



Geographic Response Strategy Exercise Series – New Bedford First Responder Exercise

After-Action Report/Improvement Plan

April 13, 2022

The After-Action Report/Improvement Plan (AAR/IP) aligns exercise objectives with preparedness doctrine and related frameworks and guidance. Exercise information required for preparedness reporting and trend analysis is included; users are encouraged to add additional sections as needed to support their own organizational needs.

EXERCISE OVERVIEW

Exercise Name	2022 New Bedford First Responder Exercise
Exercise Dates	April 13, 2022
Scope	This is a full-scale exercise, planned for approximately 6 hours in New Bedford Harbor. Exercise play is limited to New Bedford Harbor in the vicinity of the New Bedford Marine Commerce Terminal and the adjacent shorelines.
Focus Area(s)	Prevention, Protection, Response
Capabilities	Environmental Response/Health and Safety, Operational Coordination, Operational Communications.
Objectives	<p>Objective 1: Demonstrate the ability to deploy oil spill equipment from one or more MassDEP pre-positioned oil spill response trailers utilizing common Geographic Response Strategy (GRS) tactics.</p> <p>Objective 2: Demonstrate the ability to assemble a spill response organization utilizing Incident Command System (ICS) principles through execution of an Incident Briefing (ICS 201) and implementation of on-site incident management and tactical operations.</p> <p>Objective 3: Demonstrate the ability to effectively communicate between multiple local, state, and federal agencies including fire departments, police departments, harbor masters, and other state and federal first responders using VHF and UHF communications.</p>
Threat or Hazard	Discharge of oil into a navigable waterway
Scenario	An oil spill has occurred that threatens New Bedford Harbor. The New Bedford Fire Department and New Bedford PD/Harbor Master will utilize various common Geographic Response Strategy (GRS) tactics to protect sensitive resources in New Bedford Harbor and the surrounding area.
Sponsor	Massachusetts Department of Environmental Protection (MassDEP)
Participating Organizations	<p>Participating organizations will include:</p> <ul style="list-style-type: none"> • New Bedford Fire Department (NBFD) • New Bedford PD/Harbor Master (NBPD) • New Bedford Port Authority (NBPA) • Massachusetts Department of Environmental Protection (MassDEP) • Massachusetts Department of Marine Fisheries (MassDMF) • U.S. Coast Guard Sector Southeastern New England (USCG) • Moran Environmental Recovery (MER) • Nuka Research <p>Note: See Appendix B for participant count</p>
Point of Contact	<p>Julie Hutcherson, Marine Oil Spill Program Coordinator Massachusetts Department of Environmental Protection Oil Spill Prevention and Response Program 1 Winter St. Boston, MA 02108 (617) 366-7424 julie.hutcherson@mass.gov</p>

First Responders practice assembling anchor systems



First Responders learn about shoreside and passive recovery



Photos courtesy of Nuka Research

First responders practice assembling the boom



Shore team assembles the boom prior to deployment for a containment strategy



Photos courtesy of Nuka Research

Shore team supports and assists with on-water boom deployment



NBFD MARINE 38 begins towing boom to implement dockside containment boom strategy



Photos courtesy of Nuka Research

NBFD MARINE 6 secures containment boom along seawall



NBFD and NB Harbormaster vessels work together to place containment boom around a vessel at a mooring



