

COTP CHARLESTON HURRICANE PORT PLAN

Important Details:

1. SCDOT Bridge Closures 35 MPH
2. SCSPA Crane Closures 35 MPH
3. Pilots stop transits 45 MPH

A. DISCUSSION.

1. Of the various forms of natural disasters, hurricanes and violent non-tropical storms are the most prevalent in the Captain of the Port (COTP) Charleston area of responsibility (AOR), which includes the ports of Charleston, Georgetown, and Port Royal. Disastrous hurricanes are relatively infrequent occurrences for any particular segment of coastline, but are so destructive that adequate planning is essential to prevent and limit the loss of life and property. Recent examples of the extent of destruction caused by hurricanes are evidenced by the impact of Hurricane Katrina on the Gulf Coast region and Hurricane Hugo on the Charleston area. Damages due to hurricanes in the United States average one half billion dollars annually. Although the hurricane damage by wind, flood and storm surge is well known, the greatest loss of life occurs from drowning (by a ratio of about nine to one), followed by such secondary causes as electrocution from fallen power lines and from flying debris.

2. The Port of Charleston, the Port of Georgetown and Port Royal are not considered hurricane havens since surrounding low topography does not provide an adequate windbreak. The Port of Charleston should not be used as a haven from tropical storms unless there is certainty that winds will not intensify above 60 knots/69 mph. The National Weather Service's Sea, Lake and Overland Surges from Hurricanes (SLOSH) model indicates that water surges of over 19 feet can be expected in the Port of Charleston if a Category 5 hurricane were to strike the Charleston area. Special care should be taken with storms approaching from the southeast, where storm tides are more frequent than destructive winds and are the major threat to shipping and residents in coastal areas. The maximum height storm surges will occur along the beaches, the entrance jetties at Charleston, and the City of Charleston. The NWS Storm Surge Atlas lists the following maximum tidal surges for downtown Charleston:

<u>Hurricane Category</u>	<u>FT Above Mean Tide</u>
Category One	5 FT
Category Two	10 FT
Category Three	15 FT
Category Four	17 FT
Category Five	19 FT

3. Charleston's latitude of 32N is well within the normal area in which tropical cyclones slow and intensify. During this period it is difficult to predict the storm's speed of movement, direction of travel and, obviously, the storm's precise position at a future

point in time. In addition, the shape of the South Carolina coast limits evasive courses a vessel may steer to avoid these cyclones.

4. The Port of Georgetown is located in Winyah Bay approximately 60 miles north of Charleston, South Carolina. The Georgetown area is not considered a hurricane haven since the low topography does not provide adequate windbreak. Deep draft vessels will not be allowed to enter or remain in this port if hurricane force winds are anticipated.
5. Port Royal is located in Beaufort County, South Carolina. The Port Royal area is not considered a hurricane haven since the low topography does not provide adequate windbreak. Deep draft vessels will not be allowed to enter or remain in this port if hurricane force winds are anticipated.
6. The National Oceanic and Atmospheric Administration's (NOAA) National Weather Service (NWS) provides advance warning of hurricanes. A "hurricane watch" is issued whenever a hurricane becomes a threat to coastal areas. A "hurricane warning" is issued when hurricane winds of 74 MPH or higher, or a combination of dangerously high water and very rough seas, are expected in a specific coastal area within 24 hours. The strength of a hurricane is measured by its maximum sustained winds. Hurricanes are categorized by the Saffir-Simpson Scale as follows:

<u>Category</u>	<u>Winds</u>
Category One	74-95 MPH
Category Two	96-110 MPH
Category Three	111-130 MPH
Category Four	131-155 MPH
Category Five	over 155 MPH

Note: These five hurricane categories should not be confused with the five Hurricane Conditions discussed in paragraph A.7.

