



First Responder Training and Geographic Response Strategy (GRS) Testing Exercise Series – Bourne/Sandwich

After-Action Report

September 17, 2024

The After-Action Report (AAR) 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

Table 1: Exercise Overview

Exercise Name	2024 Bourne/Sandwich FR Exercise
Exercise Date	September 17, 2024
Scope	This was a full-scale exercise planned for approximately six hours at Taylor Point Marina in Buzzards Bay, MA. Exercise play was limited to Taylor Point Marina and the adjacent shoreline.
Mission Area(s)	Prevention, Protection, Response
Capabilities	Environmental Response/Health and Safety, Operational Coordination, Operational Communications
Objectives	<p>Demonstrate the ability of local first responders to:</p> <p>Objective 1: Conduct initial response activities within the first 4-6 hours of an oil spill incident by deploying MassDEP oil spill response equipment and implementing common Geographic Response Strategy (GRS) tactics in alignment with the MassDEP GRS Tactics Guide.</p> <p>Objective 2: Establish and maintain command and control in the first 4-6 hours of an oil spill incident response by identifying relative health and safety hazards, developing an initial response organization, and communicating response objectives, strategies, and tactics through the completion of an Incident Briefing form (ICS 201) and the facilitation of an Operations and Safety Briefing.</p> <p>Objective 3: Communicate information and actions between multiple local, state, and federal agencies within the first 4-6 hours of an oil spill incident by identifying a common UHF or VHF radio channel that can be utilized by all participants.</p>
Threat or Hazard	Discharge of oil into a navigable waterway
Scenario	An oil spill has occurred that threatens Taylor Point Marina. The Bourne and Sandwich Fire Departments and Harbormaster/Department of Natural Resources staff will utilize various common Geographic Response Strategy (GRS) tactics to protect sensitive resources in Taylor Point Marina and the surrounding area.
Sponsor	Massachusetts Department of Environmental Protection (MassDEP)
Participating Organizations	<p>Participating organizations included:</p> <ul style="list-style-type: none"> • Bourne Fire Department • Bourne Department of Natural Resources and Harbormaster • Sandwich Fire Department • Sandwich Harbormaster • MassDEP • Barnstable County Incident Management Team • Massachusetts Department of Fire Services Rehab Unit • Moran Environmental Recovery (MER) • Nuka Research

Exercise Name	2024 Bourne/Sandwich FR Exercise
Point of Contact	Julie Hutcheson, Marine Oil Spill Prevention & Response Program Coordinator Massachusetts Department of Environmental Protection Oil Spill Prevention and Response Program 100 Cambridge St., Suite 900 Boston, MA 02114 (617) 366-7424 julie.hutcheson@mass.gov

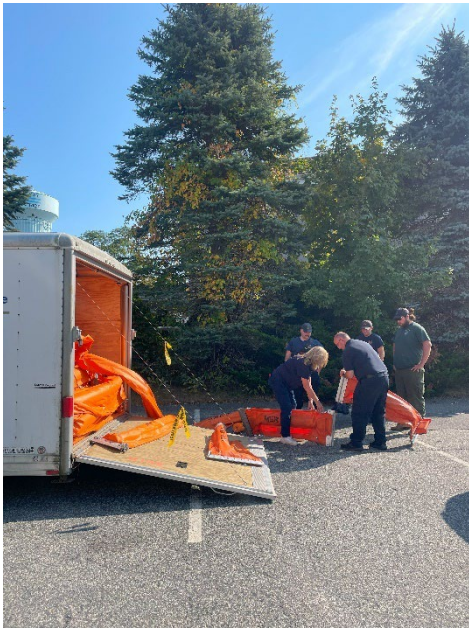


Figure 1: Participants practice connecting sections of boom



Figure 2: Participants learn how to configure a shoreside anchor system



Figure 3: Participants learn about sorbents and culvert plugs

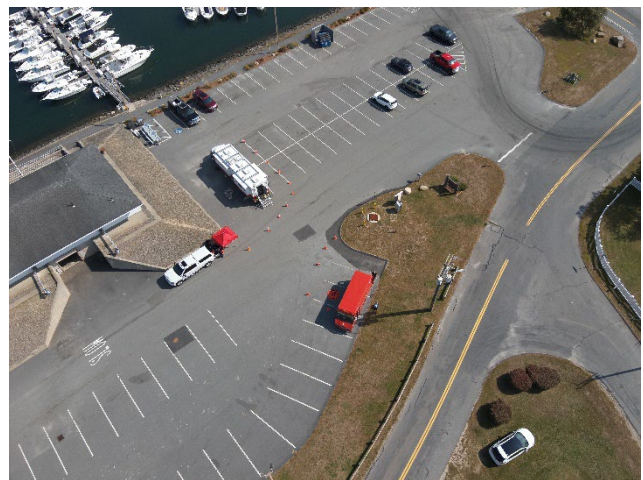


Figure 4: Birdseye view of exercise staging area

Photos courtesy of Nuka Research & Planning Group and Massachusetts Department of Fire Services

EXECUTIVE SUMMARY

Exercise Planning

In preparation for the Bourne/Sandwich exercise, both an Initial and Final Planning Meeting (IPM/FPM) were held with members of the Exercise Planning Team (EPT). The EPT was comprised of senior personnel from each of the participating organizations listed in the Exercise Overview section.