Photos courtesy of Nuka Research

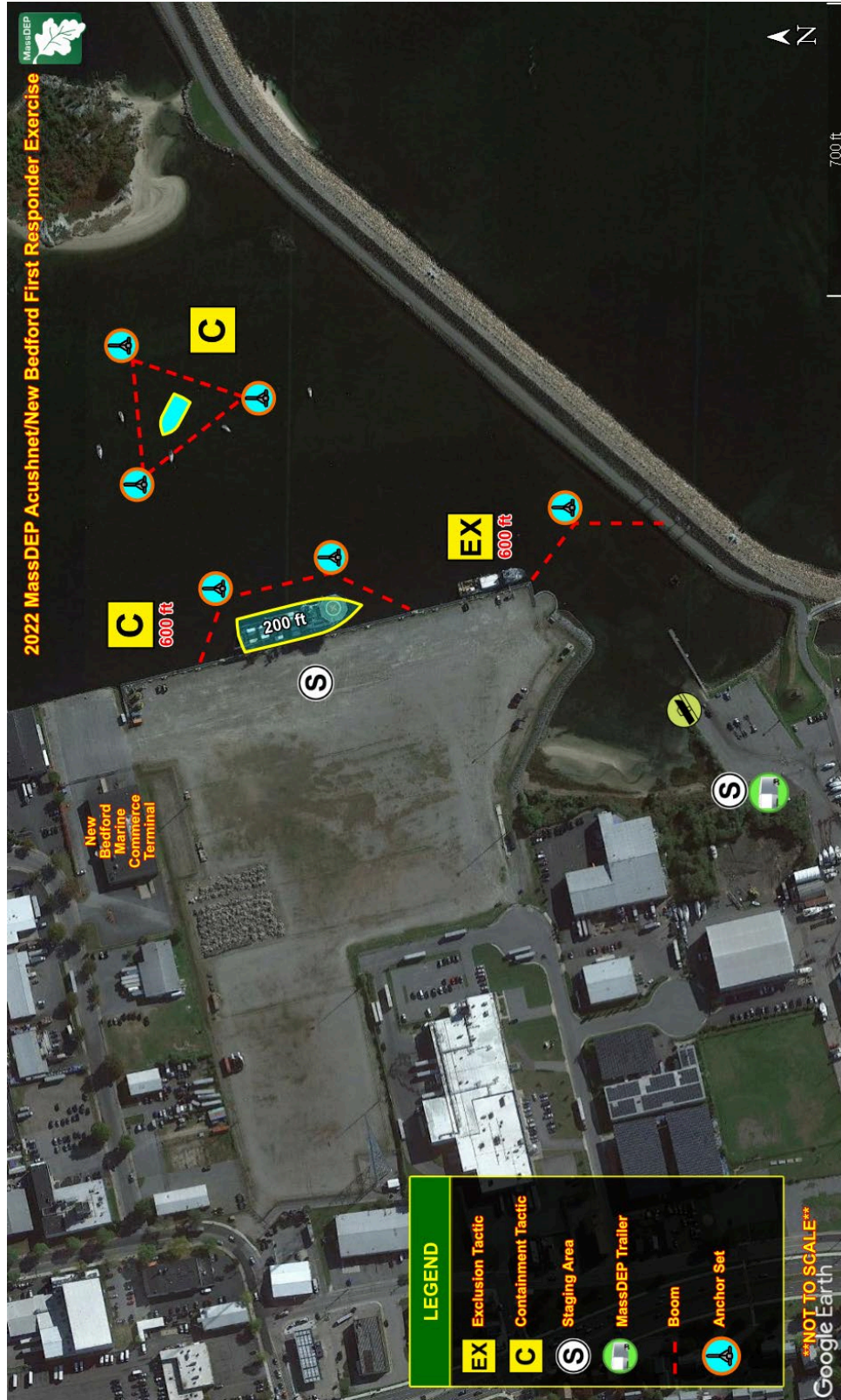


Figure 1. Exercise Tactics Map

ANALYSIS OF CAPABILITIES

Aligning exercise objectives and capabilities provides a consistent taxonomy for evaluation that transcends individual exercises to support preparedness reporting and trend analysis. Table 1 includes the exercise objectives, aligned capabilities, and performance ratings for each capability as observed during the exercise and determined by the evaluation team.

Objective	Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
Demonstrate the ability to deploy oil spill equipment from one or more MassDEP pre-positioned oil spill response trailers utilizing common Geographic Response Strategy (GRS) tactics.	Environmental Response/Health and Safety		S		
Demonstrate the ability to assemble a spill response organization utilizing Incident Command System (ICS) principles through execution of an Incident Briefing (ICS 201) and implementation of on-site incident management and tactical operations.	Operational Coordination		S		
Demonstrate the ability to effectively communicate between multiple local, state, and federal agencies including fire, police and harbor master departments using VHF and UHF communications	Operational Communications		S		
Ratings Definitions: Performed without Challenges (P): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. Performed with Some Challenges (S): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. However, opportunities to enhance effectiveness and/or efficiency were identified. Performed with Major Challenges (M): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s), but some or all of the following were observed: demonstrated performance had a negative impact on the performance of other activities; contributed to additional health and/or safety risks for the public or for emergency workers; and/or was not conducted in accordance with applicable plans, policies, procedures, regulations, and laws. Unable to be Performed (U): The targets and critical tasks associated with the core capability were not performed in a manner that achieved the objective(s).					

