

INFORMATION PAPER

MARINE TRANSPORTATION SYSTEM RECOVERY CURRENT STATE OF PREPAREDNESS PRACTICE

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SUMMARY. The overall inter-modal transportation system is fundamental to effective functioning of the national economy, and involves cargo flow pathways through coastal ports as well as the extensive inland river system commodity flows that serve major sections of the country. International, national, regional, and local supply chain interdependencies with a maritime transportation nexus exist across other surface transportation modes and Critical Infrastructure and Key Resources (CI/KR) Sectors. These interdependencies are not well cross-sector quantified and could benefit from further development in support of continuing implementation of the DHS Strategy to Enhance International Supply Chain Security. The Coast Guard, in cooperation with partners and stakeholders in the public and private sectors, has established a common, scalable, all-hazards concept of operations planning framework nationwide to facilitate a cooperative process for accomplishing near-term recovery (i.e., restoration of partial functionality) of the Marine Transportation System following a substantial or catastrophic transportation disruption, including resumption of trade inside and outside of incident areas. This approach is designed to also help set the stage and position the system to support follow-up long-term recovery measures by system stakeholders relative to their portions of the system.

This information paper provides a general synopsis of disaster recovery preparedness relative to the U.S. Marine Transportation System (MTS) as the system is described in *An Assessment of the U.S. Marine Transportation System: A Report to Congress* (DOT, 1999). This information paper is a technical compilation of available materials from a strategic through tactical concept of operations planning perspective, and is not an official statement of policy. The material presented is representative, but is not complete with respect to the panoply of operational and supporting activities associated with MTS recovery. Therefore, this material should be considered an entry point for further discussion.

¹ This paper is intended as an information resource for the Preparing for, Responding to, and Recovering from Disasters Study Group. The views expressed are those of the author as subject matter expert for MTS recovery.

U.S. MARINE TRANSPORTATION SYSTEM

The U.S. Marine Transportation System (MTS) consists of ports, waterways and inter-modal landside connections which accommodate the movement of freight, military goods and passengers. The MTS is a vital public-private partnership that makes up an essential component of the nation's transportation network. It links water and surface transportation (rail and highway) and enables America to globally connect. Stakeholders in the MTS include governmental agencies, waterfront facilities, commercial and recreational vessels, vehicles and system users, such as importers and exporters. Recovery of the MTS, and the resumption of commerce following a major incident, natural or man-made, that significantly impacts the MTS is an important component in supporting overall resiliency of the nation's supply chain.

MTS Roles and Responsibilities

Commercial port complexes are primarily local private and public sector resources for which owners and operators are responsible for business continuity and recovery. Initial emergency preparedness and response that serve the nation's marine and river navigation systems (e.g., fire, law enforcement, emergency management, emergency medical, public health and public works assets) are organized and managed by local authorities. However, the arteries of the overall MTS, on which commerce flows, sometimes referred to as marine highways, are predominantly built (i.e. federal navigation projects such as designed channels), maintained, and operated by the Federal Government. Maritime commerce, and associated marine safety and maritime security requirements, are also regulated by the Federal Government.

The recovery of the MTS for the resumption of commerce requires coordination among multiple federal and state agencies in cooperative efforts to mitigate the impacts to the U.S. economy resulting from a significant MTS disruption. When disasters occur, restoration of Federal marine navigation arteries and navigation systems is a Federal lead responsibility using own resources. These MTS recovery activities occur in coordination with recovery of facilities and port infrastructure in the private and public sector, and are in addition to initial emergency preparedness and response services provided by Federal agencies with maritime roles, such as search and rescue. Industry possesses both the best information on inbound and outbound cargoes and day-to-day capabilities within the transportation modes to identify transportation and cargo processing alternatives. Therefore, cooperative engagement among all concerned are necessary to achieve the objective of restoring functionality to the MTS. The Federal agencies may also become involved in related or non-related federal-to-federal support or mission assignments (under Stafford Act declarations) accepted by individual agencies.

Federal Agency Roles and Responsibilities

The following are highlights of Federal agency roles and responsibilities relative to the MTS.

U.S. Army Corps of Engineers (USACE). Building, maintaining, and operating physical infrastructure in the form of channels, canals, locks and dams, associated traffic management services, dredging, shoreline protection (e.g., levee systems), and river navigation charts are the responsibility of the USACE. The USACE also has limited responsibility for marine salvage as it

pertains to removing obstructions to navigation from Federal Channels under certain circumstances.

U.S. Coast Guard (USCG). The Coast Guard has broad, multi-faceted jurisdictional authority and responsibility to ensure the safety and security of the nation's MTS. As such, the Coast Guard is uniquely positioned to lead MTS recovery efforts. Roles and responsibilities include establishing, maintaining, operating, and administering navigation systems (e.g., buoyage), safety and security regulation of vessels and facilities, marine pollution prevention and response, vessel traffic management systems in certain areas, maritime law enforcement, and emergency response including search and rescue. The Coast Guard, as an element of its longstanding marine safety and security statutory missions and in its role as Sector-Specific Agency for Maritime Transportation Security, works with Federal, State, Tribal, and local jurisdictions, industry, partners and stakeholders to facilitate coordinated and cooperative planning for recovery of the MTS.

