



First Responder Training and Geographic Response Strategy (GRS) Testing Exercise Series – Provincetown/Truro

After-Action Report/Improvement Plan

May 23, 2023

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	2023 Provincetown/Truro FR Exercise
Exercise Date	May 23, 2023
Scope	This was a full-scale exercise planned for approximately six hours at MacMillan's Pier in Provincetown and upon the waters of Provincetown Harbor. Exercise play was limited to Provincetown Harbor and the adjacent shorelines.
Mission Area(s)	Prevention, Protection, Response
Capabilities	Environmental Response/Health and Safety, Operational Coordination, Operational Communications
Objectives	<p>Objective 1: Demonstrate the ability of local first responders to 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: Demonstrate the ability of local first responders to 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: Demonstrate the ability of local first responders to effectively 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 Provincetown Harbor and the adjacent shorelines. The Provincetown and Truro Fire Departments and Harbormasters will utilize various Geographic Response Strategy (GRS) tactics to protect sensitive resources in Provincetown Harbor and the surrounding area.
Sponsor	Massachusetts Department of Environmental Protection (MassDEP)
Participating Organizations	<p>Participating organizations included:</p> <ul style="list-style-type: none"> • Truro Fire Department • Truro Harbormaster • Provincetown Harbormaster • Provincetown Pier Maintenance • MassDEP • U.S. Coast Guard Sector Cape Cod • Moran Environmental Recovery (MER) • Nuka Research <p>Note: See Appendix B for participant count</p>
Point of Contact	<p>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</p>

Vessel crews navigate through fishing traffic to tow boom



Vessel crews towing boom to the deployment site



Photos courtesy of Nuka Research & Planning Group

Vessel crews anchor boom to the wave attenuator



Vessel crews discuss potential adjustments to anchor systems



Photos courtesy of Nuka Research & Planning Group

EXECUTIVE SUMMARY

Exercise Planning

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

Based on general direction provided by the EPT, and the overarching exercise scope and objectives mentioned above, the following deployment plans were developed:

- Deploy 200 ft of boom in a cascade diversion (DV) configuration from a wave attenuator anchor point, and deploy containment booming drills as time allows (see **Figure 1** below)

Exercise Conduct

Upon arrival at the deployment site on the day of the exercise, exercise controllers and senior participant personnel conducted a pre-deployment site survey to identify any limitations or obstructions that may impact the deployment plan outlined above. The following factors are typically observed and evaluated during this process:

- Wind speed and direction
- Tidal conditions, water depth, current speed and direction, and other water flow patterns
- Vessel traffic, mooring field density, and other deployment area limitations or obstructions

The site survey did not identify any conditional limitations and the following deployment activities were completed:

- Deploy 200 ft of boom in a cascade diversion configuration from the wave attenuator



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	Ratings
Demonstrate the ability of local first responders to 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.	Environmental Response Health and Safety	S
Demonstrate the ability of local first responders to 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.	Operational Coordination	S
Demonstrate the ability of local first responders to effectively 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.	Operational Communications	U
<p>Ratings Definitions:</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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).</p>		

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.

Objective 1: Demonstrate the ability of local first responders to 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.

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

Capability 1: Environmental Response/Health and Safety

Strengths

The Partial capability level can be attributed to the following strengths:

Strength 1: Despite last-minute changes to the number of vessel crews available for deployment, all remaining participants appropriately adjusted booming strategies and tactics to successfully configure a modified cascading diversion array.

Strength 2: Participants utilized a nearby wave attenuator to effectively configure an anchor system at an angle and in a location suitable for deploying the cascading diversion array.

Areas for Improvement

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

Area for Improvement 1: Shoreside crews encountered tangles in towing lines, causing brief delays in boom towing operations.

Reference: MassDEP GRS Tactics Guide

Analysis: While shoreside crews worked quickly to untangle the poly towing line and were eventually able to offload boom to awaiting vessels and vessel crews who then successfully initiated towing operations, this additional level of effort may have been avoided if extra care was taken to properly load and transfer the towing line without encountering tangling issues.

Area for Improvement 2: Vessels and vessel crews encountered difficulty securing the anchor line to the wave attenuator due to strong winds and currents, causing brief delays in the configuration of the cascading diversion array.

Reference: MassDEP GRS Tactics Guide

Analysis: During the Safety and Operations brief, exercise command staff observed strong wind and current conditions and adjusted the angle and positioning of the cascading diversion array to overcome these conditions. Although vessels and vessel crews worked well to coordinate those adjustments, they encountered challenges approaching the wave attenuator and securing the anchor line to the appropriate cleat on the attenuator. Although this process resulted in a brief delay in boom deployment, vessel crews were eventually able to properly anchor and configure the cascading array.

Objective 2: Demonstrate the ability of local first responders to 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.

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

Capability 2: Operational Coordination

Strengths

The Partial capability level can be attributed to the following strengths:

Strength 1: Command staff worked well to coordinate modifications to boom deployment tactics and strategies and maximize the use of on-water resources.

