A Port Management Self-Assessment
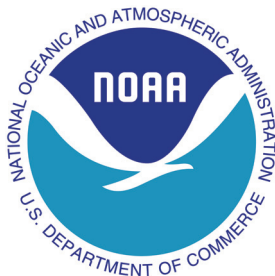
Understanding How Prepared Your Port Organization is for a Disaster

"Navigating to port resilience"

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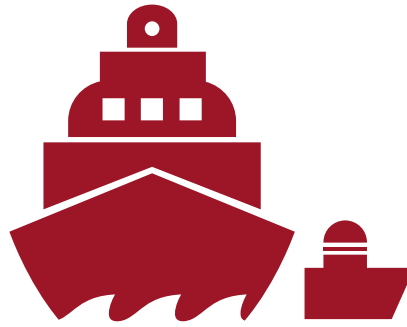
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INTRODUCTION

As the frequency of natural and manmade hazards increases, Ports play an important role in waterfront community resilience and should be considered part of the solution to achieve that resilience. The Ports Resilience Index (PRI) is a self-assessment tool developed for Port and marine industry leaders. It serves as a simple and inexpensive method of assessing if Ports and the regional marine transportation sector are prepared to maintain operations during and after disasters. Completing the PRI will assist Ports in developing actions for long-term resilience.

As you complete the PRI, you should consider your Port's level of preparedness for both large and small-scale events. Large-scale events include natural hazards affecting a widespread area, such as hurricanes. Small-scale disasters can be thought of as short-term weather events or an event that affects only your facility, such as a fire or flood on-site.

Being able to withstand and adapt to change has become a focal point for several business sectors and industries. Resilient industries recognize the vital role that planning, preparation, and collaboration play in developing and executing an ability to respond to challenges, adapt to changes and thrive. The PRI development team stresses that Port resilience planning should be completed in collaboration with the Port Coordination Team or with a similar group of internal and external Port stakeholders.

Coastal seaports and inland river ports will benefit from the PRI by identifying strengths and weaknesses in their management and operations. These indicators can provide an important baseline by which to measure progress toward resilience goals. In addition, the PRI assists in assessing the overall resilience of the Ports industry. The process of completing the PRI will help identify the action items the industry should work towards to address system vulnerabilities and maintain long-term viability.

METHODS

The PRI was developed with broad participation from industry leaders. The PRI Development Team prepared a checklist of possible indicators of resilience for ports, using the American Association of Port Authorities 2006 *Emergency Best Practices Manual* as a starting point. Other resources included the NOAA Port Resilience Planning Tool and academic sources (e.g., Becker, A., and M.R. Caldwell. 2015. Stakeholder Perceptions of Seaport Resilience Strategies: A Case Study of Gulfport (Mississippi) and Providence (Rhode Island). Coastal Management 43(1): 1-34.).

To ensure we collected a robust and thorough set of draft indicators, the coordinating team asked for assistance from leaders in the ports and marine transportation industry to identify measures of resilience (indicators). Using those indicators, the PRI was organized into broad categories (i.e. hazard assessment, risk management, emergency operations, etc.). Each indicator is written in the form of a 'yes' or 'no' question that can be answered in terms of existing port facility conditions and operations. A percentage system is used for each indicator so an overall score can be calculated. Instructions and interpretation of a score are included at the end of the PRI. It is important to note that the process of completing the PRI is intended to be an in-person activity bringing together various members of a Port management team to discuss the questions and determine an answer. This process creates dialogue about important issues, stimulates discussion on joint solutions to challenges the industry may face, and documents strengths of current industry best practices.

IMPORTANT DEFINITIONS

Alternate Operations Location: A physical or virtually remote location from which port operations can continue before, during, and after a hazardous event

Disaster: An event that is experienced collectively, resulting in infrastructure and property damage, and requires external aid and assistance in order to respond

Essential Personnel: Those Port employees who are required to maintain port operations before, during, and after a hazardous event

Hazard: An event that precedes disaster; sources of hazard include environmental, national security, technological, or public health

Resilience: The ability to return to an acceptable level of functioning after a disaster and "bounce forward"

INTENDED TARGET AUDIENCE

The intended target audience for the Ports Resilience Index begins with the Port Authority or Port management organization. Many visits and discussions during the process of the development of the PRI clarified that *Port* signifies the Port Authority or Port management organization whereas *port* signifies the geographic area included within the jurisdictional boundaries under the authority of the Port. Since the content of the questions within the PRI targets Port management, you will see *Port* as the actor of the questions.

The list of potential invitees to a facilitated run-through of the PRI includes those internal to the Port and those external to the Port. Internal invitees include divisions of Port management, including executive leadership, operations, environmental health and safety, finance and administration, security, communications, and human resources. Other internal invitees include representatives from operators, tenants, or Port-related associations. External invitees include representatives from the local emergency management agency; tenant representatives; and federal partners (e.g. closest MARAD gateway officer). In collaboration with the facilitator, each Port will develop the invitation list of the people necessary to complete the PRI.

WHEN TO COMPLETE

The PRI is meant to be a living document and provides important guidelines for a Port to select actions that need to be addressed throughout the year. Exposure to environmental hazards will have an impact on when the checklist is completed. For example, a coastal port exposed to hurricanes might want to complete the PRI prior to the beginning of hurricane season. In addition, turnover in personnel requires regular updates to preparedness plans. Although there is no set timeframe, the PRI should be revisited at least every 1-2 years.