The Coast Guard also has limited responsibility for marine salvage as it pertains to marking obstructions to navigation and removing or mitigating the threat of oil and hazardous materials being released into the environment. The Coast Guard established a Salvage Engineering Response Team (SERT) to provide subject matter experts on salvage at its Washington DC Marine Safety Center. SERT provides immediate salvage engineering support to the Coast Guard Captains of the Port (COTP) and Federal On-Scene Coordinators (FOSC) in response to a variety of vessel casualties. Specifically, SERT can assist the COTP and FOSC manage and minimize the risk to people, the environment, and property when responding to vessels that have experienced a grounding, allision, collision, capsizing, or structural damage. SERT provides this assistance by performing numerous technical evaluations including: assessment and analysis of intact and damaged vessel stability, hull stress and strength, grounding and freeing forces, prediction of oil/hazardous substance outflow, and expertise on passenger vessel construction, fire protection, and safety. SERT has external relationships with organizations like the U.S. Navy Supervisor of Salvage (SUPSALV), Coast Guard Intelligence Coordination Center, and the Office of Naval Intelligence (ONI), as well as all major class societies.

U.S. Customs and Border Protection (CBP). CBP is responsible for regulating and facilitating international trade, collecting import duties, enforcing United States trade laws, stemming the flow of illegal drugs and other contraband across the nation's borders, and enforcing U.S. customs laws and conducts associated maritime law enforcement operations.

U.S. Navy Director of Ocean Engineering, Supervisor of Salvage and Diving (SUPSALV). SUPSALV is the Federal Government's principle source of salvage and diving expertise. Upon request, SUPSALV can provide expertise in conducting and supporting salvage/wreck removal operations, oil and HAZMAT abatement, heavy lift, vessel lightering, vessel inspections, Remotely Operated Vehicle (ROV) services, and diving services. In addition to military assets such as Mobile Diving and Salvage Units One (located in Pearl Harbor, HI) and Two (located in Little Creek, VA), and the Military Sealift Command's tugs and salvage ships, Also, SUPSALV is able to quickly draw upon the extensive resources of the commercial salvage industry through its competitively awarded standing salvage support contracts. In addition, SUPSALV can also access the Navy's hydrographic survey assets/capabilities.

Other Federal Agencies. Other agencies with important roles include, but are not limited to, the National Oceanic and Atmospheric Administration (NOAA) (e.g., nautical charts, bathymetric surveys, survey vessels), U.S. Maritime Administration (MARAD), Transportation Security Agency (TSA), and Environmental Protection Agency (EPA) (e.g., inland environmental pollution response).

MTS RECOVERY GOVERNANCE

Strategic Guidance

The U.S. Coast Guard Strategy for Maritime Safety, Security, and Stewardship (Jan, 2007) describes how the U.S. Coast Guard will work to safeguard the nation against all threats, hazards, and challenges in the maritime domain. The Strategy is shaped by laws, executive orders, international conventions and agreements, and other guidance that determines U.S. maritime policy. It took significant shape from the *National Strategy for Maritime Security* (NSMS), the President's *Ocean Action Plan* (OAP), National and Homeland Security Presidential Directives (NSPD/HSPD), and the Department of Homeland Security goals and priorities. This strategy is applied to the parts of a larger interlocking system of governance comprised of maritime regimes, domain awareness, and operational capabilities. The overarching objective is to achieve an integrated, systematic approach to maritime governance. With respect to marine transportation, the Strategy is applied to the U.S. MTS as described in the DOT report noted previously.

The Coast Guard Strategy identified developing a national capacity for MTS recovery as one of six cross-cutting priorities for improving the nation's preparedness and advancing U.S. maritime interests. The rationale for this priority is that the nation needs a coordinated, integrated approach to planning for and responding to major disruptions in the MTS. To support the NSMS and its *Maritime Infrastructure Recovery Plan* (MIRP), and to meet the statutory requirements of the *Maritime Transportation Security Act of 2002* (MTSA) to mitigate the effects of Transportation Security Incidents (TSI) and the salvage response coordination requirements of the *Security and Accountability for Every Port Act of 2006* (SAFE Port Act), the Coast Guard is leveraging its authorities, responsibilities, and capabilities to lead the national planning agenda for assuring the continuity of commerce and critical maritime activities. This activity includes coordinating relationships and linkages between maritime security, marine environmental response, and natural disaster plans and procedures in support of all-hazards compatibility.

MTS recovery includes restoration of Coast Guard infrastructure (e.g. field units) and MTS infrastructure that the Coast Guard maintains (e.g. aids to navigation), federal-to-federal support related to MTS recovery, and facilitation of maritime community MTS recovery activities. MTS recovery activities include needs in both incident and non-incident areas, including continuing prevention and protection requirements, and restoration of partial functionality of marine systems needed to support response.

