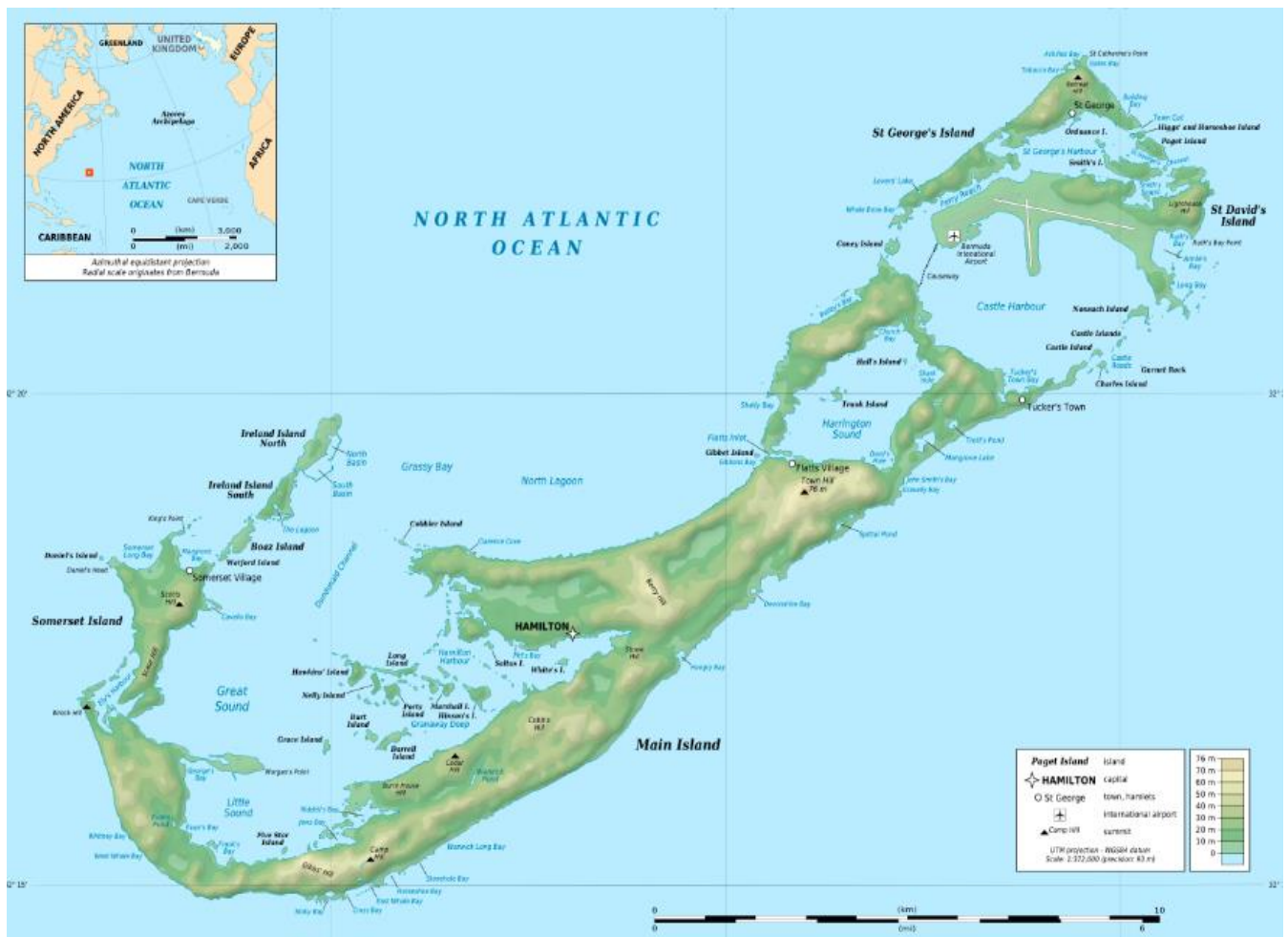




HURRICANE WEATHER PREPAREDNESS PLAN



Hurricane Weather Plan

The purpose of the Hurricane Plan is to establish emergency management procedures and guidelines to follow in the event of a severe storm or hurricane.

