Maritime Transportation System Recovery, and Hurricane Sandy Lessons Learned
Nationally, the MTS is composed of approximately:

- 25,000 miles of navigable channels and rivers;
- Over 3,700 Marine Facilities;
- Over 1,400 Intermodal Connections;
- Over 90,000 Aids to Navigation;
- Link for over 174,000 miles of railway and 45,000 miles of interstate highways;
- $649 Billion to U.S. GDP and 13 million jobs;
- Major Ports (LA/LB; New York; Houston/Galveston) could lose $9.3 – $21 Million PER DAY if closed.
What is MTS Recovery?

• MTS Recovery – Returning MTS infrastructure to a status that allows resumption of commerce to “near normal”.
• Recovery begins during the Response phase and continues into the initial part of the Restoration phase (usually 3-90 days in duration)
• Includes structural measures, e.g. ATON replacement or channel clearance
• Includes non-structural measures, e.g. COTP orders and emergency regulations
• Accomplished through activities and resources controlled by Coast Guard, other agencies and maritime industry partners
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MTS Recovery Strategic Guidance

- Maritime Transportation Security Act 2002
- Maritime Infrastructure Recovery Plan (Apr 2006)
- Security and Accountability for Every Port (Safe Port Act) of 2006
- Strategy to Enhance International Supply Chain Security (Jul 2007)
- CBP/USCG Joint Protocols for the Expeditious Recovery of Trade
Commandant Instruction 16000.28 (series), MTS Recovery and Resumption of Trade

Atlantic Area Instruction 16001.1 (series), Marine Transportation System Recovery

D1 Instruction 160001.1, Marine Transportation System Recovery
Atlantic Area SOP, MTS Recovery

Defines CG and ICS organizational roles and responsibilities for MTS recovery

Establishes information requirements to facilitate the reporting of MTS status and MTS recovery decision making
Provides process and procedures for determining incident impact to the MTS and for facilitating the resumption of commerce following a Transportation Security Incident, or other significant marine transportation incident of significant threat.

Provides guidance on tools available to assist personnel involved in MTS recovery activities.

Provides guidance for the use of the Common Assessment and Reporting Tool (CART) application, the primary means of documenting and reporting MTS recovery status for transportation disruptions.
The D1 MTS instruction provides additional guidance and tasks for Sectors and District MTSRUs that are not covered in other instructions.
• District MTSRU will consist of four CG members which can be filled from members of both sector and District MTSRU

• District and Sector shall pre-identify two personnel for possible deployments to other sectors or districts for MTS recovery support during an MTS disruption
• Sector MTSRUs will have at least four members on their team including the MTSRU leader.

• Sector MTSRU Leaders shall provide updated personnel lists to the District MTSRU coordinator annually in the second quarter of each fiscal year.

• District and Sectors need to maintain open lines of communications to better facilitate recovery of the MTS
• During an incident the MTSRU leader will conduct daily port status teleconferences with MTS stakeholders. The District MTSRU Leader will participate in these conferences to obtain updated information for District briefs.

• Sectors shall conduct MTS recovery planning in conjunction with appropriate port partners and shall exercise the MTSRU and MTS recovery capabilities annually either as standalone exercises or as part of AMS /PREP exercises.
Marine Transportation System Recovery

MTS Recovery in the Incident Command System (ICS)

Training and Qualification for Marine Transportation Recovery Leader Type-3 Incidents (MTSL-3)

Type 1 & 2 Incident Qualifications
Marine Transportation System Recovery

**Purpose of MTSRUs:**

- To provide guidance to facilitate the recovery of the Marine Transportation System (MTS) following a significant transportation disruption.

- A unit of the Planning Section of the Incident Command System (ICS) established for every incident that significantly disrupts the MTS.

- This unit is primarily staffed by government personnel and augmented by local maritime industry expertise.

CG Members set priorities for vessel traffic movement, July 2008, at the MTSRU in New Orleans.
CART
Common Assessment & Reporting Tool
Welcome to the Marine Transportation System Recovery Common Assessment and Reporting Tool.

Please enter your Username and Password. If you have problems logging in, please contact the administrator.

Username: 
Password: 

[Login] [Register] [Recover Password]

The inclusion of proprietary and personally identifiable information is NOT authorized. Inappropriate material is subject to removal by the CART Program Sponsor.

