



Marine Biological Laboratory



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## **Severe Weather Preparedness Plan**

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# 1 INTRODUCTION

## 1.1 PURPOSE

The MBL Severe Weather Preparedness Plan establishes procedures for the Incident Management Team (IMT) and other key personnel in the event of a tropical storm, hurricane, or other severe weather event that may affect the MBL campus in Woods Hole.

This Plan is a component of the MBL Emergency Management Plan (EMP), which describes the overall management structure and communications processes that are employed by the MBL in any emergency situation.

The objectives of this Severe Weather Preparedness Plan are to:

1. Reduce risk to personal safety through awareness, early decision-making, and advance preparation;
2. Minimize, to the extent possible, loss or damage to property and research assets, and;
3. Position the MBL for rapid recovery and resumption of its core mission.

## 1.2 SCOPE

This Plan is intended to provide a framework for a coordinated response to a severe weather event emergency affecting the MBL. It outlines the roles and responsibilities of various groups and organizations within the MBL.

MBL Research Centers and other departments also have detailed storm emergency plans, which are considered to be an integral part of this Plan and further defined in Section 2.2.

## 1.3 DEFINITIONS

The following terms and references are included in this Plan:

*Incident Action Plan* - A formal work plan created by the Incident Management Team that reflects the overall strategy and detailed management actions for leading the MBL response to any incident. In the case of a severe weather event, the Incident Action Plan is established and subsequently updated over the course of the storm and recovery period, and includes specific steps to be taken, identification and deployment of resources, and assignments to individuals and supporting departments.

*Tropical Storm Watch* - An announcement by the National Weather Service that sustained winds of 39 to 73 mph are possible within 48 hours, in association with a tropical, subtropical, or post-tropical cyclone.

*Tropical Storm Warning* - An announcement by the National Weather Service that sustained winds of 39 to 73 mph are expected within 36 hours, in association with a tropical, subtropical, or post-tropical cyclone.

*Hurricane Watch* - An announcement by the National Weather Service that sustained winds of 74 mph or higher are possible within 48 hours, in association with a tropical, subtropical, or post-tropical cyclone.

*Hurricane Warning* - An announcement by the National Weather Service that sustained winds of 74 mph or higher are expected within 36 hours, in association with a tropical, subtropical, or post-tropical cyclone.

*Blizzard Watch* - An announcement by the National Weather Service that sustained winds of 35 mph or higher are possible within 48 hours, considerable falling, and/or blowing snow reducing visibility to 0.25 miles or less for a period of three hours or more.

*Blizzard Warning* - An announcement by the National Weather Service that sustained winds of 35 mph or higher are expected within 36 -12 hours, considerable falling, and/or blowing snow reducing visibility to 0.25 miles or less for a period of three hours or more.

*Tornado Watch* - An announcement by the National Weather Service is issued when severe thunderstorms and tornadoes are possible in and near the watch area. It does not mean that they will occur. It only means they are possible. Conditions may include winds of 58 mph or higher and/or hail 1 inch in diameter or larger.

*Tornado Warning* - An announcement by the National Weather Service is issued when a tornado is imminent. When a tornado warning is issued, seek safe shelter immediately.

*Severe Thunderstorm Warnings/Microburst* - An announcement by the National Weather Service is issued when a Severe Thunderstorm Warnings/Microburst is imminent. When a warning is issued, seek safe shelter immediately.

*MBLAlert* - The MBL high speed, automated emergency notification system. In an emergency that requires immediate information to the community, MBLAlert will be used to send every individual registered in the MBL One Card system short messages via email, text, and/or voice.

## 2 GENERAL INFORMATION

### 2.1 ROLES AND RESPONSIBILITIES

#### *Incident Management Team*

As outlined in the *MBL Emergency Management Plan*, the **Incident Management Team** (IMT) will have primary responsibility for direction of MBL operations in the event of a tropical storm or hurricane. The IMT will coordinate all activities with other MBL departments and Centers and the University of Chicago in accordance with this Plan and associated procedures.

#### *MBL Operational Support Teams*

In addition to specific functions outlined in emergency procedures by the Centers and other departments, the following teams will be established by the IMT to provide MBL-wide support:

##### *Emergency Response Team (ERT)*

The ERT is responsible for the physical preparation of campus facilities in advance of a storm, providing essential staff as necessary during a storm, conducting damage assessment immediately following a storm, and coordinating recovery operations. The ERT includes staff from Plant Operations and Maintenance (POM), Transportation, Housing, Environmental Health and Safety, Animal Care, and any other functional areas identified by the IMT. The ERT is organized and led by the Director of Facilities and Services.

