



MassDEP Geographic Response Strategy* –2020 Barnstable Harbor (CI-03) GRS Exercise

After Action Report

October 19, 2020

The After-Action Report/Improvement Plan (AAR/IP) aligns exercise objectives with preparedness doctrine to include the National Preparedness Goal 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.

COVID-19 Compliance - This exercise was conducted during the COVID 19 pandemic and all Commonwealth of Massachusetts Executive Orders and associated social distancing, face covering, and indoor and outdoor gathering requirements were strictly adhered to.

***Note: In keeping with national trends across federal and state agencies involved in oil spill response planning, and in the interest of standardizing terminology, MassDEP Geographic Response Plans (GRP) will now be referred to as Geographic Response Strategies (GRS).**

EXERCISE OVERVIEW

Exercise Name	2020 Barnstable Harbor (CI-03) GRS Exercise
Exercise Date	October 19, 2020
Scope	This exercise was a Full-Scale Exercise, planned for approximately six hours in Barnstable, MA and upon the waters of Barnstable Harbor. Exercise play was limited to Barnstable Harbor and the adjacent shoreline.
Mission Area(s)	Response
Core 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 Barnstable Harbor and the surrounding area. The Barnstable and West Barnstable Fire Departments and Barnstable Harbor master staff will utilize standard Massachusetts GRS booming tactics to protect sensitive resources in Barnstable Harbor and the surrounding area.
Sponsor	Massachusetts Department of Environmental Protection (MassDEP)

**Participating
Organizations**

Participating organizations will include:

- Barnstable Fire Department (BFD)
- Barnstable Harbormaster (BHM)
- West Barnstable Fire Department (WBFD)
- MassDEP
- U.S. Coast Guard Sector Southeastern New England (USCG)
- Moran Environmental Recovery (MER)
- Nuka Research and Planning Group, LLC (Nuka Research)

Note: See Appendix B for participant count

Point of Contact

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Fire Department personnel participate in hands-on boom set-up training



Participants prepare equipment for on-water deployment



Photos courtesy of Nuka Research & Planning Group



Figure 1. Barnstable Harbor GRS (CI-03)



Figure 2. Exercise Tactics Map

ANALYSIS OF CORE CAPABILITIES

Aligning exercise objectives and core 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 core capabilities, and performance ratings for each core capability as observed during the exercise and determined by the evaluation team. Table 2 includes compiled data from the Exercise Evaluation Guide (EEG) including the organizational capability targets, associated critical tasks, and observations as observed during the exercise and determined by the evaluation team.

Objective	Core 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	P			
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	P			
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	P			
<p>Ratings Definitions:</p> <ul style="list-style-type: none"> 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

Core Capability	Organizational Capability Target	Associated Critical Tasks	Observation Notes
Environmental Response/ Health and Safety	Overview of Response Equipment	<ul style="list-style-type: none"> • Access Mass DEP Trailer • Identify boom and sorbents • Connect boom together • Connect towing bridle to boom • Connect components of anchor system together 	<ul style="list-style-type: none"> • Performed Without Challenges (P) • All equipment was readily available in both trailers. • Participation during hands-on training at multiple stations was excellent.
	Basic Booming Operations	<ul style="list-style-type: none"> • Transport and tow boom. • Anchoring and Connecting boom to shore • Safe vessel and crew operations. (Refer to ICS-208) 	<ul style="list-style-type: none"> • Performed Without Challenges (P) • Anchoring requirements were initially determined once on-scene, anchor systems were configured and set-up quickly and efficiently, and adjustments to on-water anchoring were quickly made during the deployment. Observer on Ocean 24 (BHM) which served as the vessel at a mooring to be boomed noted that this evolution provided a good opportunity to observe anchoring around vessel and to see better ways to place anchors based on the current. Best to place first anchor upstream, allow boom legs to follow current around vessel which should allow for better placement of remaining anchor systems. Boom towing and anchoring were conducted safely. • Safety practices for working around the water were followed.. Boat operators were able to maneuver successfully during boom deployment despite narrow operating area between floating docks and vessels in harbor (for EX-02 deployment).
	Implement Tactics in GRS	<ul style="list-style-type: none"> • Deploy containment around a vessel at a mooring. • Deploy EX-02 strategy at mouth of Maraspin Creek. 	<ul style="list-style-type: none"> • Performed Without Challenges (P) • Deployment of boom around a vessel at a mooring was safely and effectively performed. Ocean 24 served as the vessel to be boomed and anchored near the Blish Point boat ramp. Ocean 16 (BHM) towed 150 ft. of 12-inch boom from the boat ramp and deftly encircled O24, connected boom section together, and set two anchor systems. M-219 (BFD vessel) deployed one additional anchor system. • EX-02 had been previously tested in 2014. Due to the importance of protecting Maraspin Creek and the challenges faced by deploying this strategy in this location (restricted maneuvering around floating docks and moored vessels as well as strong currents coming from different directions at the bridge crossing the entrance to Maraspin Creek) the decision was made to deploy the strategy again to gain experience in deploying here under different conditions. Lessons learned from the 2014 exercise informed responder actions with 150 ft. of 12-inch boom in a chevron configuration being used for the EX strategy as was done previously. The

