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# MassDEP Geographic Response Plan – 2018 Lower Cole River (MHB-01) Exercise

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After Action Report  
October 16, 2018

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.

## EXERCISE OVERVIEW

<b>Exercise Name</b>	2018 Lower Cole River (MHB-01) Exercise
<b>Exercise Date</b>	October 16, 2018
<b>Scope</b>	This exercise was a Full-Scale Exercise, planned for approximately six hours in Swansea, MA and upon the waters of the Cole River. Exercise play was limited to the Cole River and the adjacent shoreline.
<b>Mission Area(s)</b>	Response
<b>Core Capabilities</b>	Environmental Response/Health and Safety, Operational Coordination, Operational Communications.
<b>Objectives</b>	<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 Plan (GRP) 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>
<b>Threat or Hazard</b>	Discharge of oil into a navigable waterway
<b>Scenario</b>	An oil spill has occurred that threatens the Lower Cole River in the vicinity of Cole River Narrows and the State Boat Ramp. The Swansea and Somerset Fire Departments and Harbormaster staffs will utilize GRP MHB-01 to deploy boom to protect sensitive resources in the Lower Cole River.
<b>Sponsor</b>	Massachusetts Department of Environmental Protection (MassDEP).

**Participating  
Organizations**

Participating organizations will include:

- Swansea Fire Department (SWFD)
- Swansea Police Department/Harbormaster (SPD)
- Somerset Fire Department (SOFD)
- 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**

Julie Hutcheson, Oil Spill Program Coordinator  
Massachusetts Department of Environmental Protection  
Oil Spill Prevention and Response Program  
1 Winter St.  
Boston, MA 02108  
(617) 556-1191  
julie.hutcheson@state.ma.us

Classroom training is held at the Swansea  
Fire Department



Participants assembled during the trailer demonstration  
portion of the training to learn about and practice anchor  
system assembly, boom connection, use of culvert plugs  
and sorbent, and shoreside anchoring



Photos courtesy of Nuka Research & Planning Group



Figure 1. Lower Cole River GRP (MHB-01)

## 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 Plan (GRP) 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 harbormaster departments using VHF and UHF communications	Operational Communications	P			
<b>Ratings Definitions:</b> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> <li>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).</li> </ul>					

**Table 1. Summary of Core Capability Performance**



Core Capability	Organizational Capability Target	Associated Critical Tasks	Observation Notes
<b>Environmental Response/ Health and Safety</b>	<b>Overview of Response Equipment</b>	<ul style="list-style-type: none"> <li>Access Mass DEP Trailer</li> <li>Identify boom and sorbents</li> <li>Connect boom together</li> <li>Connect towing bridle to boom</li> <li>Connect components of anchor system together</li> </ul>	<ul style="list-style-type: none"> <li><b>Performed Without Challenges (P)</b></li> <li>All operations conducted in a safe manner.</li> <li>All equipment was readily available in both trailers.</li> <li>Participation by the Swansea Fire and PD/Harbormaster Departments, and the Somerset Fire Department were excellent and they worked well together.</li> <li>Hands on training at multiple stations was very effective. Many participants had never connected the boom together. The anchor station benefitted greatly from the diagram of how to put together an anchor system.</li> </ul>
	<b>Basic Booming Operations</b>	<ul style="list-style-type: none"> <li>Transport and tow boom.</li> <li>Anchoring and Connecting boom to shore</li> <li>Safe vessel and crew operations. (Refer to ICS-208)</li> </ul>	<ul style="list-style-type: none"> <li><b>Performed with Some Challenges (S)</b></li> <li>Initially, the eastern shoreline anchoring team set the eastern shoreline anchoring point below the highwater line and as such had to adjust the location after boom was anchored in the river. Additionally, the (eastern) shoreline anchoring team task force leader, as a former commercial lobsterman, was extremely proficient at line handling and knot tying and did an excellent job setting up the anchor point and teaching techniques to other participants.</li> <li>Safety Officer did an outstanding job of monitoring and ensuring overall situational awareness and site safety.</li> </ul>
	<b>Implement Tactics in GRP</b>	Exclusion Boom (DV-01)	<ul style="list-style-type: none"> <li><b>Performed with Some Challenges (S)</b></li> <li>Due to the strong flood current and the small/low horsepower FD boats being used for the deployment, the DV-01 GRP tactic was not “completed” as a closed-chevron configuration. Responders were able to deploy a 500-ft eastern leg, and a 400-ft western leg but were unable to connect the two legs at the chevron’s apex due to the reasons specified and because the up-current anchor on the western leg dragged far downstream from the apex location. Because the eastern leg held, surrogate was deployed and was contained within the boom, drifting towards the shoreside collection point with no visible signs of entrainment despite the current speed. The westerly breeze present on the day of the exercise was not a factor in driving the surrogate. <b>Recommendation:</b> Change the DV-01 tactic from a chevron configuration to a single leg and reduce the length from 1,000 ft to 900 ft. This recommendation is based on: <ul style="list-style-type: none"> <li>Current speed throughout the channel leading into the Lower Cole River/Narrows is very strong and makes towing, maneuvering and deploying boom difficult, especially for small and underpowered skiffs and boats. Deploying a chevron configuration like that currently depicted on the MHB-01 GRP can be doubly difficult, even for experienced</li> </ul> </li> </ul>