WE ARE CURRENTLY EXPERIENCING DIFFICULTIES WITH USER REGISTRATION. UNTIL A SOLUTION TO THE ISSUE IS FOUND, NEWLY REGISTERING USERS MAY NEED TO ATTEMPT REGISTRATION MULTIPLE TIMES BEFORE A SUCCESSFUL REQUEST IS SUBMITTED.

CART ACCESS AND/OR SERVICE HAS BEEN RESTORED WITH THE FOLLOWING LIMITATIONS:

1. DURING INITIAL EVENT CREATION ONLY: USERS SHOULD NOT ADD MORE THAN 150 EEIs. EXCEEDING THIS LIMIT MAY RESULT IN TIME-OUT ERRORS TO SATISFY USER NEEDS, EEI ADJUSTMENTS TO EXISTING EVENTS CAN BE MADE WITH A MAXIMUM OF 150 EEIS PER UPDATE (AS MANY TIMES AS NECESSARY TO SATISFY REPORTING REQUIREMENTS).

2. HTML EXECUTIVE SUMMARY REPORTS: THERE IS A CODE/TEXT "WRITE OVER" ERROR THAT APPEARS ON THE EEI AVAILABLE TABLE WHEN...
<table>
<thead>
<tr>
<th>Name</th>
<th>Summary</th>
<th>Location</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sector Ohio Valley MTS Status Report 2011</td>
<td>Event created to enable baseline report to be established.</td>
<td>Sector Ohio Valley</td>
<td>10/1/2009</td>
<td></td>
</tr>
<tr>
<td>Sector LA-LB Port Status</td>
<td>Event created to establish baseline reporting</td>
<td>Sector LA-LB</td>
<td>8/2/2010</td>
<td></td>
</tr>
<tr>
<td>Sector Hampton Roads Port Status</td>
<td>Event created to establish baseline report brief.</td>
<td>Portsmouth, Va</td>
<td>8/11/2010</td>
<td></td>
</tr>
<tr>
<td>Sector Puget Sound Port Status</td>
<td>Event created to establish baseline reporting</td>
<td>Puget Sound AOR</td>
<td>9/16/2010</td>
<td></td>
</tr>
<tr>
<td>Baseline Data Sector Charleston</td>
<td>Event created for Sector Charleston Baseline Data</td>
<td>Sector Charleston, SC</td>
<td>12/7/2010</td>
<td></td>
</tr>
<tr>
<td>Sector Lake Michigan Port Status</td>
<td>SLM Marine Transportation System</td>
<td>Sector Lake Michigan AOR</td>
<td>1/24/2011</td>
<td></td>
</tr>
<tr>
<td>Sector Jacksonville Baseline Event</td>
<td>Event created to establish baseline reporting of EEs in Sector Jacksonville AOR</td>
<td>Sector Jacksonville</td>
<td>1/26/2011</td>
<td></td>
</tr>
<tr>
<td>EXERCISE-SECTOR MIAMI COOP-EXERCISE</td>
<td>Hurricane Kathleen, CAT 3 storm hits Dinner Key, just south of the Port of Miami. 15APR2011 0900-Preliminary damage assessment conducted from overflight by Sector Command: 1. One of the container cranes has collapsed at POMTOC facility in the Port of Miami. No injuries reported. 2. Numerous containers are scattered throughout the POM, including several floating in the water and partially submerged. Contents of containers and HAZMAT is unknown. 3. The SE 2nd Ave Bridge appears damaged and a co...</td>
<td>Southeast Florida (Sector Miami AOR)</td>
<td>4/15/2011</td>
<td></td>
</tr>
<tr>
<td>EXERCISE*** MSD COOP-EXERCISE</td>
<td>MSD Cincinnati is participating in a State and local EMA exercise. This is in conjunction with the NLE Exercise.</td>
<td>Southwest Ohio, Cincinnati</td>
<td>6/15/2011</td>
<td></td>
</tr>
</tbody>
</table>
Marine Transportation System Recovery

- **Essential Elements of Information (EEIs)**

- **22 EEIs grouped in 5 categories:**
  - Waterways and Navigation Systems
  - Port Area - Critical Infrastructure
  - Port Area – Vessels
  - Offshore Energy
  - Monitoring Systems