PLANNING DOCUMENTS FOR HAZARDS AND THREATS

Plans and procedures should be copied onto a USB drive or backed up to the cloud to be portable in case of emergency.

Planning Documents for Hazards and Threats	Yes	No	N/A
Example: Regularly update contact lists as personnel change	√		
1. **Does your Port have a hazard or emergency preparedness plan that includes the following:** • A summary of the situations that it addresses and a general concept of emergency operations • Essential Personnel and their functions (e.g., Director, Managers, Security, Emergency Response, Communications, Harbormaster) • Locally established evacuation routes and information			
2. **Are the Port's emergency response and contingency plans integrated into state and local** (city, parish or county) **emergency, response, and recovery plans?**			
3. **Has your Port identified and prioritized the critical facilities and services to be restored in order for the Port to resume normal operations** (e.g., berths and wharves, roadways, rail, terminal equipment, storage facilities)**?**			
4. **Has your Port identified critical business processes** (e.g., email, payroll, purchasing, accounts payable, business support, etc.) **and priorities for post-event restoration?**			
5. **Does your Port identify someone responsible for updating all emergency documents?**			
6. **Does your Port regularly update contact lists as personnel change?**			
7. **Does your Port reference appropriate manuals and federal guidelines for emergency planning and training exercises** (See Resources on page 25)**?**			
8. **Has your Port considered developing and utilizing gaming exercises, simulations, and scenario planning tools to assist with annual drills?**			
Total number of Yes and No answers:			

EXAMPLES

Essential Personnel:

- Port Director and Deputy Port Director
- Managers (e.g., Senior; Facility; Media Relations; Environmental, Health and Safety; Engineering; Risk; Maintenance)
- Security (e.g., Port Police force; Facility Security Officers)
- Emergency response (e.g., local Fire Department liaison; local Police Department liaison)
- Communications (e.g., public information officer; media relations)
- Harbormaster

Evacuation Information:

- Evacuation route maps for port facilities
- Equipment and personnel needed for safe and efficient evacuation from the port
- Identified routes for police, fire protection and medical services
- Permanent signage indicating evacuation routes leading into and out of the port
- Evacuation route maps and instructions for the city/county/state

ADDITIONAL NOTES

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HAZARD ASSESSMENT: INFRASTRUCTURE AND ASSETS

These questions help a Port determine if it has a plan to assess all hazards and risks to facilities and infrastructure.

Hazard Assessment	Yes	No	N/A
Example: Identified its cyber risk and possible mitigation procedures to address that risk		√	
1. **Does your Port conduct a regular assessment of critical infrastructure and facilities to identify potential threats, including weather hazards, technological hazards, port-specific hazards, and cyber threats?**			
2. **Does your Port conduct a regular assessment of the condition of its facilities to identify maintenance issues requiring corrective action to increase safety?**			
3. **Has your Port performed an assessment to identify infrastructure and facility upgrades necessary to limit damage due to flooding, wave and wind action for various storm scenarios?**			
4. **Does your Port follow FEMA Floodmap Base Flood Elevation standards?**			
5. **Has your Port identified likely needs for post-event dredging and material removal from navigation channels, based on various storm scenarios?**			
6. **Does your Port consider historic trends and past events** (e.g., climatic data, weather records, incidents on-site, economic trends) **to identify information related to hazard risks and probabilities for future acute events** (e.g., hurricanes, chemical spill)**?**			
7. **Does your Port consider historic trends and past events to identify information related to hazard risks and probabilities for future chronic events** (e.g. sea level rise, shoreline erosion, economic recession)**?**			
8. **Has your Port identified its cyber risk and possible mitigation procedures to address that risk?**			
Total number of Yes and No answers:			

BEST PRACTICE

Review FEMA floodmaps to see how infrastructure at your port might be affected by changes in zone designations and to identify what steps should be taken to be in compliance with the National Flood Insurance Program.

Case Study Example:
The Port of Corpus Christi Authority works with the City of Corpus Christi to review changes in FEMA floodmaps and how those changes affect infrastructure at the port.

EXAMPLES

Weather Hazards:

- Hurricanes
- Coastal storms
- Flooding
- Ice and snow

Geological Hazards:

- Earthquakes
- Tsunamis

Technological Hazards:

- Oil spills
- Chemical releases
- Fires
- Cyber security threats

Port-Specific Hazards:

- Vessel collisions
- Vessel groundings
- Train derailment
- Labor strikes
- Equipment failure

ADDITIONAL NOTES

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INSURANCE AND RISK MANAGEMENT

Once the hazard assessment is complete, the Port identifies mechanisms to address those risks. The following questions help a Port decide if it has the right property insurance strategy based on its identified risks, loss exposure and economic tolerance.