The plan is separated into 3 major sections:

1. Section 1: procedures for the pre-planning phase during calm weather conditions
2. Section 2: procedures for a hurricane threat
3. Section 3: procedures for recovery activities

Areas of responsibility

1. Management and Supervision
 - a. The Project Executive shall provide the direction, as required, for the carrying out of this preparedness plan.
 - b. The Project General Superintendent shall provide guidance over field preparations for subcontractors, visitors and vendors.
 - c. Superintendents shall implement actions necessary for the protection of the jobsite, materials, and equipment in their respective areas prior to a storm. General Superintendent is responsible to account for all personal in their areas prior to evacuation
 - d. The Safety Manager shall prepare and update as necessary the Hurricane Plan. The Plan shall describe in detail the actions necessary to protect the jobsite, materials equipment and employees from damage or injury due to inclement weather. The Safety manger shall coordinate the preparation and evacuation status of the job site. He/she shall also monitor weather and news reports for updated information.
2. Subcontractors
 - a. All supervisors of subcontractors shall take direction from the Project Superintendent/Designee in the event preparedness are necessary for an impending storm.
 - b. Information and direction shall be issued promptly to subcontractors.
 - c. All foremen of subcontractors and craft personal shall Take direction from their immediate supervisors in order to anticipate and prepare for a storm.
3. Office Personnel:
 - a. All office personal shall, at the direction of the Project Executive, prepare to leave their offices. Subcontractors shall clear out their offices as they complete preparation work in the field.
 - b. Site Office shall have one person in charge of coordinating document protection activities (files, records, equipment, electronics, etc.)
 - c. Prior to an office becoming vacated, all subcontractor representatives shall report to the Safety Representative/Competent person at the project office.

Definitions

- Essential Personnel – Personnel that will remain on island for the duration of the Hurricane and participate in the Hurricane aftermath recovery phase.
- Non- Essential Personnel – At the first indication of a hurricane within the area (possible threat within 72-48 hours), personnel that will not be needed for the duration of the Hurricane and the Hurricane Aftermath recovery activities will be evacuated.
- Gale – Wind speeds of 39-54 mph (34 to 47 knots).
- Hurricane Season – June through November 30th as defined by NOAA for the Atlantic, Caribbean, and Gulf of Mexico.
- Hurricane – A tropical cyclone with surface winds in excess of 74 mph in the hemisphere.
- Hurricane Watch – A Hurricane condition poses a possible threat, generally within 36 hours.
- Hurricane Warning – Hurricane conditions are expected within 24 hours or less. A Hurricane Warning may remain in effect if dangerously high water or exceptionally high waves continue, even though winds may be less than hurricane force.

Hurricane Categories

- Category 1 – Minimal Damage Wind speed 74-95 mph, Storm Surge 4-5 feet above normal.
- Category 2 – Moderate Damage Wind speed 96-110 mph, Storm Surge 6-8 feet above normal
- Category 3 – Major Damage Wind Speed 111-155 mph, Storm Surge 13-18 feet above normal.
- Category 4 – Extreme Damage Wind speed 131-155 mph, Storm Surge 13-18 feet above normal.
- Category 5 – Catastrophic Wind speed greater than 155 mph, storm surge greater than 18 feet above normal.
- Storm – A disturbed state of the atmosphere, especially affecting the Earth's surface, and strongly implying destructive and otherwise unpleasant weather.
- Storm Surge – A rise above the normal water level along a shore caused by strong on shore winds and/or reduced atmospheric pressure. A storm surge may even double or more in height when the hurricane's track
- Storm Warning – when winds of 55 mph predicting or occurring, not directly associated with tropical cyclones are expected.
- Saffir/Simpson Scale –Ratings are normally between 1 and 5 based on the present intensity of a storm (1 being the least severe and 5 being the worst case). This is used to give an estimate of the potential property damage and flooding expected along from a hurricane landfall.