- **EEIs within CART events are characterized in 1 of 3 categories—**
  - Fully Available (FA)
  - Partially Available (PA)
  - Not Available (NA)

- **Text block to identify what factors contribute to the EEI being partially or not available.**
  - Example:
    - Critical ATON off-station;
    - Bridge is stuck down restricting waterway traffic.
• Executive Summary Reports—
  – CART allows users to generate standard incident reports for all registered events
  – Roll-up Options—District, Sector, COTP, MSU
  – Report Formats—HTML, PDF, XML
  – Report Sections—Port Status, Summary, EEI details, EEI trends
### Baseline Data

<table>
<thead>
<tr>
<th>Instance Name</th>
<th>Eei Type</th>
<th>Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raritan Bay Reach</td>
<td>Deep Draft Channel</td>
<td>New York</td>
</tr>
<tr>
<td>Ward Point Secondary Channel</td>
<td>Deep Draft Channel</td>
<td>New York</td>
</tr>
<tr>
<td>Raritan River Cutoff</td>
<td>Deep Draft Channel</td>
<td>New York</td>
</tr>
<tr>
<td>Raritan River</td>
<td>Deep Draft Channel</td>
<td>New York</td>
</tr>
<tr>
<td>Bay Ridge Channel</td>
<td>Deep Draft Channel</td>
<td>New York</td>
</tr>
<tr>
<td>Buttermilk Channel</td>
<td>Deep Draft Channel</td>
<td>New York</td>
</tr>
<tr>
<td>New Jersey Pierhead Channel</td>
<td>Deep Draft Channel</td>
<td>New York</td>
</tr>
<tr>
<td>Bayonne Terminal Channel</td>
<td>Deep Draft Channel</td>
<td>New York</td>
</tr>
<tr>
<td>Newark Bay Channel</td>
<td>Deep Draft Channel</td>
<td>New York</td>
</tr>
<tr>
<td>Port Elizabeth Channel</td>
<td>Deep Draft Channel</td>
<td>New York</td>
</tr>
<tr>
<td>Claremont Terminal Channel</td>
<td>Deep Draft Channel</td>
<td>New York</td>
</tr>
<tr>
<td>National Dock Channel</td>
<td>Deep Draft Channel</td>
<td>New York</td>
</tr>
<tr>
<td>Port Newark Pierhead Channel</td>
<td>Deep Draft Channel</td>
<td>New York</td>
</tr>
<tr>
<td>Lower Hudson Pierhead Channel</td>
<td>Deep Draft Channel</td>
<td>New York</td>
</tr>
<tr>
<td>Middle Hudson River</td>
<td>Deep Draft Channel</td>
<td>New York</td>
</tr>
</tbody>
</table>
### MTS Executive Summary (MTS - 209)

**D1 Hurricane Sandy, Sectors NNE, Boston, SENE, LIS, New York Executive Summary**

<table>
<thead>
<tr>
<th>Incident Name</th>
<th>D1 Hurricane Sandy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Sectors NNE, Boston, SENE, LIS, New York</td>
</tr>
<tr>
<td>Sector(s)</td>
<td>Boston, Long Island, Southeast New England, New York, Northern New England</td>
</tr>
<tr>
<td>COTP Zone(s)</td>
<td>Boston, Long Island, Southeast New England, New York, Northern New England</td>
</tr>
<tr>
<td>MSU(s):</td>
<td></td>
</tr>
<tr>
<td>Start Date:</td>
<td>10/26/2012</td>
</tr>
<tr>
<td>End Date:</td>
<td>12/20/2012</td>
</tr>
</tbody>
</table>