7. Hurricane Conditions are based on predictions by the NWS and serve to describe the time interval remaining before hurricane force winds are possible. The COTP Charleston is responsible for setting hurricane/tropical storm conditions for the Charleston AOR when local conditions warrant. Vessel operators will be notified of these conditions by broadcasts on VHF FM radio. Some COTP notifications will also be made via MSIB. See Annex E for examples of broadcasts. The hurricane conditions are:
 - a. Condition Five: This condition is automatically set for Coast Guard units from 1 December to 31 May each year, except when modified by a rare winter storm. Hurricanes are not expected in this period.
 - b. Condition Four: A condition automatically set for Coast Guard units annually on 1 June which remains in effect through 30 November.

- c. Condition WHISKEY The port condition in which threatening winds are possible **within 72 hours**
- d. Condition X-RAY The port condition in which threatening winds are possible **within 48 hours**.
- e. Condition YANKEE The port condition in which threatening winds are possible **within 24 hours**.
- f. Condition ZULU A danger condition exists for the port in which threatening winds are possible **within 12 hours**.

8. South Carolina uses Operational Conditions (OPCONs) to increase their state of readiness for disaster response. Their OPCONs do not correlate with the COTP setting hurricane Conditions within the ports. The OPCONs are not based on time intervals. The following chart provides a comparison between Coast Guard COTP Conditions and state OPCONs (also see Charleston County Emergency operations Plan Annex V):

Events	EPD OPCON	Port Condition
Hurricane season begins	5	
Threatening Winds within 72 hours	5	WHISKEY
Operational area of Charleston County threatened	4	WHISKEY
Threatening Winds within 48 hours	4	X-RAY
Hurricane Watch set	3	X-RAY
Threatening Winds within 24 hours	3	YANKEE
Hurricane Warning set	2	YANKEE
Evacuation "order" given	1	YANKEE
Threatening Winds within 12 hours	1	ZULU

B. CONSIDERATIONS.

1. The ports of Charleston, Georgetown and Port Royal are not considered safe havens during hurricane conditions.
2. **Small Craft and ICW Traffic.** A massive civilian evacuation from the at-risk coastal areas could create severe problems for marine interests transiting the intracoastal and inland waterways. Both land and water-borne travel routes are affected by a network of major and minor drawbridges. The order to secure these drawbridges in the down position may be given by local government officials at any time to accommodate evacuation and could occur well in advance of severe weather. Consequently, it is incumbent on maritime interests, in particular tug companies and marinas servicing the ICW to initiate necessary action at the earliest stage of storm preparations.
3. **Pilot Availability. The limited number of pilots and tugs available also mandates**

early decision making and action by oceangoing and other commercial marine interests. It is expected that pilots may refuse to move vessels when wind velocities exceed gale force (34 knots/39 mph).

4. Evasion at Sea.

- a. Evasion at sea is the recommended course of action for all seaworthy vessels when Charleston is directly threatened with threatening winds and/or inundating severe storm surge from an intense tropical cyclone or hurricane. This rationale is based on the lack of terrain features that could provide shelter, the lack of anchorages suitable for use during a hurricane, and the over-riding concern for the effects of a strong storm surge.
- b. A critical aspect of the decision to sortie from this particular port is its timeliness. The decision should ideally be made 36-48 hours before the onset of threatening winds (near the time of the decision to set Condition X-RAY). The need for early sortie from Charleston is a result of the coastline orientation, the nature of the harbor makeup, and the distance to deep water. The somewhat concave shape of the southeastern U.S. coastline restricts running room to the north and south. The northeastward-aligned coastline, to the north, and the south-southeastward-aligned coastline of Florida, limit the maneuvering options when evading in those directions. Taking an easterly course results in crossing the track of all storms that re-curve or pass north of Charleston; in addition, it places the ship in the dangerous semicircle of the storm. A course north of east could place the ship in a position of being overtaken by a fast-moving re-curving storm. Evading to the south, while positioning the ship in the less dangerous semicircle, results in very limited maneuvering space because of the eastward curvature of the Florida Atlantic coastline. Furthermore, for those storms that do not re-curve but assume a more westerly course, evasion to the south can create a dangerous situation because of the closing storm and limited evasion routes.
- c. The need for the early sortie is further necessitated by the general characteristics of a multi-river harbor, i.e., distance to harbor mouth, limited navigable water, bends in the channel, bridge obstructions, converging traffic at confluence of rivers, and the outflowing river current requiring greater speeds in order to maintain steerage without the assistance of a flood tide. All of these factors can come into play in departing the Charleston Harbor. These harbor characteristics, plus the tendency for a strong storm surge, make late efforts to sortie or change berthing/anchorage the worst possible position to be caught in.
- d. An early port departure is recommended for all intense or developing hurricanes that are approaching on over-water tracks and are expected to pass "close" to Charleston. "Close" is a variable; it is a function of the distance that threatening winds extend from the storm center, with an allowance for error. A forecast of a 250 nm Closest Point of Approach (CPA) for a hurricane with maximum sustained winds of 150 kts may be "close" whereas a 100 nm CPA of a 55 kt storm may not