With respect to trade, the local, regional, national, and international supply chain is owned by an amalgam of private sector interests and is regulated by multiple international, national, state, and

local government jurisdictions. Disruptions to the supply chain can quickly create serious economic consequences. In response to requirements of the SAFE Port Act, DHS developed the *Strategy to Enhance International Supply Chain Security*, (Jul 2007), which provides a consolidated strategic approach and features prevention, response and recovery. The strategy was informed by recovery preparedness requirements, policies, and initiatives already in progress, and was constructed to provide a consolidated, unified approach which has been carried forward into MTS recovery planning.

The DHS Strategy specifies that “Agencies with primary responsibility for movement of vessels and cargo (i.e. the United States Coast Guard and U.S. Custom and Border Protection) will form the core of a specific national level interagency coordinating body specifically to monitor the status of the marine transportation system and provide direction to field commanders to expedite MTS recovery and resumption of trade.” This element is further guided by the *Customs and Border Protection/U.S. Coast Guard Joint Protocols for the Expeditious Recovery of Trade*, which to date have been activated for recovery information sharing and coordination relative to floods on the Western Rivers and hurricanes, and as advance planning for the potential national effects on marine transportation of the then imminent eruption of Mt. Redoubt volcano and the spread of the H1N1 virus.

Implementation of the DHS Strategy and the Coast Guard Strategy for practical application at local, regional and national levels of engagement is intended to address the full preparedness continuum of prevention, protection, response and recovery (P2R2), and to provide a bridge from steady state activities for maritime safety and security to incident management in alignment with, and supporting the *National Response Framework* (NRF). An objective is to ensure recovery efforts are activated to secure and restore transportation capabilities, and that resources are deployed to support the flow of trade. Within incident areas, recovery must necessarily address the functionality of physical infrastructure. Outside of incident areas, the focus is more on the flow of trade and ability to support modification of cargo flow associated with the incident. A flexible, generalized approach to recovery is used, taking into consideration that unpredictable port-level factors and operating conditions will of necessity inform actual decision making processes.

Key Concepts for MTS Recovery

The DHS Strategy identified critical nodes where security efforts achieve the greatest impact across the breadth of the international supply chains. Despite the existence of key nodes with the cargo supply chain and MTS generally, there is no “one size fits all” solution to supply chain and MTS security. This is due to the complex nature of the supply chain, and the fact that supply chains vary between CI/KR Sectors, industries, and between companies within the same industry. In addition, risk factors vary by source and type of risk and how that risk applies to the MTS and cargo flow. Risk-based preparedness planning is applied to compensate for the varying effects of risk to preparedness planning. Understanding CI/KR Sector and cargo flow cross-sector interdependencies is also important to inform mitigation planning, including prevention, protection and resiliency measures to reduce incident effects. The understanding of cross-sector dependencies and interdependencies as they pertain to the transportation system is not robust and continues to evolve through preparedness planning and exercises. Further development of cross-

sector dependencies and interdependencies is, however, constrained by proprietary information and information security issues and requirements.

The DHS Strategy articulated guiding principles for international supply chain security which have been integrated into MTS recovery planning. The principles addressed: the role of technology; economic impact; all-hazards planning; scalability; incident management; concepts for prevention, response and recovery, including distinctions between initial and long-term recovery, and restoration as a measure of recovery; and, resources. Several basic characterizations set the context for disaster recovery planning relative to resumption of trade, as follows.

- **Response** for the purposes of resumption of trade is characterized as consisting of measures, operations and activities in incident areas that are needed to set the stage for initial recovery activities (notionally the initial 90 day post-incident period where impacted infrastructure and supporting activities within the incident area have been returned to service and are capable of operations or service at some level). Response includes the determination and assessment of infrastructure impacts and transportation disruptions to support assessment of the primary and secondary effects of an incident, including supply chain dependencies and interdependencies. Prevention (and protection) activities will continue during response in incident and non-incident areas as necessary as a supporting security activity, consistent with the threat. Recovery planning and operations will be conducted concurrently with response activities and will be initiated as soon as practicable following an incident.
- **Recovery** is characterized as consisting of measures, programs, and other activities that are planned and applied across CI/KR Sectors consistent with the NRF CI/KR Support Annex to facilitate and support the resumption of trade within incident areas (those areas directly impacted by the effects of the incident) and non-incident areas (those areas indirectly affected by the consequences of an incident). Recovery also consists of measures and actions needed to resume trade at normal levels following the threat of an incident which necessitates heightened security and possible transportation restrictions affecting cargo flow. Recovery measures were also characterized as those that are needed to provide initial recovery and to provide the basis to facilitate and support long-term recovery and mitigation activities where required. For incident areas, a primary focus is on restoring infrastructure sufficiently to enable restoration of transportation and trade/cargo flow. In non-incident areas, a primary focus is on offsetting the loss of functionality and capacity resulting from the incident(s) and mitigation of the associated disruption of transportation and trade.
- The level of **restoration** is characterized as the extent to which infrastructure is individually or collectively recovered or the extent to which trade has recovered, expressed as a percentage or other suitable metric of pre-incident conditions or service, or as the capacity to operate or provide service at pre-incident levels, as appropriate.