			<p>responders. Deploying a single boom section from the shoreside recovery point (after pre-staging and anchoring boom on the shoreline) using an adequately powered vessel will likely provide the greatest chance of successful diversion and recovery efforts before oil impacts the Lower Cole River area.</p> <ul style="list-style-type: none"> <li>Local fire departments could benefit from larger vessels with greater horsepower to more easily and safely deploy oil spill response equipment in their respective areas of responsibility.</li> </ul>
<b>Operational Coordination</b>	<b>Create and Execute an Assignment List (ICS 201)</b>	<ul style="list-style-type: none"> <li>Fill out ICS 201</li> <li>Assignments in ICS 201 are followed and on-scene adjustments.</li> <li>Participants demonstrate command and control of exercise</li> </ul>	<ul style="list-style-type: none"> <li><b>Performed without Challenges (P)</b></li> <li>IC effectively controlled exercise. Most strike teams were well organized and effectively carried out assigned tasks. <ul style="list-style-type: none"> <li>The boom deployment strike team (trailer) was initially not fully engaged in offload/launch activities as the contractor/instructor was observed on many occasions being heavily involved in boom deployment from the trailer; sometimes performing it single-handedly</li> </ul> </li> <li>Large-scale printout of the GRP was extremely useful to the IC during the exercise.</li> </ul>
<b>Operational Communications</b>	<b>Effectively Communicate Using VHF equipment</b>	<ul style="list-style-type: none"> <li>Create Communications Plan</li> <li>Communicate with other participants using organic VHF equipment</li> </ul>	<ul style="list-style-type: none"> <li><b>Performed without Challenges (P)</b></li> <li>Communications equipment worked well with a local Fire Ground Channel (UHF Channel 3) being used in addition to voice communications when appropriate.</li> <li>Communication procedures were adequate but could have been improved by more frequent updates between the vessel strike teams and the IC in terms of on-water activities; especially when it became necessary to alter the deployment plan. Understanding that vessel strike teams sometimes have their hands full conducting the deployment safely, having a dedicated safety observer on each vessel who is also in a position to relay operational information to the IC is a best practice and should be considered for future exercises.</li> </ul>

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 Plan (GRP) 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 by the Fire Departments from Swansea and Somerset as well as the Swansea Harbormaster were excellent and they worked well together.

**Strength 2:** Hands on training in multiple stations were very effective. Many participants had never connected the boom together. The anchor station benefitted greatly from the diagram of how to put together an anchor system.