be "close". All storms forecast to pass within 180 nm of Charleston are a threat, but those storms approaching from the sector between a bearing of 120° true (the axis of the entrance channel) from Charleston clockwise to the Atlantic coast south of Charleston pose the greatest threat. A storm within this sector, moving northwest and expected to make landfall close to Charleston is the most threatening situation. These storms tend to be the most intense and also produce the earliest and highest storm surge. Considering only recent climatology for Charleston in making hurricane preparation decisions is being shortsighted. Those recent storms of disastrous potential have either made landfall at low tide, at such a small angle to the coast, or too great a CPA to produce the threatening winds and surge of past major hurricanes. The nature of the coastline in this AOR makes an early departure imperative if a real threat is in the offing. The following describes the most likely threat situations and the recommended courses of action. In reality each threat must be considered on its own merits.

- (1) A tropical cyclone located within the sector formed between a bearing 120° true from Charleston and the 82nd meridian: Tropical cyclones approaching from this sector are the greatest threat for both wind intensity and probability of high surges. Some of the worst conditions ever recorded have progressed on this path. They are also the most difficult to evade in that transiting east or northeastward positions the ship in the dangerous semicircle and the region the storm is likely to move into. Early departure is imperative in order to either cross ahead of the storm and obtain sea room in which to maneuver toward the southeast, or outrun the storm to some haven or region to the northeast. The likely action of the storm is to recurve to a northeasterly path and accelerate.

NOTE: The 120° bearing rule appears least reliable in the July-August period. During this time frame storms near the 120° bearing radial are more likely to continue westward than during other periods.

- (2) A tropical cyclone that has passed west of the 82nd meridian and is approaching from Florida or the Gulf of Mexico and forecast to pass close to Charleston: This situation is the least threatening. The intensity of the storm will have been significantly reduced by the overland passage. Surge buildup will be minimal and evacuation is not normally recommended. If evasion action were chosen, the best route would be to the southeast. In this special case, it is unlikely that threatening winds (>33 kt) will occur at Charleston, but it is reasonable that a tropical cyclone can regenerate into a severe threat to ships in the open Atlantic. All of the previous cautions should be taken into consideration, in that early evasion cannot be effective after tide and storm combine to make it unwise to leave port.
- (3) A tropical storm north of the 120° radial from Charleston: This situation is less common than (a) or (b). Storms that continue on a westward track are a threat to Charleston. Evasion action would be to steam southwestward along the coast. This action would situate the vessel in the less dangerous semicircle.

- (4) Other cases will have to be considered individually. Also, a close watch must be kept on all warnings even after the danger has apparently passed. There is always a possibility of a tropical cyclone stalling, or looping to rethreaten a particular location.
4. Navigation Controls. The COTP may establish Safety Zones during Port Conditions Yankee and Zulu. If a Safety Zone is established, no vessel may enter into or transit the area to which the Safety Zone applies without permission from the Captain of the Port. Safety Zones may be established after the storm has passed in order to expedite the clean up and to prevent unlawful acts against unmanned vessels, waterfront facilities, etc.