Insurance and Risk Management	Yes	No	N/A
Example: Have flood insurance and business interruption coverage	√		
1. **Has your Port conducted a risk assessment process to analyze financial loss exposure for identified hazards and risks that considers probability of occurrence and maximum loss value for physical assets and revenue loss?**			
2. **Has your Port determined an acceptable level of risk** (or risk tolerance) **for various hazards?**			
3. **Does your Port have the following types of insurance on all buildings managed by the Port?** • Property insurance, wind insurance, and flood insurance			
4. **Does your Port's insurance policy include a comprehensive Statement of Values with replacement costs or actual cash values for its assets?**			
5. **Does your Port have Business Interruption** (BI) **coverage to include business income, contingent business interruption, extra expense, civil authority, ingress/egress challenges, and miscellaneous related expenses?**			
6. **Does the Port's emergency plan include notification to the Port's insurance broker and contracted respondents** (e.g., vendors and consultants) **to request an adjuster when an event is in the forecast?**			
7. **Does your Port have pre-event video or photo documentation of its assets and infrastructure and the supplies to document damages to provide for FEMA and other insurance claims after an event?**			
8. **Is the Port aware of state or jurisdiction rules related to emergency bidding requirements and spending level restrictions?** (Refer to Stafford Act)			
9. **Does the Port have the ability to access lines of credit, bank loans, and disaster assistance loans to finance operations and repair and rebuilding efforts on a short-term basis?**			
10. **Does your Port have coverage for costs incurred to prevent further loss in the event of a covered peril?** (e.g., mitigation activities)			
11. **Do Port facility leases take into account emergency response and recovery efforts and procedures?**			
12. **Does your Port have mutual aid or formal agreements with neighboring ports to provide emergency support operations** (e.g., providing fuel for generators; water; food; people to help with cleanup)**?**			
13. **Does your Port have a plan to provide or request mutual aid for regional emergency procedures** (e.g., alternate medical transport services; regional helicopter services; MARAD hospital ship requests)**?**			
Total number of Yes and No answers:			

EXAMPLES

Pre-event Materials for Insurance Claims:

- Copies of all policies and required forms for filing claims
- Current video and photographs of all Port property
- Contact information for the insurance agent or broker for claim reporting
- Pre-service contract or established relationship with recovery companies prior to event to set reasonable rates for post-event services

Post-event Materials for Insurance Claims:

- Time and origin of the loss
- Plans and specifications for all buildings, fixtures and machinery destroyed and damaged
- All contracts of insurance covering any of the property
- Records of physical addresses of contacts for Port assets

Emergency Response and Recovery Elements of Facility Leases:

- Waiver of liability for force majeure conditions
- Removal of damaged cargo
- Waiver of common carrier status for cargo claims

- Reference to the Port tariff and all rules and regulations therein unless otherwise specified in the lease
- Definition of what will happen in the event of damage to facilities under lease
- Reminder of the Port's ability to terminate if there is total destruction or insurance proceeds are insufficient
- Waiver of liability for replacement of tenant fixtures or improvements

Elements of Mutual Aid Agreements:

- Activation of the agreement
- Description of aid to be provided
- Procedures for requests for assistance
- Supervision and control
- Food, housing and self-sufficiency
- Communications
- Rights and privileges of personnel
- Term of deployment
- Responsibility for all costs of providing assistance
- Insurance responsibilities
- Waiver of claims against each other
- Immunity retained
- Termination provisions

ADDITIONAL NOTES

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CONTINUITY OF OPERATIONS PLANNING FOR INFRASTRUCTURE AND FACILITIES

These questions help a Port decide if it has considered appropriate pre-storm measures to enable its response and recovery.

Continuity of Operations Planning	Yes	No	N/A
Example: Have a list of vendors and contact information for response services		√	
1. **Does your Port have a plan to prevent flying debris by securing or moving equipment including gantry cranes, container equipment, intermodal transportation and facilities, buildings and high mast lighting, vehicles, and utilities?**			
2. **Does the Port plan consider the circumstances under which the power at the Port is shut off?**			
3 **Does the Port have a protocol to establish emergency reactivation of utilities after an event?**			
4. **Does your Port have a list of vendors and contact information to allow for quick scheduling of emergency response and recovery services** (e.g., equipment, supplies, damage assessment, facility control, channel maintenance)**?**			
5. **Do other government entities in the area have master service agreements for emergency response and restoration that could benefit the Port** (e.g., highway cleaning equipment to clear debris from roads leading into and out of the port facility)**?**			
6. **Does your Port have a pre-identified Damage Assessment Team** (e.g., in-house or contractors) **and the resources to conduct both an initial damage assessment and the formal damage assessment process per FEMA regulations?**			
7. **Does your Port have knowledge of or access to a consultant who has knowledge of disaster assistance programs** (i.e., FEMA Public Assistance, FEMA Hazard Mitigation Grant Program) **and a plan to apply for assistance after an event?**			
8. **Does your Port have access to an emergency vessel boat launch?**			
9. **Does your Port utilize itself as an emergency response asset** (e.g., safe harbor for vessels)**?**			
10 **Is your Port aware of the assistance it may be asked to provide to the community in the event of a disaster** (e.g., Navy Hospital Ships, FEMA/MARAD Ready Reserve Force)**?**			
Total number of Yes and No answers:			

BEST PRACTICE

Discuss with the local municipality (e.g., city, county, or parish) to find out what master service agreements they have in place with emergency response and recovery companies that might include the Port (e.g., debris removal from roads).

Case Study Example:
After Hurricane Katrina, FEMA used available waterfront space at the Port of Pascagoula to dock a cruise ship that housed nearly 200 families displaced by the storm. A Navy hospital ship also docked at the port to treat hurricane victims.