#### **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 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:** The Incident Commander effectively controlled the exercise. Most strike teams were well organized and effectively carried out assigned tasks. Both shoreline anchoring teams (east and west) did an outstanding job

### Areas for Improvement

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

**Area for Improvement 1:** Strike Team tasking/participation

**Reference:** 2018 MassDEP Geographic Response Plan Exercise and Testing Program Incident Commander and Safety Officer Handbook

**Analysis:** The boom deployment strike team (trailer) was not fully engaged in offload/launch activities as the contractor/instructor was observed on many occasions being heavily involved in boom deployment from the trailer; sometimes performing it single-handedly.

### 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:** Communications equipment worked well with a local Fire Ground Channel (UHF Channel 3) being used in addition to voice communications when appropriate.

### Areas for Improvement

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

**Area for Improvement 1:** IC/Strike Team Communication frequency

**Reference:** 2018 MassDEP Geographic Response Plan Exercise and Testing Program Incident Commander and Safety Officer Handbook

**Analysis:** Communication procedures were adequate but could have been improved by more frequent updates between the vessel strike teams and the IC in terms of on-water activities; especially when it became necessary to alter the deployment plan. Understanding that vessel strike teams sometimes have their hands full conducting the deployment safely, having a dedicated safety observer on each vessel who is also in a position to relay operational information to the IC is a best practice and should be considered for future exercises.

Vessels from Somerset and Swansea work together to deploy diversion booming tactic to protect sensitive resources in the Lower Cole River



Photo courtesy of Nuka Research & Planning Group

MassDFS Rehab Unit allowed participants to learn about resources available during an incident



Photo courtesy of Nuka Research & Planning Group

Double-rebar shoreside anchoring is used to secure diversion boom along shoreline



Peat moss surrogate is used to test the final configuration of DV-01. No entrainment occurred despite strong currents



Photos courtesy of Nuka Research & Planning Group

## APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for the municipalities of Somerset and Swansea following the MassDEP GRP Exercise conducted on October 16, 2018.

Core Capability	Issue/Area for Improvement	Corrective Action	Capability Element <sup>1</sup>	Primary Responsible Organization	Organization POC	Start Date	Completion Date
Core Capability 1: Environmental Response/Health and Safety	Revise MHB-01 GRP	Change the DV-01 tactic from a 1,000 ft chevron array to a 900 ft single leg configuration.	Planning	Nuka Research	Mike Popovich	10/17/18	12/31/18
Core Capability 2: Operational Coordination	None.	None.	N/A	N/A	N/A	N/A	N/A
Core Capability 3: Operational Communications	Improve comms frequency between IC and Strike Teams	During future exercises, Controllers will ensure a safety observer/comms officer is identified on each vessel strike team and who can ensure that frequent comms are maintained with IC especially when deployment plans change.	Organization	Nuka Research	Mike Popovich	01/01/19	12/31/19

<sup>1</sup> Capability Elements are: Planning, Organization, Equipment, Training, or Exercise.

## APPENDIX B: EXERCISE PARTICIPANTS

Participating Organizations	
<b>Town of Somerset, MA</b>	<b>Participant Count</b>
Somerset Fire Department	15
<b>Town of Swansea, MA</b>	
Swansea Fire Department	6
Swansea PD/Harbormaster	2
<b>TOWN PARTICIPANTS</b>	<b>23</b>
<b>Federal</b>	
United States Coast Guard (USCG)	6
<b>State</b>	
Massachusetts Department of Environmental Protection (MassDEP)	2
Nuka Research and Planning Group, LLC (contractor for MassDEP)	2
Moran Environmental Recovery (contractor for MassDEP)	2
<b>TOTAL</b>	<b>35</b>

40% of first responders reported having previous GRP exercise experience.

## 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 _____.	

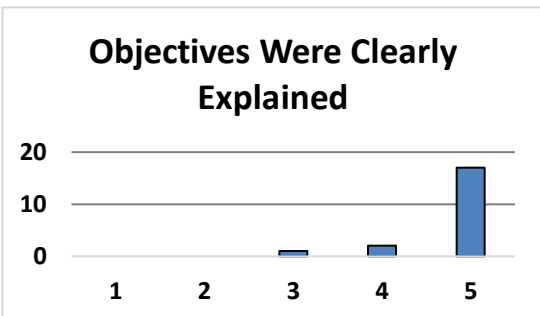
Please use the back of the sheet if you need more room for comments.

