						Maintenance Ops
Inventory hazardous materials and review storage locations						CP
Take actions to secure construction sites and project staging areas from wind and flood hazards						Maintenance Ops
Inventory and replenish as needed emergency supplies: quantities of rope, plywood, masking tape, flashlights, batteries, cables, turnbuckles, etc						Maintenance Ops
Inventory vehicles, equipment, and critical stock, tools, and materials in Administration Building, Operations Building, White Fuel Building, Reefer Building and yard/maintenance areas at risk of flooding (Figure 4) and develop relocation/elevation plan						Maintenance Ops
Inventory and test communications equipment (radios, phones, laptops, etc) and backup power supplies						Maritime Ops
Develop IT shut down and equipment elevation/relocation plan for White Fuel Building and Administration Building						All Maritime
Review electrical shut down plan for all of Conley Terminal and coordinate with utility and IT Department						Maritime Ops
Back-up computer applications and files from local hard drives to MPA or third party network						IT
Relocate US Customs screening machines to WTC Blvd, Hanscom, or Logan Airport elevated roadways						Electrical
Prepare accommodations for sheltering essential employees and standby contractors (beds, food, potable water, etc)						IT
Review staffing availability/schedule and contact information						All Maritime
Retrieve and transport temporary barriers and portable access ladders and stage for deployment at Conley Conley Wharf Switch Houses 1-3, Marine Operations Building and Fuel Island						Security
Perform pre-storm conditions survey						People and Culture
Facility check of catch basins and drains, including roof drains						All Maritime
Remove missile hazards from area and tie down trailers: barrels, flags, banners, outside furniture, cameras, antennas						Maritime Ops
Test and fuel all pump systems, air compressors, emergency lights, and generators						Security
Deploy temporary barriers, portable access ladders and portable pumps at Conley Wharf Switch Houses 1-3, Marine Operations Building and Fuel Island. Leave at least one set of panels/barriers at key entrances open to allow for egress into and out of areas until just before arrival of flood water.						People and Culture
Fuel all vehicles and equipment. Fill mobile fueling trucks and keep topped off.						All Maritime
Move all vehicles and equipment away from hazards and waters edge to higher ground (e.g., WTC Blvd or SBWTC or indoors.)						Term Contractor
Secure, move, and/or elevate hazardous materials in outdoor areas and buildings at risk of flooding						CP
Raise and secure all loose equipment and supplies off floor and secure all doors and other openings						Term Contractor
Block and stow container stacks, tie down Pier Cranes, Secure RTG's with loaded container, review reefer monitoring measures.						Maintenance Ops
Begin electrical shut down of entire Conley Terminal and coordinate with utility and IT Department						Maintenance Ops
Load/ballast/secure storage tanks as necessary						Maintenance Ops
Terminate non-essential cargo operations upon notice from the COTP						Maintenance Ops
Elevate/relocate critical tools, stock, equipment, and materials in Administration Building, Operations Building, White Fuel Building, Reefer Building and yard/maintenance areas at risk of flooding						Maintenance Ops
Move desks, files, office equipment, furniture, computers, copiers, and fax machines as needed and feasible						Maintenance Ops
Charge communications equipment and backup power supplies						All Maritime
Implement IT shut down and equipment elevation/relocation from White Fuel Building and Administration Building						All Maritime
Close and secure all buildings and empty container doors						IT
Complete electrical shut down of entire Conley Terminal and coordinate with utility and IT Department						Maintenance Ops
Suspend all but COTP approved operations when directed by COTP						Electrical
Inspect all pollution response equipment for post-flood deployment						IT
Begin evacuating and securing buildings and areas at risk of flooding						Maritime Ops
Turn on temporary pumps and leave running						Maritime Ops
Ensure that all facilities at risk of flooding are unoccupied and that all doors are securely closed; deploy remaining temporary barriers at egress routes; and perform final check of temporary barrier system						State Police
Raise Administration Building elevator cabs to second floor and disable further use						Security
Oversee the sheltering of essential employees and standby contractors						Maintenance Ops
						State Police
						Security

Pre-Flood: 72 Hours to 6 Hours

EI. > 16.5 ft. MLLW

TABLE B6 - FLOOD-RELATED ACTIONS AND TIMELINES FOR CONLEY TERMINAL

Activity	During Flood	Post-Flood					Responsible Party
		12 hours	24 hours	36 hours	48 hours	> 48 hours	
Monitor temporary pumps and refuel as needed and if safety conditions permit							Term Contractor Maintenance Ops
Re-staff entrance to Conley Terminal							State Police Security
Survey for injured persons and safety hazards							Maritime Ops State Police Security CP
Perform Initial condition assessment of facility post-flood and make recommendations for further assessments in Flood App, clean-ups or repairs							Maintenance Ops Term Contractor
Determine ownership of damaged containers and determine timeline for third party survey							Maritime Ops
Contact critical vendors for post flood response if needed							Maintenance Ops
Perform required cleanup and repair work prior to reenergizing electrical system and reoccupying buildings							Maintenance Ops Term Contractor
Return all vehicles, equipment, stock, tools, and materials to normal storage/operating locations							Maintenance Ops
Restart electrical systems and reoccupy buildings							Electrical
Return IT equipment to normal operating locations and re-connect and restart systems							IT
Remove, clean and repackage for storage temporary barriers, portable access stairs and pumps							Term Contractor
Transport and place into storage temporary barriers, portable access stairs, and pumps							Term Contractor
Prepare documentation on costs associated with flood for possible future disaster reimbursement							Maritime Finance

Post-Flood: 12 Hours to >48 Hours

EI. > 16.5 ft. MLLW

TABLE C1 - FLOOD-RELATED ACTIONS AND TIMELINES FOR FLYNN CRUISEPORT

Pre-Flood

APPENDIX 2

Activity	Pre-Flood					Responsible Party
	72 hours	48 hours	24 hours	12 hours	6 hours	
Monitor flood forecasts and distribute building/area flood risk information and checklists						CP MPA Comm Ctr.
Update Cruiseport status via website and distribution lists to Customs, Coast Guard, Cruiselines, Labor and employees. (Frequency of alerts TBD)						Maritime Ops
Establish the storm center at a safe location (Main Building or Boston Convention Center)						Security
Contact critical vendors for pre/post flood response						Maintenance Ops
Inventory hazardous materials and review storage locations						Maritime Ops
						Maritime (Safety)
Inventory and replenish emergency supplies, as needed: rope, plywood, masking tape, flashlights, batteries, cables, turnbuckles, jersey barriers, etc						Maintenance Ops
Inventory vehicles, equipment, and supplies on berths and in outdoor areas and develop relocation/elevation plan						Maintenance Ops
Inventory and test communications equipment (radios, phones, laptops, etc) and backup power supplies						All Maritime
Review electrical shut-down plan for entire Cruiseport and coordinate with utility						Electrical
Review staffing availability/schedule and contact information						All Maritime
Prepare accommodations for sheltering essential employees and standby contractors (beds, food, potable water, etc)						Security
Check and clear all catch basins and drains						Maintenance Ops
Remove missile hazards from area and secure inside the building: compressed gas tanks, barrels, flags, banners, outside furniture, cameras, antennas						Maintenance Ops
Test and fuel all pump systems, emergency lights, air compressors, and generators						Maintenance Ops
Fuel all vehicles and equipment						Maintenance Ops
Move all vehicles, forklifts, trucks, baskets, manual gangways, and BPP/gangway away from hazards and waters edge to higher ground or inside the building.						Maintenance Ops
Secure BPP/gangway by placing jersey barriers around each leg then strap down gangway to barriers						Maritime Ops
Remove all loose equipment and supplies from berths and outdoor areas and secure/elevate inside the building						Maintenance Ops
Remove hazardous materials from berths and outdoor areas and secure inside the building						Maritime Ops
						Maritime (Safety)
Implement electrical shut down of entire Cruiseport and coordinate with utility						Electrical
Terminate non-essential Cruiseport operations						Maritime Ops
Relocate communications equipment (radios, phones, laptops, etc) and backup power supplies to storm center						All Maritime
Suspend all but COTP-approved operations when directed by COTP						Maritime Ops
Inspect all pollution response equipment for post-flood deployment						Maintenance Ops
Ensure that all facilities are unoccupied and that all doors are securely closed						Maritime Ops
						State Police
						Security
Oversee the sheltering of essential employees and standby contractors						State Police
						Security

Pre-Flood: 72 Hours to 6 Hours

EI. < 16.5 ft. MLLW

TABLE C2 - FLOOD-RELATED ACTIONS AND TIMELINES FOR FLYNN CRUISEPORT

Activity	During Flood	Post-Flood					Responsible Party
		12 hours	24 hours	36 hours	48 hours	> 48 hours	
Re-staff Cruiseport							State Police
							Security
Survey for injured persons and safety hazards							Maintenance Ops
							State Police
							Security
Assess condition of facility post-flood and make recommendations in Flood App for priority cleanup and repairs							CP
							Maintenance Ops
							Term Contractor
Perform required cleanup and repair work prior to reenergizing electrical system and reoccupying buildings							Maintenance Ops
							Term Contractor
Return all vehicles, equipment, and supplies to normal storage/operating locations							Maintenance Ops
Restart electrical systems in coordination with utility and reoccupy buildings							Electrical
Contact critical vendors for post flood response if needed							Maintenance Ops

Post-Flood: 12 Hours to >48 Hours

EI. < 16.5 ft. MLLW

TABLE C3 - FLOOD-RELATED ACTIONS AND TIMELINES FOR FLYNN CRUISEPORT

Pre-Flood

APPENDIX 2

Activity	Pre-Flood					Responsible Party
	72 hours	48 hours	24 hours	12 hours	6 hours	
Monitor flood forecasts and distribute building/area flood risk information						CP
						MPA Comm Ctr.
Update Cruiseport status via website and distribution lists to Customs, Coast Guard, Cruiselines, Labor and employees. (Frequency of alerts TBD)						Maritime Ops
Establish the storm center at a safe location (Main Building or Boston Convention Center)						Security
Contact critical vendors for pre/post flood response						Maintenance Ops
Inventory hazardous materials and review storage locations						Maritime Ops
						CP
Inventory and replenish emergency supplies, as needed: rope, plywood, masking tape, flashlights, batteries, cables, turnbuckles, jersey barriers, etc.						Maintenance Ops
Inventory vehicles, equipment, and supplies on berths, in outdoor areas, and inside the building first level and develop relocation/elevation plan						Maintenance Ops
Inventory and test communications equipment (radios, phones, laptops, etc) and backup power supplies						All Maritime
Review electrical shut-down plan for entire Cruiseport and coordinate with utility						Electrical
Develop IT shut down and equipment elevation/relocation plan for Main Cruisport Building						Maritime Ops
						IT
						Maritime Ops
Back-up computer applications and files from local hard drives to MPA or third party network						Security
						IT
Review staffing availability/schedule and contact information						All Maritime
Prepare accommodations for sheltering essential employees and standby contractors (beds, food, potable water, etc)						Security
Check and clear all catch basins and drains						Maintenance Ops
Remove missile hazards from outdoor areas and building first level and secure/elevate: compressed gas tanks, barrels, flags, banners, outside furniture, cameras, antennas						Maintenance Ops
Retrieve portable pumps and stage for deployment in Main Terminal Building second level or above						Term Contractor
Test and fuel all pump systems, emergency lights, air compressors, and generators						Maintenance Ops
Fuel all vehicles and equipment						Maintenance Ops
Move all vehicles, forklifts, trucks, baskets, manual gangways, and BPP/gangway from the property to higher ground offsite . Note: inside building is not a safe storage location						Maintenance Ops
Secure BPP/gangway by placing jersey barriers around each leg then strap down gangway to barriers						Maritime Ops
Remove all loose equipment and supplies from berths, outdoor areas, and inside building first level and secure/elevate						Maintenance Ops
Remove hazardous materials from berths, outdoor areas, and inside building first level and secure/elevate						Maritime Ops
						CP
Terminate non-essential Cruiseport operations						Maritime Ops
Implement electrical shut down of entire Terminal and coordinate with utility						Electrical
Relocate communications equipment (radios, phones, laptops, etc) and backup power supplies to storm center						All Maritime
Move interior furnishings to second level or above if feasible						All Maritime
Implement IT shut down and equipment elevation/relocation from Main Cruiseport Building first level						IT
Suspend all but COTP approved operations when directed by COTP						Maritime Ops
Inspect all pollution response equipment for post-flood deployment						Maintenance Ops
Turn on temporary pumps and leave running						Maintenance Ops
Raise Main Terminal Building elevator cabs to second level or higher and disable further use						Maintenance Ops
						Maritime Ops
Ensure that all facilities are unoccupied and that all doors are securely closed						State Police
						Security
Oversee the sheltering of essential employees and standby contractors						Security