##### *Business Continuity Team (BCT)*

The BCT is responsible for the protection and continued functioning of all essential financial, human resources, and other vital business systems of the MBL. The BCT includes staff from Finance, Human Resources, Research Administration, and Information Technology. The BCT is organized and led jointly by the Directors of Finance and Human Resources.

## 2.2 DEPARTMENTAL SEVERE WEATHER EMERGENCY PLANS

Each MBL Department, Program, and Center is expected to prepare and maintain detailed operational plans and procedures for responding to a severe weather event. A list of related supporting plans is included in Appendix A.

Departmental plans should establish specific actions that will:

- Coordinate functions with the MBL Emergency Management Plan;
- Identify departmental leaders and decision-making processes;
- Secure vital assets at the unit level;
- Establish local teams for preparation, response, and recovery;
- Enable effective internal communications at all times;
- Maintain up-to-date contact information; and
- Support damage assessment and recovery.

**Most importantly, all departmental plans must identify dependencies for critical resources and expected support from other units of the MBL.**

All departmental plans shall be updated and forwarded to the IMT annually. The IMT will review all plans and coordinate implementation with each department and research center.

## 2.3 COORDINATION OF COMMUNICATION

The IMT will be responsible for the coordination and distribution of official MBL information, including guidance in advance of a storm, policy decisions and instructions regarding specific actions such as closure, evacuation, and resumption of MBL functions.

All staff, visiting researchers, guests, and students are expected to be familiar with MBL communication channels, and expect announcements and direction from the IMT and individual departments. Methods of communication will include:

- **Urgent** messages distributed through *MBL Alert*, and *MBL App*
- Updates through the *MBL Intranet*, and social media (Facebook and Twitter);
- Postings on the MBL emergency web page ([emergency.mbl.edu](http://emergency.mbl.edu)), and on-campus digital displays.

# 3 PREPARATION

## 3.1 WEATHER AND EMERGENCY ADVISORIES

It is the responsibility of the Director of Facilities and Services to monitor long range weather forecasts for the MBL and to advise the MBL Emergency Policy Group (EPG) and the IMT when a potentially deteriorating weather situation may impact the MBL.

The MBL will rely on official weather information from the National Weather Service and the National Hurricane Center ([www.nhc.noaa.gov](http://www.nhc.noaa.gov)) as the primary source of official information for long range forecasts. For local weather updates and alerts, the MBL will also rely on regional sources and public media outlets.

The IMT will also maintain direct communication with the Falmouth Local Emergency and Barnstable County Regional Emergency Planning Committees ([www.bcrepc.org](http://www.bcrepc.org)) and participate in any conference calls initiated by these agencies.

### **3.2 COORDINATION OF STORM PREPARATIONS**

The IMT is responsible for directing storm preparations in a manner that is proportional to the timing and anticipated impact of the storm on the MBL campus. In general, key timelines and major decision points are described below. These stages must be considered flexible and take into account factors such as the rate of advancement of a storm, weekends, campus activity level, scheduled events, or other significant vulnerabilities. For a Tornado Watch/Warning or a Microburst there is limited warning, these events require quick actions for notification and sheltering.

#### **Tropical Storm /Hurricane Scenario**

##### *Stage 1 - Initial Advisory - (5 Day Forecast)*

In the event that a tropical storm in the Atlantic is active and the 5-Day Forecast Cone issued by the National Hurricane Center (NHC) encompasses southeastern Massachusetts, the following steps will be initiated:

1. The Director of Facilities will advise the IMT of the long term forecast and any associated relevant information.
2. All members of the IMT will review their respective departmental operational plans and procedures and refresh themselves with this Severe Weather Preparedness Plan.
3. The IMT will meet as soon as possible to discuss the developing weather situation and prepare an initial Incident Action Plan (See the MBL Emergency Management Plan, Section 4.3).
4. The Incident Action Plan will include a communication plan to inform the MBL community. It will also establish appropriate next steps for the IMT, including how it will continue to monitor the forecast, and when it will reconvene to plan any additional actions.