Strength 2: Command Staff appropriately assigned roles and responsibilities to each participant.

Areas for Improvement

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

Area for Improvement 1: Although a comprehensive Safety and Operations brief was held, some participants did not have a clear understanding of the modified tactics to be deployed.

Reference: Exercise Specific ICS-201

Analysis: It was shared during the exercise Hot Wash that there was some confusion pertaining to the intended deployment tactics after last-minute modifications were made. For future exercises, the exercise planning team should remain engaged with command staff to provide additional reasoning for strategy and tactic adjustments and general deployment guidance to ensure a collective understanding of these plans. Utilization of additional visual aids is also recommended to avoid confusion related to the deployment plan.

Objective 3: 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

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

Capability 3: Operational Communications

Participants were unable to test the ability to effectively communicate between local, state, and federal agencies, and therefore, the exercise planning team was unable to assess the overall performance of the operational communications capability.

Command Staff observe vessel crew operations



Participants provide exercise feedback during a Hot Wash



Photos courtesy of Nuka Research & Planning Group

Participants offload boom from a nearby vessel



Participants rinse boom prior to restowing



Photos courtesy of Nuka Research & Planning Group

APPENDIX A: IMPROVEMENT PLAN

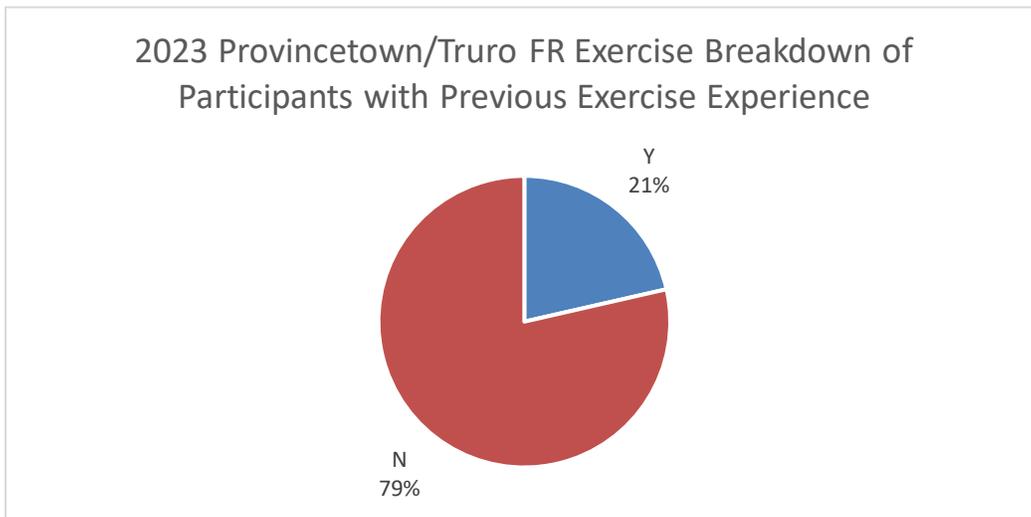
This IP is developed specifically for MassDEP, MER, Nuka Research and the Towns of Provincetown and Truro as a result of the MassDEP GRS Testing and First Responder Training Exercise conducted on 23-May-23.

Capability	Issue/Area for Improvement	Corrective Action	Capability Element ¹	Primary Responsible Organization
Capability 1: Environmental Response	Shoreside crews encountered tangles in towing lines, causing brief delays in boom towing operations.	Exercise trainers revise trailer familiarization sessions to include hands-on training on how to properly load boom and supplies into vessels.	Equipment/Systems	Fire Departments and Harbormasters
Capability 1: Environmental Response	Vessels and vessel crews encountered difficulty securing the anchor line to the wave attenuator due to strong winds and currents, causing brief delays in the configuration of the cascading diversion array.	Exercise trainers encourage participants to designate personnel to monitor boom while it is in tow or assign another support vessel to tend the boom and assist with issues if/when they arise.	Organization/Leadership	Fire Departments and Harbormasters
Capability 2: Operational Coordination	Although a comprehensive Safety and Operations brief was held, some participants did not have a clear understanding of the modified tactics to be deployed.	Exercise facilitators provide additional guidance to command staff prior to the Safety and Operational brief so they can detail the reasoning behind strategy and tactic adjustments during these briefings.	Organization/Leadership	Fire Departments and Harbormasters

¹ Capability Elements are: Planning, Organization and Leadership, Personnel, Equipment and Systems, Training, or Exercise

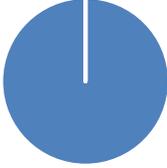
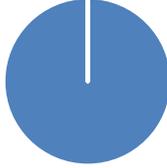
APPENDIX B: PARTICIPANTS & RESOURCES

