Port of Cleveland, Ohio:

Supply Chain Disruption Tabletop Exercise

After Action Report

October 22, 2024

Prepared by the U.S. Committee on the Marine Transportation System
Supply Chain and Infrastructure Integrated Action Team

Cover page photo credit: Kloss

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U.S. Committee on the Marine Transportation System
1200 New Jersey Avenue, SE
Washington, DC 20590

MTSinfo@dot.gov

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GENERAL INFORMATION

U.S. Committee on the Marine Transportation System

The U.S. Committee on the Marine Transportation System (CMTS) serves as a Federal maritime policy interagency coordinating committee for the purpose of assessing the adequacy of the marine transportation system (MTS), promoting the integration of the marine transportation system with other modes of transportation and other uses of the marine environment, and coordinating, improving the coordination of, and making recommendations with regard to Federal policies that impact the marine transportation system. For more information on the CMTS, its member agencies, and the various teams and working groups please visit https://www.cmts.gov/.

The CMTS Supply Chain and Infrastructure Integrated Action Team focuses on enhancing interagency discussion, communication, and providing recommendations and/or actions in support of the MTS supply chain and facilitating the development of broad evaluation and decision criteria that are used to inform a whole-of-government approach to Federal infrastructure investment in the MTS. The CMTS Supply Chain and Infrastructure Integrated Action Team is the sponsor of this tabletop exercise for the purpose of identifying policies, procedures, and regulations governing the resumption of trade following a supply chain disruption and to identify strategies to mitigate supply chain disruption impacts. https://www.cmts.gov/Topics-Projects/Supply-Chain-and-Infrastructure/

Exercise Point of Contact

For inquiries regarding this tabletop exercise, please email the U.S. Committee on the Marine Transportation System at MTSinfo@dot.gov.

Intermodal Security Training and Exercise Program

The Transportation Security Administration's (TSA) Intermodal Security Training and Exercise Program (I-STEP) provides exercise, training, and security planning tools and services to the transportation community. The program focuses on the security nexus of the intermodal transportation environment, serving mass transit, freight rail, pipeline, port and intermodal, highway and motor carrier, and aviation modes. Working in partnership with the transportation modes, I-STEP enables security partners to:

- Enhance security capabilities – Strengthen plans, policies, and procedures; clarify roles and responsibilities; validate planning needs; and strengthen grant proposals
- Build partnerships – Develop relationships with regional transportation players and other collaborators.
- Gain insights in transportation security – Network with peers to gain a deeper understanding of security lessons learned and best practices.

I-STEP is the only Federal exercise program to focus on the security nexus of the intermodal transportation environment. As a result, the program reduces risk to individual systems as well as the entire transportation network. I-STEP aligns to TSA's Transportation Systems Sector-Specific Plans (TSSSP) under the National Infrastructure Protection Plan (NIPP). The office of Policy, Plans, and Engagement (PPE) manages this program.

The Exercise Information System (EXIS) portal guides users through a step-by-step exercise planning process to develop their own specific security exercise. EXIS is an intuitive system providing a variety of exercise planning and evaluation tools as well as lessons learned and best practices from the Department of Homeland Security (DHS) Transportation Systems Sector and other aligned user communities. Lessons learned and best practices from exercises and training events along with intelligence information help shape transportation security policy and guidance. Go to: https://exis.tsa.dhs.gov to receive an account and use the tool.

I-STEP and the EXIS portal were used to assist with the design, monitoring, and execution of this tabletop exercise.

EXERCISE OVERVIEW

Purpose and Scope

The purpose of this exercise was for the Great Lakes Marine Transportation System and partners to identify policies, procedures, and regulations governing the resumption of trade following a supply chain disruption and identify strategies to mitigate future disruptions.

Exercise Objectives and Capabilities

The exercise objectives in Table 1 describe expected outcomes for the exercise. The objectives are linked to capabilities, which are the means to accomplish a mission, function, or objective based on the performance of related tasks. The objectives and aligned capabilities are guided by senior leaders and selected by the Exercise Planning Team (EPT). For additional information regarding core capabilities, please visit: https://www.fema.gov/emergency-managers/national-preparedness/mission-core-capabilities.