C. RESPONSIBILITIES.

1. Coast Guard. The primary responsibility for disaster preparedness response rests with state and local governments. However, Federal assistance may be provided when state and local governments are unable to cope with the effects of a disaster. Additionally, the Coast Guard has statutory responsibility to save lives, protect property, and assist other government agencies. Responsibilities of the COTP include:
 - a. Providing advance warning to commercial shipping interests.
 - b. Ensuring major pier areas are clear of explosives, dangerous substances, and polluting materials, and that adequate control of these materials is maintained during and after the storm.
 - c. Monitoring port areas for hazards, pollution, debris, etc., after passage of the storm/hurricane. In addition, Sector Charleston personnel must plan to protect themselves, their families, and equipment to best enable a prompt post-hurricane response.
- (1) Pre-Hurricane Surveys. Water and shoreside surveillance patrols will be conducted by COTP personnel in order to determine the degree of preparedness within the ports. These patrols will generally begin when the COTP sets Port Condition WHISKEY for the port.
 - (a) It is anticipated that ports may be closed because of damage caused by the storm. To help restore the port to operation, ports will be surveyed by COTP personnel or other designated agencies as resources permit.
 - (b) Safety Zones established by the COTP prior to the hurricane shall remain in effect until rescinded. If the COTP has safety concerns about the port because of hazardous conditions, including navigational hazards, spilled oil, or other dangerous conditions within the port, the COTP may establish additional Safety Zones or otherwise prohibit ship movements or cargo transfers.

2. State Ports Authorities/Port Directors/Facility Managers. State Ports Authorities/Port Directors are responsible for the security of piers, warehouses, and roadways within their jurisdiction. Private facility managers are responsible for security of their facilities. At least twelve (12) hours before the predicted arrival threatening winds, port areas should be secured for heavy weather. Particular attention shall be given to dangerous cargoes within the port. The COTP shall be notified by the Port Director/facility manager when they secure a terminal. Include any problems noted.
3. Pilots. The Pilots shall inform the COTP and Port Authority in advance of pilot services being suspended, when services are predicted to resume, and upon resumption of services. Pilots should keep in close contact with the COTP and advise of any unusual or dangerous situations.
4. Vessel Masters. Vessel masters shall take prompt effective action to ensure the safety of their ship and crew. Masters should plan to avoid the hurricane by putting to sea. The master of any commercial oceangoing vessel or Coast Guard certificated oceangoing barge over 500 gross tons that is unable to put to sea must request permission to remain in port from the COTP in writing. Requests to remain in port shall include completing the survey form in Annex V of enclosure 8, as a minimum. The request may be faxed to (843) 720-3289. Masters of vessels having the COTP's permission to remain in port shall follow the guidance in this plan, in addition to applicable standards of seamanship and the master's judgment, to weather the storm.
5. Vessel and Tug Companies. Maritime companies should review or develop hurricane recovery plans that provide for the earliest possible resumption of services after the hurricane has passed. Individual companies should review and prepare to implement their post hurricane pollution contingency plans.
6. Agents. Shipping agents are responsible for providing all vessels they represent a copy of this plan, including the Vessel Survey Form in Annex V of enclosure 8. Shipping agents shall assist any vessel master requesting permission from the COTP to stay in port during a hurricane in submitting the completed survey form to the COTP. Forms may be faxed to the COTP at (843) 720-3289.

D. COMMUNICATIONS.

1. Initial communication call-up with nonmilitary vessels assisting the Coast Guard Captain of the Port will be on Channel 16 VHF-FM radio. Vessels will be shifted to Channel 22 (157.1 MHZ). Landline communications (if operational) will be via telephone. Sector Charleston's telephone number is (843) 724-7616.
2. In the event of waterfront or vessel related emergencies contact the Coast Guard at:

Coast Guard Sector Charleston (COTP) (24 hrs) (843) 724-7616/7/8/9

E. PREPAREDNESS RESPONSIBILITIES. The actions and responsibilities for each

condition of readiness are listed below for both Coast Guard and the maritime community.