Pre-Flood: 72 Hours to 6 Hours

EI. ≥ 17.5 ft. MLLW

TABLE C4 - FLOOD-RELATED ACTIONS AND TIMELINES FOR FLYNN CRUISEPORT

Activity	During Flood	Post-Flood					Responsible Party
		12 hours	24 hours	36 hours	48 hours	> 48 hours	
Re-staff entrance to Terminal							State Police
							Security
Survey for injured persons and safety hazards							Maritime Ops
							State Police
							Security
Perform Initial condition assessment of facility post-flood and make recommendations for further assessments, clean-ups or repairs							CP
							Maintenance Ops
							Term Contractor
Contact critical vendors for post flood response if needed							Maintenance Ops
Perform required cleanup and repair work prior to reenergizing electrical system and reoccupying							Maintenance Ops
							Term Contractor
Return all vehicles, equipment, and supplies to normal storage/operating locations							Maintenance Ops
Restart electrical systems in coordination with utility and reoccupy buildings							Electrical
Return IT equipment to normal operating locations and re-connect and restart systems							IT
Prepare documentation on costs associated with flood for possible future disaster reimbursement							Maritime Finance

Post-Flood: 12 Hours to >48 Hours

EI. ≥ 17.5 ft. MLLW

TABLE D1 - FLOOD-RELATED ACTIONS AND TIMELINES FOR BOSTON FISH PIER

Pre-Flood

APPENDIX 2

Activity	Pre-Flood					Responsible Party
	72 hours	48 hours	24 hours	12 hours	6 hours	
Monitor flood forecasts and distribute building/area flood risk information and checklists						CP MPA Comm Ctr.
Update Fish Pier status via website and distribution lists to Coast Guard, tenants, Labor and employees. (Frequency of alerts TBD)						Maritime Ops
Notify tenants and moored vessels of forecasted flood risks and MPA actions/timelines, and their responsibilities						Maritime Ops
Establish the storm center at a safe location (Massport Offies or Boston Convention Center)						Security
Put term contractor on notice for deployment of temporary barriers at East Building Fire Pump Room, East and West Building Elevator Machine Rooms, West Building Electrical Rooms (north arch), and Guard House switch						CP
Put Term Contractors on notice for Pump repairs, fence repairs, door and window repairs, fender system and						CP
Inventory hazardous materials and review storage locations						Maritime Ops Maritime (Safety)
Inventory critical stock, equipment, tools, materials on grounds and in building first levels and develop relocation/elevation plan						Maintenance Ops
Inventory temporary barriers and portable access ladders and get ready for deployment at East Building Fire Pump Room, East and West Building Elevator Machine Rooms, West Building Electrical Rooms (north arch), and Guard House switch						CP Term Contractor
Review electrical shut-down plan for entire Fish Pier facility and coordinate with utility and IT Department						Electrical
Pump out all sewage and waste storage tanks on the Fish Pier.						Maintenance Ops Term Contractor
Inventory and test communications equipment (radios, phones, laptops, etc) and backup power supplies						All Maritime
Develop IT shut down plan for Fish Pier East data center						Maritime Ops IT Security
Back-up computer applications and files from local hard drives to MPA or third party network						All Maritime
Retrieve and transport temporary barriers and portable access stairs and stage for deployment at East Building Fire Pump Room, East and West Building Elevator Machine Rooms, West Building Electrical Rooms (north arch), and Guard House switch						Term Contractor
Remind tenants and moored vessels of evacuation timeline						State Police Security
Prepare accomodations for sheltering essential employees and standby contractors (beds, food, potable water, etc)						Security
Review staffing availability/schedule and contact information						All Maritime
Facility check of catch basins and drains						Maintenance Ops
Remove and store all potential debris, including: flags and banners, outside furniture, barrels, Antennas, Cameras, portable signs / remind tenants of same						Maintenance Ops
Deploy temporary barriers, portable access ladders, and portable pumps at East Building Fire Pump Room, East and West Building Elevator Machine Rooms, West Building Electrical Rooms (north arch), and Guard House switchr. Leave at least one set of panels/barriers at key entrances open to allow for egress into and out of areas until just before arrival of flood water.						Term Contractor
Fuel all vehicles, equipment, portable generators and chain saws. Fill spare fuel tanks.						Maintenance Ops
Move all vehicles, trucks and forklifts to higher ground (South Boston Waterfront Transportation Center or other designated elevated location)						Maintenance Ops
Complete relocation/elevation of critical stock, tools, equipment, and materials / Remind Tenants of same						Maintenance Ops Term Contractor
Raise and secure all loose equipment and supplies off first floors and secure all doors and other openings / Remind tenants of same						Maintenance Ops
Remove hazardous materials from berths, outdoor areas, and inside building first level and secure/elevate						Maritime Ops Maritime (Safety)
Load/ballast/secure storage tanks as necessary						Maintenance Ops
Terminate non-essential operations upon notice from the COTP						Maritime Ops
Charge communications equipment and backup power supplies						All Maritime

TABLE D1 - FLOOD-RELATED ACTIONS AND TIMELINES FOR BOSTON FISH PIER

Pre-Flood

APPENDIX 2

Activity	Pre-Flood					Responsible Party
	72 hours	48 hours	24 hours	12 hours	6 hours	
Order all remaining vessels to leave MPA berths						State Police
						Security
Begin electrical shut down for Fish Pier in coordination with IT Department and utility						Electrical
						IT
Excuse all non-essential personnel						Maritime Ops
						People and Culture
Complete electrical shut down of entire Fish Pier and coordinate with IT Department and utility						Electrical
Implement IT shut down						IT
Suspend all but COTP-approved operations when directed by COTP						Maritime Ops
Inspect all pollution response equipment for post-flood deployment						Maintenance Ops
Begin evacuating and securing buildings and areas at risk of flooding						Maritime Ops
						State Police
						Security
						Maritime (Safety)
Turn on temporary pumps and leave running						Maintenance Ops
Ensure that all facilities are unoccupied and that all doors are securely closed; deploy remaining temporary barriers at egress routes; and perform final check of temporary barrier system						Maritime Ops
						Term Contractor
Raise elevator cabs in East Building, West Building, and Exchange Center to second floor and disable further use						Maintenance Ops
Relocate Police vehicles to South Boston Waterfront Transportation Center or other approved elevated ground						State Police
						Security
Oversee the sheltering of essential employees and standby contractors						State Police
						Security

Pre-Flood: 72 Hours to 6 Hours

EI. ≥ 14.5 ft. MLLW

TABLE D2 - FLOOD-RELATED ACTIONS AND TIMELINES FOR BOSTON FISH PIER

Activity	During Flood	Post-Flood					Responsible Party
		12 hours	24 hours	36 hours	48 hours	> 48 hours	
Oversee the sheltering of essential employees and standby contractors						State Police	
						Security	
Monitor temporary pumps and refuel as needed and if safety conditions permit						Term Contractor	
Re-staff entrance to Fish Pier						State Police	
						Security	
Survey for injured persons and safety hazards						Maritime Ops	
						State Police	
						Security	
						Maintenance Ops	
Perform Initial condition assessment of facility post-flood and make recommendations in Flood App for further assessments, clean-ups or repairs						CP	
						Term Contractor	
Perform required cleanup and repair work prior to reenergizing electrical system and reoccupying buildings						Maintenance Ops	
						Term Contractor	
Restart electrical systems in coordination with utility and reoccupy buildings						Electrical	
Return all vehicles, equipment, stock, tools, and materials to normal storage/operating locations						Maintenance Ops	
Contact critical vendors for post flood response if needed						Maintenance Ops	
Restart IT systems						IT	
Remove, clean and repackage for storage temporary barriers and portable access ladders						Term Contractor	
Transport and place into storage temporary barriers and portable access ladders						Term Contractor	
Prepare documentation on costs associated with flood for possible future disaster reimbursement						Maritime Ops	
						Maritime Finance	
						People and Culture	

Post-Flood: 12 Hours to >48 Hours

EI. ≥ 14.5 ft. MLLW

TABLE E1 - FLOOD-RELATED ACTIONS AND TIMELINES FOR PIERS PARK SAILING CENTER BUILDING

Pre-Flood

APPENDIX 2

Activity	Pre-Flood					Responsible Party
	72 hours	48 hours	24 hours	12 hours	6 hours	
Monitor flood forecasts and distribute building/area flood risk information and checklists						CP
						MPA Comm Ctr.
Update Sailing Center Building status via website and distribution lists to tenants, labor and employees. (Frequency of alerts TBD)						Maritime Ops
Notify tenants of forecasted flood risks and MPA actions/timelines, and their responsibilities						Maritime Ops
Put Massport Maintenance staff on notice for deployment of temporary barriers at Sailing Center Building						CP
Inventory hazardous materials and review storage locations						Maritime Ops
						Maritime (Safety)
Inventory critical stock, equipment, tools, materials on grounds and in building and develop relocation/elevation plan						Maintenance Ops
Inventory temporary barriers and get ready for deployment at Sailing Center Building						Maintenance Ops
Review staffing availability/schedule and contact information						Maintenance Ops
Facility check of catch basins and drains						Maintenance Ops
Remove and store all potential debris, including: flags and banners, outside furniture, barrels, Antennas, Cameras, portable signs / remind tenants of same						Maintenance Ops
Deploy temporary barriers at Sailing Center Building. Leave at least one door accessible to allow for egress into and out of area until just before arrival of flood water.						Maintenance Ops
Fuel all vehicles, equipment, portable generators and chain saws. Fill spare fuel tanks.						Maintenance Ops
Move all vehicles, trucks and forklifts to higher ground (World Trade Center Blvd or other designated elevated location)						Maintenance Ops
Complete relocation/elevation of critical stock, tools, equipment, and materials / Remind Tenants of same						Maintenance Ops
Terminate non-essential operations upon notice from the COTP						Maritime Ops
Charge communications equipment and backup power supplies						All Maritime
Excuse all non-essential personnel						Maritime Ops
						People and Culture
Inspect all pollution response equipment for post-flood deployment						Maintenance Ops
Ensure that building is unoccupied and that all doors are securely closed; deploy remaining temporary barriers at egress routes; and perform final check of temporary barrier system						Maintenance Ops
Oversee the sheltering of essential employees and standby contractors						State Police
						Security