Core Capability	Organizational Capability Target	Associated Critical Tasks	Observation Notes
			deployment proved effective despite the inability to test with an oil surrogate which couldn't be procured at the time of the exercise.
Operational Coordination	Create and Execute an Assignment List (ICS 201)	<ul style="list-style-type: none"> • Fill out ICS 201 • Assignments in ICS 201 are followed and on-scene adjustments. • Participants demonstrate command and control of exercise 	<ul style="list-style-type: none"> • Performed Without Challenges (P) • The IC clearly outlined an intended operations plan and personnel assignments were made for shoreside and vessel teams. • Coordination between shoreside and vessel teams was good.
Operational Communications	Effectively Communicate Using VHF equipment	<ul style="list-style-type: none"> • Create Communications Plan • Communicate with other participants using organic VHF equipment 	<ul style="list-style-type: none"> • Performed without Challenges (P) • The established communications plan was followed and communications, using VHF Channel 23A as well as voice communications when appropriate were, for the most part, clear, concise, and timely throughout the exercise. During the hot wash, the crew of M-218 did indicate that their communication with other vessels and the IC during the containment boom deployment could have been better. Participants also noted the importance of maintaining voice communication with members of their own boat crew, especially when actively deploying boom and anchors. Participants noted that often times they are operating vessels alone during their normal day-to-day operations and need to be cognizant of those times when they are conducting operations with additional crew members on board. No hardware or infrastructure issues were encountered.

Table 2. Summary of Organizational Capability Targets and Associated Critical Tasks

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

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

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

Core Capability 1: Environmental Response/Health and Safety

Strengths

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

Strength 1: Participation and coordination by the Barnstable and West Barnstable Fire Departments and Harbormaster staffs was excellent and all departments worked well together.

Strength 2: Participation during hands-on training at multiple stations was excellent.

Strength 3: Multiple boat crews were able to deploy both an exclusion boom strategy and containment boom around a moored vessel. Overall, boat handling, boom towing, and anchoring was outstanding.

Strength 4: Deployment of the EX-02 strategy at mouth of Maraspin Creek was successful. Lessons learned from the 2014 exercise informed responder actions with 150 ft. of 12-inch boom in a chevron configuration being used for the EX strategy as was done previously. The deployment proved effective despite the inability to test with an oil surrogate which couldn't be procured at the time of the exercise.

Areas for Improvement

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

Area for Improvement 1: While the EX-02 strategy was successfully deployed, participants noted that an additional diversion (DV) strategy should be considered at the entrance to Barnstable Harbor near the Blish Point Boat Ramp.

Reference: Barnstable Harbor (CI-03) GRS

Analysis: Inclusion of a DV strategy in this general location can protect Barnstable Harbor as a whole from potential oil impacts. Inclusion of an additional DV strategy would not negate the need for the EX-02 strategy at Maraspin Creek.

Objective 2: Demonstrate the ability to assemble a spill response organization utilizing Incident Command System (ICS) principles through development and execution of an Incident Briefing (ICS 201)

and implementation of on-site incident management and tactical operations.

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

Core Capability 2: Operational Coordination

Strengths

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

Strength 1: Overall operational coordination between exercise players was effective and well communicated.