1. Hurricane Season Stand Down (1 Dec to 31 May):
 - a. Individual company and agency hurricane plans should be reviewed internally and updated prior to 1 June of each year.
 - b. Any vessel owner or agent desiring to lay-up a vessel in the Port of Charleston, Port Royal or Georgetown shall comply with Sector Charleston Instruction 16601.1A. The responsible party for any vessel currently laid-up in the Sector Charleston AOR shall verify that a current lay-up plan is on file with the COTP no later than 31 May of each year.
2. Hurricane Season Alert (1 Jun to 30 Nov):
 - a. COTP Charleston will ensure all ports are notified via Marine Safety Information Bulletin (MSIB) that Hurricane season has begun.
 - b. COTP will brief the Maritime Association on hurricane preparedness.
 - c. COTP personnel will conduct preliminary surveys of ports and marinas to determine the present state of readiness and to alleviate potential problems that are discovered.
3. Condition WHISKEY (72 Hour Alert):
 - a. COTP Charleston will ensure ports are notified via Broadcast Notice To Mariners (BNTM) and a Marine Safety Information Bulletin (MSIB) that hurricane winds are expected within 72 hours. A draft BNTM is included in enclosure 8.
 - b. Manned, self-propelled, oceangoing vessels moored or at anchor should be prepared to get underway immediately, have a navigation watch set, and maintain a listening watch on Channel 16 VHF-FM radio. Operators/agents shall notify the COTP of all unmanned or "dead" vessels over 500 gross tons within the COTP AOR.
 - c. Masters, owners, operators and agents of commercial oceangoing vessels and Coast Guard certificated oceangoing barges greater than 500 gross tons desiring to remain in port during a hurricane must request permission, in writing, from the COTP at least 48 hours prior to the storm's expected landfall (prior to Condition X-RAY). This also applies to vessels that have received prior approval to lay-up. Use the form in Annex V of enclosure 8, to request permission from the COTP to remain in port.
 - d. Port Directors and facility managers shall review vessel lay-up plans to ensure owners/operators are taking appropriate action to prepare their vessel(s) for

hurricane conditions.

- e. Port Directors and facility managers shall remove hazardous materials from areas prone to flooding.
- f. Vessel masters shall take all practicable and reasonable measures to ensure the stability of their vessels (i.e. ballasting, shifting of cargo, securing hatches).
- g. Facility operators shall ensure the open areas of their docks, wharves and piers are cleared of all missile hazards.
- h. 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.
- i. Oceangoing vessels completing cargo-handling operations prior to Port Condition YANKEE are encouraged to clear the port, subject to anticipated storm conditions.
- j. Small craft that can be hauled out of the water and/or trailered, should be. Other small craft should be moved to sheltered locations. It should be noted that the Ports of Charleston, Georgetown, and Port Royal are not designated safe havens.
- k. Marine and port interests should review expected arrivals and departures to identify potential needs for assistance or possible disruption to port operations. Vessels entering or leaving port should confirm that sufficient tug assistance has been arranged, and ensure coordination with pilots and port authorities.
- l. COTP personnel will conduct preliminary surveys to identify any unsafe conditions in port areas, especially in vulnerable areas. Marine and port interests should conduct preliminary checks of their own and advise the COTP of any circumstances that cannot be corrected within 48 hours. Any deficiencies found by the COTP Port Survey Teams will be documented in the form of a COTP Order issued to the facility manager to be corrected.
- m. The COTP may restrict the operations of, or deny port entry to vessels transporting oil or certain hazardous materials.
- n. The COTP will consider the disposition of any ships in the port lacking mechanical or electrical power, or otherwise restricted in their ability to maneuver.
- o. The COTP and Sector Charleston will monitor small craft activity with regard to movements and mooring locations.
- p. The COTP will identify the location of dredging vessels within the Ports of Charleston, Port Royal, and Georgetown and elsewhere in the COTP AOR.