Pre-Flood: 72 Hours to 6 Hours

EI. ≥ 19.5 ft. MLLW

TABLE E2 - FLOOD-RELATED ACTIONS AND TIMELINES FOR PIERS PARK SAILING CENTER BUILDING

Activity	During Flood	Post-Flood					Responsible Party
		12 hours	24 hours	36 hours	48 hours	> 48 hours	
Oversee the sheltering of essential employees and standby contractors							State Police
							Security
Survey for injured persons and safety hazards							Maritime Ops
							State Police
Perform Initial condition assessment of Sailing Center Building post-flood and make recommendations in Flood App for further assessments, clean-ups or repairs							Security
							Maintenance Ops
Perform required cleanup and repair work prior to reoccupying buildings							CP
							Maintenance Ops
Contact critical vendors for post flood response if needed							Maintenance Ops
Remove, clean and re-store temporary barriers							Maintenance Ops
Prepare documentation on costs associated with flood for possible future disaster reimbursement and record in Flood App							Maintenance Ops
							Maritime Finance
							People and Culture

Post-Flood: 12 Hours to >48 Hours

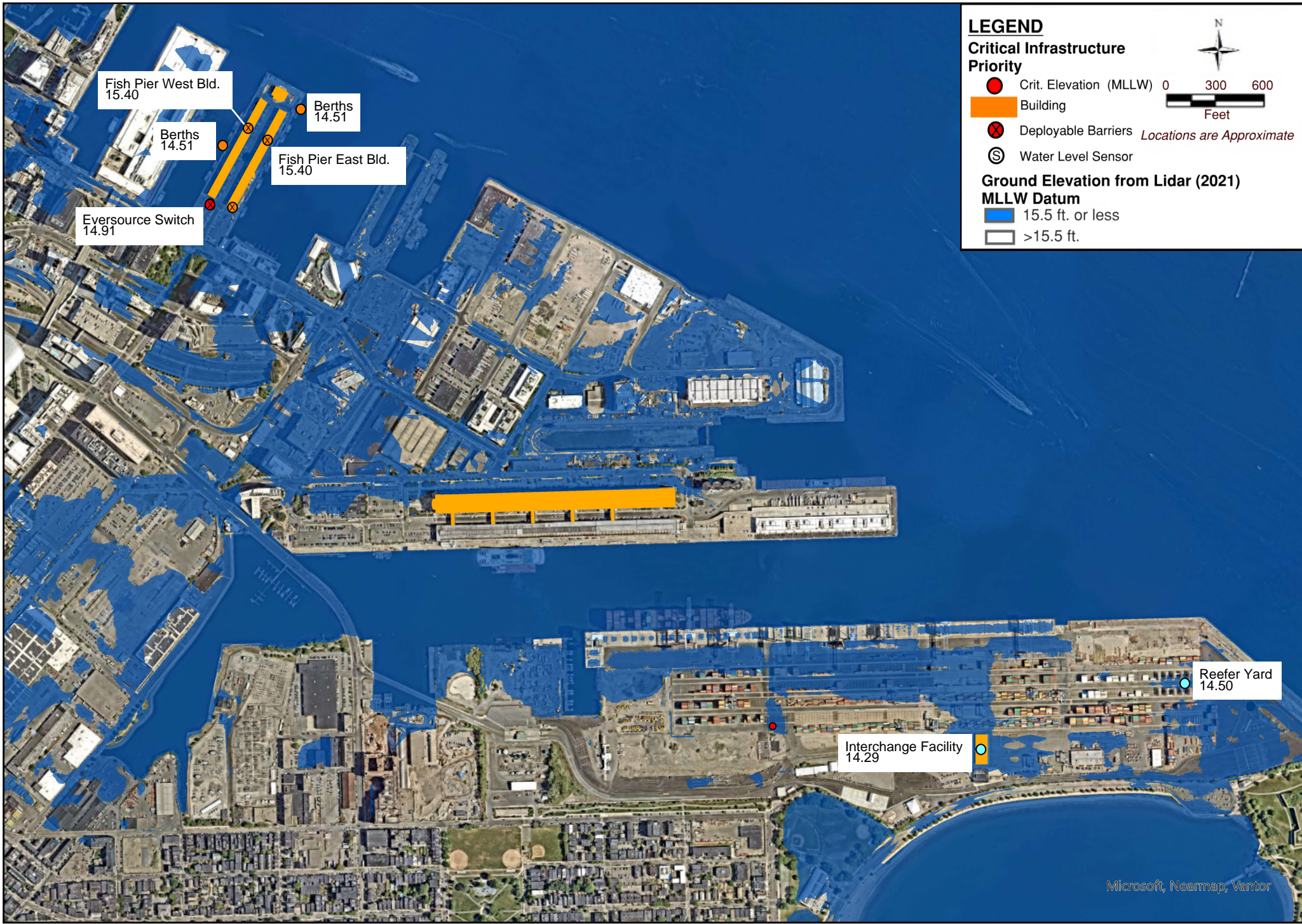
EI. ≥ 19.5 ft. MLLW

APPENDIX 2
Figure 1 - Maritime Facilities at Risk of Flooding below 14.5 MLLW



APPENDIX 2

Figure 2 - Maritime Facilities at Risk of Flooding below 15.5 MLLW



APPENDIX 2

Figure 3 - Maritime Facilities at Risk of Flooding below 16.5 MLLW



APPENDIX 2
Figure 4 - Maritime Facilities at Risk of Flooding below 17.5 MLLW



APPENDIX 2

Figure 5 - Maritime Facilities at Risk of Flooding below 18.5 MLLW



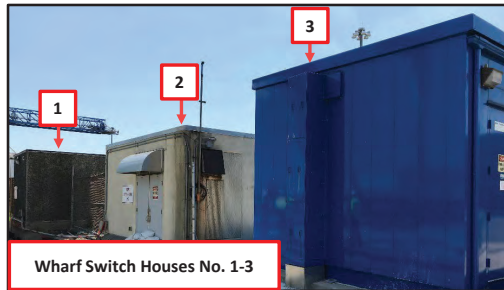
APPENDIX 3

Temporary Flood Barrier Equipment Storage and Installation Plans

- Conley Terminal – Wharf Switch Houses Nos. 1 – 3
- Conley Terminal - Fuel Island
- Fish Pier – Gate Switchgear
- Fish Pier – East and West Buildings:
 - Location A – East Building Fire Pump Room
 - Location B – East Building Elevator Room
 - Location C – West Building Eversource Room
 - Location D – West Building Eversource and MPA Electrical Rooms
 - Location E – West Building MPA Electrical Room
 - Location F – West Building Elevator Room
- Piers Park Sailing Center Building

CONLEY TERMINAL: WHARF SWITCH HOUSES 1, 2 & 3 AND MARINE OPERATIONS BUILDING

Address: 700 Summer St, Boston MA 02127



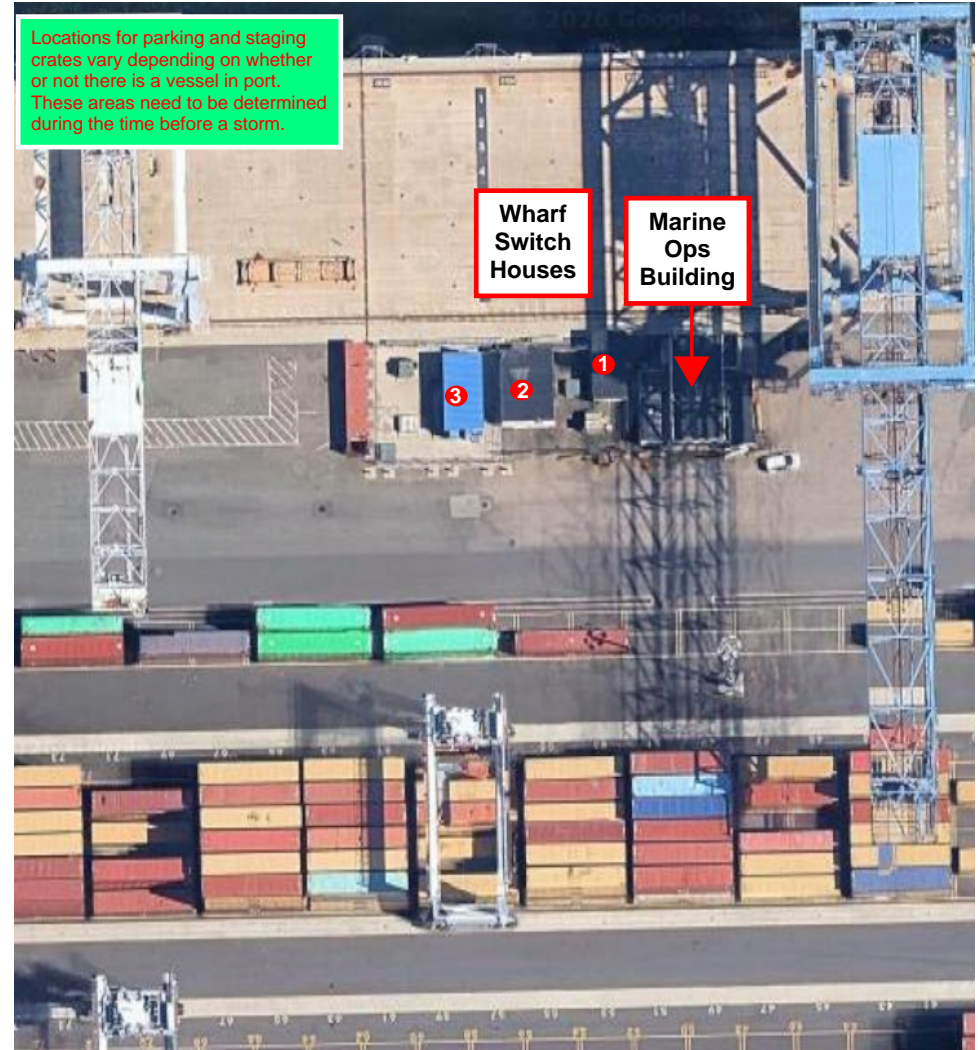
Elevation: 15.9 ft (MLLW*)

Priority: High

Estimated Deployment Time:** 9.18 hours

Flood Resiliency Inventory

Quantity	Type
10	Short Crate (~7'x4'x4') containing flood barriers
1	Portable crossover stair
2	2" trash pump
2	2" suction hose
2	2" discharge hose
2	2" screen
2	5-gallon metal gasoline can
TBD	Go-Box containing items such as anchor bolts, drill bit sockets, expanding foam, foam gasket material, replacement caps, chains and locks, specialty drill bits, extra nuts and bolts, etc.



Questions? Contact Kathleen Ledoux (Cell: 617-634-2253, Office: 617-568-3612, kledoux@massport.com)

*To convert MLLW to NAVD88, subtract 5.5.