EXAMPLES

Emergency Response and Recovery Services:

- Equipment: for removal of debris, mud, standing water, smoke; generators

- Supplies: fuel; water; portable toilets

- Damage assessment: air transportation, engineering services, FEMA consultants

- Facility control: dehumidification; corrosion control; electrical restoration

- Channel maintenance: channel sounding; berth or channel dredging

Expertise to be Represented on the Damage Assessment Team:

- Structural engineering: for damage related to water and fire

- Electrical engineering: for water analysis for ionic content, acidity, suspended solids, and organic content

- Hazardous materials and environmental issues: PCBs, asbestos, lead, cadmium, mercury, combustibles, mold and mildew spores

- Police department

Port Amenities for Response and Recovery Services:

- Navy Hospital Ships require a navigable channel, available berth space, a supply of potable water, and access to and from the vessel through the Port

- Berth space for FEMA/MARAD Ready Reserve Force vessels, which provide temporary housing for relief workers

- Preparation for hosting Emergency Trailers includes having a list of supplies, permits for emergency placement, and identified areas with utility connections

ADDITIONAL NOTES

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INTERNAL PORT AUTHORITY COMMUNICATIONS

These questions help a Port determine if it has a robust and sustainable communications plan for Port employees for times of crisis and normal operations.

Internal Port Authority Communications	Yes	No	N/A
Example: Have clear recall instructions to communicate return of employees to work		√	
1. **Does your Port assess capacity of its communications assets and implement newer technologies as needed?**			
2. **Does your Port offer a Port Emergency Operations training program to Port personnel?**			
3. **For hazardous events, has your Port identified a preparation team, ride out team, and recovery team?**			
4. **Does your Port utilize the Incident Command System framework for critical functions and responsibilities of Essential Personnel?**			
5. **Do your Port's Essential Personnel participate in National Incident Management Systems** (NIMS) **trainings?**			
6. **Does each Essential Personnel member have a hard copy of the Port emergency plan?**			
7. **At least every 18 months, does your Port conduct emergency planning or training exercises with the management staff to practice response plans and procedures for various emergency scenarios?**			
8. **Has your Port identified the communications equipment and methods** (e.g., twitter, radio, texting, etc.) **required to communicate with Port personnel in the event of an emergency?**			
9. **Does your Port regularly update its emergency notification list and pre-written messages for various emergency scenarios?**			
10. **Does your Port identify threshold criteria for issuing evacuation orders in coordination with local authorities?**			
11. **Does your Port provide employees with information on what to do in the event of a Port evacuation?**			
12. **Are recall instructions clear in communicating to Port employees how they will find out when they are to return to work after an event?**			
13 **Does your Port remind employees that access to direct deposit funds could be restricted in the event of an emergency?**			
14. **Does your Port have a re-entry policy that follows the city, county, or parish re-entry policy and considers the following?** • Check-in procedures for Port Authority employees • Check-in procedures for port tenants • Issuance of keys/codes to re-open the Port • Transportation Worker Identification Credential (TWIC) cards • Release of gate security personnel • Coordination with local authorities (e.g., National Guard, local and state police)			
15. **Has the Port considered addressing temporary housing needs, including Housing Assistance Requests (e.g., for employees, first responders, or recovery agents) or Emergency Trailers?**			
Total number of Yes and No answers:			

EXAMPLES

Communications Assets:

- Emergency notification systems: audible and visual signals; 1-800 telephone line for employees and customers

- Telephone systems: landline; base station and hand-held portables; cell phones; satellite phones

- Internet systems: Intranet; email

- Radio systems: UHF/VHF; Marine Band VHF; Amateur/Hamm

Elements of a Port Emergency Operations training program for personnel:

- Recommended precautionary actions: e.g., measures to reduce the potential for loss of life, injury, or property damage

- Emergency planning assistance manual: e.g., information to enhance individual preparedness and recovery

- Port employee trainings: e.g., workshops on filing insurance claims after an event

Emergency Planning or Training Exercises:

- Orientation: follows a seminar format to remind employees of port plans and procedures

- Tabletop: follows a roundtable format to discuss a variety of problem scenarios and the application of port plans and procedures

- Functional: follows an actual drill exercise with Emergency Operations staff through use of port plans and procedures and readiness tests of facilities

- Full-Scale exercises: follows a full performance exercise, with a field component, to test port-wide plans and procedures and deployment of resources to the field

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TENANT AND EXTERNAL STAKEHOLDER COMMUNICATIONS

These questions help a Port determine if it has a robust and sustainable communications plan for port tenants and stakeholders for times outside of crisis and for times during crisis.