The DHS Strategy also identified the following division of responsibility:

- Each Department, agency, and organization is responsible for the recovery of its own infrastructure and for the recovery of infrastructure that it directly administers, operates or maintains.
- CI/KR Sector-Specific Agencies (SSA) are responsible for performing recovery responsibilities under the *National Infrastructure Protection Plan (NIPP)* and implementing directives.
- The Federal, State, local, and Tribal Governments will provide recovery services and assistance in support of affected communities and stakeholders in accordance with the NRF constructs and applicable laws, regulations and policies.
- Private sector owners and operators have the primary responsibility for recovery of infrastructure that these parties own and operate and for trade conducted by these parties.

MARITIME DOMAIN AWARENESS

Everything cannot be fixed at once, or even for extended time periods following a catastrophic event. With respect to transportation, effective preparedness for disaster recovery therefore necessitates development of a good understanding of the systems and system elements and their relative importance to the system.

The MTS, as defined in *An Assessment of the U.S. Marine Transportation System: A Report to Congress* (Sep, 1999), is not well understood outside of the maritime community and stakeholders that have direct interests in its performance. Even less well understood are the supply chain dependencies and interdependencies across CI/KR sectors that link to maritime cargo flow through coastal or river ports, or a combination. Providing an improved understanding of these economic functional linkages is being addressed by various efforts, but development of actual lessons learned is typically incident-specific and research has not been systematically coordinated.

Supply chain dependencies and interdependencies are elements of maritime security planning that the Coast Guard is leveraging to advance all-hazard-compatible preparedness in coordination with partners and stakeholders for facilitation of MTS recovery. However, the information that is available is limited, and is largely outside of the maritime domain. This is an area for strategic as well as tactical improvement. Examples of some of the work that has helped improve the understanding of the maritime domain relative to disaster recovery include the following. Various research is said to be in progress, but there is no national database to assist in identifying the full scope of research results that may be available to support recovery planning.

Some of the work accomplished to date specific to the marine transportation mode includes studies commissioned by the Office of Naval Intelligence to examine the potential issues that might arise from a potential terrorist incident, a major industrial accident, or a natural disaster. The objective was to help better understand the implication of major marine transportation disruptions. An alternative ports analysis was performed for the West Coast as well as the Atlantic and Gulf Coasts. A West Coast cargo prioritization study was also performed.

Although these were general assessments, the findings are not surprising. A prolonged major transportation system disruption resulting in a substantial reduction or loss of functional capability would have profound national and international economic effects. The ability to recover system functionality would depend upon the severity and scale of the incident relative to the supply chain that is disrupted. In certain cases, there is insufficient capability to work around a total loss of the functional capability of a large-scale port complex.

Lessons learned from actual events and exercises with MTS recovery elements in support of testing and developing maritime regimes have helped identify some inter-modal and cross CI/KR sector interdependencies. An example of interdependencies include the actual disruption of grain exports following Hurricane Katrina as a consequence of coastal port non-availability to grain shipments moving on the Western Rivers and lack of adequate surface transportation alternatives for moving grain in bulk. Fuel for power plants (e.g., oil for coastal power plants; coal for river power plants) have been examined during actual and exercise events. The effects of damage to highway, rail and pipeline infrastructure crossing rivers on marine transportation and potential to effect east-west cargo flow as well as access by response resources have also been examined through exercises, such as the EPA/USCG – sponsored Spill of National Significant 2007 (SONS 07). The near-term implications of supply chain disruptions to Hawaii and Alaska have also been examined through recent exercises, including a Coast Guard-sponsored Area Maritime Security exercise in the Pacific Northwest and the recent Federal Emergency Management Agency (FEMA) led Exercise MAKAHI PAHILI in Hawaii which included Coast Guard participation relative to MTS recovery and supply chain issues.

Recent FEMA-sponsored port security grants for many ports included opportunities for development of recovery and resiliency plans to guide future grant requests. These plans and grant-supported follow-up projects will support the all-hazard-compatible MTS recovery element of Area Maritime Security Plans (AMSP) (described later).

MTS RECOVERY STATE OF PRACTICE

The aforementioned background was a combination of the outgrowth of lessons learned from actual incidents, and forward looking preparedness planning that is compliant with the *National Incident Management System* (NIMS). The following summarizes the current state of MTS recovery planning practice at the tactical coordination level. The discussion starts with environmental response which provides a relatively mature approach for unified incident management and cooperative and coordinated engagement with partners and stakeholders. The National Oil and Hazardous Substances Pollution Contingency Plan, referred to as the National Contingency Plan (NCP), and supporting Area Contingency Plans (ACP) are mature, and were used as working models that were adapted to support development of the *National Maritime Transportation Security Plan* (NMTSP) and AMS Plans. Lessons learned from marine transportation system restoration following large-scale marine pollution incidents and natural disasters also informed advancement of all-hazard MTS recovery preparedness. These precursors, which function in parallel with and are linked to MTS recovery plans, are discussed first.