**Assuming 4 person crew @ 60 LF per hr

CONLEY TERMINAL: FUEL ISLAND

Last Updated: August 26, 2019

(Underground Storage Tanks for Diesel and Gasoline)

Address: 700 Summer St, Boston MA 02127



Elevation: 16.2 ft (MLLW*)

Priority: Moderate

Estimated Deployment Time:** 1.13 hours

Flood Resiliency Inventory

Quantity	Type
1	Short Crate (~7'x4'x4') containing flood barriers
1	Portable crossover stair
1	2" suction hose
1	2" discharge hose
1	2" screen
1	5-gallon metal gasoline can
TBD	Go-Box containing items such as anchor bolts, drill bit sockets, expanding foam, foam gasket material, replacement caps, chains and locks, specialty drill bits, extra nuts and bolts, etc.



Questions? Contact Kathleen Ledoux (Cell: 617-634-2253, Office: 617-568-3612, kledoux@massport.com)

*To convert MLLW to NAVD88, subtract 5.5.

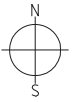
**Assuming 4 person crew @ 60 LF per hr

Notes:

- Gas pump pad
- AquaFence
- Pilings/bollards

1. Barrier CON-1 is anchored using 2" dia. concrete anchors.
NOTES

1. AquaFence panels and hardware stored in wooden crates at the 55 Haul Road building. Install anchors at all preset anchor locations.
2. Trash pumps, hoses, and screens stored at 55 Haul Road. Deliver 2 -3" trash pumps, 2 - 3" suction hoses, 2 - 3" discharge hoses, and 2 -3" screens. Locate pumps as shown on drawing.
3. Portable crossover stair stored at 55 Haul Road.



Crossover Stair

Trash Pumps

2) Connect a V1200-OC90-B, followed by 2x V1200-S.

1) Place a V1200-OC90-A, centered on the gas pump pad.

6) Continue by connecting a V1200-OC90-A, followed by a V1200-OC90-B, closing off the line.

5) Continue by connecting 2x V1200-S.

3) Continue by connecting a V1200-OC90-A, followed by a V1200-OC90-B.

Set 1 - 2" trash pump with 2" suction hose, 2" discharge hose, and 2" screen on stair landing.

Portable crossover stairway

V1200-OC90-A

V1200-OC90-B

V1200-OC90-A

V1200-OC90-B

4) Continue by connecting a V1200-OC90-A, followed by a V1200-OC90-B.

2x V1200-S

2x V1200-S

V1200-OC90-B

V1200-OC90-A

V1200-OC90-B

V1200-OC90-A

BARRIER CON-1

ANCHOR SCHEDULE	
CONCRETE ANCHOR	42 EA
ASPHALT PAVEMENT ANCHOR	0 EA

V1200-S	
V1200-OC90-A	
V1200-OC90-B	

REV. | DESCRIPTION: | BY: | 2/6/17

STATUS: ISSUED FCN 8



CLIENT: MASSPORT

ARCHITECT: KLEINFELDER

SITE: CONLEY TERMINAL FUEL ISLAND

TITLE: FLOOD BARRIER DEPLOYMENT PLAN

SCALE AT A1: 1:50 DATE: 2/6/2017 DRAWN: JDH CHECKED: NCB

PROJECT NO: A310-C1 DRAWING NO: FCN8-2 REVISION: v1

FISH PIER: GATE SWITCHGEAR

Last Updated: August 26, 2019

Address: 212 Northern Ave, Boston, MA 02210, USA
(adjacent to Guard House)



Elevation: 14.91 ft (MLLW*)

Priority: Moderate

Estimated Deployment Time:** 3.22 hours

Flood Resiliency Inventory

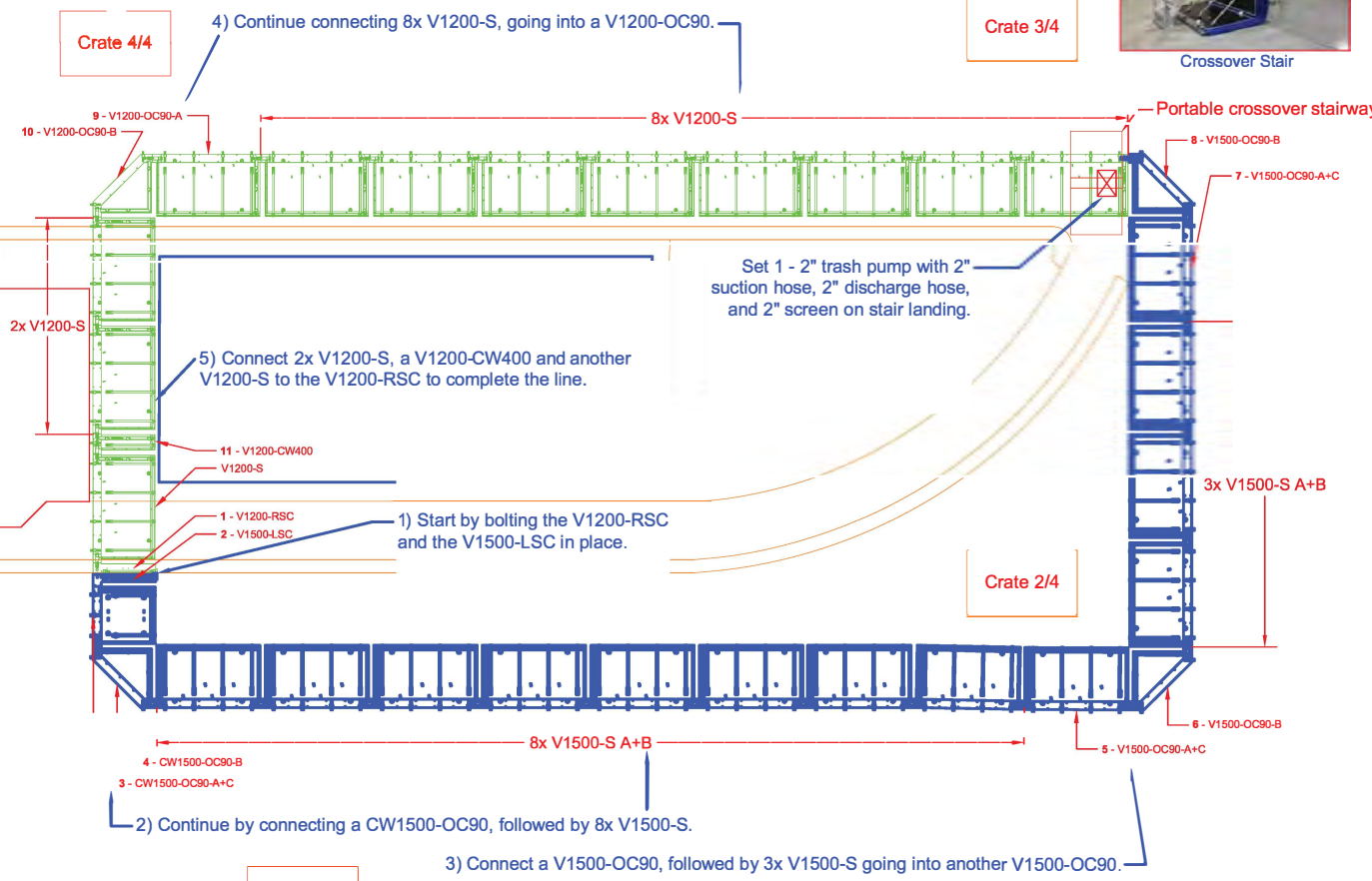
Quantity	Type
4	Short Crate (~7'x4'x4') containing flood barriers
1	Portable crossover stair
1	2" trash pump
1	2" suction hose
1	2" discharge hose
1	2" screen
1	5-gallon metal gasoline can
TBD	Go-Box containing items such as anchor bolts, drill bit sockets, expanding foam, foam gasket material, replacement caps, chains and locks, specialty drill bits, extra nuts and bolts, etc.

*To convert MLLW to NAVD88, subtract 5.5.

**Assuming 4 person crew @ 60 LF per hr



Questions? Contact Kathleen Ledoux (Cell: 617-634-2253, Office: 617-568-3612, kledoux@massport.com)



Crossover Stair

X
 3/4 inch bolted curb-climbing solution.
 Each bolt having a 500 LBS load requirement.
 3x bolts horizontally on each wall-connector.

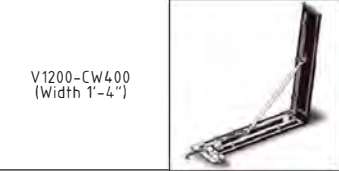
- Notes:
- Building perimeter
 - AQF 4 ft panels
 - AQF 5 ft panels
 - Sidewalk/Curb/Crate

- NOTES
1. Aquafence panels and hardware stored in wooden crates at Fish Pier. Install anchors at all preset anchor locations.
 2. Trash pumps, hoses, and screens stored at 55 Haul Road. Deliver 2 - 3" trash pumps, 2 - 3" suction hoses, 2 - 3" discharge hoses, and 2 - 3" screens. Locate pumps as shown on drawing
 3. Portable crossover stair stored at 55 Haul Road.

V1200-S	
V1500-S-A	
V1500-S-B	
V1200-RSC	
V1500-LSC	
V1200-OC90-A	
V1200-OC90-B V1500-OC90-B CW1500-OC90-B	



Trash Pumps



V1200-CW400
(Width 1'-4")

CW1500-OC90-A (Width 3'-11")		V1500-OC90-A	
CW1500-OC90-C (Width 3'-11")		V1500-OC90-C	

FINAL - APPROVED

Aqua Fence

MASSPORT

ARCHITECT: KLEINFELDER

FISH PIER GATE SWITCHGEAR

FLOOD BARRIER
DEPLOYMENT PLAN

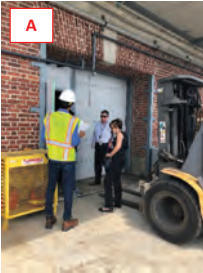
DATE:	DRAWN:	CHECKED:
03/01/2016	MD	MD

09 v4.121015 v4

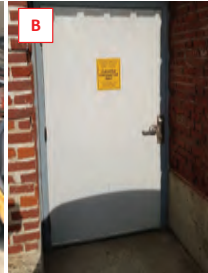
FISH PIER: EAST AND WEST BUILDING

Last Updated: August 26, 2019

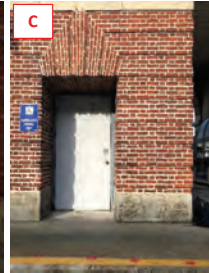
Address: 15 Fish Pier St E, Boston, MA 02210, USA



Fire Pump Room



East Elevator Room



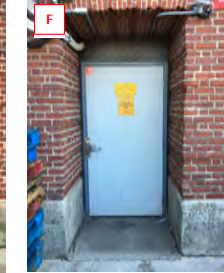
Eversource Room



Eversource & MPA Electrical



MPA Electrical



West Elevator Room

Elevation: 15.4 ft (MLLW*)