Table 1. Summary of Core Capability Performance

The following sections provide an overview of the performance related to each exercise objective and associated capability, highlighting strengths and areas for improvement.

Capability: Environmental Response/Health and Safety

The strengths and areas for improvement for each capability aligned to this objective are described in this section.

Objective 1: Demonstrate the ability to deploy oil spill equipment from one or more MassDEP pre-positioned oil spill response trailers utilizing common Geographic Response Strategy (GRS) tactics.

Objective 1.1: Overview of Response Equipment

Associated Critical Tasks

- Access Mass DEP Trailer
- Identify boom and sorbents
- Connect boom together
- Connect towing bridle to boom
- Connect components of marine and shoreside anchor systems together

Objective 1.2: Basic Booming Operations

Associated Critical Tasks

- Transfer boom and equipment between shore and vessel
- Transport and tow boom.
- Anchoring and Connecting boom to shore
- Safe vessel and crew operations.

Objective 1.3: Implement Tactics in GRS

Associated Critical Tasks

- Deploy Containment Boom Tactic around a vessel at Marine Terminal (300 ft)
- Deploy Containment Boom Tactic around a vessel at a mooring (150 ft)

Strengths

The **partial capability level** can be attributed to the following strengths:

Strength 1: Participants were attentive during the classroom and hands-on training sessions, asking informed questions throughout and providing feedback, and were fully engaged and participatory in the hands-on equipment training.

Strength 2: Two booming evolutions were conducted as part of this exercise including containment booming around a vessel at a dock, pier, or wharf (300 ft), and containment booming around a vessel at a mooring (150 ft). Despite the relative inexperience of most participants, and the resulting challenges during some phases of on-water deployment evolutions (as noted below), participants were attentive to real-time instruction by exercise controllers, quickly overcoming these challenges, and effectively deployed both booming strategies.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Personnel carrying out the containment booming of a vessel along the bulkhead experienced challenges in boom configuration including anchor placement and securing the boom to fixed points along the bulkhead.

Reference: MassDEP GRS Exercise Planning/Operations Brief Protocol

Analysis: While deploying the 300 ft containment boom section around a vessel alongside the Marine Terminal bulkhead, some vessel personnel had difficulty configuring the marine anchor systems (accounting for both the anchor line length and the water depth) so as to allow the boom section to maintain proper station around the vessel. Additional difficulty was encountered in trying to secure one end of the boom to a fixed point along the bulkhead though this could be attributed primarily to the configuration of the fixed fendering locations along the bulkhead and lack of adequate tie-off points. These challenges can be attributed to several factors, 1) unfamiliarity with the proper techniques used to deploy and anchor boom, 2) unclear objectives and associated tasks, 3) the general inexperience of most participants¹ and, 4) the configuration of the Marine Terminal bulkhead (described below).

During the Hot Wash, exercise participants pointed out that while the two-dimensional tactics map that was available (both within the ICS 201 and as a poster-size briefing aid) was good, having a white board available would help to further expound on deployment techniques during the training phase and when the need arises to alter deployment plan during the operational phase. Conducting a more detailed visual pre-brief in the classroom would be helpful to better prepare all players with details on deployment intention/goals, understanding of anchoring needs and techniques, and a better understanding of vessel capabilities. After the deployments were completed, most participants indicated they had a much firmer grasp on all these concepts.

Participants also emphasized the value of this training during the Hot Wash and requested more frequent training be conducted.