The following deployment plans were developed:

- Deploy 200ft of boom in a chevron EX array at the opening of Taylor Point Marina
- Deploy 200-300ft of containment boom around a docked vessel

Exercise Conduct

Exercise controllers and senior participant personnel monitor weather forecasts and may also conduct pre-deployment site surveys to identify limitations and obstructions that could impact the deployment plan as described above. Deployment plan modifications (if necessary) and observed exercise-day conditions are detailed below.

The following deployment activities were completed:

- Deployed 100ft of boom in a single leg DV array, with shoreside containment on the southern side of the opening of Taylor Point Marina
- Deploy 200ft of containment boom around a docked vessel near the Taylor Point Marina fuel dock

Table 2: Summary of Observed Conditions

Factor	Observed Conditions
Wind speed and direction	11 mph, SE
Tidal conditions	Ebb tide
Water depth (approx.)	8-12 ft
Wave action & Current speed (approx.)	Minimal current
Vessel traffic	Low
Harbor mooring field density	N/A
Other observations	Congested marina docks



Figure 5: Exercise Tactics Map

EXERCISE REPORT

Objective 1: Conduct initial response activities within the first 4-6 hours of an oil spill incident by deploying MassDEP oil spill response equipment and implementing common GRS tactics in alignment with the MassDEP GRS Tactics Guide.

Strength: Vessel and shoreside crews worked well to properly stage the response trailer on the boat ramp, unload each boom section, load marine anchor systems onto the appropriate vessels, and then transfer the boom from the boat ramp to awaiting on-water vessels before tow.

Strength: Vessels effectively towed two sections of boom, with one vessel towing 200ft of boom to the fuel dock location for containment booming and another towing 100ft to the area at the marina's opening to complete a diversion array. After arriving at each location, vessel crews then worked to deploy marine and shoreside anchors and complete each array.

Strength: Vessel crews effectively distributed and utilized resources to configure both tactics concurrently.

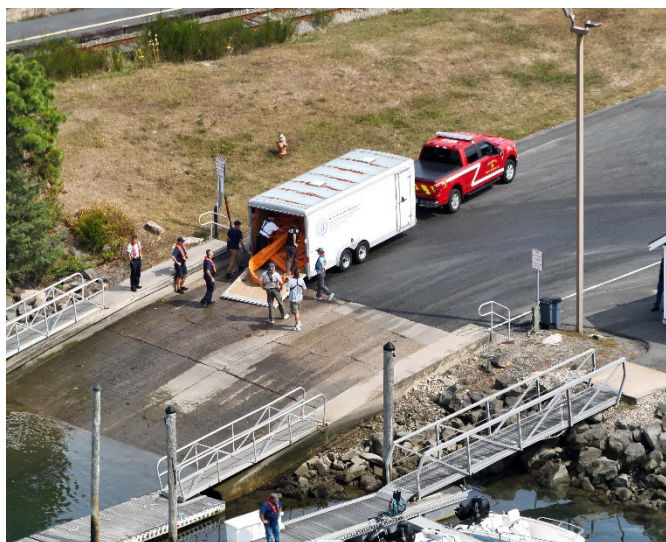


Figure 6: Crews unload boom from the spill response trailer

Observation 1: It may have been more effective to use a smaller vessel to deploy the diversion array.

Analysis: Sandwich Fire Department's 37' Moose Boat was used to tow and deploy the 100ft diversion array. While vessel crews were eventually able to configure the tactic, they experienced challenges operating in areas of low water depths near the shoreline, leading to brief deployment delays. These challenges may have been avoided if a smaller vessel had been used.

Observation 2: Excess line used to deploy the diversion tactic's marine anchor led to a belly in the boom array.

Analysis: After deployment of the marine anchor for the diversion array, vessel crews quickly recognized that they prepared too much anchor line, leading to a lack of tension and a "U" shaped belly in the boom. To prevent this in future exercises/events, water depths should be communicated during the Operations briefing so the proper adjustments can be made to anchor line length prior to on-water deployment.



Figure 7: Vessel crews deploy the 100ft diversion array

Objective 2: Establish and maintain command and control in the first 4-6 hours of an oil spill incident response by identifying relative health and safety hazards, developing an initial response organization, and communicating response objectives, strategies, and tactics through the completion of an Incident Briefing form (ICS-201) and the facilitation of an Operations and Safety Briefing.