Tenant and External Stakeholder Communications	Yes	No	N/A
Example: Remind tenants to review their company's storm readiness plan	√		
1. Does your Port designate someone to attend local harbor safety committee meetings?			
2. Does your Port work with the Coast Guard and the Corps of Engineers to identify and evaluate water transportation safety requirements and conditions?			
3. Does your Port establish local relationships with organizations committed to environmental stewardship?			
4. Does your Port coordinate internally and externally to communicate with tenants as needed for preparedness, response, and recovery?			
5. Is there a mechanism in place for your Port to conduct emergency preparedness and hurricane readiness meetings to review the Port's policies and procedures with customers and tenants?			
6. Does your Port require its tenants to provide a copy of their business continuity plan?			
7. Is there a mechanism in place for the Port to remind tenants and customers to review their company's storm plans for storm preparation activities (e.g., coordinating vessel activity; moving barges; securing cargo)?			
8. Does your Port recommend equipment security procedures to tenants (e.g., block and reinforce dry-docked vessels; press up petroleum tanks with water)?			
9. Does your Port participate on a U.S. Coast Guard Port Coordination Team or Port Emergency Action Team?			
10. Does your Port re-broadcast internal and external advisories (e.g., U.S. Coast Guard Marine Safety Information Bulletin) **to communicate with tenants as needed during the crisis?**			
11. Does the Port participate in Port Coordination Team conference calls to remain up-to-date on crisis response and damage assessments (i.e., federal navigation channel, aids to navigation, berthing areas)?			
12. During times of crisis, does your Port have a daily briefing schedule for internal and external communication with stakeholders?			
13. Does your Port identify a coordinator for emergency response information and a point-of-contact to represent your organization to the media?			
14. During a crisis, does your Port have a regularly occurring time to communicate with the media?			
Total number of Yes and No answers:			

EXAMPLES

Who should attend local harbor safety committee meetings:

- Port authorities
- Port-related associations: harbor pilot associations; industry associations; organized labor unions
- Operators: vessel operators; harbor pilots; docking pilots; tug and tow operators; terminal operators
- Federal, state, and local government representatives
- Marine exchanges
- Shipping agents

Organizations committed to environmental stewardship:

- National Estuary Programs

- Non-governmental organizations (NGOs) for restoration
- NGOs for recycling

Members of Port Coordination Team or Port Emergency Action Team:

- Port stakeholders: chairman/board of directors; port commission; employees; tenants and customers
- Transportation partners: steamship lines; terminal operators; railroads; trucking companies
- Federal agencies: U.S. Army Corps of Engineers; U.S. Coast Guard; Federal Emergency Management Agency
- State and local agencies: emergency response and management

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EMERGENCY OPERATIONS LOCATION (PHYSICAL OR VIRTUAL)

The questions in this section will help a Port evaluate whether or not it has the time and resources to staff, run and maintain its own Emergency Operations Center. Each question may not apply to every Port because of its size. While some Ports may not have the resources to have a physical EOC, they should consider remote operations and the Essential Personnel needed to continue some level of operation and functionality in the event of a disaster.

Emergency Operations		Yes	No	N/A
Example: Conduct routine maintenance checks of the Emergency Operations Center				√
1.	**Does your Port have an offsite evacuation haven or alternative operations location site, based on the type of event, where it can continue basic operations?**			
2.	**Does your Port consider certain characteristics in the selection of an alternative operations location site including emergency backup power, office supplies, and exposure to hazards?**			
3.	**Does your Port conduct routine maintenance checks throughout the year of the alternative operations location to check batteries, electricity, generator operation, fuel supply and key access?**			
4.	**Does your Port have communications assets at the alternative operations location including phones, radios, television, and computer equipment?**			
5.	**Does your Port have a transportation plan to reach the alternative operations location, in accordance with the city's evacuation and re-entrance plans?**			
6.	**Does your Port coordinate with the local Emergency Operations Center and government-based Emergency Operations Center efforts?**			
7.	**Do outside emergency personnel** (e.g., FEMA, USCG, USACE) **have access to your alternative operations location?**			
8.	**Is your Port ready to be self-sufficient without federal or external assistance for at least 3 days?**			
Total number of Yes and No answers:				

BEST PRACTICE

Ports should consider identifying a location where Port staff will congregate during or immediately after an event. This serves as a muster point or meeting area to review damages to operations, infrastructure, and personnel. The direction and speed of the event drive the location for the muster point.

Case Study Example:
The Port of Lake Charles has several alternative emergency operations locations from which to choose, depending on the nature of the oncoming hazard. The Port Police have a fortified Emergency Operations Center building on site at the port, but Port staff have gone to other locations in Louisiana and Texas before.

EXAMPLES

Supplies for Emergency Mitigation Measures and Temporary Repairs:

- Generators with adequate fuel supply
- Emergency lighting
- Supplies to mark unsafe areas (e.g., barricades, plywood, rope)
- Tools (e.g., drills, hammers, nails, shovels, pry bars)
- Tarps and plastic sheeting
- Electrical supplies and test meters
- Plumbing supplies

Needs for Emergency Backup Power:

- Connections for generators
- Electrical outlets for computer equipment, phone chargers, radio chargers, etc.

Basic Emergency Supplies:

- Food provisions for at least 7 days
- Water (at least 1 gallon per person per day)
- Basic toiletries (e.g., toilet paper, tissues, soap, toothpaste)
- First aid kits
- Flashlights and batteries
- Provisions for sleeping and bathing (e.g., sleeping bags, towels)
- Trash containers or bags
- Laundry detergent and dish soap

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CRITICAL RECORDS AND FINANCE

These questions will help a Port determine if it has strategies to address vital records, payroll, emergency spending, and banking during an emergency situation.

