

Hurricane Preparedness

Resiliency and Response at Florida Seaports

Background:

Hurricane Irma tested the emergency response preparedness at every seaport in Florida. This massive Hurricane closed major fuel and cargo operations at our seaports over several days, and provided us with some keen insights concerning local and state continuity of operations and resumption of business plans. The following provides some information and recommendations concerning improving preparedness, resiliency and response at our seaports for future hurricanes:

Fuel and Cargo Distribution – Adequacy of Critical Infrastructure

Lessons learned from the impact of Hurricane Wilma and Hurricane Irma show how important hardening of critical infrastructure is for adequate resiliency and response after a hurricane – especially at fuel distribution facilities on seaports.

Hurricane Wilma in 2005 damaged the power and functions at several fuel distribution terminals at Port Everglades. Unfortunately, restoration of power was not considered a priority at such terminals at that time. Thus, the distribution of critical fuel from such facilities was unnecessarily delayed after Hurricane Wilma left the area. Based on this issue, Port Everglades and Florida Power and Light (FPL) hardened the electrical connectivity between electrical stations and the fuel terminals. This allowed for an efficient and rapid distribution of critical fuel after Hurricane Irma left the area recently.

Hurricane Irma had a similar impact on the recently built fuel distribution terminal at Port Canaveral. The storm damaged water distribution from the City of Cocoa for fire suppression and damaged power capacity at the terminal. This damage slowed the capabilities of Port Canaveral to bring the terminal back online and distribute fuel.

In addition, difficulties with telecommunication infrastructure hampered the ability of our seaports to communicate with tenants and truckers that service the distribution of fuel at our seaports.

Hardening the water, electrical, and telecommunication functions at our seaports and prioritizing the recovery of any damage to these functions are critical to providing fuel and cargo – not only for all Floridians but for first responders responding to hurricane-related emergencies.

We recommend local county/city continuity of operations and resumption of business plans include a hardening of critical infrastructure at their seaport – especially ports with fuel distribution terminals. This critical infrastructure should include a review and hardening of power, water and telecommunication functions. Further, if state or federal emergency response funds are necessary we recommend funding be allocated for identified “hardening projects” identified in adopted continuity of operations and resumption of business plans.

We further recommend state and local emergency response plans include protocols for prioritizing the restoration of water, electrical and telecommunication functions at seaports with fuel distribution terminals.

Navigational Channel – Reopening after a Hurricane

The U.S. Coast Guard, specifically the Captain of the Port (COTP) responsible for the seaports in their sector, controls the waterside and landside readiness condition of each seaport. The COTP will begin restricting waterside access to seaports 48 hours prior to sustained gale force winds of 39 mph plus, with a complete closure 12 hours prior to sustained gale force winds. The COTP will begin restricting landside activities 24 hours prior to such sustained gale force winds, with a complete closure except for the completion of storm preparations 12 hours prior to sustained gale force winds. Waivers for waterside vessel and terminal landside activities can be granted by the COTP for activities prior to closing of the port by the COTP depending on safety concerns. Trucks and other cargo operations will not continue activities during the presence of gale force winds over 40 mph.

After a hurricane's passage, navigational channel access to a port will be re-opened after a satisfactory assessment of the waterway, including critical aids to navigation, has been conducted. These assessments are often conducted by U.S. Army Corps or National Oceanic and Atmospheric Administration (NOAA) survey vessels with crews trained to conduct certified surveys of navigational channels. Because there are limited resources (vessels and crews) available at the U.S. Army Corps, these surveys also have been conducted by U.S. Coast Guard vessels or other seaport-owned or contracted vessels and crews that have been certified by the U.S. Coast Guard to conduct such assessments. The U.S. Coast Guard may also require an aerial survey of the channel by Coast Guard or other agency aircraft prior to channel reopening.