Strength: Command Staff quickly developed and communicated deployment plans and plan modifications to all participants, assigned vessel and shoreside crew roles and responsibilities, and identified a common radio channel.

Strength: Command Staff were able to effectively coordinate and monitor multiple deployments concurrently.

Observation 1: On multiple occasions, a number of participants were dispatched to emergency calls.

Analysis: The evolving availability of participants led to brief moments of confusion regarding the assignment and reassignment of roles and responsibilities and the coordination of deployment plans and modifications. Command Staff worked together with crews to quickly clarify changes and address issues and questions. Crews were able to then effectively carry out deployment plans as modified.



Figure 8: Command Staff discuss deployment plans

Observation 2: The incident command post and drone resources should be set up in the same location.

Analysis: The incident command post was configured close to - but not directly next to - the virtual operations post, which was set up by the Department of Fire Services and Sandwich Fire Department Special Operations teams (and included multiple drones and a live stream of both deployment operations). This was done to allow drones to operate safely in the area by avoiding potential interference from radios used at the command post. During the exercise hotwash, Command Staff acknowledged they would have benefitted from being able to continuously monitor both deployments using the live drone footage. One suggestion was to run a hard wire from the virtual operations post to the command post to maximize deployment coordination and communications.

Objective 3: Communicate between multiple local, state, and federal agencies, including fire, police and harbormaster departments using VHF and UHF communications.

Strength: Command Staff pre-identified a common radio frequency as the primary communications channel for the exercise, directed participants to join the channel, and effectively communicated updates and modifications throughout the deployment.

Strength: Vessel crews and shore team maintained excellent communications despite evolving deployment plans and resource availability.



Figure 9: Inside the Sandwich Fire Department Special Operations trailer

PARTICIPANTS & RESOURCES

Table 3: List of Participants

Participating Organizations	
Town of Bourne, MA	Participant Count
Bourne Fire Department	11
Bourne Department of Natural Resources and Harbormaster	7
Town of Sandwich, MA	
Sandwich Fire Department	7
Sandwich Harbormaster	2
TOTAL TOWN/CITY PARTICIPANTS	27
County	
Barnstable County Incident Management Team	2
State	
Massachusetts Department of Environmental Protection (MassDEP)	3
Nuka Research and Planning Group, LLC (contractor for MassDEP)	2
Moran Environmental Recovery (contractor for MassDEP)	2
Massachusetts Department of Fire Services Rehab Unit	2
TOTAL	38

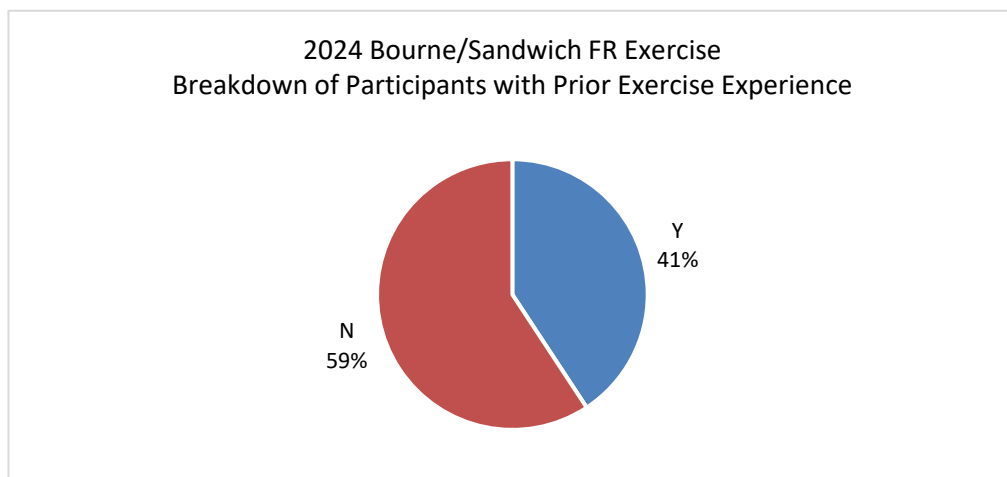


Figure 10: Previous Exercise Participation

Table 4: List of Resources

List of Resources			
Agency	Resource	Kind	Exercise Function
Bourne DNR	12' Whaler	Vessel	Safety
Sandwich FD	37' Moose Boat	Vessel	Boom Deployment
Bourne DNR	19' Skiff	Vessel	Boom Deployment
Bourne FD	Marine 130	Vessel	Boom Deployment
Bourne FD	Oil spill response trailer	Trailer	Boom Deployment
Sandwich FD	Oil spill response trailer	Trailer	Training
Sandwich FD	Equipment	Special Ops Unit	Support
Sandwich FD	Equipment	Drone	Support
DFS Rehab Unit	Equipment	Rehab Truck	Support
DFS Rehab Unit	Equipment	Drone	Support
Barnstable County IMT	Equipment	Mobile Command Center	Support