Oil Discharges and Hazardous Materials Releases

The NCP is a national to local network that creates the National Response System for responding to and recovering from discharges of oil and releases of hazardous substances. This National Response System also includes response to spills/releases that are a result of a natural disaster. Preparedness for these incidents provide a standing capability which is incorporated by reference and relied upon in maritime security plans for response to and recovery from spills associated with TSIs.

The goal of the NCP is to develop a national response capability and promotion of overall coordination amongst all stakeholders – national to local (including private sector and non-Governmental Organizations (NGO) through a hierarchy of contingency plans – NCP, Regional Contingency Plan (RCP) and the Area Contingency Plan (ACP).

Implementing each level of plan is a team of stakeholders. At the national level, the National Response Team (comprised of 16 Federal Executive Branch Agencies) provides technical assistance, resources and coordination on preparedness, planning, response and recovery activities for emergencies involving hazardous substances, pollutants and contaminants, hazardous material, oil, and weapons of mass destruction in natural and technological disasters and other environmental incidents of national significance. At the regional level (Coast Guard District and FEMA/EPA Regions), there are Regional Response Teams (RRT) (comprised of NRT agency representatives and state and local stakeholders). The RRTs responsibilities include regional planning and coordination of preparedness and response actions; guidance to Area Committees (within their area of region) to ensure inter-area consistency and uniformity of individual ACPs with the RCP and NCP.

The ACPs focus on coordination and collaboration amongst all stakeholders in the local area to prepare for and respond to spill events. The plans ensure that the local areas are prepared to respond to almost all spill events at the community level, but they also identify capability shortfalls within the local area that will require regional or national level support to fill, along with triggers for regional and national action, and routine communications and coordination protocols to ensure regional and national level support is delivered on demand. The RCP focus on supporting the ACPs by ensuring that the region is prepared to fill local area shortfalls either through resource acquisition from within the region or by reaching up to the national level if regional capabilities are exceeded.

If a significant or catastrophic discharge or release occurs in the coastal areas, a Coast Guard official, usually the Coast Guard Captain of the Port (COTP), serves as Federal On-Scene Coordinator (FOSC) and implements the ACP for that area. The FOSC monitors and directs response activities by all concerned. Owners and operators have compensation responsibilities.

The NCP is jointly managed by the Environmental Protection Agency (EPA) and the Coast Guard. The EPA has overall lead and responsibility for managing discharges and releases for inland zones; the Coast Guard has corresponding management responsibilities for coastal zones; each agency supports the other as necessary and appropriate within their areas of responsibility. The system aligns with the NRF, and is incorporated as Emergency Support Function (ESF) #10.

Natural Disasters

At the national level, a major emphasis was preparing for the 2006 hurricane season while maintaining momentum for maritime security improvements. Findings from the Coast Guard's Maritime Response and Recovery Task Force report and recommendations and lessons learned from national assessments following Katrina helped the agency focus on issues for which immediate preparedness improvements were indicated. These included the need for Pre-Scripted Mission Assignments (PSMA), vastly improved hurricane contingency concept plans (CONPLAN), pre-designation and training of Principal Federal Officers (PFO) and core Joint Field Office (JFO) staffs, improvements in the NRF organizational structure for Essential Support Functions (ESF), an organized, focused recovery planning element within ICS, and supporting job aids.

The Department of Homeland Security designated six Principle Federal Officials (PFO), five of which were Coast Guard flag officers. The Coast Guard developed Joint Field Office (JFO) staffing guidance, pre-designated Coast Guard personnel to staff JFOs, and conducted JFO training. The Coast Guard worked closely with FEMA to develop PMSAs to facilitate targeted responses under a Stafford Act disaster declaration. The PMSAs are designed to support certain ESFs. Initially, they covered potential areas where Coast Guard support may be needed including transportation, damage assessments, search and rescue, marine debris removal, and other areas within the capability of Coast Guard resources but outside of normal agency responsibility. FEMA subsequently broadened the PSMA concept to cover a broader array of Federal agencies and suite of prospective mission assignments.

Some regional and national level natural disaster concept and coordination plans have also been developed. Examples include Coast Guard hurricane and heavy weather plans to minimize the potential for damage to MTS infrastructure and the Waterways Action Plan (WAP) for coordinated measures among the Coast Guard, USACE, State and local authorities for facilitating the safe and orderly movement of traffic during extreme conditions on the inland rivers.

Maritime Security

Resumption of commerce and recovery of the MTS following a significant disruption is an issue of concern nationwide. MTSA required the NMTSP, and required that this plan include a plan to restore cargo flow following a national Transportation Security Incident (TSI). MTSA also required development of *Area Maritime Security Plans* (AMSP) that, in conjunction with the NMTSP and facility security plans, are intended to deter and when necessary, to mitigate the effects of TSIs that may occur. This requirement enabled inclusion of facilitation of MTS recovery as a specific content requirement for these port-area plans. A further content requirement was added by the SAFE Port Act which required inclusion of Salvage Response Plans within each AMS Plan as well as identification of salvage equipment in AMS areas.

MTSA requirements were implemented through publication of final rules 33 Code of Federal Regulations (CFR), Chapter I, Subchapter H –Maritime Security of Federal Regulations on October 22, 2003. Title 33 CFR Parts address specific security requirements:

- Part 103 - Area Maritime Security;
- Part 104 - Vessels;
- Part 105 - Facilities; and
- Part 106 - Outer Continental Shelf (OCS) facilities.