Mission Area	Core Capability	Exercise Objectives
Recovery	Economic Recovery	Demonstrate an understanding of the connectivity and interdependencies of surface (road and rail) and maritime transportation systems as they relate to supply chain criticality.
Recovery	Economic Recovery	Validate the ability to reroute goods post an MTS disruption to mitigate supply chain impacts.
Recovery	Operational Coordination	Identify notification processes of federal, state, and local agencies and private industry to support supply chain disruption impacts.
Recovery	Operational Coordination	Identify mitigation roles and responsibilities of federal, state, and local agencies and private industry in response to supply chain disruptions.

Table 1. Exercise Objectives and Associated Capabilities

Exercise Agenda

Start Time	End Time	Activity
8:00 AM	9:00 AM	Registration Check-In
9:00 AM	9:30 AM	Opening Remarks, Exercise Overview
9:30 AM	10:30 AM	Module One: Disaster through Day 7
10:30 AM	10:45 AM	Break
10:45 AM	11:45 AM	Module Two: Day 7 through Day 30
11:45 AM	12:45 PM	Lunch
12:45 PM	2:00 PM	Module Three: Day 30 through Day 60
2:00 PM	2:15 PM	Break
2:15 PM	2:45 PM	"What If" Scenarios and Questions
2:45 PM	3:00 PM	Feedback Survey / Closing Remarks
Total	7 Hours	**All times are approximate and in Eastern Time Zone*

Scenario Overview

The tabletop exercise scenario was designed to assess notification processes, mitigation roles and responsibilities, and the ability to reroute goods in response to supply chain disruptions at the Port of Cleveland. Participants engaged in a discussion-based exercise where a cargo vessel became wedged diagonally in the Cuyahoga River at the Norfolk Southern Bridge #1 (NS1), resulting in a shutdown of the Cuyahoga River where it meets Lake Erie. Participants were asked to discuss mitigation and response activities from the day of impact to seven days post disruption, from day seven through day thirty, and from day thirty through day sixty. The exercise concluded with a session where participants could question and discuss 'what if' scenarios. Appendix A includes a full scenario recap with facilitator questions and exercise visual aids.

Scenario Location Overview

One of the largest ports on the Great Lakes, the Port of Cleveland is located at the mouth of the Cuyahoga River on Lake Erie in Cleveland, Ohio. The port is a multimodal transportation hub of water, rail, and highway that handles a variety of bulk and general cargo products, as well as cruises. The Port of Cleveland is one of only two container ports on the Great Lakes. Maritime activity in and through the port supports 22,000 jobs and billions of dollars of annual economic value.[1] The port has access to multiple state routes and highways and is serviced by two Class 1 Railroads.

The 100-mile north-south flowing Cuyahoga River is a convergence of businesses, manufacturing, and recreation. The riverbanks are loaded with office buildings, restaurants, museums, marinas, and nature parks. Recreation on the water includes paddling, boating, fishing, and cruising. Stone, concrete, petroleum, asphalt, and steel are some of the items manufactured near and shipped along the river.

The NS1 Bridge is the final bridge that crosses the Cuyahoga River before Lake Erie. The steel vertical lift bridge services an average of 90 Class 1 and Amtrak trains per day.[2] In its lowered position, clearance under the bridge is roughly 8 feet, which stops most marine traffic.

Participating Partners

International	Transport Canada
Federal	CBP, CISA, CMTS, Dept of Homeland Security, DHS SCRC, DOT (BTS, FHWA, FRA, GLS, MARAD, OST, OST-P), EPA, FEMA, GMCC, International Trade Administration, NOAA, TSA, USACE, USCG
State	Northeast Ohio Regional Fusion Center, Ohio Dept of Natural Resources, Ohio DOT, Ohio Emergency Management Agency, Ohio Homeland Security, Ohio National Guard
Local	Cleveland Fire Dept, Cleveland Metroparks Police, Cleveland Police, Cuyahoga County OEM
Private	Cleveland Cliffs, International Longshoremen's Association, Jacobs Entertainment, Lake Carriers' Association, Nautica Entertainment, Norfolk Southern, Port of Cleveland, Rutgers University.

[1] https://www.portofcleveland.com/about/

[2] https://www.news5cleveland.com/news/local-news/cleveland-metro/norfolk-southern-to-keep-iron-curtain-lift-bridge-in-raised-position-by-default

EXERCISE OUTCOMES

Objective Summary

The exercise outlined four objectives:

1. Identify federal, state, and local agency and private industry notification processes to MTS supply chain disruption impacts.
2. Identify federal, state, and local agency and private industry mitigation roles and responsibilities in response to supply chain disruptions.
3. Demonstrate an understanding of the connectivity and interdependencies of surface (road and rail) and maritime transportation systems as they relate to supply chain criticality.
4. Validate the ability to reroute goods post MTS disruption to mitigate supply chain impacts.

