



Geographic Response Strategy Exercise Series – Falmouth/Mashpee First Responder Exercise

After-Action Report/Improvement Plan

May 4, 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 Falmouth/Mashpee First Responder Exercise
Exercise Dates	May 4, 2022
Scope	This is a full-scale exercise, planned for approximately 6 hours on the Great River in Mashpee, MA. Exercise play is limited to the Great River in the vicinity of the Waquoit Town Landing 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, harbormasters, 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 Waquoit Bay and the Great River. The Falmouth and Mashpee Fire Departments and Harbormasters will utilize various common Geographic Response Strategy (GRS) tactics to protect sensitive resources in Waquoit Bay and the surrounding area.
Sponsor	Massachusetts Department of Environmental Protection (MassDEP)
Participating Organizations	<p>Participating organizations included:</p> <ul style="list-style-type: none"> • Falmouth Fire Department • Mashpee Fire Department • Mashpee Harbormaster • Mashpee Department of Natural Resources • Massachusetts Department of Environmental Protection (MassDEP) • U.S. Coast Guard Sector Southeastern New England • Moran Environmental Recovery • Nuka Research <p>Note: See Appendix B for participant count</p>
Point of Contact	<p>Julie Hutcheson, 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.hutcheson@mass.gov</p>

First responders participate in the classroom portion of the exercise



First Responders assemble marine anchor systems

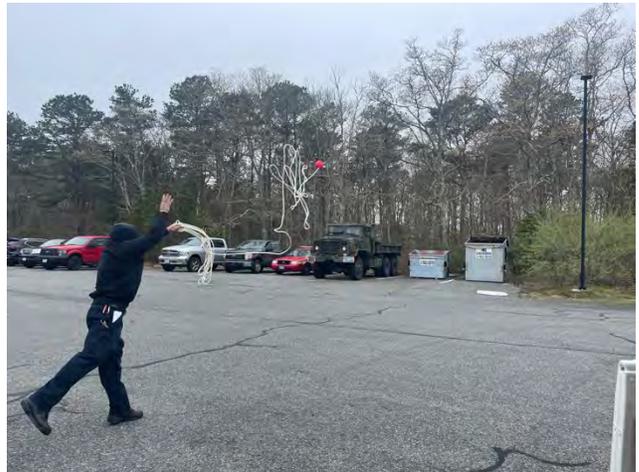


Photos courtesy of Nuka Research

First responders learn about proper use of sorbent material



First responder practices throwing a heaving line



Photos courtesy of Nuka Research

First responders deploy peat moss as an oil surrogate to test the deployed diversion boom configuration