Priority: Moderate

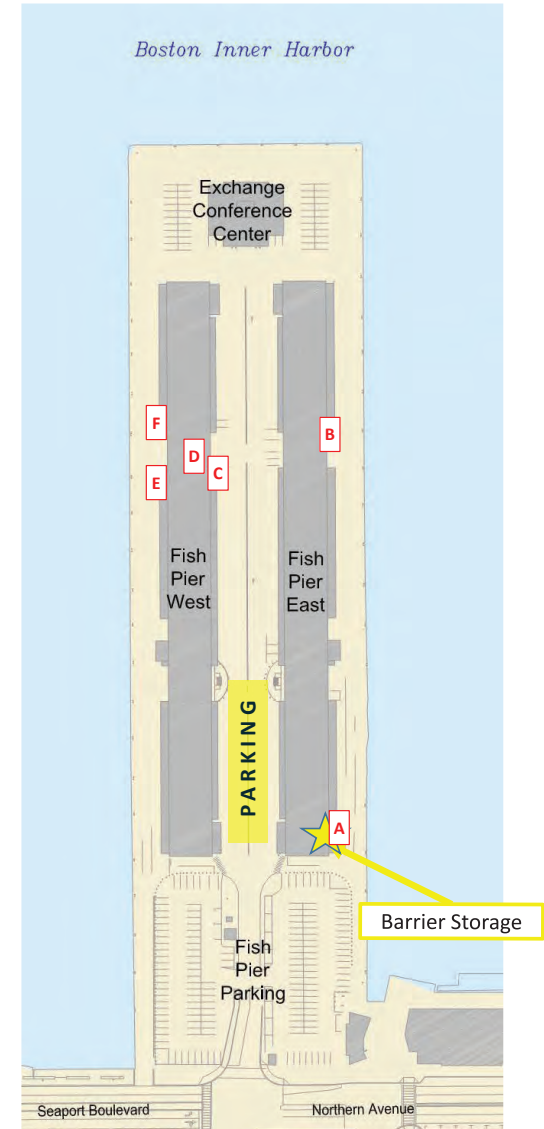
Estimated Deployment Time: 1 hour

Flood Resiliency Inventory

Quantity	Type
2	Boxes containing aluminum dams and posts
1	Portable crossover stair
1	2" trash pump
1	2" suction hose
1	2" discharge hose
1	2" screen
1	5-gallon metal gasoline can
TBD	Go-Box containing items such as anchor bolts, drill bit sockets, expanding foam, foam gasket material, replacement caps, chains and locks, specialty drill bits, extra nuts and bolts, etc.

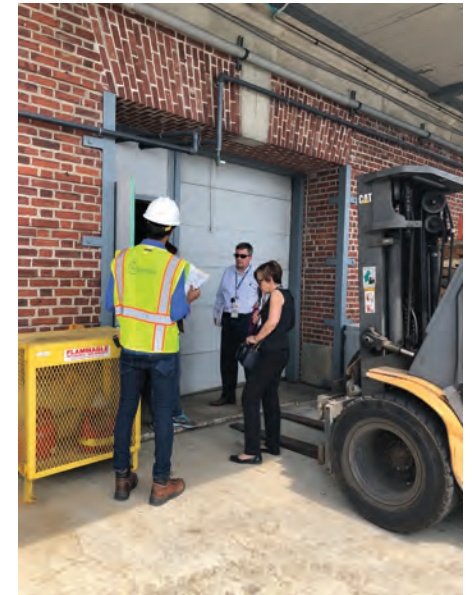
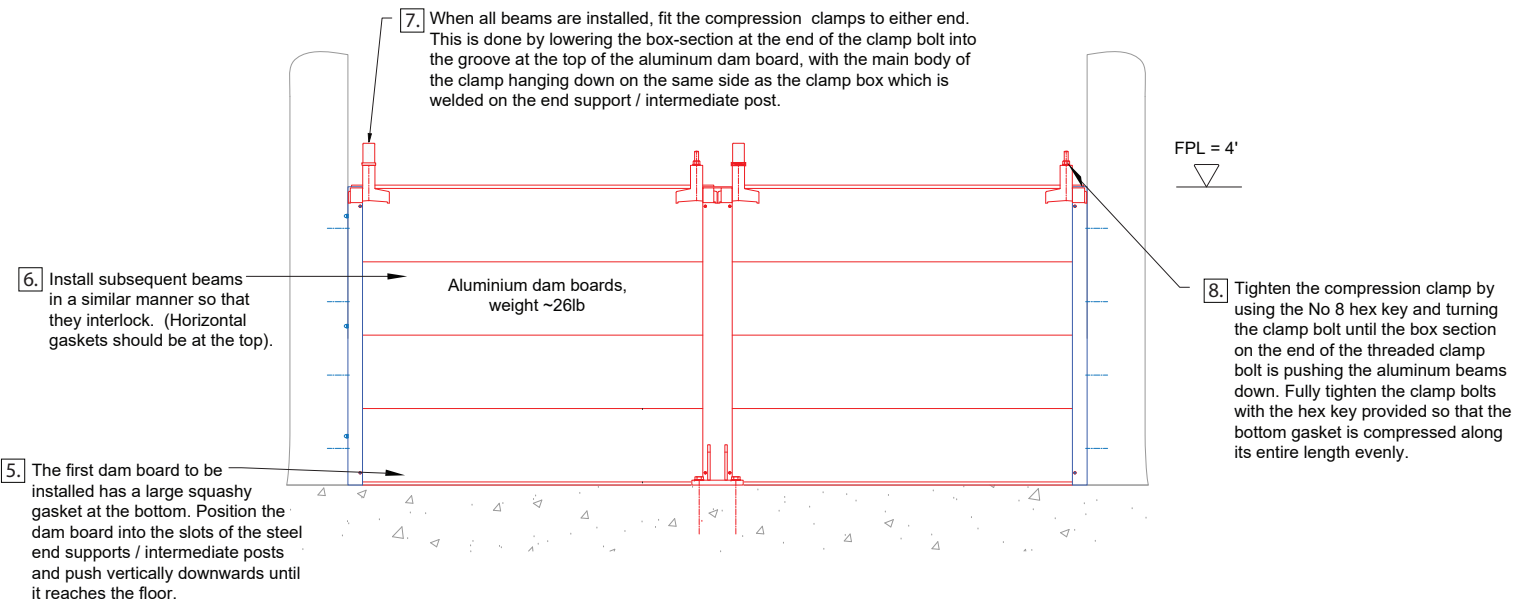
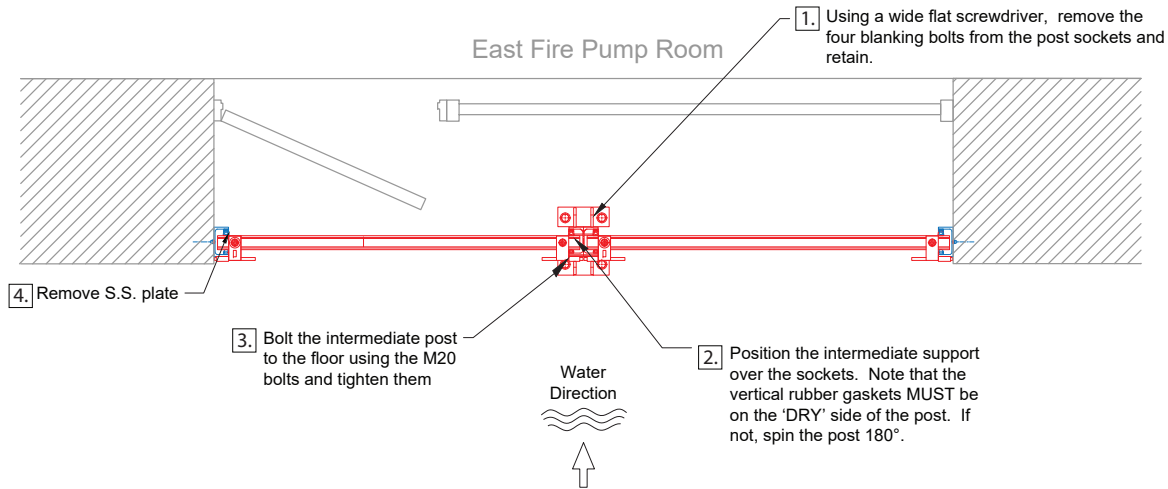
*To convert MLLW to NAVD88, subtract 5.5.

**Assuming 2 person crew



Questions? Contact Kathleen Ledoux (Cell: 617-634-2253, Office: 617-568-3612, kledoux@massport.com)

Location A:
East Building Fire Pump Room

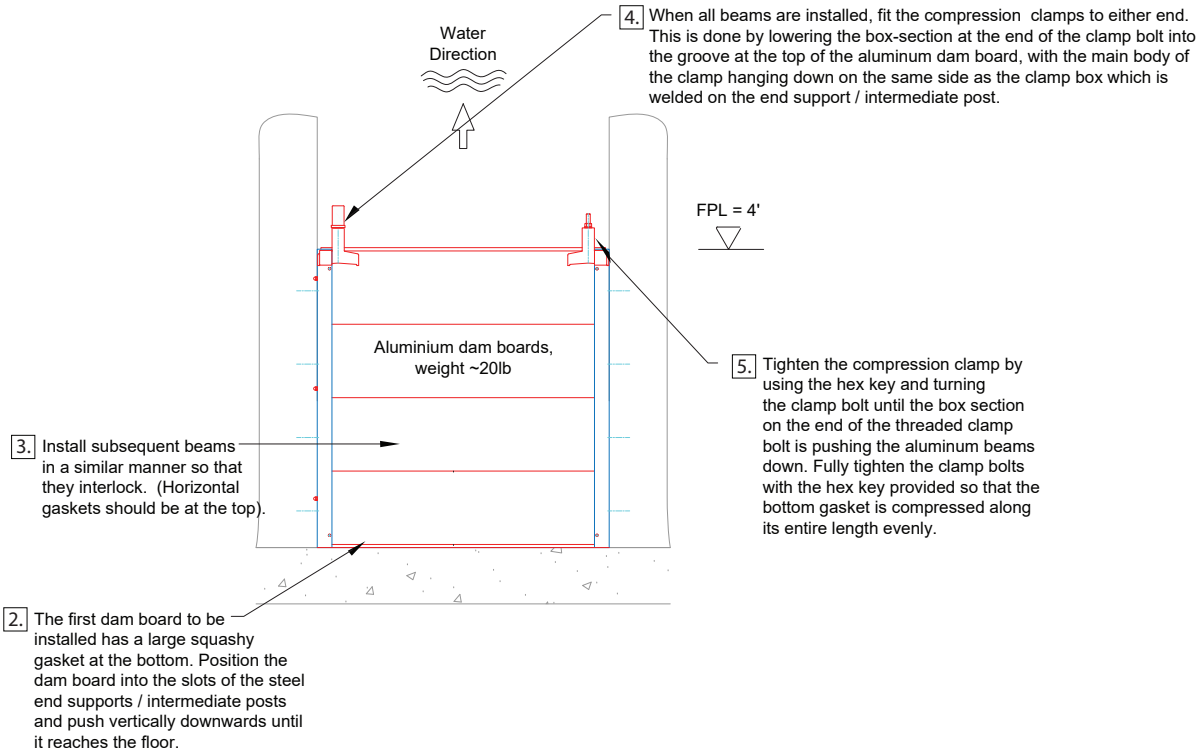
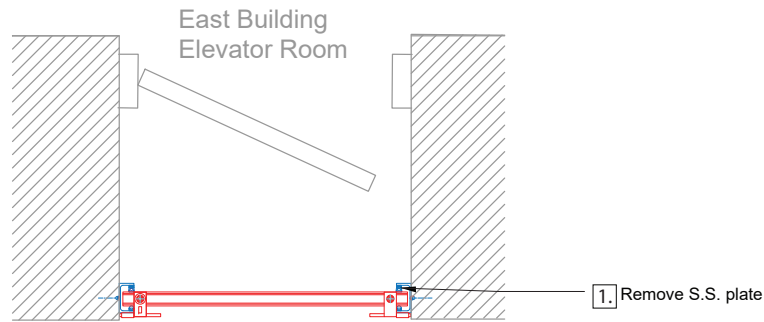


Deployed Parts Schedule	
Part	Qty.
4'-11 1/2" Aluminum Dam Boards	8
Intermediate Post	1
Locking Clamp	4

Part in place permanently

For Installation, follow steps 1-8. For removal, reverse steps.