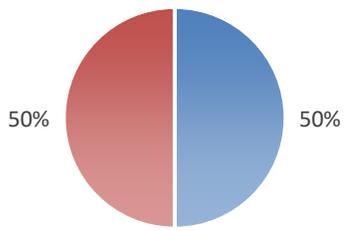
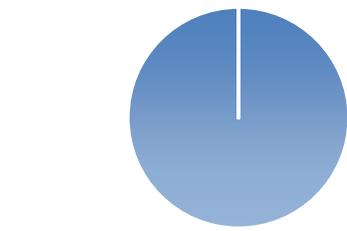
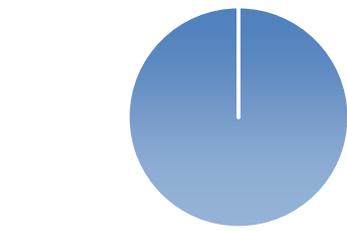
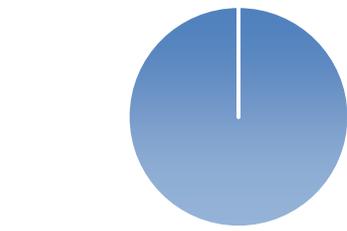
Participating Organizations	
Town of Boston, MA	Participant Count
Provincetown Pier Maintenance	2
Provincetown Harbormaster	7
Town of Truro, MA	
Truro Fire Department	4
Truro Harbormaster	1
TOTAL TOWN/CITY PARTICIPANTS	14
Federal	
United States Coast Guard Sector Cape Cod	2
State	
Massachusetts Department of Environmental Protection (MassDEP)	2
Nuka Research and Planning Group, LLC (contractor for MassDEP)	2
Moran Environmental Recovery (contractor for MassDEP)	3
TOTAL	23

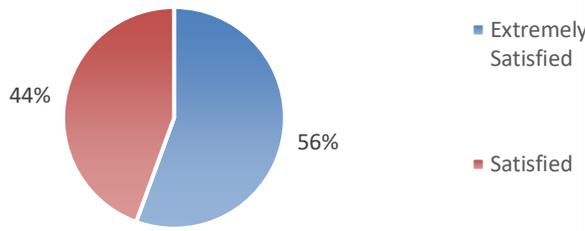
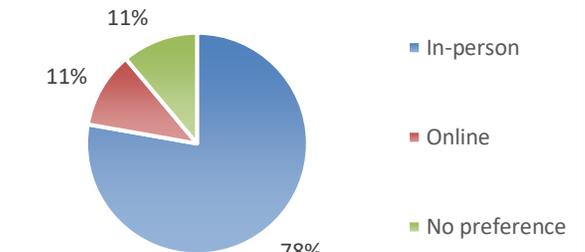


List of Resources			
Agency	Resource	Kind	Exercise Function
Provincetown HM	24' Boat	Vessel	Boom Deployment
Provincetown HM	21' Utility Boat	Vessel	Boom Deployment
Provincetown HM	Oil spill trailer	Equipment	Deploy/Demo

APPENDIX C: PARTICIPANT FEEDBACK

Question	Results		Comments
Do you have a better understanding of spill response techniques and tactics than you did before this training?	 <p>100%</p> <p>■ Yes</p>		
Do you feel more prepared to respond to an oil spill than you did before this exercise?	 <p>100%</p> <p>■ Yes</p>		
Please rank your overall satisfaction with the structure and length of this training.	 <p>100%</p> <p>■ Very satisfied</p>		<ul style="list-style-type: none"> • Need more instruction on how to safely and effectively deploy boom when there are limited participants and/or limited on-water resources
How would you rate your overall learning experience?	 <p>100%</p> <p>■ Very satisfied</p>		

Question	Results	Comments
<p>If you have previous experience participating in MassDEP GRS exercises, how would you compare your experience with classroom vs. online training?</p>	 <ul style="list-style-type: none"> ■ I learned more from the in-person experience ■ Both online and in-person methods were about the same 	
<p>Please rank whether you felt the length and pace of the online curriculum was effective for learning and knowledge retention.</p>	 <ul style="list-style-type: none"> ■ Agree 	
<p>Information provided verbally in the online curriculum was both clear and concise.</p>	 <ul style="list-style-type: none"> ■ Agree 	
<p>Information provided visually in the online curriculum appropriately supplemented verbalized content.</p>	 <ul style="list-style-type: none"> ■ Agree 	

Question	Results	Comments
<p>Please rank your overall satisfaction with the online curriculum method and materials.</p>	 <p>A pie chart with two segments. The larger segment is blue and labeled '56%' with a legend entry 'Extremely Satisfied'. The smaller segment is red and labeled '44%' with a legend entry 'Satisfied'.</p>	<ul style="list-style-type: none"> • May need to revisit the boom connection slide to discuss the importance of ensuring boom does not twist while under tow
<p>In general, do you prefer in-person or online training?</p>	 <p>A pie chart with three segments. The largest segment is blue and labeled '78%' with a legend entry 'In-person'. Two smaller segments are red and green, both labeled '11%' with legend entries 'Online' and 'No preference' respectively.</p>	