Photos courtesy of Nuka Research

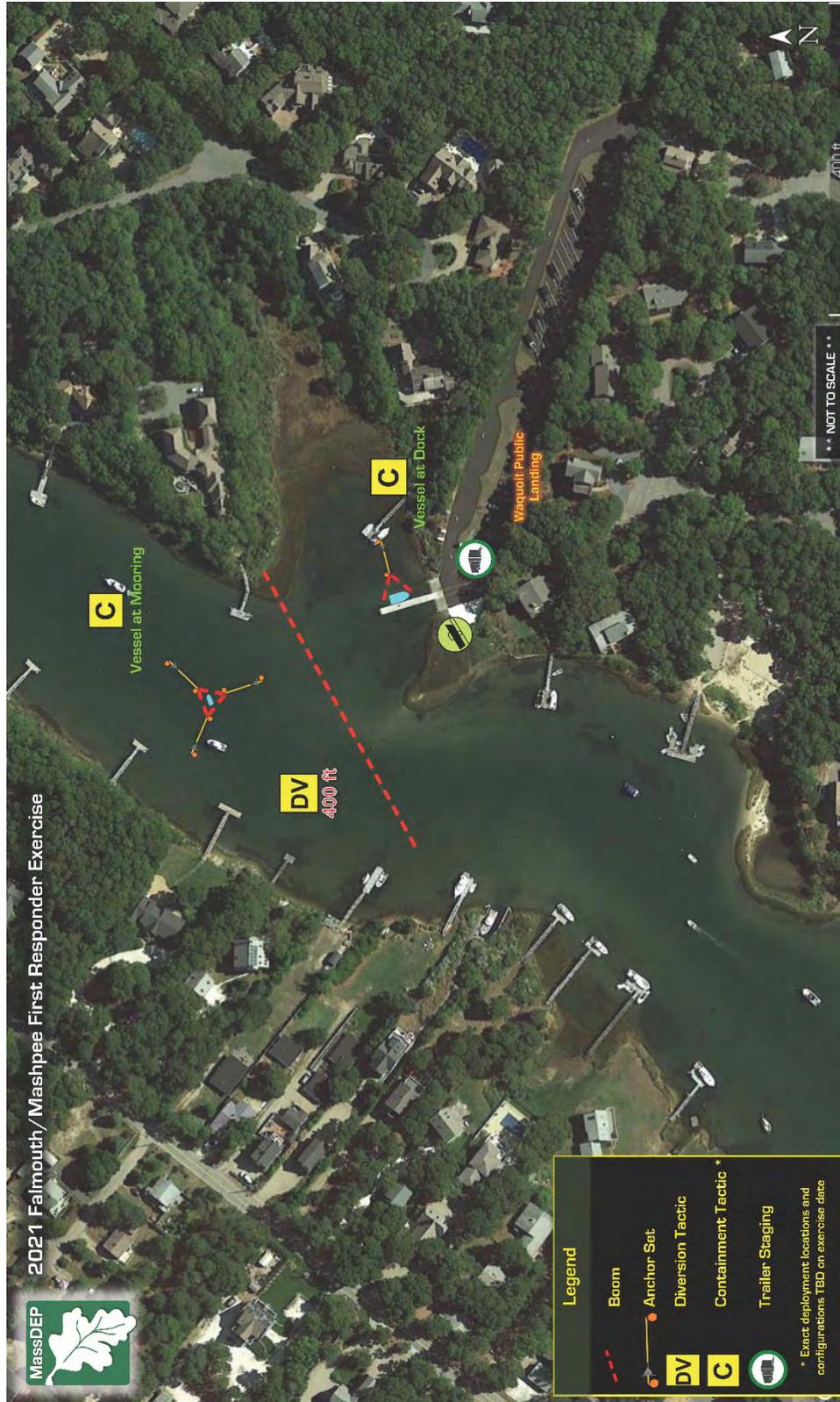


Figure 1. Exercise Tactics Map

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 a mooring (100 ft)
- Deploy Diversion Boom Tactic (400 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: Shoreside anchoring strike team did an excellent job setting up a double-rebar shoreside anchor point using the technique demonstrated and taught during the hands-on training session.

Areas for Improvement

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

Area for Improvement 1: Boom towing, configuration, and anchoring.

Reference: MassDEP GRS Exercise Planning/Operations Brief Protocol

Analysis: Some vessel strike teams experienced difficulty in towing and configuring boom sections and in setting marine anchors due to issues related to current speed and vessel horsepower.

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:

Strength 1: Senior members of both Falmouth and Mashpee Fire Departments had formulated a command-and-control plan prior to commencing the on-water deployments wherein they planned to use the MassDFS Rehab Unit (requested by Mashpee FD to support this exercise) as a command vehicle, keeping the Incident Commander in the Rehab Unit, and assigning another senior FD member to essentially act as the Operations Section Chief and manage field strike teams from the boat ramp dock. This was essentially done to provide some geographic separation between the command and operations staffs to simulate how they would manage an actual incident. This pre-planning and operational forethought is noteworthy.

Strength 2: Command Staff and Strike Team leaders adapted well to conditions observed upon initial arrival at the town landing and quickly modified the original deployment plan (reversing the direction of the 400 ft diversion boom array) based both on observed on-scene conditions and local knowledge of river flow rate and direction during that typical tide stage.

Strength 3: Vessel strike teams generally 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: Coordination and Communication between Command and Operations staff and shoreside and on-water strike teams.

Reference: Exercise Plan, ICS 201

Analysis: While a command/control plan was formulated as outlined above, there were coordination/communication issues both during initial on-scene set-up and the actual on-water deployments. This can be attributed to several factors; 1) Because of the heavy rainfall that was occurring during initial scene set-up, command/ops staff did not conduct a thorough operations brief prior to commencing on-water deployment. This resulted in not all participants understanding the complete plan for deployment, and was exacerbated by the fact that on-scene conditions resulted in changes to the deployment plan that had been reviewed during the classroom session, 2) Some vessel strike teams were being directed (via radio) by on-site personnel outside the command/ops staff. Had a thorough operations brief been conducted, Command staff would have had an opportunity to clearly outline how they would coordinate activity with the dockside command

staff member and how that person would in-turn coordinate on-water activity to meet command staff intent and ultimately achieve the exercise objectives.

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: Though communications issues did arise as outlined below, senior members of both Falmouth and Mashpee Fire Departments did establish a communications plan prior to commencing the on-water deployments, identifying both UHF 806 and VHF 16 as primary communications frequency/channel for both shoreside and vessel strike teams.

Areas for Improvement

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

Area for Improvement 1: Coordination and Communication between Command and Operations staff and shoreside and on-water strike teams.