- q. The COTP will closely review expected vessel arrivals and departures. Vessels entering or departing the Ports of Charleston, Port Royal, or Georgetown should ensure that sufficient tug assistance has been arranged in light of increased demand for tug assistance.
 - r. The COTP will contact Port Authority directors in Charleston, Port Royal, and Georgetown to determine the status of hurricane preparedness actions.
 - s. The COTP will ask pilots and industry representatives to provide information regarding vessel location, cargo, destination and estimated time of departure or arrival of vessels.
4. Condition X-RAY (48 Hour Alert):
- a. The COTP will ensure all ports are notified that Port Condition X-RAY has been set. A draft BNTM is included in Annex E.
 - b. The COTP will inform vessels, pilots, and local agents of the possibility of evacuating anchorages and moorings. Commercial oceangoing vessels and Coast Guard certificated oceangoing barges over 500 gross tons should make ready for departure to open sea prior to the setting of Condition YANKEE. At this time, other vessels should seek safe refuge.
 - c. Owners, operators, agents, masters of vessels, and managers of waterfront facilities should account for the following:
 - (1) Masters of vessels over 500 gross tons that are given permission to remain in port shall take all necessary precautions to secure the vessel for forecasted winds and tidal surges. Sufficient crew must be onboard to adjust mooring lines for all changes in tide, current and surge.
 - (2) All petroleum barges remaining in port shall be emptied of cargo and ballasted. They shall be moved to safe moorings where possible.
 - (3) Dredge operators shall move dredges to sheltered moorings.
 - (4) Facility managers shall review and prepare to implement their post hurricane pollution contingency plans.
 - (5) 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.
 - (6) Vessel masters and shipping agents should expect pilots will deny their services threatening wind conditions.

- (7) Shipping agents should anticipate that the COTP will not allow inbound traffic once Condition YANKEE is set. Vessels with an arrival of less than 24 hours before threatening winds shall arrange to seek shelter elsewhere.
- (8) Facility managers should anticipate that the COTP will order suspension of cargo handling operations during Condition YANKEE (24 hour prior to landfall). Facilities should hire and schedule labor accordingly.
- (9) Vessel masters and facility managers should anticipate storms may strengthen and movements may accelerate between "conditions;" and cargo/vessel operations should be planned accordingly.
- (10) Vessel masters, recreational vessel operators, and shipping agents should anticipate that upon the declaration of a state of emergency, movable bridges in the local area will be closed in the down position to facilitate a smooth and orderly evacuation of low lying coastal areas.
- (11) Vessel masters having received COTP permission to remain in port shall ensure that an inventory of necessary ship's stores is made to determine that adequate quantities of such items as wire rope, mooring lines, fenders, etc., are on hand to double-up and secure any vessels expected to remain in port. Supply sources will "dry-up" quickly. In addition, vessels must have sufficient fuel onboard to put to sea and ride out the storm. Bunkers must be ordered well in advance of a hurricane reaching port.
- (12) Loose materials that may become missile hazards 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.
- (13) Facilities that normally moor barges shall reduce their fleets as much as possible. Remaining barges should not be more than one barge wide and shall have sufficient fastenings to prevent the vessels from breaking loose by wind, current, wave action, surge, or other forces which might cause the vessel to break its moorings. During hurricane conditions, barges and vessels will not normally be allowed to remain at facilities that are in close proximity of bridges. Operators/owners of these vessels shall make provisions to move them well in advance of threatening winds. Barge fleets not moored at facilities shall be relocated upriver from Charleston bridges or removed from the port.
- (14) Facility managers shall address any deficiencies noted during port surveys and waterfront facility inspections conducted by COTP personnel, and notify the COTP when they are corrected.
- (15) Ship/tug services shall maintain communications with the COTP via Channel

16 VHF-FM radio or by telephone. Approximately 17 tugs are available in the port of Charleston and 3 in the port of Georgetown to assist in vessel movement. Based on the small number of tugs available, ship owners/operators must plan well in advance for the service of these tugs.