The general configuration of the Marine Terminal bulkhead contributed somewhat to the initial challenges faced by on-water strike teams in deploying containment boom around the vessel moored alongside the bulkhead. The Marine Terminal bulkhead is configured with regularly spaced “insets” which are located approximately 6 ft down from ground level (with solid concrete extending down from ground level) then extending approximately 15 ft horizontally under the pier face where there is then a curved corrugated inset bulkhead. With this type of bulkhead configuration, any containment booming would have to completely surround a vessel.

Capability: Operational Coordination

The strengths and areas for improvement for each capability aligned to this objective are described in this section.

Objective 2: Demonstrate the ability to assemble a spill response organization utilizing Incident Command System (ICS) principles through execution of an Incident Briefing (ICS 201) and implementation of on-site incident management and tactical operations

Objective 2.1: Execute an Incident Brief (ICS 201)

Associated Critical Tasks

- Assignments in ICS 201 followed/on-scene adjustments made
- Participants demonstrate command and control of exercise

Strengths

The **partial capability level** can be attributed to the following strengths:

¹ the majority of personnel involved in this exercise were participating for the first time with most having little to no experience deploying boom and configuring marine anchoring systems as well as limited experience in small boat operation.

Strength 1: Despite a lack of experience in overseeing on-water oil spill containment boom deployment operations, and being relatively new to the Nbfd Marine Safety Division, the Incident Commander (IC) did an exceptional job managing a shoreside support strike team and multiple vessel strike teams in deploying both containment boom configurations.

Strength 2: All vessel strike teams worked well together, independently coordinating on-water activity and actively providing instruction as needed to less experienced vessel operators.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Assignment of a Safety Officer

Reference: Exercise Plan, ICS 201

Analysis: Many shoreside strike team members were not initially wearing Personal Flotation Devices (PFD). A senior member of the Nbfd recognized this as shoreside strike team members were preparing boom for deployment from the Marine Terminal bulkhead and instructed all participants to obtain and don PFDs. A Safety Officer was not identified or assigned which likely contributed to this oversight.

Capability: Operational Communications

The strengths and areas for improvement for each capability aligned to this objective are described in this section.

Objective 3: Demonstrate the ability to effectively communicate between multiple local, state, and federal agencies including fire, police and harbormaster departments using VHF and UHF communications

Objective 3.1: Effectively Communicate Using UHF/VHF Equipment

Associated Critical Tasks

- Create Communications Plan
- Communicate with other participants using UHF or VHF equipment

Strengths

The **partial capability level** can be attributed to the following strengths:

Strength 1: Overall communication was enhanced due to the fact that Nbfd and the Harbormaster staffs maintain a close working relationship during both emergency and non-emergency situations and work together on a routine basis during the myriad incidents that occur within the New Bedford/Fairhaven Harbor area and the Acushnet River. Command staff maintained clear and frequent communication with all strike teams and independently recognized the need to alter the deployment plan when necessary. All participating elements generally maintained clear and frequent communications throughout both boom deployment evolutions.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Command Staff to vessel strike team communication.

Reference: Exercise Plan, ICS 201

Analysis: While overall communication was good, during the early stages of on-water boom deployment, senior members of the command staff did have to instruct some vessel strike team personnel to don communication headsets to facilitate timely and accurate comms with the IC and shoreside strike team members. This could likely have been avoided had a more thorough comms brief been conducted, especially considering the relative inexperience of some of the participants in conducting on-water booming operations.