Reference: Exercise Plan, ICS 201

Analysis: While overall communication improved as the on-water deployments progressed, effective communication early on was hampered by the same factors outlined above under the “Operational Coordination” analysis.

Appendix A: IMPROVEMENT PLAN

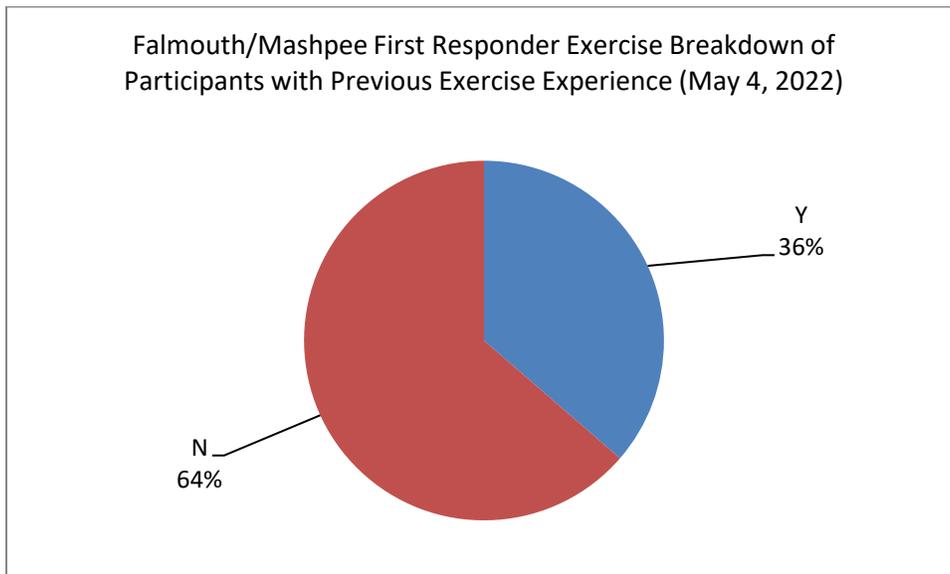
This IP is developed specifically for MassDEP, MER, Nuka Research and the towns of Falmouth and Mashpee, MA as a result of the MassDEP GRS Exercise conducted on May 4, 2022.

Capability	Issue/Area for Improvement	Corrective Action	Capability Element ¹	Primary Responsible Organization	Organization POC	Start Date	Completion Date
Capability 1: Environmental Response/Health & Safety	1. Towing and configuring, boom and setting/placing marine anchors	Encourage more frequent/independent boom deployment training at local level	Training, Exercise	Nuka Research	M. Popovich	06/01/22	09/01/22
Capability 2/3: Operational Coordination/Communication	2. Coordination and Communication between Command and Operations staff and shoreside and on-water strike teams	Incorporate a more detailed operations brief into the classroom portion of the training to review exercise objectives and associated activities and tasks	Organization, Exercise	Nuka Research	M. Popovich	06/01/22	09/01/22

¹ Capability Elements are: Planning, Organization, Equipment, Training, or Exercise

APPENDIX B: PARTICIPANTS & RESOURCES

Participating Organizations	
	Participant Count
Town of Falmouth, MA	
Falmouth Fire Department	9
Town of Mashpee, MA	
Mashpee Fire Department	6
Mashpee Department of Natural Resources	7
TOWN PARTICIPANTS	22
Federal	
United States Coast Guard Sector Southeastern New England	3
State/Other	
Massachusetts Department of Environmental Protection (MassDEP)	2
Massachusetts Department of Fire Services (Rehab Unit)	2
Nuka Research and Planning Group, LLC (contractor for MassDEP)	2
Moran Environmental Recovery (contractor for MassDEP)	2
TOTAL	33



Agency	Resource	Kind	Exercise Function
Falmouth FD	Rescue Boat 1 Boston Whaler 17 ft	Vessel	
Falmouth FD	Oil Spill Response Trailer	Equipment	Boom Deployment
Mashpee FD	MARINE 359 Edgewater 18 ft	Vessel	Boom Deployment
Mashpee FD	Oil Spill Response Trailer	Equipment	Equipment Demo
Mashpee HM	MARINE 1 Maycraft 25 ft	Vessel	Boom Deployment Support
Mashpee HM	MARINE 7 Carolina Skiff 19 ft	Vessel	Boom Deployment

APPENDIX C: PARTICIPANT FEEDBACK

Limited participant feedback received following this field exercise. The table below contains the feedback that was received, with this feedback being positive across the board.

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	5 - Strongly agree	5 - Strongly agree	5 - Strongly agree	5 - Strongly agree