The exercise met the outlined objectives by providing an open, no-fault learning environment wherein capabilities, plans, systems, and processes were discussed and evaluated. Dialogue amongst federal, state, and private partners explained steps each agency takes in response to incidents and supply chain disruptions. Participants emphasized the need for exercises to test scenarios and capabilities, network, and strengthen relationships. Lessons learned from previous exercises have proven useful in response to live incidents, such as the 2024 collapse of the Francis Scott Key Bridge in Baltimore, Maryland. The CMTS Supply Chain and Infrastructure Integrated Action Team intends to continue the design and facilitation of yearly tabletop exercises.

Strengths of existing practices and areas for improvement were identified from the completion and review of this exercise and are listed below. Participant feedback can be found in Appendix B.

Strengths of Existing Practices

- The policies, plans, and emergency procedures for individual organizations and companies operating within the Cleveland, Ohio, area MTS are readily available and regularly updated to be shared among the MTS to include federal, state, and local counterparts.

- Communication, to include call-trees, within each organization/company is actively maintained and updated for continuity purposes during an incident. Within the Cleveland, Ohio, maritime area, the communication pathways between MTS partners are open and actively used, ensuring a swifter recovery during live events. Communication and collaboration amongst the United States

and Canada (to include federal government, state and private organizations, and MTS operators) regarding operations within the Great Lakes helps ensure safe and reliable commodity shipments.

- To combat a gap in incident response times, the Cuyahoga County Emergency Management Agency created a flip book of marine response vessels which transit the area. This flip book is given to local U.S. Coast Guard and emergency management personnel and includes vessel characteristics such as station location, vessel particulars, vessel capabilities, radio frequencies operated, etc.

Areas for Improvement

- There is a need for the organizations represented at this exercise to evaluate their coordination efforts beyond the immediate emergency response to incidents; the need for more tabletops and/or seminars to discuss supply chain disruptions pertaining to long-duration supply chain impacts could be considered.

- The exercise identified that information provided to and distributed by the public needs improvement to consider stronger joint efforts and resource identification. The coordination of timely and accurate incident information dissemination should be considered in response management.

- Backup, non-digital (paper), standard operating procedures and emergency response plans are needed in case of a loss of electronic documents and response plans.

- Emergency response agencies and industry should develop a procedure to address the alternative routing of critical commodities when existing freight corridors are disrupted. Alternative routes should seek to maintain public safety, infrastructure, and industrial operations.

APPENDIX A: FULL SCENARIO RECAP

Module One: Day of Impact to Plus Seven (+7)

Scenario

October 15th, 2024: 10:00 a.m.

The Port of Cleveland in Cleveland, Ohio, is experiencing a vessel that is potentially subject to a cyber-attack and has rendered the ship wedged diagonally in the Cuyahoga River at the River Bridge #1 (NS1). The ship is resting against the bridge, which is in its lifted position. Local first responders and authorities have mitigated the initial incident and have begun to turn the incident over to the respective authorities for recovery efforts. Multiple media outlets are reporting on the incident and have begun to reach out with questions pertaining to recovery efforts. Additional components are still being notified of the incident and are being requested to assist in recovery development/deployment.

Discussion Questions

1. How are you finding out about this incident? How are agencies being notified?
2. Now we are 7 days out, how/what are you finding out?
    a. Who makes the call to NRC?
    b. Given it is possibly a cyber-attack, would that impact vessel communication?
3. Is it embedded in the risk communication process that industry (non-Federal government) is tagged? If not, does it need to be added?
4. USCG, to whom is your 2nd phone call?
5. Norfolk Southern, how do you find out about the incident?
6. Is this incident treated as a cyber incident?
7. The Cleveland, Ohio, area is rare in that District, Sector and Station are all within walking distance. Who is responding to the incident?
8. Port of Cleveland, how are you finding out about the incident?
9. Nautica Entertainment, how do you find out and is there anything you can offer?
10. Do you provide information or utilize a liaison?
11. What is the social media picture?
12. Is there any misinformation or disinformation?
13. Norfolk Southern, how long would it take to inspect the bridge?
14. Would the navigation channel be closed?

Module Two: Day 7 Through Day 30 of Disaster

Scenario

October 22nd, 2024: 8:00 a.m.