The regulations were issued under the enabling authority and requirements of the MTSA, and discretionary authority of antiterrorism amendments to the Ports and Waterways Safety Act of 1972 (PWSA), and the Magnuson Act of 1950. These regulations concurrently implement within the U.S. the port, facility, and vessel security standards promulgated as the *International Ship and Port Facility Security Code* (ISPS Code). The Salvage Response Plan requirement was folded under the pre-existing MTS recovery element of AMS Plan content.

Area Maritime Security Plans

The AMS Plans are a key component of the Coast Guard's national maritime security layered approach. The underlying objective is to prevent a significant loss of life, environmental damage, transportation system disruption, or economic disruption. The regulations in 33 CFR 103 require an Area Maritime Security (AMS) Plan that coordinates consistent security measures throughout multiple Captain of the Port (COTP) zones. This plan provides regional strategies and resources to mitigate vulnerabilities and subsequent consequences identified by the AMS Assessment. These assessments are informed by output from the Coast Guard's Maritime Security Risk Assessment Model (MSRAM). The AMS Plan addresses security measures designed to ensure effective security for certain vessels, facilities, and OCS facilities not required to meet 33 CFR 104, 105, and 106.

The Coast Guard structured AMS plans drawing on concepts associated with the existing successful model for response and mitigation of oil and hazardous materials incidents. In doing so, the Coast Guard adapted, correlated and applied longstanding safety, security, and emergency response missions, authorities and capabilities, community and stakeholder coordination practices, and lessons learned from oil and hazardous materials response and mitigation. This approach thus built on existing pre-incident steady state, prevention-oriented risk management activities and operations that provide a continuing return on investment to the public, while also providing core resources to initiate agency-specific response and recovery actions and supporting preparedness activities, and coordination of stakeholder engagement.

AMS plans are developed pre-incident as a concept plan for community-based coordination. The plans provide a vehicle for maritime security preparedness planning and for developing mutually supporting procedures for tactical coordination. AMS procedures are intended to take the AMS community up to the point at which it is necessary to establish a unified command for incident management. The AMS plan then becomes a supporting plan for the maritime component of incident management.

AMS Plan content conforms to requirements of 33 CFR 103 plus additional content necessary for systems approach to community-based maritime security. Comprehensive plan development policy guidance is promulgated in non-directive policy guidance issued by the Coast Guard as

Navigation and Vessel Inspection Circular (NVIC) 09-02 series. Change 3 is currently effective, and includes templates for the AMS Plans, MTS recovery plans, and Salvage Response Plans. The AMS Plans are tested annually per 33 CFR 103 using a five-year preparedness planning cycle using program standards promulgated in the NVIC.

Main elements of AMS Plans include:

- Authority and Purpose
- Area Maritime Security Committee
- Awareness
- Maritime Security Assessments
- Communications
- Maritime Security Levels and Reporting
- Prevention (including prevention during response and recovery)
- Security Responses (including protective measures and port evacuation)
- Facilitation of Marine Transportation System Recovery
- Compliance Measures
- Plan Maintenance

Marine Transportation System Recovery (*includes infrastructure functional restoration, salvage response, and resumption of trade, covering incident and non-incident areas*)

Resumption of commerce and recovery of the marine transportation system (MTS) following a significant disruption is an issue of concern nationwide. The state of practice described below involved a number of related, but independent initiatives that were guided by common core needs and themes.

Coast Guard Approach to MTS Recovery. The Coast Guard is using a focused approach for preparedness for, response to and facilitation of recovery from disasters that adversely affect the MTS, and security of the international supply chain, including CI/KR cross-sector interdependencies that have a marine transportation nexus directly or through inter-modal transportation links. The MTS recovery regime also takes into consideration continuity of operations, business continuity, maritime security, and force protection issues that continue during post-incident recovery activities. The MTS recovery regime is in addition to the agency's responsibility for own infrastructure, federal-to-federal support, and Stafford Act mission assignments under NRF constructs. The following discussion provides background and summarizes the current state of practice.

MTS Recovery Strategic Direction. Strategic concepts supporting efficient recovery of the MTS and associated recommendations were documented in the *Maritime Infrastructure Recovery Plan* (MIRP). The MIRP was developed as a supporting plan under the *National Strategy for Maritime Security* under NSPD-41/HSPD-13. These concepts were incorporated into the *DHS Strategy to Enhance International Supply Chain Security*. MTS Recovery was also incorporated at the strategic level in *Coast Guard Publication 1* and *The U.S. Coast Guard Strategy for Maritime Safety, Security, and Stewardship*.

Scoping Recovery Issues. MTS recovery requires a community effort. In order to advance the national dialog on recovery role, responsibilities, and practices, the Coast Guard sponsored a national forum on MTS recovery during summer 2006. Work being done to address MTS recovery in the Ports of Los Angeles and Long Beach was extensively featured during the event. The insights that were gained also helped inform the development of the DHS *Strategy to Enhance International Supply Chain Security* required by the SAFE Port Act. The Coast Guard, CBP, and other DHS components provided subject matter experts on preparedness to participate on the DHS authoring team. The strategy was used to inform the Coast Guard's policy guidance for MTS recovery.