Location B:
East Building Elevator Room

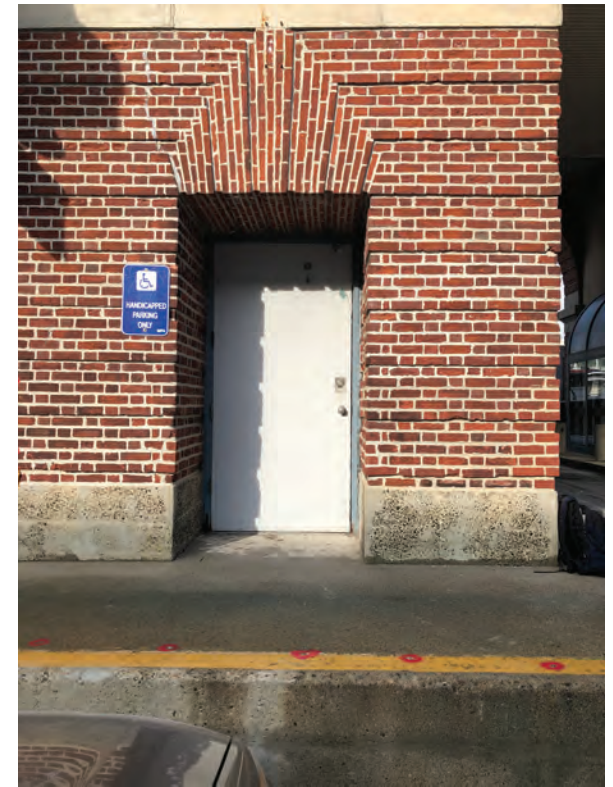
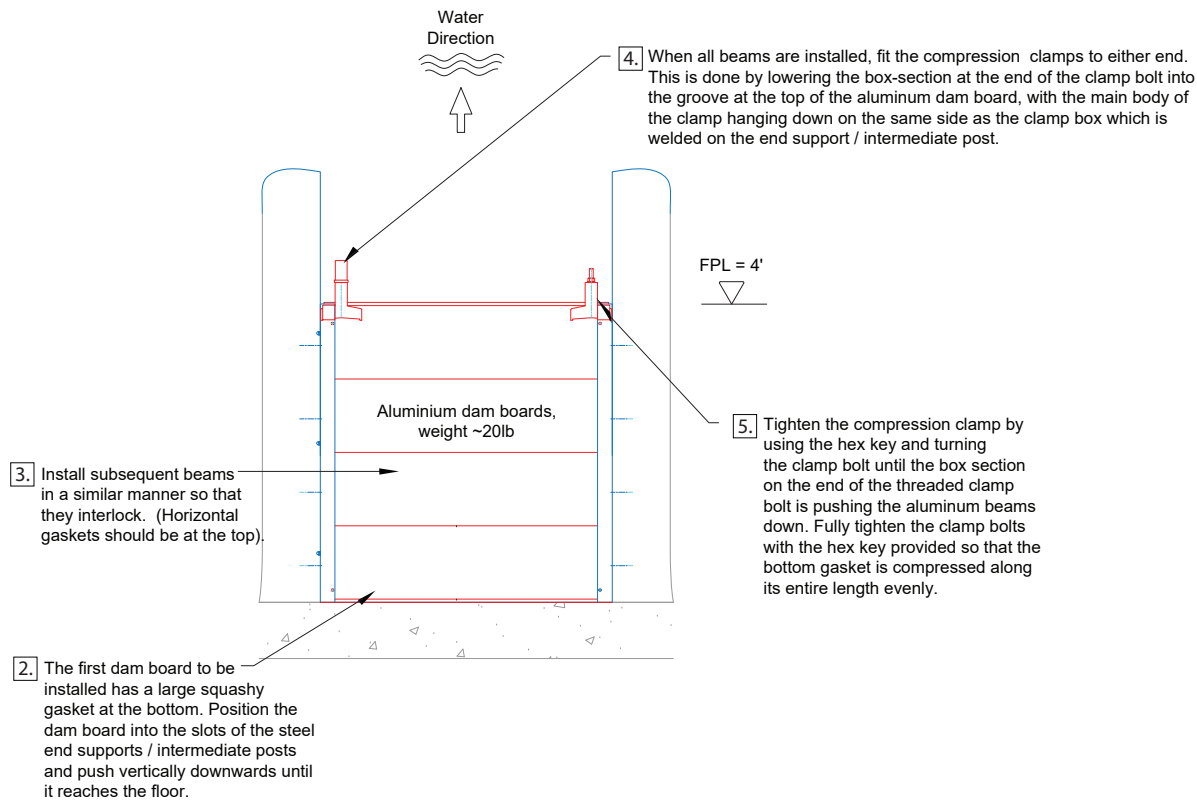
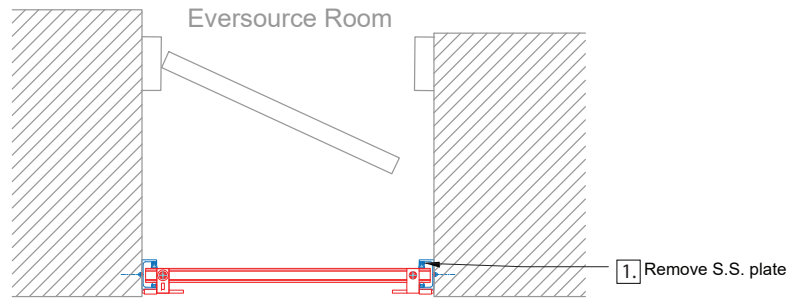


Deployed Parts Schedule	
Part	Qty.
3'-9 3/4" Aluminum Dam Boards	4
Intermediate Post	0
Locking Clamp	2

Part in place permanently

For Installation, follow steps 1-8. For removal, reverse steps.

Location C:
West Building Eversource Room

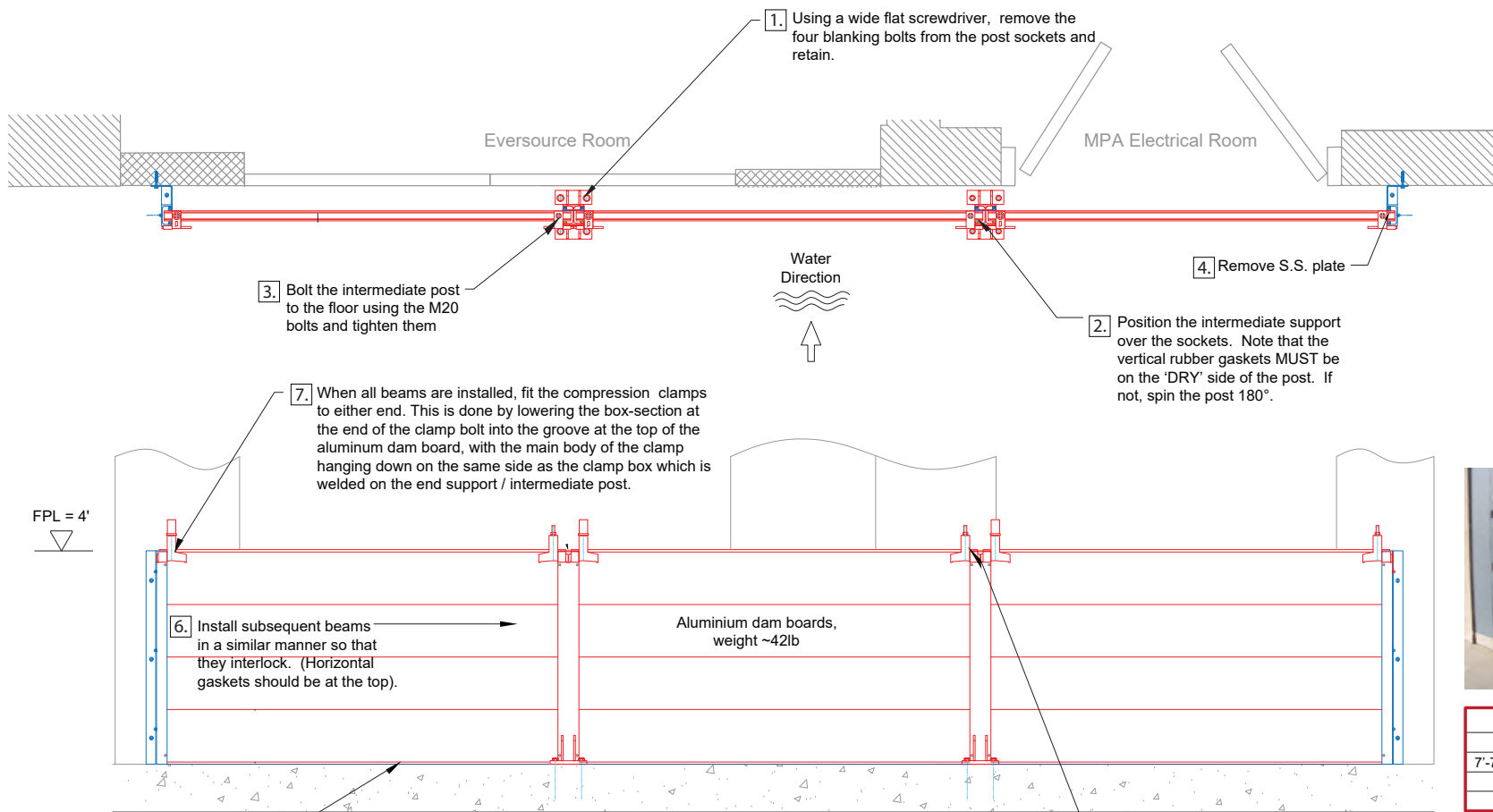


Deployed Parts Schedule	
Part	Qty.
3'-9 7/8" Aluminum Dam Boards	4
Intermediate Post	0
Locking Clamp	2

Part in place permanently

For Installation, follow steps 1-8. For removal, reverse steps.

West Building Eversource and MPA Electrical Rooms

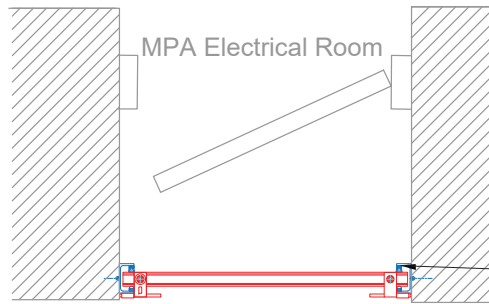


Deployed Parts Schedule	
Part	Qty.
7'-7 1/2" Aluminum Dam Boards	12
Intermediate Post	2
Locking Clamp	6

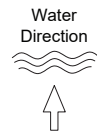
Part in place permanently

For Installation, follow steps 1-8. For removal, reverse steps.