##### *Stage 2 - Activation of Essential Preparations - (3 Day Forecast)*

Should the storm system continue on a track toward Cape Cod, and the NHC 3-Day Forecast Cone encompass the region, the IMT will reconvene to update the Incident Action Plan and initiate advance preparations and storm plans for essential functions:

1. As part of the escalation of storm readiness, the IMT will commence regular communications with MBL department administrators with guidance on the activation of local plans and anticipated future actions.

2. The IMT will also activate the communications plan for the MBL community, which will include appropriate information regarding the developing storm and reminders for preparedness and safety.
3. The Director of the MBL will contact the Office of the President at the University of Chicago to provide a report on storm preparations and the Action Plan.

Stage 3 - Tropical Storm / Hurricane Watch - (48 hours)

Should the storm system continue on a track toward Cape Cod, and the National Hurricane Center issue a Tropical Storm or Hurricane Watch, the IMT will reconvene to update the Action Plan and commence operational plans to prepare the MBL for the impact of a severe storm.

IMT actions to be taken include:

1. Set up Lillie 103 as the Emergency Operations Center (EOC).
2. Confirm the availability and schedule of all Emergency Response Team (ERT) staff from all MBL departments.
3. Arrange for overnight accommodations and food for assigned ERT staff that may be required to remain on the campus during the storm.
4. Establish communications with individuals identified in the Department Emergency Response Plans and confirm readiness.
5. Update the Office of the President at the University of Chicago regarding the pending storm situation, the current Incident Action Plan, and establish procedures for ongoing communication.
6. Activate communication plan for the MBL community with instructions for active preparation and opening channels for continuing communication.
7. Initiate the official logs of actions taken, records of staff time, and storm-related expenses.

Stage 4 - Tropical Storm / Hurricane Warning - (36 hours or less)

Should the National Hurricane Center issue a Tropical Storm or Hurricane Warning for the area including Woods Hole, the IMT will reconvene to review the current weather forecast (including severity, projected location and time of landfall), Falmouth and Massachusetts government advisories, MBL storm preparations and other relevant information, and to update the Incident Action Plan.

Depending on the analysis of specific information available, additional IMT actions may include:

1. Re-confirm the availability and work schedule of assigned ERT staff from all MBL departments, and accommodations and food for those personnel required to remain on the campus during the storm.
2. Review the status of all preparations by MBL departments and Centers and identify any gaps in final preparations.
3. Oversee implementation of facilities preparations to protect structures from wind and flooding, and to ensure critical services are connected to backup power.

4. Determine the appropriate operational status for the MBL during the period leading up to the anticipated storm, including decisions regarding cancellations, closing, evacuation of residents (MBL Campus Residential Evacuation Plan), and any other actions necessary to protect and preserve vital research assets.
5. The MBL Director will communicate status updates and action plans with the Office of the President at the University of Chicago.
6. Convene a conference call and/or meeting with all department and Center directors to communicate actions and expectations.
7. Update the communication plan for the MBL community with specific instructions as identified in the Incident Action Plan.
8. Establish and test IMT communication channels to be used during and following the weather event and determine the schedule for reconvening the IMT.

### **Winter Storm Scenario**

#### *Stage 1 – Winter Storm Watch / Blizzard Watch - (48 hours)*

Should the National Weather Service issue a Winter Storm or Blizzard Watch, IMT will convene to update the Incident Action Plan and initiate advance preparations and storm plans for essential functions MBL for the impact of a severe storm.

IMT actions to be taken include:

1. If needed, set up Lillie 103 as the Emergency Operations Center (EOC).
2. Confirm the availability and schedule of all Emergency Response Team (ERT) staff from all MBL departments.
3. Arrange for overnight accommodations and food for assigned ERT staff that may be required to remain on the campus during the storm.
4. Establish communications with individuals identified in the Department Emergency Response Plans and confirm readiness.
5. Update the Office of the President at the University of Chicago regarding the pending storm situation, the current Incident Action Plan, and establish procedures for ongoing communication.
6. Activate communication plan for the MBL community with instructions for active preparation and opening channels for continuing communication.
7. Initiate the official logs of actions taken, records of staff time, and storm-related expenses.

#### *Stage 2 – Winter Storm Warning / Blizzard Warning - (36 hours or less)*

Should the National Weather Service issue a Winter Storm or Blizzard Warning for the area including Woods Hole, the IMT will reconvene to review the current weather forecast (including severity, projected location and time of landfall), Falmouth and Massachusetts government advisories, MBL storm preparations and other relevant information, and to update the Incident Action Plan.