MTS Recovery Planning Policy. Subsequent to the MTS recovery symposium and assessment of lessons learned from Hurricanes Katrina and Rita, the Coast Guard leveraged the mitigation requirement established by MTSA and a scheduled five-year update to AMS Plans (required by MTSA) to advance all-hazard MTS recovery preparedness. The AMSP update was performed by Coast Guard Captains of the Port (COTP), serving as Federal Maritime Security Coordinators (FMSC), in consultation with their respective AMS Committee. Review and approval of the updates are scheduled for completion during summer 2009.

The Coast Guard promulgated an internal directive, Commandant Instruction 16000.28, *Recovery of the Marine Transportation System for Resumption of Trade*, that established roles and responsibilities and implementation requirements for the various overarching legislative mandates, national strategies, policy directives, national plans, similar guidance, and the *CBP/USCG Joint Protocols for the Expeditious Recovery of Trade*, which was also required by the SAFE Port Act. Development of Essential Elements of Information (EEI) for MTS sub-elements and incident reporting requirements ensures that all critical elements of the MTS are considered in developing the recovery and restoration plan and in documenting and reporting functional status. The EEIs provide the essential baseline information for assessing incident impact. The directive also required establishment of MTS Recovery Units (MTSRU) at field and Coast Guard Headquarters levels to support incident management. These units were designed as a collateral duty for surge application rather than a dedicated organic resource.

Although recovery needs will vary by the character and context of each incident, use of a common MTS recovery framework with links to existing concept and contingency plans covering particular aspects of preparedness needs reduces overall planning burden and helps keep what needs to be accomplished more manageable, consistent, and practical. Therefore, the directive included an AMS planning requirement to employ a common approach for all-hazards across all categories of transportation disruptions, as defined by the SAFE Port Act, thereby institutionalizing the recovery planning approach that was already in progress.

The directive established short-term recovery as the primary focus for facilitation of MTS recovery. During initial (i.e., short-term, near-term) recovery, a primary focus for MTS recovery within incident areas is on restoring infrastructure sufficiently to support response, to enable restoration of transportation and/or cargo flow, and to set the stage for long-term recovery. Impacted infrastructure and supporting activities will be returned to service at some level of operations. Outside of incident areas, the initial focus will be on offsetting loss of functionality and capacity resulting from the incident(s) and mitigation of the associated disruption of

transportation and trade. Measures and supporting activities, including maritime security measures for prevention and protection, may be redirected, reallocated or supplemented to support response and recovery operations in incident areas. This may result in changes to operations outside the incident area to accommodate near-term indirect effects of the incident.

Practical implementation was informed by best practices and lessons learned from management of oil and hazardous material incidents and other recovery experiences. The Coast Guard adapted, correlated and applied longstanding safety, security, and emergency response missions, authorities and capabilities, and lessons learned from oil and hazardous materials response and mitigation and natural disaster incident management. For example, the AMS MTS recovery regime links to and relies on mitigation elements of ACPs for restoring port functions after disruptions caused by spills of oil or hazardous materials. This approach thus built on existing marine and environmental safety activities that provide a continuing return on investment to the public, while also providing core resources to initiate response and recovery actions. By taking a practical systems approach around its core missions and responsibilities, the Coast Guard has been able to maintain a consistent approach and alignment with evolving mandates and policies following the terrorist attacks of 2001 and subsequent major natural disasters.

Collectively, the community-based AMS Plan recovery elements and mitigation elements of Area Contingency Plans for oil and hazardous materials response, and their associated AMS and Area Committees, provide a strong foundation for facilitation of MTS recovery in incident areas as well as for resumption of trade through non-incident areas. These plans function in conjunction with Coast Guard hurricane and heavy weather plans for port areas, the Coast Guard's internal operations and contingency plans, and application of Incident Command System principles. This framework also provides a nationwide port-level framework for minimizing and offsetting the effects of incidents that occur.

MTS Recovery Program Standards. MTS recovery planning is guided by non-directive policy guidance issued by the Coast Guard as Navigation and Vessel Inspection Circular (NVIC) 09-02 series. The NVIC medium is used to communicate technical guidance and to clarify practical applications. Change 3 to the NVIC is currently effective, and includes substantial enhancement of MTS recovery guidance. A robust planning template is included as Enclosure (5). NVIC 09-02 specifies that AMS Plans include or link to MTS recovery plans that address:

- Guiding principles.
- Roles, Authorities, Responsibilities, and Funding Streams.
- Pre-Incident MTS Recovery Preparedness needed to facilitate MTS recovery following a TSI including correlation with oil and hazardous materials preparedness planning.
- Procedures for Recovery of the MTS that will be used for efficient recovery of the MTS and for reopening port(s), and affected waterways, and/or provide linkages to port plans for recovery of the MTS including recovery of the navigation and waterways infrastructure and associated Essential Elements of Information (EEI).
- Recovery/Restoration of Commerce Following a Threatened TSI.
- Post-incident recovery procedures.