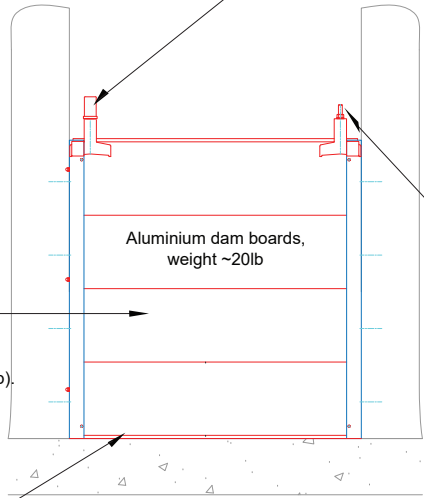
Location E:
West Building MPA Electrical Room



1. Remove S.S. plate



4. When all beams are installed, fit the compression clamps to either end. This is done by lowering the box-section at the end of the clamp bolt into the groove at the top of the aluminum dam board, with the main body of the clamp hanging down on the same side as the clamp box which is welded on the end support / intermediate post.



FPL = 4'

5. Tighten the compression clamp by using the hex key and turning the clamp bolt until the box section on the end of the threaded clamp bolt is pushing the aluminum beams down. Fully tighten the clamp bolts with the hex key provided so that the bottom gasket is compressed along its entire length evenly.

3. Install subsequent beams in a similar manner so that they interlock. (Horizontal gaskets should be at the top).

2. The first dam board to be installed has a large squashy gasket at the bottom. Position the dam board into the slots of the steel end supports / intermediate posts and push vertically downwards until it reaches the floor.

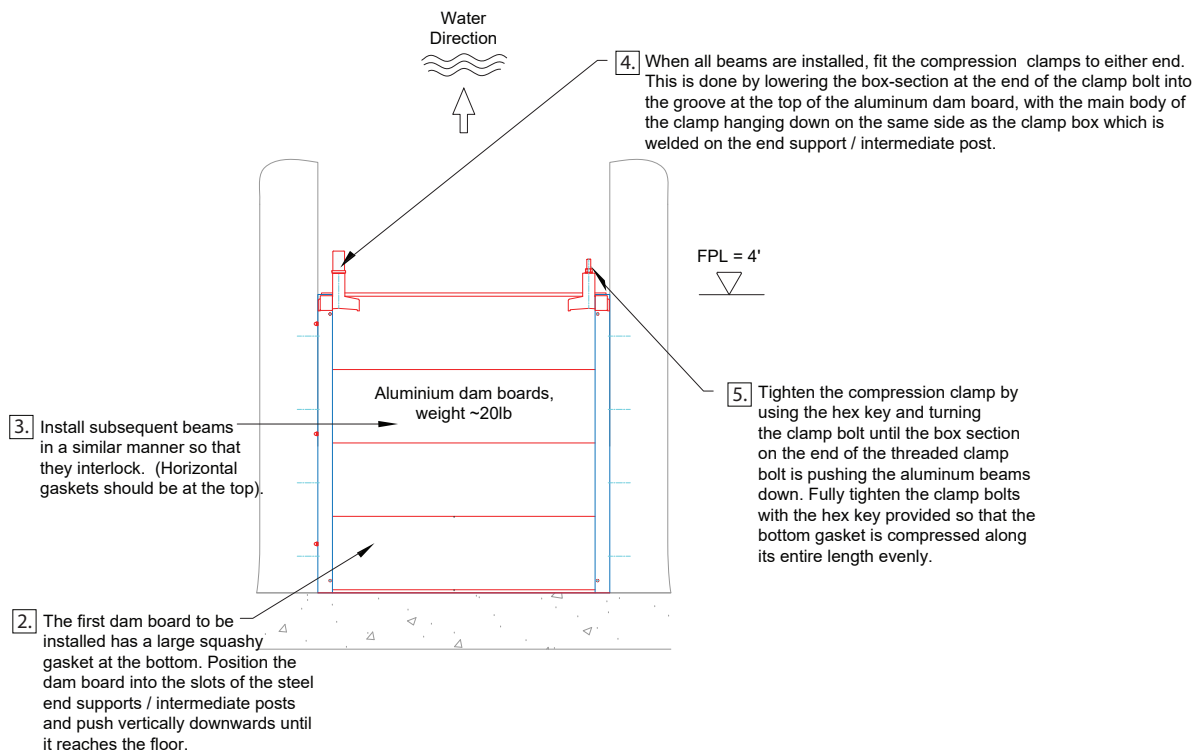
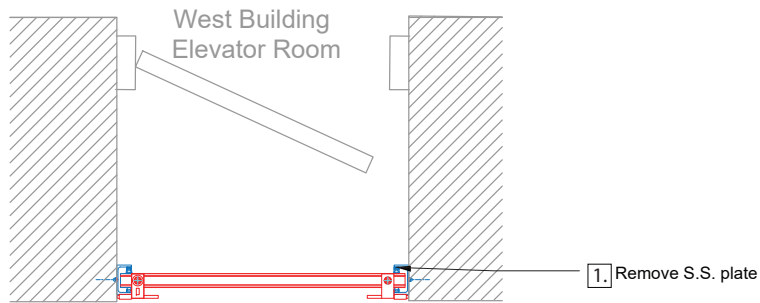


Deployed Parts Schedule	
Part	Qty.
4'-11 1/2" Aluminum Dam Boards	8
Intermediate Post	1
Locking Clamp	4

Part in place permanently

For Installation, follow steps 1-8. For removal, reverse steps.

Location F:
West Elevator Room Door at
Fish Pier



Deployed Parts Schedule	
Part	Qty.
3'-9 7/8" Aluminum Dam Boards	4
Intermediate Post	0
Locking Clamp	2

Part in place permanently

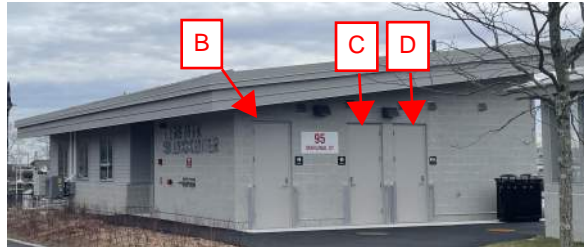
For Installation, follow steps 1-8. For removal, reverse steps.

PIERS PARK: SAILING CENTER

Address: 95 Marginal St, Boston, MA 02110, USA



Pavilion



Toilet Room Toilet Room ADA Toilet Room



North Entry



South Entry



East Entry

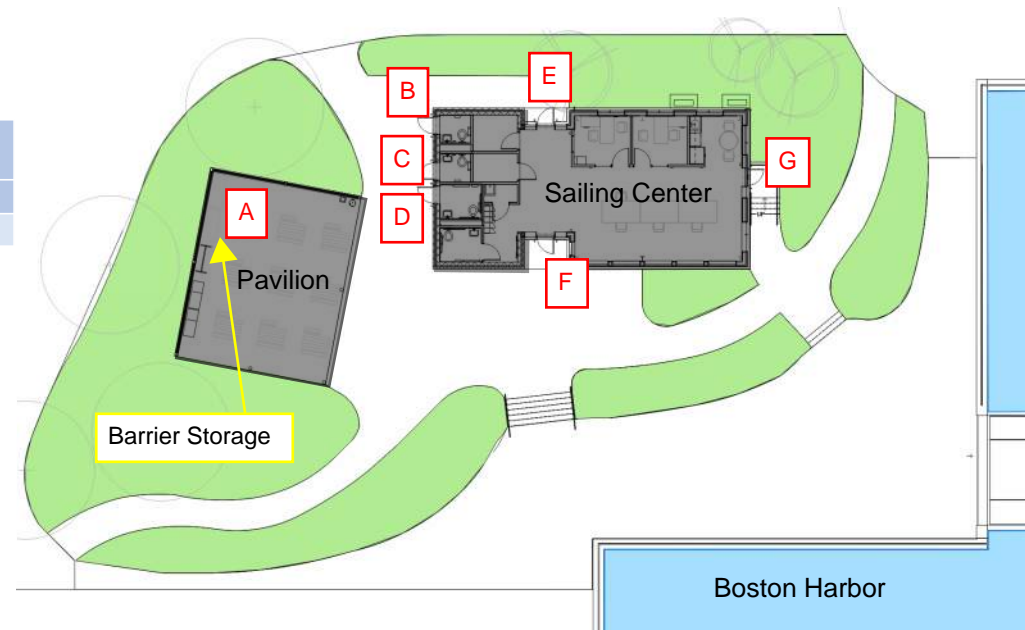
Elevation: 22.5 MLLW (17.0 NAVD88)

Priority: Moderate

Estimated Deployment Time: 3 hours**

Flood Resiliency Inventory

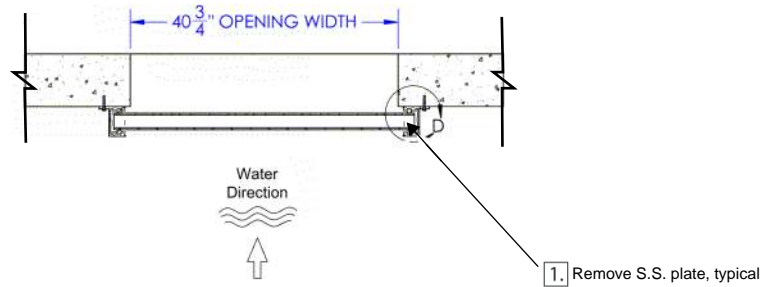
Quantity	Type
2	Boxes containing aluminum dams and posts



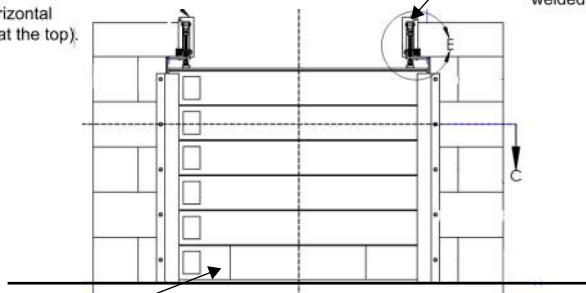
**Assuming 2 person crew

Questions? Contact Kathleen Ledoux (Cell:617-634-2253)
Office: 617-568-3612, kledoux@massport.com

Location B:
Toilet Room



3. Install subsequent beams in a similar manner so that they interlock. (Horizontal gaskets should be at the top).



2. The first dam board to be installed has a large squashy gasket at the bottom. Position the dam board into the slots of the steel end supports / intermediate posts and push vertically downwards until it reaches the floor.

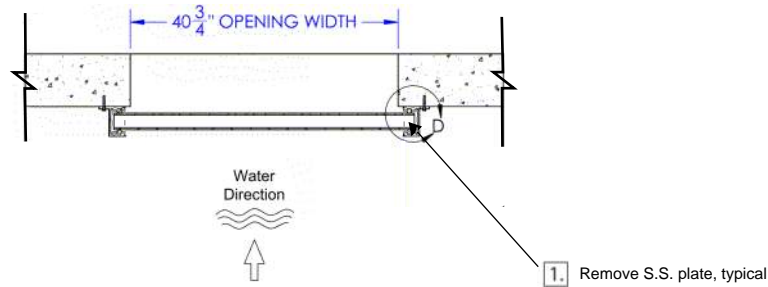
4. When all beams are installed, fit the compression clamps to either end. This is done by lowering the box-section at the end of the clamp bolt into the groove at the top of the aluminum dam board, with the main body of the clamp hanging down on the same side as the clamp box which is welded on the end support / intermediate post.