Action Items

Pre-Storm (Calm Weather)

1. Supervisors which includes Project Managers and Superintendents are responsible to ensure that the Plan is in effect and that all subcontractors and personnel are familiar with established requirements.

Note: This plan will be reviewed with the craft employees of all subcontractors through weekly safety meetings.

2. All subcontractors will be supplied with this plan. They are required to review this plan with their craft personnel.
Subcontractors will have on file, a list of personal, inventory of equipment, and list of material for reference in the event a company representative is not readily accessible during an impending storm. Also, emergency phone numbers shall be provided by subcontractors should a storm approach during the weekend or holidays and the need to reach a subcontractor arises.
3. Pre-Plan preparations
 - a. Establish governmental emergency contact relations if necessary.
 - i. Develop and maintain a working relationship with emergency personnel.
 - ii. Provide a symbolic relationship that can be mutually beneficial.
 - b. Information sharing includes
 - i. Supplies
 - ii. Equipment
 - iii. Labour
 - iv. All other items
 - c. Establishment of Weekly Planning Meetings with Key Personnel Subcontractor Superintendents and Project Owner representatives) to discuss the following:
 - i. Assignment of Responsibilities
 - ii. Establishment of Chain of Command
 - iii. Determination of Essential personnel (Identify "Ride out and Recovery Team") and Non-Essential personnel.
 - iv. Hurricane Preparedness Work Schedule
 - d. Determination of evacuation procedures for non-essential personnel
 - i. An Evacuation plan for families and all non-essential personnel shall be developed by each project entity in the event of a severe storm with threat to life and property.
 - e. Mobilization of Materials: Anchor Bolts, Duct tape, Masking tape, #9 Tie Wire, Zip Tie Wraps, Plywood, Lumber, Wire Rope/cable clamps, nails, Rope, Generators, Pumps etc.

- f. Structures within each area of responsibility have been modified to be anchored, secured and protected.
- g. Materials within each area of responsibility have been notified to be anchored, secured and protected.
- h. An action plan developed, and responsibilities assigned to essential personnel.
 - i. Construction Material, tools and products
 - 1. Determining storage type, location, and securing procedures.
 - 2. Building materials that are in the field will be placed on pallets and secured on a daily basis.
 - ii. Heavy Equipment Vehicles
 - 1. Determining storage type, location, and securing procedures.
 - iii. Hazardous Materials
 - 1. Determining storage type, location and securing procedures
- i. Office documentation & Equipment protection procedures shall be developed, and responsibilities assigned and designated to essential personnel. Determination of appropriate storage location, Storage Container/s be located on high ground and properly secured to concrete foundation.
- j. Determination of Emergency Gasoline and Diesel Fuel Storage Requirements. Volume amounts, storage type, and site location shall be determined and approved by project owner.
- k. Determination and verification of potable Drinking water supplies for the project site.
- l. Offsite Hurricane Shelter designation for essential personnel. Each project entity is responsible for selecting their appropriate hurricane Shelter.
 - i. At least one primary and one secondary Hurricane shelter shall be identified. Identifying guidelines:
 - 1. On high ground away from highest possible storm surge.
 - 2. Locality to job site.
 - 3. Concrete Structure with hurricane Shutters
 - 4. Adequate size for intended occupants.
 - 5. Adequate amount of Storage for Emergency Supplies.
 - 6. Personal Home used as a Hurricane Shelter

Hurricane Threat Procedures

Alert One (Hurricane Statement issued)

Hurricane Statement issued within the Atlantic Ocean and Caribbean Area by NOAA's National Weather Service or the Bermuda Weather Service. In general, action taken during this alert consists of major preparation activities.

Project Executive will issue a notice to supervisory personnel to review the Plan and to proceed with storm preparation. The following Action Items will be put into operation.