The Port of Cleveland experienced an incident on October 15th, 2024. Recovery-focused efforts continue. Authorities having jurisdictions have established a recovery unified command structure. A Joint Operations Center/Command (JOC) and a Joint Information Center (JIC) has been stood up. Media reporting has tapered; however, information is being requested by federal, state, and local agencies. Additional information is being requested regarding recovery efforts and potential future mitigation efforts. The vessel is still stuck. Fire/local have cleared incident.

Discussion Questions

15. What are your organization's continued priorities and long-term recovery plans? What is impacted?
16. What happens when a rail line is closed?
17. USCG has the ability to manage and manipulate/prioritize cargo/ships. Does FRA have the ability to direct prioritization of cargo?
18. Where is there a conversation to prioritize commodities? Who would/could make a decision where cargoes are prioritized over, per se, Amtrak?
19. Norfolk Southern and FRA, can you pull out certain rail cars?
20. If we shift focus, are you expecting an uptick in and/or additional commodities?
21. Last year, the 7-day shut down felt like a choke point with degradation to Work-Life balance. What is the timeline of the impact from this incident?

Module Three: Day 30 of Disaster and Beyond

Scenario

November 22nd, 2024: 8:00 a.m.

The JOC and JIC have demobilized, and tempo changed for all organizations to return to their respective normal operations with daily/weekly syncs regarding efforts towards sustaining recovery efforts. Internal and external agencies/authorities have been reaching out regarding policy development and/or reevaluation of current policies.

Discussion Questions

22. We had the JOC/JIC for the initial response, what are your organization's priorities for future forecasting? Are the JOC/JIC still required?
23. If another entity wanted to maintain a JOC would USCG support and/or be involved?
24. Who should be in the room for a Supply Chain Fusion Center?
25. After the collapse of the Francis Scott Key Bridge in Baltimore, Maryland, was anyone doing after-action post-supply chain incident reports?
26. Where is National Guard untapped and what more could they provide that hasn't been discussed?
27. Was this a cyber attack? Does this change anything?
28. Let's pivot again and say a cyber event did not occur and there are more boats on the water. How do we get back to normal operations? Do we complete our own evaluations and AARs?
29. Is information shared across to Canada?
30. If we change the vessel type, does the response change?
31. What is done with the crew?

“What If” Scenarios and Questions

32. Loss of Technology but not a cyber-attack and only effects the one vessel (GPS jammer or satellite out) – no laptops/phones.

33. Train on the bridge when there is a boat impact. Amtrak Train on the bridge?

34. Flood of the Cuyahoga River due to a vessel stuck in the middle and blocking water, floods Cleveland, Ohio.

35. What would a holiday weekend do to the response?

36. Collision Bend vessel doesn’t turn and runs up on the Flats (highly used by public – recreation, restaurants, bars).

37. Irish Town Bend 300/400 Yard Bank that has failed and will at some point fail and become a failure point if not addressed soon.

38. What if bridge collapses? Or if the vessel sinks?

39. Time of year change thing? Middle of winter with ice and snow?

Exercise Visual Aids

Figure 2. Aerial view of the Port of Cleveland from an airplane (credit: M.Carns 2024)

Figure 3. Vessel transits under NS1 Bridge (Credit: Kloss)

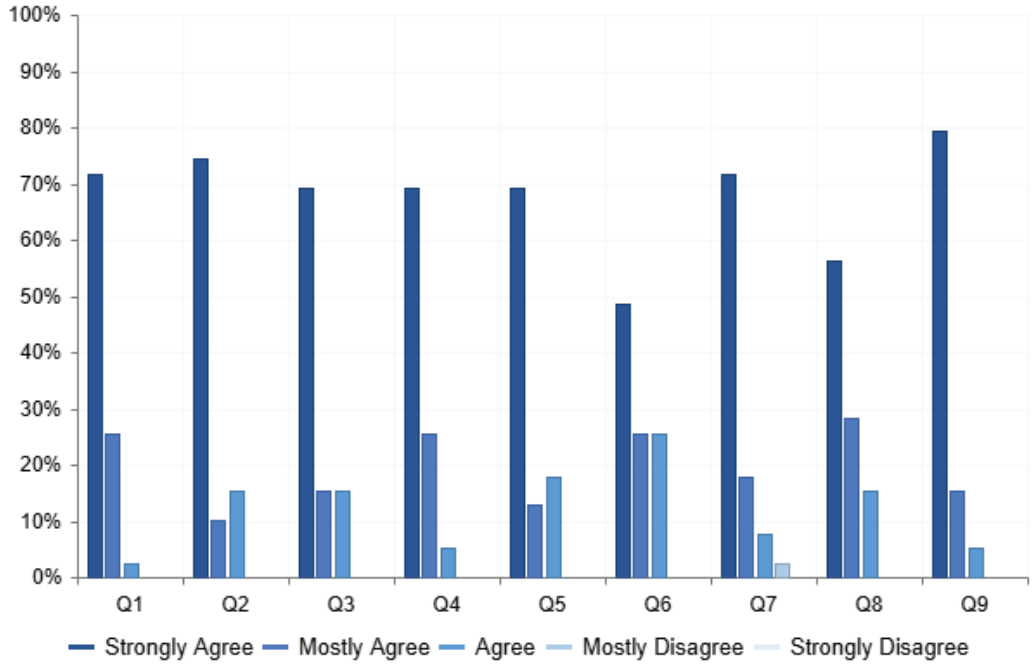
Figure 4. Barge, tug, and recreational craft on the Cuyahoga River (credit: tugster)