5. Tighten the compression clamp by using the hex key and turning the clamp bolt until the box section on the end of the threaded clamp bolt is pushing the aluminum beams down. Fully tighten the clamp bolts with the hex key provided so that the bottom gasket is compressed along its entire length evenly.

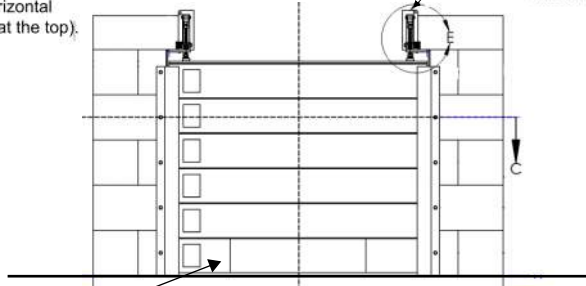
Deployed Parts Schedule	
Part	Qty.
45 3/4" Aluminum Dam Boards	6
Locking Clamp	2

For Installation, follow steps 1-5. For removal, reverse steps.

Location C:
Toilet Room



3. Install subsequent beams in a similar manner so that they interlock. (Horizontal gaskets should be at the top).



4. When all beams are installed, fit the compression clamps to either end. This is done by lowering the box-section at the end of the clamp bolt into the groove at the top of the aluminum dam board, with the main body of the clamp hanging down on the same side as the clamp box which is welded on the end support / intermediate post.

5. Tighten the compression clamp by using the hex key and turning the clamp bolt until the box section on the end of the threaded clamp bolt is pushing the aluminum beams down. Fully tighten the clamp bolts with the hex key provided so that the bottom gasket is compressed along its entire length evenly.

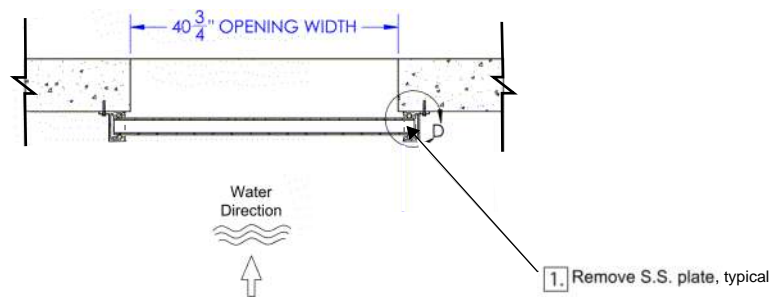
2. The first dam board to be installed has a large squashy gasket at the bottom. Position the dam board into the slots of the steel end supports / intermediate posts and push vertically downwards until it reaches the floor.

Deployed Parts Schedule	
Part	Qty.
45 3/4" Aluminum Dam Boards	6
Locking Clamp	2

For Installation, follow steps 1-5. For removal, reverse steps.

Location D:

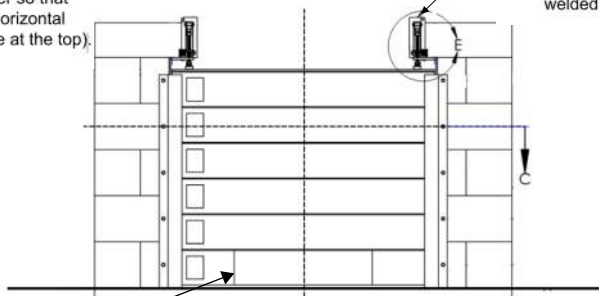
ADA Toilet Room



1. Remove S.S. plate, typical



3. Install subsequent beams in a similar manner so that they interlock. (Horizontal gaskets should be at the top).



2. The first dam board to be installed has a large squashy gasket at the bottom. Position the dam board into the slots of the steel end supports / intermediate posts and push vertically downwards until it reaches the floor.

4. When all beams are installed, fit the compression clamps to either end. This is done by lowering the box-section at the end of the clamp bolt into the groove at the top of the aluminum dam board, with the main body of the clamp hanging down on the same side as the clamp box which is welded on the end support / intermediate post.

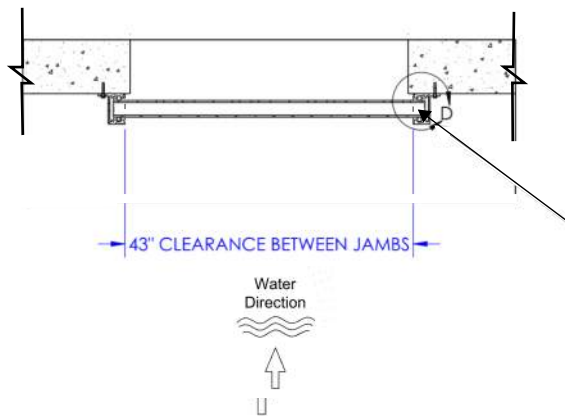
5. Tighten the compression clamp by using the hex key and turning the clamp bolt until the box section on the end of the threaded clamp bolt is pushing the aluminum beams down. Fully tighten the clamp bolts with the hex key provided so that the bottom gasket is compressed along its entire length evenly.

Deployed Parts Schedule	
Part	Qty.
45 3/4" Aluminum Dam Boards	6
Locking Clamp	2

For Installation, follow steps 1-5. For removal, reverse steps.

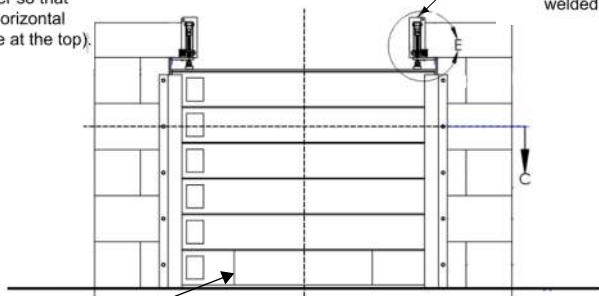
Location E:

North entry door



1. Remove S.S. plate, typical

3. Install subsequent beams in a similar manner so that they interlock. (Horizontal gaskets should be at the top).



4. When all beams are installed, fit the compression clamps to either end. This is done by lowering the box-section at the end of the clamp bolt into the groove at the top of the aluminum dam board, with the main body of the clamp hanging down on the same side as the clamp box which is welded on the end support / intermediate post.

5. Tighten the compression clamp by using the hex key and turning the clamp bolt until the box section on the end of the threaded clamp bolt is pushing the aluminum beams down. Fully tighten the clamp bolts with the hex key provided so that the bottom gasket is compressed along its entire length evenly.

2. The first dam board to be installed has a large squashy gasket at the bottom. Position the dam board into the slots of the steel end supports / intermediate posts and push vertically downwards until it reaches the floor.

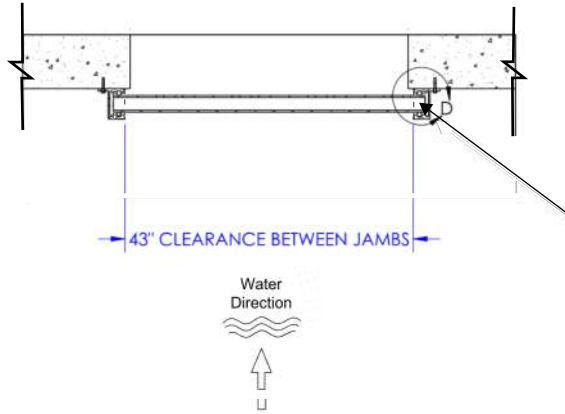
Deployed Parts Schedule

Part	Qty.
46 1/2" Aluminum Dam Boards	6
Locking Clamp	2

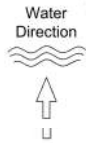
For Installation, follow steps 1-5. For removal, reverse steps.

Location F:

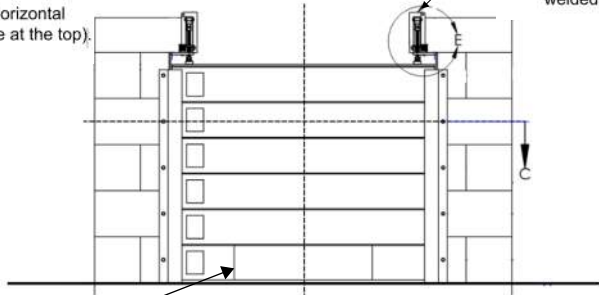
South entry door



1. Remove S.S. plate, typical



3. Install subsequent beams in a similar manner so that they interlock. (Horizontal gaskets should be at the top).



4. When all beams are installed, fit the compression clamps to either end. This is done by lowering the box-section at the end of the clamp bolt into the groove at the top of the aluminum dam board, with the main body of the clamp hanging down on the same side as the clamp box which is welded on the end support / intermediate post.

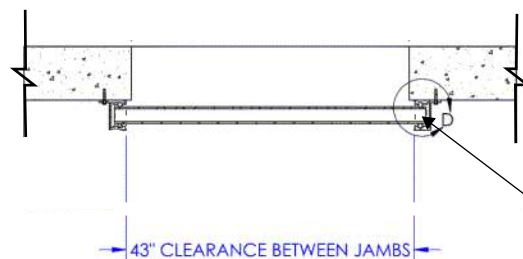
5. Tighten the compression clamp by using the hex key and turning the clamp bolt until the box section on the end of the threaded clamp bolt is pushing the aluminum beams down. Fully tighten the clamp bolts with the hex key provided so that the bottom gasket is compressed along its entire length evenly.

2. The first dam board to be installed has a large squashy gasket at the bottom. Position the dam board into the slots of the steel end supports / intermediate posts and push vertically downwards until it reaches the floor.

Deployed Parts Schedule		
Part		Qty.
46 1/2"	Aluminum Dam Boards	6
	Locking Clamp	2

For Installation, follow steps 1-5. For removal, reverse steps.

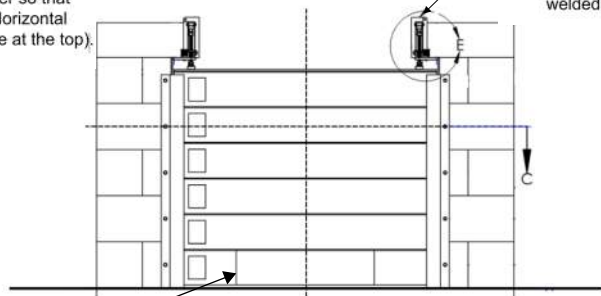
Location G:
East entry door



1. Remove S.S. plate, typical



3. Install subsequent beams in a similar manner so that they interlock. (Horizontal gaskets should be at the top).



4. When all beams are installed, fit the compression clamps to either end. This is done by lowering the box-section at the end of the clamp bolt into the groove at the top of the aluminum dam board, with the main body of the clamp hanging down on the same side as the clamp box which is welded on the end support / intermediate post.

5. Tighten the compression clamp by using the hex key and turning the clamp bolt until the box section on the end of the threaded clamp bolt is pushing the aluminum beams down. Fully tighten the clamp bolts with the hex key provided so that the bottom gasket is compressed along its entire length evenly.

2. The first dam board to be installed has a large squashy gasket at the bottom. Position the dam board into the slots of the steel end supports / intermediate posts and push vertically downwards until it reaches the floor.

Deployed Parts Schedule	
Part	Qty.
46 1/2" Aluminum Dam Boards	6
Locking Clamp	2

For Installation, follow steps 1-5. For removal, reverse steps.