Project management

1. Review Progress Schedule to determine the storms effect on Critical activities. Photos of all site will be taken pre and post str activity to track the damages.
2. Meet with appropriate project Owners' representative to review and coordinate plans.
3. Begin the process of altering and reviewing evacuation procedures for non-essential personal from the island. Non-essential personnel shall be evacuated depending on the time allotment for site removal and their job site role.

Structures on Site

1. New Structures – All structures and parts of structures under construction shall be braced, anchored, and secured as necessary to present damages.
2. Trailers
 - a. Trailers to be anchored to the ground.
 - b. Office records and Equipment removal List – Contract files, Employee Files, Drawings, payroll records, computers/modem/discs, printers, submittal records, surveying equipment, fax machines, laser levels, wo way radios,
 - c. TVs, adding machines, progress photos/negatives, first aid kits, and tools/equipment in closet.

Containers shall be anchored to the ground with wire rope and locked to prevent wind damage.

Utilities

1. Gas - if gas is present on site it must be identified and the value must be turned off.
2. Electricity – All electrical power not used directly for the project, such as de watering, shall be disconnected to protect employees from downed powers supplies upon return to the job site.
3. Water- water when connected to the job site, shall be turned off. When turned back on for use water shall be tested prior to consumption.
4. Cellular Phones – Phones will be left connected for use in case of emergency, battery levels shall be checked and topped off as necessary.
5. Clear all rainwater drains an prune trees where a collapse may be possible.

Equipment

1. Mobile cranes, excavators, and dozers will be moved back from the edge of excavation to higher ground and away from anything with the potential of falling onto the machine. The crane booms will be lowered to the ground and the machine will be locked. Masking tape will be placed on all glass to guard against breakage. Service equipment and fueled – especially equipment to be used for cleaning.
2. All crane booms and lifts are to be lowered to a safe position. Leads, boom, auger and torque arms should be secured to each other when Practical.
3. Earthmoving equipment and on-site vehicles are to be left on high ground with brakes set.
4. All equipment, such as rubber tire pickers, loaders, back hoes, and form-lifts, will be fueled and moved to higher ground.
5. Welders, compressors, gasoline powered water pumps, and generators will be fueled and moved to higher ground.
6. Gang boxes shall be locked and moved to high ground or inside sea container.
7. All scaffolding is to be secured from movement. Confirm that all boards and plywood are removed and secured.
8. All trash barrels are to be emptied and secured to stable objects. Used 55 –gallon steel drums are to be secured if they cannot be removed from the site.
9. Trash dumpsters are to be emptied and removed from the project site.
10. All Site vehicles shall have fuel levels verified and filled prior to a storm event.
11. All company vehicles shall have fuel levels verified and filled prior to a storm event.

Tools

1. Electrical tools shall be removed from the field and stored in a container that has been placed on the highest ground and strapped or chained to a pad. Hand tools shall be locked in their regular storage containers.
2. Each crafts man is responsible for their own personal tools which are to be stored in a trailer placed on high ground.
3. All company owned tools shall be stored in their appropriate storage containers and accounted for prior to evacuation.
4. Gang boxes shall be locked and moved to high ground or inside as sea container.

Materials

1. Lumber – bundles shall be banded together.
2. Panels – stacks of unused panels or pans shall be banded.
3. Rebar – unconnected walls and coloumns shall be braced down to prevent falling,

4. Block, water stop, pipe, wire and conduit (plastic and Metal) shall be secured and protected.
5. Pick up all trash and materials that will not have to be put back in the field.

Vendors / Deliveries

Review material and equipment delivery schedules that may be affected by the storm.

Miscellaneous items to protect

These items shall be rounded up and secured during the preparation phase.

1. Fire Extinguisher
2. First Aid kits
3. Port o Johns
4. Drinking water jugs. Drinking water containers are to be filled with potable water and placed in a secure container.
5. Fill and secure all fuel storage tanks.
6. Fill and retain portable electric generators
7. Locate and retain pumps and hoses for water removal.

Notifications

1. Notify the Project manager and Project owners representative when final preparations are completed.
2. Notify the Corporate Safety Office once the above activities are completed.