The U.S. Army Corps and NOAA often place their limited number of survey vessels in certain areas to prepare for re-opening of channels after a hurricane passes. Given the changing trajectory of these storms, positioning of these limited number of survey vessels is often a guessing game.

We recommend the purchase of additional survey vessels for the U.S. Army Corps and/or NOAA to deploy around the country. We also recommend funds be allocated to seaports with critical fuel and other cargo distribution facilities to purchase a fully equipped survey vessel and provide for training of personnel to conduct the surveys. A fully equipped survey vessel will cost approximately \$260,000.

Water Level and Tide Gauges

NOAA maintains a network of real-time tide gauges and water level monitors throughout the United States, including 24 stations in Florida. NOAA also maintains larger Physical Oceanographic Real-Time System (PORTS) in 30 major ports and waterways throughout the United States, including Jacksonville and Tampa Bay in Florida. The information from those systems and gauges is essential to monitor water levels and storm surges in real-time, and can be critical for safe navigation and in allocating resources to damage assessment and response after a storm. Nevertheless, there are gaps along the coast of Florida where data is not available. Broward County is one area without a real-time water level sensor, but the county contracted with NOAA in April 2016 to have a sensor system installed at Port Everglades at county expense. The system will be installed in December 2017 for approximately \$117,000 for equipment installation and \$27,000 in recurring annual maintenance costs. The federal government should determine what coastal areas of Florida are not adequately covered and fund the installation and recurring maintenance of these sensor systems, including the addition of PORTS systems in other large Florida seaports.

Emergency Preparedness/Response Communications

The following issues do not require any additional appropriation of funds. Based on lessons learned from Hurricane Irma and other storms, we would recommend a review of the following for any necessary protocol, regulatory or statutory changes.

1. Maritime Heavy Weather Preparedness and Recovery Communications Protocol. Every terminal and Florida seaport has developed a continuity of operations and resumption of business plan. In many of the larger seaports, the COTP, port administration and tenants also have a communication plan for the resumption of issues such as fuel distribution. However, these communications may or may not be

automatically connected to the state emergency operations center, state emergency response agencies or federal partners during and after a hurricane.

We recommend the creation of a state maritime heavy weather protocol plan with staffing by the Florida Ports Council (FPC) at the state emergency operations center during the declaration of an emergency by the Governor involving Florida seaports. We also recommend individual seaports, especially those with fuel distribution terminals, create their own heavy weather preparedness and recovery group to communicate local issues to FPC staff at the state emergency response center. Protocol communications and response include, but are not limited to, issues involving the following:

- a. Discussions with state emergency response teams and the U.S. Coast Guard concerning receipt and distribution of fuel and other emergency cargo during diminishing port readiness conditions, as long as safe operations are maintained. This could include landside operations during condition Zulu.
 - b. Discussions with U.S. Coast Guard, state and local law enforcement personnel concerning small and private vessel evacuations and compliance with emergency mooring procedures. As discussed below, abandoned and destroyed vessels in navigation channels will unnecessarily delay the opening of vital fuel and cargo facilities.
 - c. Discussions with U.S. Coast Guard and maritime industry concerning prioritization of channel usage and berthing space after passage of a hurricane. After Hurricane Irma moved out of the state, there was some confusion with non-fuel carrying cargo vessels seeking berthing space prioritized for fuel vessels.
 - d. Discussions with landside fuel distribution terminal operators to understand their capacity, operational status, and distribution needs before and after the hurricane. These discussions should be communicated directly to FPC staff at the state emergency operations center.
 - e. Designation of truck staging areas both within and near ports for petroleum tank trucks to expedite resumption of petroleum delivery after a storm passes and conditions allow for safe travel.
2. Small/Personal Vessel Emergency Moorings and Evacuations. Chapter 327, the Florida Vessel Safety Law, was recently amended by the Florida Legislature to prohibit a vessel or floating structure from anchoring or mooring within 150 feet of a seaport or within or within 100 feet outward from the marked boundary of a public mooring field. Based on current estimates at several of our Florida seaport navigational channels, these prohibitions need to be increased and may need additional state resources to ensure compliance by vessel owners.