Post-incident recovery procedures cover, but are not limited to:

- Reconstitution/Continuity of Operations;
- Establishment of an MTS Recovery Unit (MTSRU) within the planning section of unified commands;
- Coordination with the AMS Committee and other stakeholders;
- MTS recovery planning process;
- Other plans with elements pertinent to MTS recovery (e.g. ACPs);
- Recovery advisory and staffing support to the unified command and MTSRU;
- MTS Function and Condition Information Sharing;
- MTS status determinations (e.g., aids to navigation, channel conditions, Vessel Traffic Services/Vessel Traffic Management, maritime CI/KR);
- Status of non-maritime infrastructure needed to support MTS functions;
- Incident Effects/Damage and Transportation Disruption Assessments;
- Cargo Stream, Passenger Flow and Economic Effects Assessments;
- Critical Cargo Identification; and
- Documentation and Reporting, including condition changes correlated with EEIs.
- Implementation of the AMS Salvage Response Plan (SRP).

Guidance to assist practical application of these concepts was incorporated into U.S. Coast Guard Incident Management Handbook, Commandant Pub P3120.17A (August, 2006). Although issued prior to Encl (5) to NVIC 09-02 series, both documents were under concurrent development, with the handbook scheduled for earlier release. Practical guidelines for facilitating all-hazard MTS recovery were a more immediate need to support field-level preparedness for episodic storms following Hurricanes Katrina and Rita, and were issued without delay leveraging inclusion of a new maritime security/antiterrorism component to the handbook as a pathway of opportunity.

AMS Salvage Response Plans.

A Salvage Response Plan (SRP) is a major element of the MTS recovery section of each AMSP. The SAFE Port Act did not provide authority to conduct marine salvage. Therefore, the SRP was designed to serve as a coordination and procedural foundation around existing authorities, funding streams, and capabilities to support development of unified command incident action plans under the Incident Command System (ICS) at the port level when salvage response becomes necessary to facilitate resumption of trade. Development of SRPs is supported by a robust planning template (Enclosure (6) to NVIC 09-02, Change 3). Development of notional marine salvage equipment lists is supported by a Coast Guard- produced job aid.

AMS Exercises.

Annual testing of AMS Plans is required by 33 CFR 103 to support refinement and improvement. Program standards for these Coast Guard-sponsored exercises are provided as (Enclosure (4) to NVIC 09-02, Change 3). The standards provide a five-year, structured approach to testing core plan elements including MTS recovery. The standards are linked to the AMS Plan content requirements specified at 33 CFR 103. A comprehensive list of potential exercise objectives is included in the enclosure for discretionary use, covering awareness,

prevention, protection, response, and recovery. This list can be used as a checklist for self-assessment of MTS recovery preparedness status.

Joint exercises are sometimes held to address multiple objectives while also conserving and optimizing resources. For example, joint oil spill and AMS exercises have been held. The Coast Guard and the Transportation Security Administration (TSA) have also been working to develop joint exercise opportunities involving the AMS Exercises and TSA's Intermodal Security Training and Exercise Program (I-STEP). The latter is designed for mass transit, freight rail, pipeline, and highway motor carriers to meet the requirements of the Implementing Recommendations of the 9/11 Commission Act of 2007 (9/11 Act).

CBP/USCG Joint Protocols for the Recovery of Trade. Following Hurricane Katrina, the SAFE Port Act established a mandate for an improved national-level process to support the recovery of trade, which led to development of CBP/USCG joint protocols. The joint protocols establish a communications process and describe how the CBP and the Coast Guard will communicate and coordinate with other Federal agencies and the maritime industry to facilitate recovery and resumption of trade following an event that causes a major disruption to the MTS. The protocols establish a critical link with industry groups that represent trade and carriers interests. The protocols are not designed to make operational mission assignments, operational decisions, business decisions, or establish local or regional priorities. Instead, shared information is used as a resource when planning shifts in federal assets, balancing the competing resource needs of response and MTS infrastructure recovery needs in incident areas with resources needed to support resumption of trade through non-incident areas. The goals of the MTS recovery protocols following a maritime incident are:

- Support NSPD-41/HSPD-13 initiatives.
- Support MTSA requirement for a plan to ensure cargo flow is efficiently and quickly reestablished through U.S. ports after a TSI.
- Fulfill SAFE Port Act requirement to provide protocol for expeditious resumption of trade in a post TSI environment.
- Consider collateral impacts of MTS incident on international commerce.
- Facilitate federal decision-making actions.
- Help to implement the MIRP recommendations.
- Define Coast Guard and CBP interactions with other government agencies in recovery effort.

By following the MTS Recovery Protocols, the Coast Guard, CBP, and other Federal agencies, informed with pertinent and timely information from affected stakeholders, will be able to improve the effectiveness and timeliness of communications and measures to mitigate the adverse effects of a major disruption in trade. Concurrently, information shared with industry groups will assist their industry segments in determining their appropriate courses of action relative to the disruption.

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