Areas for Improvement

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

Area for Improvement 1: N/A

Reference: N/A

Analysis: N/A

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 communications

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

Core Capability 3: Operational Communications

Strengths

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

Strength 1: The established communications plan was followed and communications, using VHF Channel 23A as well as voice communications when appropriate were clear, concise, and timely throughout the exercise. During the hot wash, the crew of M-218 did indicate that their communication with other vessels and the IC during the containment boom deployment could have been better. Participants also noted the importance of maintaining voice communication with members of their own boat crew, especially when actively deploying boom and anchors. Participants noted that often times they are operating vessels alone during their normal day-to-day operations and need to be cognizant of those times when they are conducting operations with additional crew members on board.

Areas for Improvement

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

Area for Improvement 1: Maintaining regular radio and voice communications.

Reference: ICS 201

Analysis: Recognition by participants that there were minor lapses in communication highlights the importance of regular, clear radio and voice communication between all strike teams, boat crew members, and the Incident Commander.

Barnstable Fire Department tows containment boom into the harbor



Containment boom around an anchored vessel successfully deployed



Shore team personnel anchors the exclusion boom to the piling



Personnel tow the apex anchor system to set the chevron tactic EX02



Photos courtesy of Nuka Research & Planning Group

APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for the municipalities of Barnstable and West Barnstable following the MassDEP GRS Exercise conducted on October 19, 2020.

Core Capability	Issue/Area for Improvement	Corrective Action	Capability Element ¹	Primary Responsible Organization	Organization POC	Start Date	Completion Date
Core Capability 1: Environmental Response/Health and Safety	Update existing EX-02 strategy on the Barnstable Harbor GRS (CI-03)	Adjust boom length for existing EX-02 strategy to call for 150 ft of boom.	Equipment	Nuka Research	Mike Popovich	11/01/20	12/31/20
	Add a diversion (DV) strategy at or near the Blish Point boat ramp to protect Barnstable Harbor from oil impacts.	Consider adding a diversion strategy to the CI-03 GRS at the recommended location.	Planning	Nuka Research	Mike Popovich	11/01/20	12/31/21
	Participants noted the absence of a boat ramp icon (on the Barnstable Harbor GRS) at the location of the refurbished town boat ramp adjacent to Millway Marina.	Add an additional boat ramp icon on the Barnstable Harbor GRS	Planning	Nuka Research	Mike Popovich	11/01/20	12/31/21

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

Core Capability 2: Operational Coordination	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Core Capability 3: Operational Communication	Regular radio and voice communication between vessel and shore crews and voice comms between individual boat crews	Highlight proper/timely voice comms during planning meetings, training and operations brief immediately prior to each exercise	Training	Nuka Research	Mike Popovich	11/01/20	12/31/21

APPENDIX B: EXERCISE PARTICIPANTS

Participating Organizations	
Town of Barnstable, MA	Participant Count
Barnstable Fire Department	11
Barnstable Harbormaster	2
Town of West Barnstable, MA	
West Barnstable Fire Department	4
TOWN PARTICIPANTS	17
Federal	
United States Coast Guard	2
State	
Massachusetts Department of Environmental Protection (MassDEP)	2
Nuka Research and Planning Group, LLC (contractor for MassDEP)	3
Moran Environmental Recovery (contractor for MassDEP)	2
TOTAL	26

APPENDIX C: EXERCISE EVALUATION FORM



MassDEP Geographic Response Plan (GRP) Exercise and Testing Program

Participant Feedback Form

1 Strongly disagree	2 Mildly disagree	3 Neutral	4 Mildly agree	5 Strongly agree
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Please use the above rating scale to answer the questions for each of the following topics.