**Incident Summary:**
14 Nov 12 - 0800: Recovery from SANDY continues. SEC NY continues to conduct facility assessments. The Port of New York is open to all commercial vessel traffic, with the following restrictions: the Arthur Kill Channel, south of the Goethals Bridge, is limited to no-wake operation due to pollution incident work. Recreational vessel traffic restrictions are noted in the Port of New York Port Status tab. Electrical power restoration continues throughout the AOR, however, many facilities remain affected due to various reasons (i.e., loss of electrical power, flooding and damage). Facilities continue repairs and preparations to bring themselves online. There are no critical ATON discrepancies. Point Judith and Old Harbor affected for recreational vessel traffic due to ATON discrepancies. Point Judith Harbor and Harbor of Refuge is open during daylight hours only allowing the commercial fishing fleet to put to sea and ferries with COTP waivers.
<table>
<thead>
<tr>
<th>Instance Name</th>
<th>Eei Type</th>
<th>Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phillips 66 Bayway (Formerly Conoco Phillips Bayway)</td>
<td>Bulk Liquid Facilities</td>
<td>New York</td>
</tr>
<tr>
<td>Hess Corp Second Reserve (Port Reading)</td>
<td>Bulk Liquid Facilities</td>
<td>New York</td>
</tr>
<tr>
<td>Kuehne Chemical Company Inc.</td>
<td>Bulk Liquid Facilities</td>
<td>New York</td>
</tr>
<tr>
<td>Buckeye Perth Amboy (Formerly CHEVRON)</td>
<td>Bulk Liquid Facilities</td>
<td>New York</td>
</tr>
<tr>
<td>IMTT Bayonne</td>
<td>Bulk Liquid Facilities</td>
<td>New York</td>
</tr>
<tr>
<td>Hess Corp. Roseton Terminal</td>
<td>Bulk Liquid Facilities</td>
<td>New York</td>
</tr>
<tr>
<td>Hess First Reserve AKA Hess Perth Amboy</td>
<td>Bulk Liquid Facilities</td>
<td>New York</td>
</tr>
<tr>
<td>GenOn Sayreville Power PL (Formerly Reliant)</td>
<td>Bulk Liquid Facilities</td>
<td>New York</td>
</tr>
<tr>
<td>GenOn Werner Power Plant (Formerly Reliant)</td>
<td>Bulk Liquid Facilities</td>
<td>New York</td>
</tr>
<tr>
<td>Kinder Morgan (Perth Amboy), LLC.</td>
<td>Bulk Liquid Facilities</td>
<td>New York</td>
</tr>
<tr>
<td>HESS Bronx (Formerly Stuyvesant Fuel Terminal CO. LLC)</td>
<td>Bulk Liquid Facilities</td>
<td>New York</td>
</tr>
<tr>
<td>Motiva Enterprises Sewaren</td>
<td>Bulk Liquid Facilities</td>
<td>New York</td>
</tr>
<tr>
<td>Kinder Morgan Staten Island</td>
<td>Bulk Liquid Facilities</td>
<td>New York</td>
</tr>
<tr>
<td>PSEG Sewaren Generating Station</td>
<td>Bulk Liquid Facilities</td>
<td>New York</td>
</tr>
<tr>
<td>Bayside Fuel Oil Shore Parkway</td>
<td>Bulk Liquid Facilities</td>
<td>New York</td>
</tr>
</tbody>
</table>
Marine Transportation System Recovery

MTS Executive Summary (MTS - 209)

Deepwater Horizon oil spill, Mississippi Canyon 252 Executive Summary

Incident Name: Deepwater Horizon oil spill
Location: Mississippi Canyon 252
Sector(s): Mobile, New Orleans
COTP Zone(s): Mobile, New Orleans, Morgan City
MSU(s): Sector New Orleans, MSU Baton Rouge, MSU Morgan City, MSU Houma
Start Date: 04/29/2010
End Date: N/A

Incident Summary:
Oil cleanup is ongoing as a result of the explosion of the Deepwater Horizon offshore drilling unit.

SAVANNAH
Recovery - Open
The Port of Savannah remains open with no restrictions. All facilities operational as normal. No reported sightings of ollisheen within the port.

SAN JUAN
Recovery - Open
The Port of San Juan remains open with no restrictions. All facilities operational as normal. No reported sightings of ollisheen within the port.

TAMPA
Recovery - Open
The Port of Tampa remains open with no restrictions. All facilities operational as normal. No reported sightings of ollisheen within the port. The Port of St. Petersburg remains open with no restrictions. All facilities operational as normal. No reported sightings of ollisheen within the port. The Port of Manatee remains open with no restrictions. All facilities operational as normal. No reported sightings of ollisheen within the port.

PORT EVERGLADES
Recovery - Open
Port Everglades remains open with no restrictions. All facilities operational as normal. No reported sightings of ollisheen within the port.

CHARLESTON
Recovery - Open
The Port of Charleston remains open with no restrictions. All facilities operational as normal. No reported sightings of ollisheen within the port.