Depending on the analysis of specific information available, additional IMT actions may include:

1. Re-confirm the availability and work schedule of assigned ERT staff from all MBL departments, and accommodations and food for those personnel required to remain on the campus during the storm.
2. Review the status of all preparations by MBL departments and Centers and identify any gaps in final preparations.
3. Oversee implementation of facilities preparations to protect structures from wind and flooding, and to ensure critical services are connected to backup power.
4. Determine the appropriate operational status for the MBL during the period leading up to the anticipated storm, including decisions regarding cancellations, closing, evacuation of residents (MBL Campus Residential Evacuation Plan), and any other actions necessary to protect and preserve vital research assets.
5. The MBL Director will communicate status updates and action plans with the Office of the President at the University of Chicago.
6. Convene a conference call and/or meeting with all department and Center directors to communicate actions and expectations.
7. Update the communication plan for the MBL community with specific instructions as identified in the Incident Action Plan.
8. Establish and test IMT communication channels to be used during and following the weather event and determine the schedule for reconvening the IMT.

### ***Tornado or Severe Thunderstorm Scenario***

#### *Stage 1 – Tornado Watch or Severe Thunderstorm Watch*

Should the National Weather Service issue a Tornado Watch or a Severe Thunderstorm Watch for the area including Woods Hole, the following steps will be initiated:

1. MBL's Security department will issue an MBL Alert of the potential for a Tornado or Severe Thunderstorm. "Tornado or Severe Thunderstorm Watch in effect for Woods Hole Area".
2. If safe to do so, individuals within vulnerable buildings such as the MBL Club or Homestead should evacuate to the fortified buildings Lillie or Starr/Rowe respectively.

#### *Stage 2 – Tornado Warning or Severe Thunderstorm Warning (Microburst)*

Should the National Weather Service issue a Tornado Warning or a Severe Thunderstorm Warning (Microburst) for the area including Woods Hole, the following steps will be initiated:

1. MBL's Security department will promptly issue an MBL Alert of the threat to "seek shelter immediately."
2. POM/Security/Custodians will assist in evacuating all individuals from top floors for the buildings which they currently occupy at time of event. Additionally, provide verbal notice to occupants on all lower floors to either move to away from windows and/or move to lower floor/shelter area. **General location is "down and in" (central basement).**
3. If time warrants as determined by Manager/Supervisor, vulnerable buildings such as the MBL Club, Homestead or ESL should evacuate to sturdier buildings Lillie or Starr/Rowe respectively. If manager/supervisor determines unsafe, then shelter in designated area.

<u>Building</u>	<u>Evacuate To</u>	<u>Shelter in Place Location</u>
MBL Club	Lillie	Base Floor Closet
Homestead	Rowe	Base Floor (away from windows)
ESL	Starr	First Floor Hallway
Wooden Dorms	Loeb	Base Floor (away from windows)
Cottages	n/a	Bathroom (close door)
37 Memorial Circle	n/a	Bathroom (close door)
Candle House	n/a	Base Floor (away from windows)
Ebert	n/a	Base Floor (away from windows)
MRC	n/a	Main Entrance (away from windows)
Lillie	n/a	Base Floor (away from exit doors)
Loeb	n/a	Base Floor (away from exit doors)
Rowe	n/a	First Floor Hallway
Starr	n/a	First Floor Hallway
Swope	n/a	Base Floor (away from windows)

- Once the storm has past, MBL's Security department will issue through the MBL Alert system an "all clear" message. Additionally, POM/Security/Custodians can then assist with providing a verbal "all clear" to areas which they currently occupy.

## 4 OPERATIONS DURING A SEVERE STORM

***Important: In the event that the MBL closes, only those Emergency Response Team personnel who are identified in the IMT Action Plan as being essential to conduct emergency operations of the MBL during a severe weather event will be permitted to remain on the campus.***

The objective of all operations during this intense period is to minimize property damage and loss of research and position the MBL for recovery - all while minimizing risk to staff and residents. The Incident Action Plan will establish appropriate staffing by specific members of the Emergency Response Team during the weather event. Other ERT staff not on-campus will be expected to return as soon as practical and safe following the storm.