Critical Records and Finance	Yes	No	N/A
Example: Have the ability to process payroll from an alternate location	√		
1. **Does your Port have service contracts with an archival agency to store critical records?**			
2. **Does your Port implement offsite storage for electronic data** (e.g., files stored on laptops, hard drive backup at offsite location, backup to the cloud)**?**			
3. **Does your Port store backup files offsite at a location not subject to the same risks?**			
4. **If you do not have access to the office, do your Port employees have access to electronic documents,** (e.g., Port Documents, Port Facility Information, Incident Command System forms, Essential Personnel Information, Utility Information, and Port Condition Information)**?**			
5. **Does your Port's Emergency Operations Plan consider supplies needed** (e.g., additional cash or cashiers checks) **for employee payroll and other expenses?**			
6. **Does your Port have the ability to process payroll from an alternate location?**			
7. **Does your Port's Executive Management have emergency spending authority?**			
8. **Is your Port familiar with FEMA procedures for purchasing or acquisition and record-keeping for purchasing items after an event?**			
9. **Does the Port train employees on how to properly document expenses in an emergency situation?**			
10. **Does your Port bank with an institution that has multiple locations?**			
11. **Does the Port have an account at an alternate financial institution that is not subject to the same risks?**			
Total number of Yes and No answers:			

BEST PRACTICE

Be familiar with FEMA procedures for record-keeping for purchasing items after an event so that your Port can be reimbursed for emergency expenditures.

Case Study Example:
The Port of Lake Charles requires employees to utilize direct deposit, so that payroll will always be completed, regardless of interruption to Port operations.

EXAMPLES

Important Documents to Back up Electronically:

- Port documents (e.g., Port emergency plans; Port employee telephone directory; map of port, terminals and facilities)

- Port facility information (e.g., building plans; specifications; drawings; warranties; proposals; main office address)

- Incident command system forms (incident briefing form; incident objectives list; organization assignment list; incident status summary report; incident check-in lists)

- Phone and email contact lists (e.g., terminal operators, facility operators, tenants, customers, pilot and vessel operators, local/state/federal government agencies, response and recovery vendors, media)

- Essential personnel information (e.g., designated department, assigned tasks, names and phone numbers)

- Utility information (e.g., drawings and diagrams of utility connections, cut-off valves, and control panels; emergency contact list for response and restoration contractors; equipment resources; mobilization timelines; protocol for utility outage notification and reactivation; vendors for standby utility equipment)

- Port condition information (e.g., annual condition surveys of facilities; still photographs and videos)

ADDITIONAL NOTES

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SCORING TABLE

Tally the number of "yes" answers for each Section and use those numbers in the second column to complete the following table. The resilience index correspond to percentages (e.g., LOW (0-49%), MEDIUM (50-75%), and HIGH (76-100%)) based on the total possible number of questions that could be answered within each section.

Section	Number of "yes" answers/Number of questions answered	Translate ratio of "yes" answers to percentage	Resilience Index LOW = 0-49% MED = 50-75% HIGH=76-100%	Comments
(Example) Insurance & Risk Management (13 Possible Questions)	6/13	(6/13)*100 = 46%	LOW	We are getting updated FEMA floodmaps and buying flood insurance for buildings in the special flood hazard area.
Planning Documents for Hazards and Threats (8 Possible Questions)				
Hazard Assessment: Infrastructure and Assets (8 Possible Questions)				
Insurance and Risk Management (13 Possible Questions)				
Continuity of Operations Planning for Infrastructure and Facilities (10 Possible Questions)				
Internal Port Authority Communications (15 Possible Questions)				
Tenant and External Stakeholder Communications (14 Possible Questions)				
Emergency Operations (Physical or Virtual) (8 Possible Questions)				
Critical Records and Finance (11 Possible Questions)				

INTERPRETING PORTS RESILIENCE INDEX RESULTS

RESILIENCE INDEX: A Resilience Index is an indicator of your Port organization's ability to reach and maintain an acceptable level of functioning and structure after a disaster.

After completing the Scoring Table section of this document, your Resilience Index was identified as **LOW**, **MEDIUM**, or **HIGH** in different categories.

LOW Resilience Index. A low Resilience Index indicates that your Port organization should pay specific attention to this category and should make efforts to address the areas of low rating. For example, if you received a low rating for Continuity of Operations Planning for Infrastructure and Assets, then your port may encounter multiple problems reopening and becoming functional after a disaster.

MEDIUM Resilience Index. A medium Resilience Index indicates that more work could be done to improve your resilience in this category. If the Continuity of Operations Planning for Infrastructure and Assets section received this rating, there will be some challenges to reopening and quickly getting the port to full operational status.

HIGH Resilience Index. A high Resilience Index indicates that your Port is well prepared for a storm event. If the Continuity of Operations Planning for Infrastructure and Assets section received this rating, then your Port will likely reopen and be functional with few difficulties.

WHAT'S NEXT?

Regardless if your Port has a **LOW**, **MEDIUM**, or **HIGH** Resilience Index, you should learn about and investigate the weaknesses you have identified during this process. Refer to the Resources section for additional information on resources, training, and support. You can use the space provided on page 24 to start your own list of action items and best practices.

FOR MORE INFORMATION

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NEXT STEPS

Short-Term (in the next 3 months): If you are completing the PRI at the beginning of or in preparation for hurricane season, what actions might you be able to implement to increase resilience before reaching the "peak" of hurricane season (mid-August to late-September)?

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Mid-Term (3–6 months): In the next six months, what actions might you be able to implement with your staff (e.g., begin or continue a planning process, attend a local harbor safety committee meeting, initiate partnerships with local government)?

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Long-Term (6–12 months): In the next 12 months, what actions might you be able to initiate to increase resilience (i.e., conduct a study of port infrastructure to understand flood risk; plan a tabletop exercise with Port personnel and port tenants, etc)?

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PORT RESILIENCE RESOURCES

The American Association of Port Authorities: www.aapa-ports.org
The AAPA is the leading national organization for the port industry. The AAPA website offers a page of "Publications & Resources" that are freely available, including the West Coast Ports Sustainable Design and Construction Guidelines. On the website, under "Programs & Events", you can find the titles and slideshows of past seminar presentations, including presentations for the 2006 seminar series on emergency preparation and response. The presentations cover information helpful to port management, attorneys, engineers, operations personnel, communications staff, and risk managers. Seminar material covers lessons learned from Hurricane Katrina. If your Port is a member of AAPA, you can obtain access to the 2006 *Emergency Preparedness and Continuity of Operations Planning Manual for Best Practices*.

The United States Coast Guard: www.uscg.mil
Users can do a Google search to find the most recent version of the U.S. Coast Guard's Incident Management Handbook. This document provides guidance to response personnel and specifically assists Coast Guard personnel in the use of the National Incident Management System (NIMS) Incident Command System (ICS) framework during response operations and planned events.

Federal Emergency Management Agency: www.fema.gov
FEMA's Emergency Management Institute provides online training courses for the National Incident Management System (NIMS) and Incident Command System (ICS) Framework. The training program and schedule is available at https://training.fema.gov/nims/.

The National Flood Insurance Program: www.floodsmart.gov
This website is the official site for the National Flood Insurance Program and provides relevant flood insurance information for residential and commercial property owners. The website also includes tutorials to understand how to read and understand FEMA flood maps.

Department of Homeland Security Emergency Communications:
www.dhs.gov/topic/emergency-communications
The Emergency Communications page on the DHS website provides links to several programs and offices, including Government Emergency Telecommunications Service (GETS) and Wireless Priority Service (WPS). GETS supports emergency preparedness users when the landline network is congested, and WPS supports emergency preparedness users when the wireless network is congested.

NOAA Sea Level Rise Viewer: coast.noaa.gov/digitalcoast/tools/slr
The Sea Level Rise Viewer tool allows the user to visualize sea level rise scenarios for any coastal location (with the exception of Alaska) along a sliding scale from one to six feet above the average highest tide. The tool shows the corresponding land areas that would be impacted by flooding. This tool can be useful in identifying what coastal infrastructure is at risk due to potential sea level rise.

Climate Central Surging Seas: sealevel.climatecentral.org/maps
Climate Central's Surging Seas Map is another online tool that helps the user visualize the impacts of potential sea level rise scenarios side by side. Other available tools include a risk zone map, which shows coastal locations at risk for flooding impacts.

REFERENCES

- Becker, A., and M.R. Caldwell. 2015. Stakeholder Perceptions of Seaport Resilience Strategies: A Case Study of Gulfport (Mississippi) and Providence (Rhode Island). *Coastal Management 43*(1): 1-34.

- NOAA Port Resilience Planning Tool: https://coast.noaa.gov/digitalcoast/tools/port.

- Saathoff, P. 2006. Emergency Preparedness and Continuity of Operations Planning: Manual for Best Practices. American Association of Port Authorities.

- U.S. Government Accountability Office. 2007. Port Risk Management: Additional Federal Guidance Would Aid Ports in Disaster Planning and Recovery. Washington, D.C: U.S. GAO.

DEVELOPMENT TEAM

- Gulf Ports Association of the Americas
- Hatch Mott MacDonald
- McGriff, Seibels, & Williams of Texas, Inc.
- Port of Corpus Christi
- Port of Delcambre
- Port of Lake Charles
- Port of Morgan City
- Port of New Orleans
- Port of Pascagoula
- Port of Pensacola
- Ready Communities Partnership
- U.S. Maritime Administration

PARTNERS

- NOAA
- Gulf of Mexico Alliance
- Louisiana Sea Grant
- Mississippi-Alabama Sea Grant
- Dewberry