KEY WEST
Recovery - Open
The Port of Key West remains open with no restrictions. All facilities operational as normal. No reported sightings of ollisheen within the port. COTP Key West issued MSIB applicable to arriving vessels transiting from areas affected by the oil spill.

JACKSONVILLE
Recovery - Open
The Port of Jacksonville remains open with no restrictions. All facilities operational as normal. No reported sightings of ollisheen within the port.

Latest updated: 05/07/2010

Latest updated: 05/11/2010

Latest updated: 05/19/2010

Latest updated: 05/24/2010
Marine Transportation System Recovery

USCG Enterprise GIS - GOM Spill

Event Viewer

- Port Protector TTX
- Deepwater Horizon oil spill

Breakdown of EEI's by Status
- Total Count 368
  - 364 Fully Available
  - 3 Not available
  - 1 Partially Available

Breakdown of EEI's by Type
- 66 Non-Deep Draft Channel
- 20 Locks
- 100 Bulk Liquid Facilities
- 5 Container Facilities
- 36 Non-container Facilities
- 9 Pass/Ferry Terminals
- 10 Aids to Navigation
- 24 Shipyards
- 2 Gaming
- 1 Monitoring Systems
- 31 Deep Draft Channel
- 64 Bridges

Last Updated 4/28/2010 12:00:00 AM

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U.S. Coast Guard
Hurricane Sandy, October 29, 2012
Damages Incurred

- **Extensive infrastructure damage**

  Flooding (Water level in buildings @ 3-5’)
  - Utilities --- general commercial power, motors, controllers
    - Sewage/fire pump motors and controllers
    - Loss of rail relays and switches
  - Security fencing and guard booths destroyed
  - Damage to cranes and cargo handling equipment
    - Debris in roadways, channels and berths
      - Road and rail track damage
  - Total loss of rail car float and rail transfer bridge at Greenville

- **Cargo impacts**
  - Toppled container stacks
    - Lost containers
  - Autos destroyed by flooding and fire

- **Cruise Passenger Auto Damages**
Access Road Port New Jersey
Red Hook Barge “New York” sitting on Berth Number 6
Port of NY/NJ Container Terminal
Crane Wheel Motor Housings
Motiva (Seawaren, NJ)
Navigation Hazard Remediation
NOAA and Army Corps
Channel Surveys
Channel Assessment & Surveys
Vessel Traffic Service New York
Managed Vessel Queue
MTS Recovery Challenges

Power outages after Sandy

In all, hurricane Sandy knocked out power to more than 8.1 million US customers. These state totals are as of 9 a.m. ET on Monday.

<table>
<thead>
<tr>
<th>STATE</th>
<th>CURRENT CUSTOMER OUTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Jersey</td>
<td>2,498,447</td>
</tr>
<tr>
<td>New York</td>
<td>1,967,874</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>1,267,512</td>
</tr>
<tr>
<td>Connecticut</td>
<td>626,440</td>
</tr>
<tr>
<td>Maryland</td>
<td>311,020</td>
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<tr>
<td>Massachusetts</td>
<td>298,072</td>
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<tr>
<td>Ohio</td>
<td>254,207</td>
</tr>
<tr>
<td>West Virginia</td>
<td>212,183</td>
</tr>
<tr>
<td>Virginia</td>
<td>182,811</td>
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<tr>
<td>New Hampshire</td>
<td>141,992</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>116,308</td>
</tr>
<tr>
<td>Maine</td>
<td>90,727</td>
</tr>
<tr>
<td>Michigan</td>
<td>68,619</td>
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<tr>
<td>Delaware</td>
<td>45,137</td>
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<tr>
<td>Vermont</td>
<td>17,959</td>
</tr>
<tr>
<td>Indiana</td>
<td>7,537</td>
</tr>
<tr>
<td>North Carolina</td>
<td>4,005</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>3,583</td>
</tr>
</tbody>
</table>

SOURCE: US Department of Energy

RICH CLABAUGH/STAFF
Wide Spread Power Outages
Entire NE Fuel Supply Disrupted
MTS Recovery Lessons Learned Following Hurricane Sandy

- Hurricane Season Planning and Preparation
- Communications and Conference Calls
- Staging of Personal and Resources
- Validation of Essential Elements of Information
- Experience and knowledge of Stakeholders
- Loss of Power Grid
- Loss of Communications
- Lack of Fuel For Everyone