- (16) Facility managers shall ensure that laid-up vessels are not breasted.
- d. The COTP will contact port facilities regarding facility operational shutdowns. Vessels and terminal operators should prepare to terminate all cargo-handling operations 24 hours prior to threatening winds.
 - e. Sector personnel will conduct follow-up surveys to ensure that any hazards identified earlier are being resolved.
 - f. The COTP will issue orders requiring 24-hour advance notification of arrivals and departures for **all** vessels including barges over 500 gross. All vessels at anchor shall make preparations to depart prior to the COTP setting Port Condition YANKEE. No oceangoing vessel may remain in port at anchor after the COTP has set Port Condition YANKEE.
 - g. The COTP will evaluate the status of port activities with regard to hazardous and polluting substances. Under authority of the Ports and Waterways Safety Act, consideration is to be given to ordering tankers and vessels carrying hazardous substances to prepare to depart the port immediately, and coordinate this with the Pilot's Associations.
5. Condition YANKEE (24 Hour Warning):
- a. The COTP will ensure all ports are notified that Port Condition YANKEE has been set. See draft BNTM in enclosure 8.
 - b. The ports in Sector Charleston's AOR shall not be used as a haven from tropical storms unless considerable confidence exists that the sustained wind speed will not exceed 60 knots/69 mph. Prior to winds reaching a sustained velocity exceeding 34 knots/39 mph (gale force), State Pilots may decline boarding vessels. Anytime prior to landfall of the hurricane, state and county officials (as noted in their Emergency Operations Plans) may elect to "lock down" bridges in the port on short notice to facilitate evacuation of low lying areas. Where vessels are upstream of moveable bridges, transits must start early enough to avoid being locked in once bridges are secured in the down position.
 - c. Evasion at sea is the recommended course of action for all commercial oceangoing vessels and Coast Guard certificated oceangoing barges over 500 gross tons when winds of hurricane force are expected in Sector Charleston's area of responsibility (AOR).

- d. Certain waterfront facilities may insist vessels depart their docks during this period. No moves will be permitted by the COTP unless the move can be done safely and mooring space has been identified at another pier, wharf or local shipyard, unless the vessel is departing to sea.
- e. As stated before, pilots may elect not to move deep draft vessels after winds increase to 34 knots/39 mph. However, if vessels are moved, they shall be under tug escort. Decisions regarding the appropriate number and size of escort tugs shall be made by the COTP in conjunction with the pilots.
- f. All small craft located in the Ports of Charleston, Port Royal and Georgetown, should move upriver of downtown bridges and tie up in sheltered locations. If possible, small craft should be hauled out or trailered. If owners are unable to remove their boats from the water, they should be storm moored at docks with all available fenders and allowances made for tidal changes. Small craft owners may wish to move their boats into a small winding stream for protection.
- g. COTP survey teams, port authority personnel, and/or waterfront facility representatives will conduct final facility and vessel surveys to address any remaining unresolved discrepancies using Annex II.
- h. The COTP will make a final decision concerning which vessels must be moved from the Port of Charleston, Port Royal or Port of Georgetown. Masters of vessels that have been granted permission to remain at a berth shall be examined by the host facility operator for proper mooring and stowage practices. Waterfront facility operators shall report to the COTP, the status of vessels remaining at their facilities throughout the storm, and report when the last departing vessel has sailed.
- i. Owners, operators, agents and/or masters of vessels and waterfront facilities should:
 - (1) Commence/continue removing/securing missile hazards and hazardous cargoes at open wharves.
 - (2) Terminate all cargo handling operations and commence securing equipment. Product storage tanks ashore should be loaded to optimum level to withstand winds and flooding.
 - (3) Anticipate that the COTP may close the port to incoming traffic at this time and to all but emergency vessel movements when Port Condition ZULU is set. Broadcast Notice to Mariners and Marine Safety Information Broadcasts will be used to announce impending port closures and special conditions deemed necessary by the COTP. Vessels not permitted to remain in port should plan to depart the port as soon as possible.
 - (4) Remove remaining equipment from vulnerable areas.