### 4.1 ESSENTIAL SERVICES

During a severe storm it is likely that utility electric power will be interrupted. Portions of some buildings will be backed-up by on-campus emergency generators. The generators will be operated as long as possible during the storm, but may be shut down if necessary to protect them from damage and to enable rapid recovery following the storm.

Other external essential services to be monitored are natural gas, internet, and telecommunications. During a storm, little can be done to prevent a loss of service, but monitoring is vital to safety and to enable rapid recovery.

Critical on-campus services include seawater distribution, refrigeration, and environmental controls (cooling and heating) for animal facilities. A loss of backup power will affect these functions and other pre-storm contingency plans may be required.

All departmental plans should identify critical support functions and specific procedures to be followed in the event of failure of utility services.

#### **4.2 EMERGENCY COMMUNICATION**

During a storm, all staff, researchers, faculty and students should monitor all MBL channels for communicating emergency information to the campus community, including:

- *MBL Alert*
- *Recorded Outgoing Messages at 508-289-7625 (7MBL)*

Other public service information may be available through local radio and television, including official statements and emergency orders issued by the governor or other public authorities.

#### **4.3 COORDINATION WITH PUBLIC AUTHORITIES**

The IMT will maintain communication with local and state governmental authorities (Falmouth LEPC, Police, Fire/EMS, or other agencies, such as the Barnstable County Emergency Regional Emergency Planning Committee and/or National Guard). In the event of severe conditions, public officials may establish regional authority and Incident Command that may include the MBL. Under such circumstances, the Director of Facilities will be designated as the Emergency Coordinator to represent the MBL with the Incident Commander of the organization having jurisdiction.

### **5 POST-STORM RECOVERY**

Restoring the MBL and returning to normal operations as quickly and efficiently as possible is critical. In the event of a severe weather event that required closure of the MBL and/or resulted in extensive physical damage, the IMT will continue to actively manage the situation.

As soon as it is safe to access the campus, members of the Emergency Response Team (ERT) who were off-site during the storm will return to conduct a damage assessment and report the situation to the IMT.

The IMT will convene and update the Incident Action Plan to reflect the situation at the MBL and in Woods Hole, and decisions will be made regarding the most effective steps to resume operations.

In the case of extreme damage or a projected extended outage of critical services, the IMT and the MBL administration may establish interim headquarters at an offsite location with the assistance of Agility Recovery services. The Business Continuity Team (BCT) will coordinate this effort.

Other factors that the IMT will consider in its ongoing management of the situation will include:

- Continued communication and instructions to members of the MBL community regarding the status of campus operations and plans for reopening the campus.
- Remote access and restoration of backup computer data.
- Establishing financial estimates of damage and filing timely notices for insurance claims.
- Assisting with emotional and psychological support of MBL staff and students.
- Ensuring that the reputation of the MBL is preserved in the aftermath of a disaster.

In the event of a large scale disaster affecting the region, it is likely that the Commonwealth of Massachusetts and the Federal Emergency Management Agency (FEMA) will deploy resources to

assist with response and recovery. The IMT will establish communication with such agencies as early as possible in the response stage to identify critical needs for the MBL and determine distribution points for any available necessities to meet health, safety, and lifesaving requirements.

The IMT will develop appropriate documentation procedures to be included as part of the Incident Action Plans and will assign roles and responsibilities to ensure that records are properly organized and retained. Documentation will include photographic and video records of conditions throughout the incident. The MBL Finance Office will also work closely with the University of Chicago Risk Management and Insurance Office to assist with the timely processing of claims and recovery of losses.

## Appendix A - Department Emergency Response Plans

The following departmental plans are intended to address specific situations that have been identified as hazards or potential threats to the MBL. These plans and procedures are maintained jointly by the Incident Management Team.

Plan Description
National <i>Xenopus</i> Resource (NXR) Emergency Plan - Storms
Bell Center Emergency Plan
Ecosystems Emergency Plan
Josephine Bay Paul Center Emergency Plan
Animal Care Facility (ACF) Emergency Plan
MBL/WHOI Library Tropical Storm Plan
Candle House (MBL Administration) Emergency Plan
Whitman Scientists Emergency Plan
Plant Operations and Maintenance Tropical Storm/Hurricane Procedures
Stock Room Procedures
Shipping and Receiving Procedures
Apparatus Procedures
Marine Resources Department Plan
Financial Services Disaster Plan
Information Technology Disaster Plan