Figure 5. Norfolk Southern train on NS1 Bridge (credit: M.Carns 2024)

APPENDIX B: PARTICIPANT FEEDBACK

Overview

Ninety-one (91) attendees representing thirty-nine (39) agencies/organizations/offices participated in this exercise. All participants had the opportunity to complete feedback forms, which allowed them to provide input on the content and conduct of this exercise. This section includes participants' feedback on the exercise and changes participants would like to implement within their organizations. Feedback questions 1-9 were Likert scale designed, with the results shown below in Figure 1. Feedback questions 10-13 were open-ended survey questions, with the results shown below in Table 2.



Q1: The exercise was well-structured and organized.
Q2: The exercise scenario was plausible and realistic.
Q3: Participation in the exercise was appropriate for someone in my position.
Q4: Participants included the right people in terms of level and mix of disciplines.
Q5: The exercise was relevant to the risks facing my organization.
Q6: The exercise made me aware of new tools, capabilities, and/or resources that will increase my organization's preparedness.
Q7: The exercise afforded me the opportunity to network with federal, state, local, tribal, and/or industry stakeholders with whom I did not previously have established relationships.
Q8: The exercise was valuable to myself and/or my organization.
Q9: I would participate in an I-STEP exercise again.

Figure 1. Likert scale feedback questions in graph form. A Likert scale is a rating scale that uses a 5 or 7-point scale that ranges from one extreme attitude to another. It can sometimes be referred to as a satisfaction scale.

Table 2. Open-ended feedback questions and answers

10. Of what you learned today, what changes or improvements would you like to implement within your organization?	Better understand supply chains on the Great Lakes
	Review and optimize continuity of operations planning, gain and understanding of other agencies emergency procedures
	Expand emergency response partnerships and networking
	Emphasize the need for paper copies of emergency procedures and action plans as well as digital
	Awareness and points of contact for such scenarios
	Our agency would still respond on the same way, but it was interesting to learn more about the actions and timelines of other organizations
	Consider requesting logistics assistance from National Guard
	Ensure communications with all stakeholders is codified in all standard operating procedures and checklists
	Business continuity plans incorporating other modes of transportation as backups
	Change to Port Conditions Instructions to capture more than just weather events
	I would formalize our incident response format to be more robust and precise
	Out of the box thinking and preparedness
	Field level version of this exercise for first responders would be valuable to layer in their tactical perspective
	I would improve the communication and knowledge of the information
	Organization wide knowledge of response capabilities. These supply chain disruptions have significant cascading affects and understanding impacts is key to understanding mitigation practices
	Standard operating procedures
	Expand our disruption event plan to include reaching out to additional agencies
	Improve public affairs coordination
	Perform more tabletops
	Improve communications plan and be prepared to quickly integrate with a variety of stakeholders and partners
	Better response planning for information management
	Compose more robust contingency plans for supply chain disruption
11. How do you think the exercise results will assist you in your risk-reduction efforts?	Networking and meeting individuals that can outreach with when necessary
	Connecting me with the right people and asking the right questions
	It will increase efforts to establish relationships with previously overlooked partner agencies
	Better collaboration and planning
	Formalize communication flows intergovernmentally and with industry