- (5) Inspect moorings of vessels that have been granted permission to remain in port; doubling up of mooring lines or changing the mooring arrangement as may be necessary.
 - j. Local towing companies should contact the COTP to advise their operational status prior to and after the hurricane winds pass the area. The COTP's goal is to have a listing of tugs available for assistance.
6. Condition ZULU (12 Hour Warning):
- a. COTP Charleston will notify the maritime community that Port Condition Zulu has been set via Broadcast Notice to Mariners and Marine Safety Information Bulletins. Draft BNTM is included in Annex E.
 - b. The maritime community should anticipate that the COTP will secure all port operations and vessel movements.
 - c. Facility managers of oil transfer terminals shall ensure that loading arms and transfer hoses are drained of all product, flanged off and secured to the dock; and close all valves on transfer piping leading to the docks.
 - d. The following information is intended for masters of vessels moored at docks:
 - (1) Place the outboard anchor at short stay.
 - (2) The vessel shall be moored with sufficient mooring lines and wire to resist the effects of hurricane force winds.
 - (3) Sufficient officers and crew shall be on board to tend mooring lines, maintain a navigational watch, and to ensure the operation of the vessel's main propulsion unit and other machinery.
 - (4) The vessel shall be properly ballasted.
 - (5) All side ports, hatches, portholes and other openings shall be closed and secured.
 - (6) Bilge pumps shall be in good operating condition and ready for immediate use.
 - (7) All fire fighting equipment shall be ready for immediate use.
 - (8) At least one pilot ladder shall be rigged on the onshore and offshore sides of the vessel.

- (9) A gangway or other suitable means of access between the vessel and the pier shall be rigged.
 - (10) At least one hawser of sufficient strength to tow the vessel should be rigged at the bow and at the stern, on the offshore side of the vessel, no more than six feet from the water's edge.
 - (11) Spare mooring lines and/or wires shall be readily available on deck, forward and aft.
 - (12) Maintain a continuous radio watch aboard the vessel on Channel 16 VHF-FM radio.
- e. Owners, operators, agents, and/or Masters of vessels on waterfront facilities shall make final inspections of their vessels and facilities, and verify resolution of any discrepancies noted earlier in surveys.
 - f. Facilities shall ensure cranes are properly secured, missile hazards cleared, and remaining containers secured.
 - g. A COTP representative will relocate to the Charleston County Emergency Operation Center (EOC) at the following location:

County Emergency Operations Center
Third Floor
Lonnie Hamilton III Public Service Building
4045 Bridge View Drive
North Charleston, SC 29405

F. PORT EMERGENCY INFORMATION CENTER.

- 1. The Maritime Association of the Port of Charleston (MAPCHA) will stand up a Port Emergency Information Center (PEIC) following the passage of severe weather. The PEIC has three primary goals:
 - a. Facilitate the reopening of the Port of Charleston to commercial navigation,
 - b. Establish an effective communication system within the maritime community and,
 - c. Assist the return of normal port operations.

The PEIC will be manned as soon as possible following the passage of severe weather by MAPCHA staff and volunteers from various port industries and will be located at the Embassy Suites on International Blvd in North Charleston, SC.

- 2. The PEIC will gather and distribute vital information needed by the port

industries in order to plan for and resume normal port operations as soon as possible. Information such as the status of road closures, power outages and channel opening/restrictions will be vital for the commercial marine industry to know when attempting to resume operations. The PEIC will gather this information from many sources including the USCG Sector Charleston representative assigned to the Charleston County Emergency Operations Center.

3. The PEIC can be reached at (843)725-1335/1336/1337/1338. A copy of MAPCHA's Hurricane Consequence Management Plan can be obtained from the MAPCHA website at <http://www.mapcha.com/>.