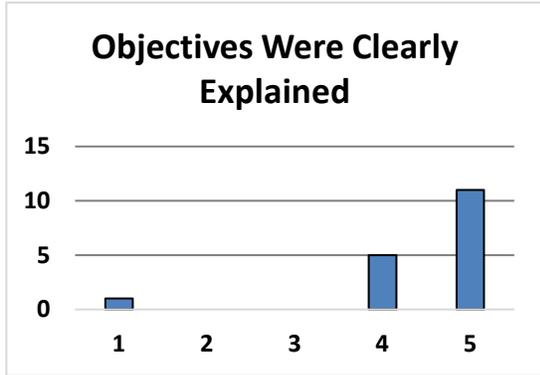
The objectives were clearly explained and the exercise met those objectives.	1 2 3 4 5
Comments:	
The material appropriately challenged me and the pace of instruction was correct.	1 2 3 4 5
Comments:	
The instructor(s) did an excellent job.	1 2 3 4 5
Comments:	
I found the classroom to be a comfortable learning environment.	1 2 3 4 5
Comments:	
I feel more prepared to respond to an oil spill than I did before this exercise.	1 2 3 4 5
Comments:	
The best thing about this training was _____.	
This training could have been improved by _____.	

Please use the back of the sheet if you need more room for comments.

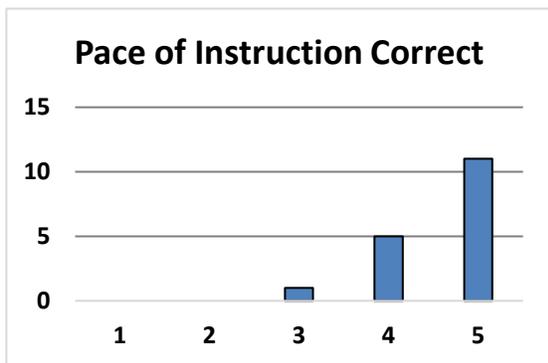
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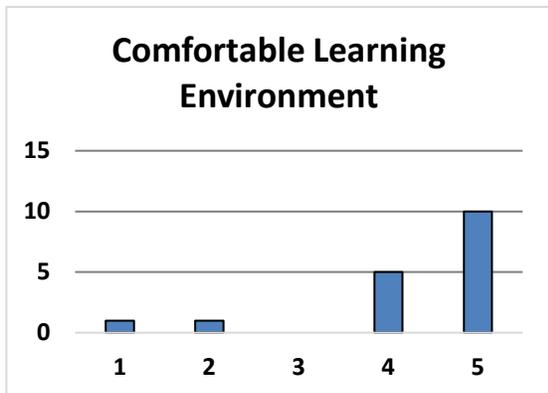
Student Feedback Summary



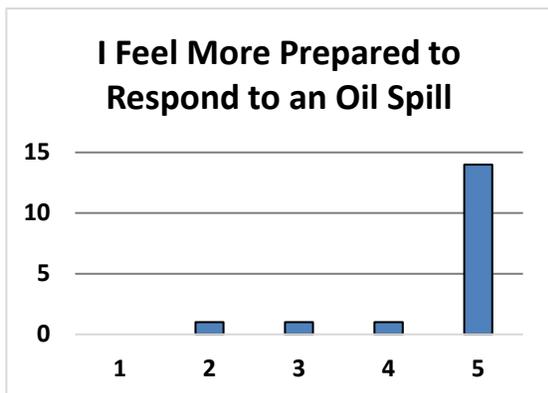
Comments: None



Comments: None

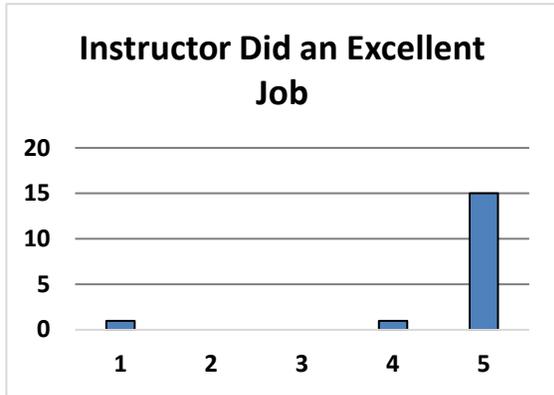


Comments: None



Comments: None

Comments: "The instructor was great"



The best thing about this training was... "Hands on parts of the exercise", "Hands on", "The lecture was very informative, and helped me understand what I need to do as a first responder", "Hands on with equipment", "Boom placement", "Learning and then doing simulated exercises", "Slow but controlled deployment of booms", "Engaging", "The hands on portion"

This training could be improved by... "More time and actually deploying boom in various fashion", "More time", "Setting up the classroom portion online and spending more hands-on time", "More training hours"