Appendix A: IMPROVEMENT PLAN

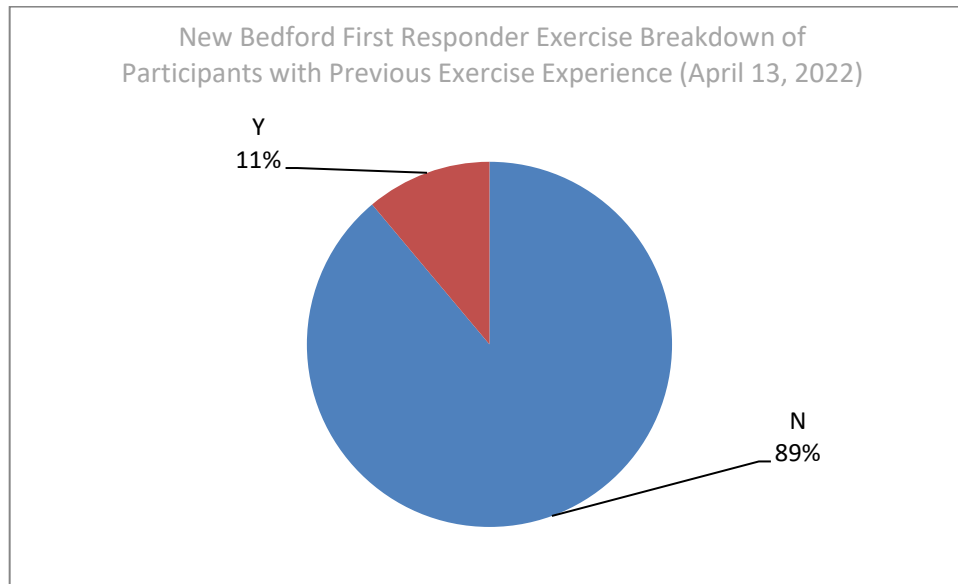
This IP is developed specifically for MassDEP, MER, Nuka Research and the City of New Bedford, MA as a result of the MassDEP GRS Exercise conducted on April 13, 2022.

Capability	Issue/Area for Improvement	Corrective Action	Capability Element ²	Primary Responsible Organization	Organization POC	Start Date	Completion Date
Capability 1: Environmental Response/Health & Safety	1. Understanding and Execution of booming and anchoring techniques and overall exercise objectives	Incorporate a more detailed operations brief into the classroom portion of the training (including white board procurement) to review exercise objectives and associated activities and tasks	Planning, Training, Execution	Nuka Research	M. Popovich	04/26/22	05/01/22
Capability 2: Operational Coordination	2. Safety Officer not assigned	Emphasize position assignments during each exercise's training and operational brief	Organization, Execution	Nuka Research	M. Popovich	04/26/22	05/01/22
Capability 3: Operational Communications	3. All strike team personnel did not have proper communication devices	Ensure all command staff and strike team personnel have proper communication devices during operational brief	Organization, Execution	Nuka Research	M. Popovich	04/26/22	05/01/22

² Capability Elements are: Planning, Organization, Equipment, Training, or Exercise

APPENDIX B: PARTICIPANTS & RESOURCES

Participating Organizations	
City of New Bedford, MA	Participant Count
New Bedford Fire Department	12
New Bedford Police Department/ Harbormaster	2
New Bedford Port Authority	2
TOWN PARTICIPANTS	16
Federal	
United States Coast Guard Sector Southeastern New England	2
State/Other	
Massachusetts Department of Environmental Protection (MassDEP)	2
Massachusetts Department of Marine Fisheries	2
Nuka Research and Planning Group, LLC (contractor for MassDEP)	3
Moran Environmental Recovery (contractor for MassDEP)	2
TOTAL	27



Agency	Resource	Kind	Exercise Function
New Bedford FD	MARINE 38 Moose 38 ft	Vessel	Boom Deployment Support
New Bedford FD	MARINE 6 Defender 15 ft	Vessel	Boom Deployment/Support
New Bedford FD	Oil Spill Response Trailer	Equipment	Boom Deployment
New Bedford FD	Pump Truck	Vehicle	Exercise Support
New Bedford PD/HM	MARINE 1 Safeboat 27 ft	Vessel	Boom Demonstration
New Bedford PD/HM	HARBORMASTER Boston Whaler 27 ft	Vessel	Exercise Support

APPENDIX C: PARTICIPANT FEEDBACK

Due to several logistical and operational factors, participant feedback was not received from the entire group. Two participants did complete online feedback with that feedback being overwhelmingly positive.

The objectives were clearly explained and the exercise met those objectives.	The materials appropriately challenged me and the pace of instruction was correct.	The instructor(s) did an excellent job.	I found the classroom to be a comfortable learning environment.	I feel more prepared to respond to an oil spill than I did before this exercise.
5 - Strongly agree	5 - Strongly agree	5 - Strongly agree	5 - Strongly agree	5 - Strongly agree
5 - Strongly agree	4 - Mildly agree	5 - Strongly agree	4 - Mildly agree	5 - Strongly agree