	The broad range of knowledge in the room really helped in understanding the different roles organizations have as well as the resources they bring to the table. Learned a lot about other agencies resources and products
	It provides more awareness of all the different entities in the area associated with my supply chain
	Helped me understand the infrastructure within the port area
	By having more contacts and resources
	I think the next step is to review any salvage and recovery plans, then conduct a functional exercise
	I can improve policy to support the field
	I think it will focus my efforts more concisely
	Increased awareness of other agency responses and capabilities
	Broader thinking about a shared problem set
	It will change the level of risk and how I measure the risk and events within my organization
	They will help with policy development and contingency planning in other areas
	Greatly. It will definitely get the ball rolling to try and do scenarios like this at my workplace
	Need to put additional focus on supply chain disruption planning
	Better understanding of all the different stakeholders and appreciation of their perspectives
	Better awareness of hazards on the port and river
	Getting a good sense of what is done state side can be helpful to some of our information
	Has expanded my thought process to include inter-departmental cooperation
12. Please comment on any ways future exercises could be improved.	Longer term thinking vs emergency management
	More time
	The length of exercise was ideal, not too long, not too short optimal time to stay focused
	The schedule was off initially but was able to get back on target by the end. Create more of an opportunity to explore any stakeholders that were missed
	I would like to bring additional NOAA subject matter experts for weather, oil and HAZMAT response and navigation services and tides and currents
	Sound system would be helpful for those who have softer voices
	It is unclear to me how the different entities would work together to manage overall supply chain impacts. Is it a separate unified command type structure, who takes the lead, etc. Perhaps for a separate drill we could work through that aspect as a day 2 exercise
	New port with new scenario next year

	Optional evening social might be a helpful ice breaker
	Adding extra table and chairs for space to accommodate additional people. Additional monitors to see the information from different area of the room
	Scope of the exercise would have helped with bringing additional experts. For large organizations it is difficult to know best reps to attend
	More in depth scenario. This was realistic but would have been nice to get real in depth planning on this had it effected all vessels on the great lakes
	Include some supply chain modelers
	Include additional opportunities for informal networking during meals, lunch, etc. Consider holding a no-host social event
	Being an observer online was challenging - if this option is revisited to have online attendance can it be a requirement to have microphone best practices or something of information for people to speak clearly? Ended up missing a lot of context, which made it hard to follow
	Provide a list of acronyms
	Ensuring all participants are included in the discussion
13. Please enter additional comments or feedback.	It would be good to include a more life threatening situation and have agencies elaborate on both emergency response as well as getting goods moved
	Excellent facilitator
	Great exercise with a good group of subject matter experts who explained their roles and concerns
	Great exercise. Very well run and positive interaction and participation by all
	Exceptionally well done in preparation and facilitation
	Thank you Michelle and Drew. Michelle and Drew did an excellent job
	Well prepared exercise
	Very well done and presented
	CBP participation was missing - they were a key player in the previous exercise. May also want to include reps from NTSB and DOJ to address issues associated with their investigations
	USACE involvement would not be as critical for these scenarios, but it was beneficial to observe and hear concerns from partner agencies and community stakeholders. Thank you

APPENDIX C: ACRONYMS

Acronym	Term
AAR	After Action Report
BTS	DOT Bureau of Transportation Statistics
CBP	United States Customs and Border Protection
CISA	Cybersecurity and Infrastructure Security Agency
CMTS	United States Committee on the Marine Transportation System
DHS	United States Department of Homeland Security
DOJ	United States Department of Justice
DOT	United States Department of Transportation
EPA	United States Environmental Protection Agency
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FHWA	DOT Federal Highway Administration
FRA	DOT Federal Railroad Administration
GLS	DOT Great Lakes St. Lawrence Seaway Development Corporation
GMCC	Global Maritime Operational Threat Response Coordination Center
Hazmat	Hazardous Material
ILA	International Longshoremen's Association
I-STEP	Intermodal Security Training and Exercise Program
JIC	Joint Information Center
JOC	Joint Operations Center/Command
LCA	Lake Carriers' Association
MARAD	DOT Maritime Administration
MTS	Marine Transportation System
NOAA	National Oceanic and Atmospheric Administration
NRC	National Response Center
NS1	Norfolk Southern Bridge #1
NTSB	National Transportation Safety Board
OEM	Office of Emergency Management
OST	DOT Office of the Secretary of Transportation
SCRC	DHS Supply Chain Resilience Center
TSA	Transportation Security Administration
TTX	Tabletop Exercise
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard