Recommendations for a Resilient Path Forward for the Marine Transportation System, and other activities of the CMTS

Helen A. Brohl
Executive Director

June 17, 2019
Transportation Oversight in the Federal Government

**Air:** Federal Aviation Administration (DOT)

**Highways:** Federal Highway Administration (DOT)

**Rail:** Federal Railroad Administration (DOT)

**Marine:** 30+ Federal Agencies and Offices
### Standard Matrix of the Federal Marine Transportation System

**By Department/Agency**

| Federal Interest          | Major Categories | USDA | FSA | APHIS | NRCS | AMS | BLS | Census | FTA | NOAA | USACE | Navy | TRANSCOM | USFWS | BOEM | BSEE | USGS | BL | OSHA | TSA | USCG | FEMA | CBP | DOT | FMC | NTSB | EPA |
|---------------------------|------------------|------|-----|-------|------|-----|-----|--------|-----|------|-------|------|----------|-------|------|------|-----|----|------|-----|------|------|-----|-----|----|-----|-----|-----|
| Enhance Safety            | Safety           |      |     |       |      |     |     |        |     |      |       |      |           |       |     |      |     |    |      |     |      |      |     |     |    |     |     |
| Protect the Environment   | Environmental Protection |     |     |       |      |     |     |        |     |      |       |      |           |       |     |      |     |    |      |     |      |      |     |     |    |     |     |
| Facilitate Commerce       | Trade Facilitation |     |     |       |      |     |     |        |     |      |       |      |           |       |     |      |     |    |      |     |      |      |     |     |    |     |     |
|                           | Trade Promotion   |     |     |       |      |     |     |        |     |      |       |      |           |       |     |      |     |    |      |     |      |      |     |     |    |     |     |
|                           | Vessel Construction |     |     |       |      |     |     |        |     |      |       |      |           |       |     |      |     |    |      |     |      |      |     |     |    |     |     |
|                           | Vessel Operations |     |     |       |      |     |     |        |     |      |       |      |           |       |     |      |     |    |      |     |      |      |     |     |    |     |     |
|                           | Federal Channels, Waterways, and Sea Lanes |     |     |       |      |     |     |        |     |      |       |      |           |       |     |      |     |    |      |     |      |      |     |     |    |     |     |
|                           | Port/Modal Transfer Infrastructure |     |     |       |      |     |     |        |     |      |       |      |           |       |     |      |     |    |      |     |      |      |     |     |    |     |     |
| Ensure Security           | Security          |     |     |       |      |     |     |        |     |      |       |      |           |       |     |      |     |    |      |     |      |      |     |     |    |     |     |
| Cross-Cutting             | Research & Development |     |     |       |      |     |     |        |     |      |       |      |           |       |     |      |     |    |      |     |      |      |     |     |    |     |     |
|                           | Human Resources   |     |     |       |      |     |     |        |     |      |       |      |           |       |     |      |     |    |      |     |      |      |     |     |    |     |     |
Authorization of the CMTS


This Plan contained a Presidential Directive to establish a cabinet-level interagency committee on the marine transportation system MTS.

**Coast Guard and Maritime Transportation Act (2012), PL 112-213**

The CMTS shall serve as a federal interagency coordinating committee for the purpose of:

- Assessing MTS adequacy
- Promoting MTS integration with other modes of transportation and marine environment uses
- Coordinating, improving the coordination of, and making recommendations related to MTS relevant federal policy
CABINET COMMITTEE

Chair: Transportation Secretary Elaine L. Chao
Members: Secretaries of 14 Departments and Independent Agencies

COORDINATING BOARD

Current Chair: MG Scott Spellmon, USACE
Members: Leaders of MTS Agencies and Offices, including White House Ex-Officio Members

EXECUTIVE SECRETARIAT

WORKING GROUP

INTEGRATED ACTION TEAMS

Arctic Marine Transportation IAT
Maritime Data IAT
MTS Resilience IAT

Infrastructure Investment IAT
Future of Navigation IAT
Maritime Innovative Science and Technology IAT

TASK TEAMS

AIS Task Team
Military to Mariner Task Team
Cybersecurity Task Team
14 Recommendations under 5 Priority areas:

• System Performance
• Safety
• Security
• Energy Innovation
• Infrastructure Investment
2018-2019 Work Plan

• MTS Infrastructure Investment Economic Benefit
• **MTS Resilience – Hurricane Response Analysis**
• Navigation Safety Services and Technologies Integration
• **Maritime Cyber Security Touchstone Project**
• U.S. Arctic Marine Transportation Assessments
• Ocean Policy and the Maritime Nexus
• Maritime Data Coordination/Enhancing Access to AIS
• Supporting Veterans Hiring and Military to Mariner
• Promoting the value of the MTS and the Federal Role
Maritime Cyber Security Touchstone Project

• “Support interagency and stakeholder collaboration for maritime security, including cybersecurity, to provide foundational information with which to enhance the Federal engagement and response.”

• **TASKER:** Engage Federal maritime security stakeholders to address gaps regarding maritime cybersecurity understanding and response.

• **In other words:** what is the threshold for Federal engagement and to whom does one report?
Reviewing the 2017 Hurricane Season: Recommendations for a Resilient Path Forward for Federal Agencies

Charged by the CMTS Coordinating Board, the RIAT reviewed the 2017 hurricane season and produced the Report that includes:

- Input from offices within 12 agencies
- Identifies key activities necessary for the restoration and return to normal MTS operations
- Identifies key interdependencies with non-Federal systems and organizations
- Presents best practices employed during 2017 hurricane season
- Suggests recommendations to increase MTS resilience
2017 Hurricane Season

• 17 named storms
• 7 U.S. landfalling storms
  • 3 major hurricanes: Harvey, Irma, Maria
• 25.8 million people affected
• 4.6 million registered for federal assistance with FEMA
• Weather events in 2017 amounted to $306.2 billion in cumulative costs which included hurricanes Harvey ($125B), Irma ($50B), and Maria ($90B)*

IMPACTED PORTS ACROSS TX, FL, PR, and VI

- **Hurricane Irma landfall** September 10
- **Hurricane Harvey** landfall August 26
- **Hurricane Maria landfall** September 20

**Port Count**

- **YANKEE**
- **WHISKEY**
- **X-RAY**
- **ZULU**
Gulf Region Vessel Movements

Hurricane Harvey Cargo and Tanker Vessel Signal Density Plots
Created with ERDC Automatic Identification System Analysis Package (AISAP)

August 1, 2017
Tropical Storm Harvey will be named August 16

August 24, 2017
USCG declares Port of Houston under condition Yankee

August 25, 2017
USCG declares Port of Houston under condition ZULU

August 26, 2017
Hurricane Harvey makes landfall at Rockport & becomes a tropical storm over inland Texas

August 28, 2017
Harvey recedes towards the Gulf, record rainfall recorded at 51.88 in

September 4, 2017
Vessels queue at anchorage areas. Port reopens with restrictions September 6th.

ERDC Navigation Data Performance Team: Katherine Touzinsky, Kenneth N. Mitchell, Patricia Dijoseph, Marin Kress
Hurricane Harvey

• **Challenges**
  • Flooding caused indirect impacts to supporting infrastructure
  • Lack of knowledge management and collaborative tools regarding port condition or status
  • Redundant information requests

• **Successes**
  • Early communication
  • Centralized information distribution
  • Pre-prioritized resource placement
  • Execution of drills and training
  • Early closure of energy facilities
  • Efficient restoration of ATONS following storm
  • Cross agency communication
  • Engagement with public sector for resource needs
  • Delegation of FEMA mission assignments
Hurricane Irma

• **Challenges**
  • Power outages
  • Debris removal between storms
  • Resource allocation between commerce, tourism, & EM
  • Equipment pre-positioning in FL
  • Availability of resources and funds

• **Successes**
  • Early communication on critical ports and supporting infrastructure
  • Critical Aids to Navigation identified in advance
  • Updated coastal imagery for fast surveys
  • Transportation and accommodation arrangements
  • Mobile integrated Survey Team kits when operating vessels of opportunity
  • Repurposing vessels directed to Texas
  • Coordination with local business advisory councils and initiatives
Hurricane Maria

• **Challenges**
  • Lack of space for shipping & seaport operations
  • Lack of supporting infrastructure (road, electric, water)
  • First responder challenges
  • Balancing emergency supply with commercial supply

• **Successes**
  • First responders with Spanish language skills
  • Interagency collaboration and sharing of information
  • AIS-ATON utilized to help facilitate re-opening of San Juan by rapidly triaging ATONS in the field
Summary: Best Practices for MTS Response and Recovery

• Established communication networks!
  • Hurricane Season Kickoff Meeting – held at start of hurricane season
  • Full Scale Hurricane Exercises
  • Area Port Coordination Committees

• Pre and post-storm port assessments

• Interagency efforts for navigation channel reopening

• ATON verification and resiliency
Summary: Opportunities to Enhance Response and Recovery

- Need for tools & protocols for prioritization at the regional or national level
- Pre-staging of survey teams & equipment
- Evaluating Port Status vs. Channel Status
- How to aid port employees returning to work
MTS Resilience – Examination throughout the Cycle of Resilience

- Anticipate and plan for disruptions,
- Resist loss in operations and/or absorb the impact of disturbances or stressors,
- Rapidly recover afterwards, and
- Adapt to short- and long-term stressors, changing conditions and constraints.

Through data and operations experts, we can gather information on *how* the MTS was able to Resist and Recover to inform future Adaptation and Preparation.
MTS Resilience – Improvement over Time

Rebuilding, new projects, community awareness, etc.

Disturbance

Adapt; Evolve

Disturbance

Resilience increased:
- Less loss in functionality
- Faster recovery time

Prepare; Anticipate

Resist; Withstand

Recover Bounce Back

Functionality

Time

100%

0%
Port of Savannah – Net Vessel Count for 2016 Hurricane Matthew

Port of Savannah - Net Vessel Count for 2017 Hurricane Irma

Closed – 5 days

Closed – 2 days
Federal Actions to Minimize Disruption and Enhance Resilience

Findings were identified by applying the Resilience Framework and separated into categories:

• Preparation actions
• Response and recovery actions
• Adaptation actions
Recommendations to Increase Resilience

**PREPARE**

- **Build relationships beforehand** – coordination teams, contracting mechanisms, resource staging
- **Prioritize key infrastructure systems and critical infrastructure interdependencies**

**ABSORB/RESIST**

- **Share data** across Federal agencies for recovery projects through interagency teams and data-sharing platforms

**ADAPT**

- Develop a **common operating picture** of the port system interdependencies and authorities and prioritizations of essential land and maritime functions
- Hold proactive **planning scenario exercises** and interagency training sessions where recommendations from the past season are communicated and incorporated
- Promote or consider **new cutting-edge methodologies** to understand infrastructure redundancies and reduce vulnerabilities to hazards and to improve port services or support in times of operational failure
Conclusions

• MTS community was generally successful in quickly reopening ports for business during an unprecedented season

• Partnerships between Federal, State, and Local and Industry leaders are critical to the establishment of communication networks and resource management practices that ensures the rapid resumption of MTS operations.

• Opportunities to improve resilience include continuing to learn from past disruptions and leveraging new technology for:
  • Better understanding how our MTS depends on supporting infrastructure systems
  • Managing and synthesizing data and information across stakeholders
  • Assessing strategies for resilient infrastructure investments