We recommend that the Florida Fish and Wildlife Conservation Commission work with the U.S. Coast Guard to determine if the mooring prohibitions contained in Chapter 327 are adequate to prevent disabled vessels from blocking navigable waterways after a hurricane. We also recommend enforcement capabilities of anchoring and mooring prohibitions contained in Chapter 327 be increased. Local and state law enforcement agencies with waterside authority must have the ability to help remove unlawfully moored vessels once the COTP has set condition Whiskey (72 hours prior to gale force winds) at the seaport.

3. Communication with Trucking Industry/Waiver of Driver Hours. Distribution of fuel by drivers with a current Commercial Driver License (CDL) was a key component of state efforts to provide fuel to Floridians before and after Hurricane Irma. Communication with these truck drivers was often haphazard and confusing. Many drivers did not know Governor Scott waived driving hour requirements or provided Florida National Guard escorts for fuel tankers.

We recommend a review and development of communication protocols by state and local emergency response centers to provide a method to communicate with drivers distributing fuel and other emergency cargo from our seaports.

Lessons Learned/Recommendations

Background:

Hurricane Irma tested the emergency response preparedness at every seaport in Florida. This massive Hurricane closed major fuel and cargo operations at our seaports over several days, and provided us with some keen insights concerning local and state continuity of operations and resumption of business plans. The following are lessons learned and recommendations for improving preparedness, resiliency and response at our seaports:

Fuel and Cargo Distribution – Adequacy of Critical Infrastructure

- We recommend local county/city continuity of operations and resumption of business plans include a hardening of critical infrastructure at their seaport – especially ports with fuel distribution terminals. This critical infrastructure should include a review and hardening of power, water and telecommunication functions. Further, if state or federal emergency response funds are necessary, we recommend allocated funding for identified “hardening projects” in continuity of operations and resumption of business plans.
- We further recommend state and local emergency response plans include protocols for prioritizing the restoration of water, electrical and telecommunication functions at seaports with fuel distribution terminals.

Navigational Channel – Reopening after a Hurricane

- We recommend the purchase of additional survey vessels for the U.S. Army Corps and/or NOAA to deploy around the country. We also recommend funds be allocated to seaports with critical fuel and other cargo distribution facilities to purchase a fully equipped survey vessel and provide for training of personnel to conduct the surveys. A fully equipped survey vessel will cost approximately \$260,000.

Emergency Preparedness/Response Communications

- We recommend the creation of a state maritime heavy weather protocol plan with staffing by the Florida Ports Council (FPC) at the state emergency operations center during the declaration of an emergency by the Governor involving Florida seaports.
- Small/Personal Vessel Emergency Moorings and Evacuations. Chapter 327, the Florida Vessel Safety Law modifications. We recommend that the Florida Fish and Wildlife Conservation Commission work with the U.S. Coast Guard to determine if the mooring prohibitions contained in Chapter 327 are adequate to prevent disabled vessels from blocking navigable waterways after a hurricane. We also recommend enforcement capabilities of anchoring and mooring prohibitions contained in Chapter 327 be increased. Local and state law enforcement agencies with waterside authority must have the ability to help remove unlawfully moored vessels once the COTP has set condition Whiskey (72 hours prior to gale force winds) at the seaport.
- We recommend a review and development of communication protocols by state and local emergency response centers to provide a method to communicate with drivers distributing fuel and other emergency cargo from our seaports.

Water Level and Tide Gauges

- Gauges vital for emergency situations will cost approximately \$117,000 for equipment installation and \$27,000 in recurring annual maintenance costs. The federal government should determine what coastal areas of Florida are not adequately covered and fund the installation and recurring maintenance of these sensor systems, including the addition of PORTS systems in other large Florida seaports.