Coastal Flood Exposure Mapper

www.coast.noaa.gov/digitalcoast/tools/flood-exposure

This tool supports users undertaking a community-based approach to assessing coastal hazard risks and vulnerabilities by providing maps that show people, places, and natural resources exposed to coastal flooding. This product is based on knowledge and experiences the Office for Coastal Management has in community-based risk and vulnerability assessments.
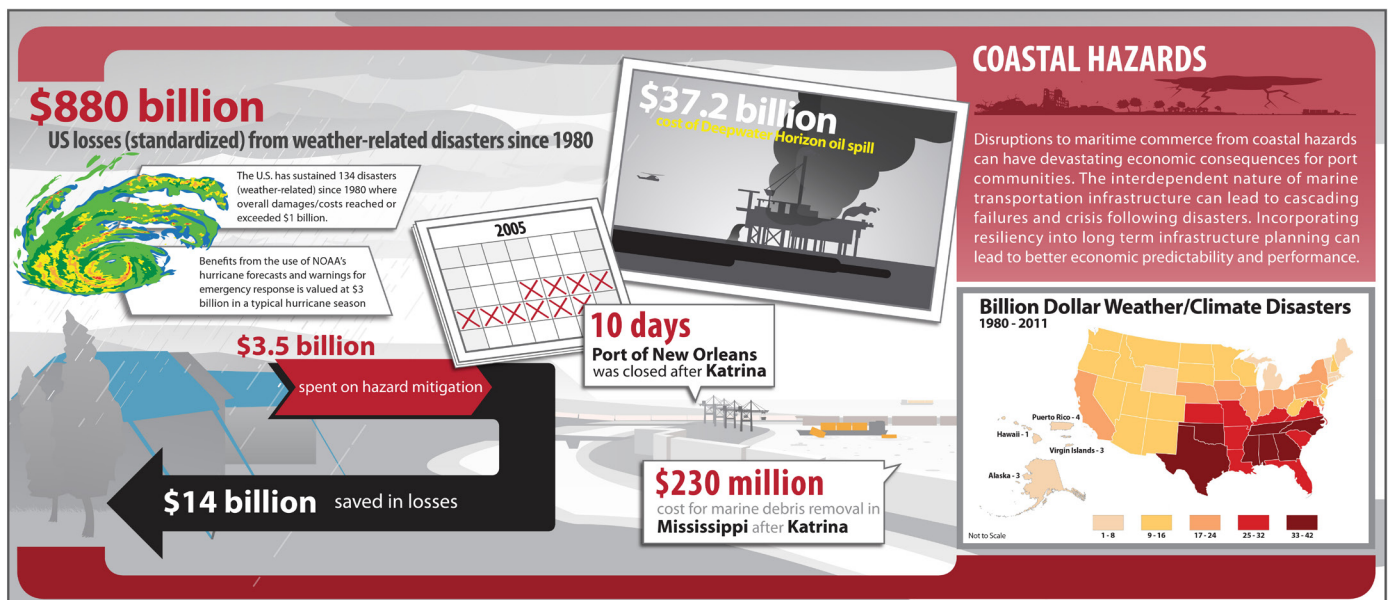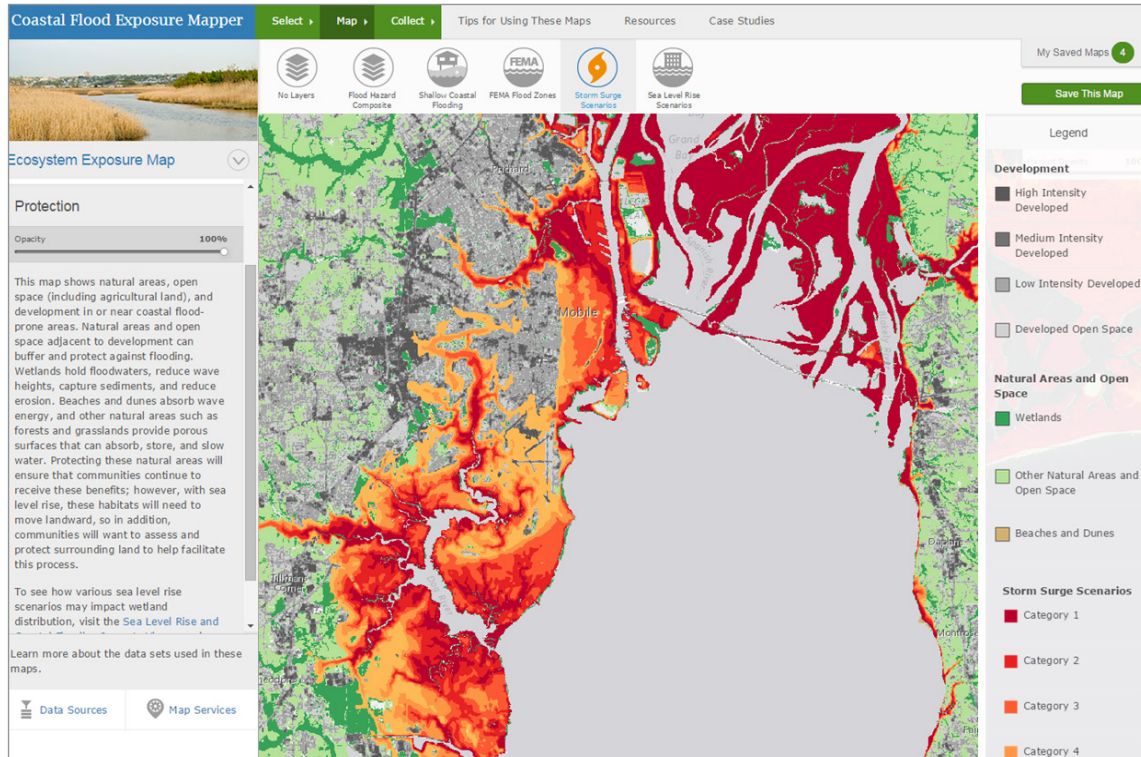

Image Credit: NOAA Office of Coastal Management

PORTS RESILIENCE INDEX