(Rev 2016)



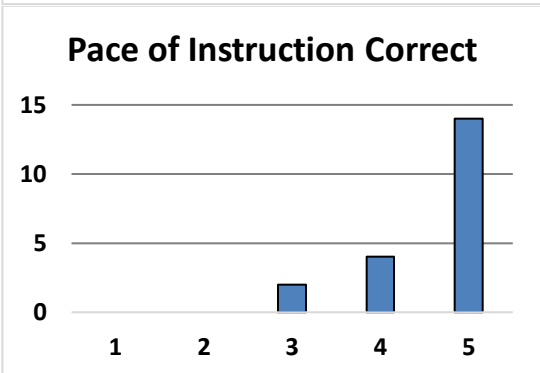


## Student Feedback Summary

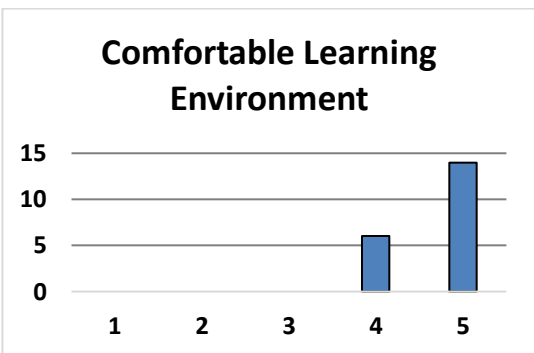


**Comments:**

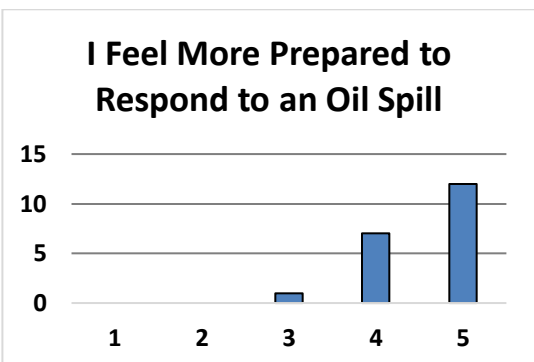
"Understood but deployment was approx. 75% successful," "Nice job with PowerPoint (NOT TOO LONG), good mix of classroom and hands-on time,"



**Comments:** None

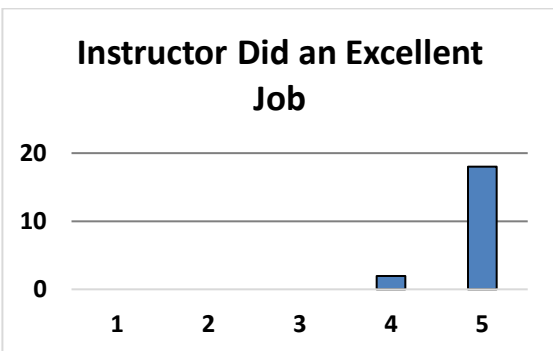


**Comments:** "Too many people in classroom"



**Comments:**

"Excellent drill," "Went very well," "Already had proper preparation for an oil spill," "Only the second time seeing boom deployed-- eye-opening," "I thought everyone did a great job"



Comments: None

**The best thing about this training was...** "Full evaluation," "Learning how much tides and winds affect everything," "Hands-on training," "Hands-on deployment and actually seeing how difficult it was to deploy," "Hands-on," "Proctored evaluation," "Stations around trailer," "Real time putting gear out," "Actually seeing our boats attempt to put 500 ft of boom into position," "Hands-on activity," "Hands-on," "Field ops," "The in-field exercise," "Use of multiple agencies," "Informative, hands-on,"

**This training could be improved by....** "Shorter exercises, but more hands-on with multiple crews," "Less down time, although there wasn't much," "Longer class," "Excellent as is," "Nothing"