Alert 2 (Hurricane Watch – Storm within 36 hours)

“Hurricane Watch” is issued by the NOAA’s National Weather Service or Bermuda Weather Service. In general, action taken during this alert consists of advance inspection and procedures for the arrival of the storm and evacuation of the project site (See Appendix 5 for Check List).

Documentation

Assign the task of producing photo and video documentation of the site prior to the storm, preparations for the storm, and damages caused by the storm. This documentation is to be considered part of the Critical Files for the site. Ensure tapes are sent Pittsburgh office with non-essential personal.

Action Items

- ♣ Keep unauthorized people off the job site during the preparation phase.
- ♣ Pick up all trash and materials that will not have to be put back on the field in the event that the hurricane watch is lifted.
- ♣ Check tie downs on office trailers.
- ♣ Fill and secure all fuel storage tanks.
- ♣ Locate and retain portable electric generators.
- ♣ Locate and retain pumps and hoses for water removal.
- ♣ Review work and make arrangements for removal of non-fixed equipment and materials from all areas.
- ♣ Equipment that will be used for clean-up activities will be serviced and refueled.
- ♣ Check storm drainage systems for tie-ins, blockage, etc.
- ♣ Check and secure unused materials, tools, and light equipment.
- ♣ Notify the project manager and Project Owner’s representative when final preparations are completed.
- ♣ Notify Corporate Safety Office once the above activities are complete.

Alert 3 (Hurricane Warning – Within 24 hours)

Hurricane force winds and heavy rains are imminent. “Hurricane Warning” is issued by NOAA’s National Weather Service or Bermuda Weather Service. In general, action taken during this alert consists of making final preparations for the arrival of the storm and evacuation of the project site.

Action Items

Supervisory team completes a final inspection of the Job Site.

Dismissal of all Craft

- a. Account for all people (make a sweep of the project site).
- b. Notify the project manager and owners representative when final preparations are completed.
- c. Notify the Corporate Safety Office once the above activities are completed.

Evacuation (Category 3 Hurricane)

When the site management has determined if approaching storm is updated to a category 3 hurricane or greater and anticipated to pass over the island, all employees will be evacuated. The Management team will maintain over-site of the project until the remaining team members can return to the project. However, work shall be planned in such a manner that all personnel are evacuated at the earliest possible hour.

Recovery Activities

Recovery and Remobilization after the storm

After the NOZZ’s NWS or Bermuda Weather Service broadcasts that the storm has passed through the area and is continuing to move away, Recovery and restart of Work may commence. During this phase the work being conducted will be damage assessments, cleanup and site mobilization.

Action Items

1. Damage Assessment by Management

- a. Review all areas of the project for water and wind damage. Note potential problems from downed power lines and other damaged utilities.
- b. Crane and inventory of damaged equipment, business and personal property, records, drawings Etc. Listing items description, serial numbers, and quantities involved for the claims process.
- c. Document damage with a video camcorder or digital still cameras.
- d. Notify insurance carrier of potential claims, This step is to be completed by the corporate Risk management and coordinated with Project Representatives.

Damage assessment Meeting with management, Subcontractor Superintendent and Owners

- a. Develop, Agree and Implement Project Work Order List.
- b. Recommended Recover Work Items
 - i. Remove standing water,
 - ii. In the event of a downed hazard left on site after the storm, it will be reported to the proper agency/authority, (An example of such a hazard would be downed power lines.)
 - iii. Review project with the electrician and turn on the power when it is determined safe.
 - iv. Remove temporary protective measures
 - v. Clean up and dispose of damaged materials and debris.
 - vi. Absolutely no damaged property or materials are to be removed from the project site without authorization of the Project Superintendent.
 - vii. Work shall progress the following order:
 - viii.
 - Estimate cost of rework/repair – accompany with photos of each item if possible
 - Work with owner to prepare insurance claims=
 - Re-evaluate project schedule to determine storm impact
 - Make job site stable and safe
 - Clean up heavy damage and debris
 - Coordinate return of evacuated personnel
 - Work May proceed.

