



MassDEP Geographic Response Plan – 2015 Boston Harbor First Responder Exercise

September 23rd, 2015

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

Exercise Name	2015 Boston Harbor First Responder Exercise
Exercise Dates	September 23rd, 2015
Scope	This exercise is a Full Scale Exercise, planned for approximately six hours in Winthrop, MA and upon the waters of Winthrop Harbor. Exercise play is limited to Winthrop Harbor and 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 Plan (GRP) tactics.</p> <p>Objective 2: Demonstrate the ability to assemble a spill response organization utilizing Incident Command System (ICS) principles through development and execution of an Assignment List (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 both UHF and VHF communications.</p>
Threat or Hazard	Discharge of oil into a navigable waterway
Scenario	An oil spill has occurred that threatens Winthrop Harbor and the surrounding area. The Winthrop and Nahant Fire Departments and Harbormasters staff will utilize MassDEP GRP tactics to deploy protective booming to protect sensitive resources in and near Winthrop Harbor and the surrounding area.
Sponsor	Massachusetts Department of Environmental Protection. Program funds will be utilized for first responder backfill and overtime costs.

**Participating
Organizations**

Participating organizations included:

- Winthrop Fire Department (WFD)
- Winthrop Harbormaster (WHM)
- Nahant Fire Department (NFD)
- Nahant Harbormaster (NHM)
- MassDEP
- U.S. Coast Guard Sector Boston (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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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	P			
Demonstrate the ability to assemble a spill response organization utilizing Incident Command System (ICS) principles through development and execution of an Assignment List (ICS 204) 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 departments, police departments, harbor masters, and other state and federal first responders using both UHF and VHF 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 					

Objective	Core Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
<p>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> <ul style="list-style-type: none"> 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 skills successfully demonstrated during the exercise Classroom training was excellent. Trailer accessed without issue. Boom removed from trailer & all participants had an opportunity to connect boom segments. Hands on demonstration for trailer equipment very effective. Students were involved in hands on instruction and performed well during equipment deployment. Area for Improvement: The Nahant trailer roof was damaged by snow accumulation during the winter. Recommend repairs be conducted.
	Basic Booming Operations	<ul style="list-style-type: none"> Transport and tow boom. <i>Critical Task:</i> Anchoring and Connecting boom to shore <i>Critical Task:</i> Safe vessel and crew operations. (Refer to ICS-208) 	<ul style="list-style-type: none"> Performed Without Challenges (P) Nahant and Winthrop boats effectively towed boom from the boat ramp to pier side and open water containment sites. Vessel and crew operations performed safely. During pier containment deployment, anchors got tangled up on the deck of one of the response boats but the crew rapidly untangled them and deployed the anchors effectively to create enough space for oil to collect. Best Practice: Partially fill culvert plug with air to facilitate handling of equipment while putting it into the culvert. If it is totally deflated, it is hard to maneuver inside the culvert All necessary PPE properly worn. Shore team anchored boom to pier using available cleats. Area for Improvement: Open water

Core Capability	Organizational Capability Target	Associated Critical Tasks	Observation Notes
			<p>containment tactic could have used more boom. Important to note that you need 3X the vessel length to contain a vessel borne spill. The vessel length needs to not only include the overall length of the vessel but the length from the vessel to the mooring ball as well since the boom needs to go around the mooring ball to accommodate shifting tides/current/wind. Recommend that include adding mooring length to length of vessel for boom calculation be added to classroom instruction.</p>

Core Capability	Organizational Capability Target	Associated Critical Tasks	Observation Notes
	<p>Implement Tactics in GRP</p>	<ul style="list-style-type: none"> Deploy culvert plug and containment booming tactics at pier and in open water. 	<p>Culvert Block</p> <ul style="list-style-type: none"> Performed Without Challenges (P) Multiple teams successfully performed this tactic. <p>Pier containment:</p> <ul style="list-style-type: none"> Performed Without Challenges (P) Pier containment tactic successfully achieved. Outstanding teamwork by response crews. Response vessels worked well together to secure containment boom to both ends of the solid pier. Pier teams worked well to secure the boom to the pier cleats while the boats deployed the anchors. Anchors on the western side of the containment boom were nearly underwater but once the eastern anchor was set, the anchor float popped right up. <p>Open Water Containment</p> <ul style="list-style-type: none"> Performed Without Challenges (P) Response vessels did an excellent job of maneuvering the boom around the vessel simulating a pollution source., using the elements to encircle the vessel as it was tied to a mooring ball. 3 Anchors effectively to provide effective shape to collect spilled oil from the vessel. 3 anchors were used in this tactic but 4 may have been more appropriate to give some additional room off the stern of the vessel being contained. <p>Overall exercise comment: This training is different from the training provided in GRP Exercises and extremely valuable as containment booming tactics</p>

			are the most likely situation first responders will encounter in day-to-day operations. All responders participating in this exercise did an outstanding job and learned a great deal.
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"> • ICS 201 completed. • Assignments followed correctly with on-scene adjustments made as necessary. • IC performed well and did an excellent job of directing personnel & adjusted tactics exercise based on observed conditions • Team make up well defined. • Enough personnel were present to complete assignments
Operational Communications	Effectively Communicate Using UHF and VHF equipment	<ul style="list-style-type: none"> • Create Communications Plan • Communicate with other participants using organic UHF equipment • Communicate with other participants using organic VHF equipment 	<ul style="list-style-type: none"> • Performed without Challenges (P) • Communications interoperability between departments was seamless with VHF equipment. • Good comms between shore and water crews. • UHF Equipment not utilized.

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: Participants from multiple agencies and contractors (Winthrop, Nahant, Moran Environmental, MassDEP) worked well together to complete assigned tasks

Strength 2: All participants conducted the deployment safely. There were no potential safety incidents.

Areas for Improvement

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

Area for Improvement 1: The Nahant trailer roof was damaged by snow accumulation during the winter. Recommend repairs be conducted.

Reference: N/A

Analysis: Historic snowfall this winter resulted in a number of trailers incurring damage from excessive weight on the roof. All trailers need to be examined and the Nahant trailer needs to be repaired.

Area for Improvement 2: A best practice for use of culvert plugs was identified. Partially filling the plug with air allows responders to more easily handle the plug. Recommend that this information be included in the trailer demonstration portion of the training.

Reference: Massachusetts Geographic Response Plan Tactics Guide

Analysis: It's important to partially fill culvert plugs with air to facilitate their placement in a culvert. Filling it with air allows it to maintain its shape while handling the plug and placing it in its desired location. If the plug is totally deflated, it is hard to place inside the culvert.

Area for Improvement 3: Recommend revising classroom instruction on open water containment to include adding mooring length to length of vessel for boom calculation

Reference: Massachusetts Geographic Response Plan Tactics Guide

Analysis: During cases of open water containment, you need 3X the vessel length to contain a vessel borne spill. The vessel length needs to not only include the overall length of the vessel but the length from the vessel to the mooring ball as well since the boom needs to go around the mooring ball to accommodate shifting tides/current/wind.

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 did an outstanding job. All personnel were clear on assignments during the exercise and appropriate direction was provided. All participants were very motivated to demonstrate the skills they learned during the training.

Areas for Improvement

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

Area for Improvement 1: None

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 both UHF and 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: Clear and effective communications between all participants was maintained throughout the exercise. All participants used VHF radios and maintained good radio discipline. Asset coordination was carried out to accomplish deployment objectives.

Areas for Improvement

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

Area for Improvement 1: None to report.

Reference: Homeland Security Exercise and Evaluation Program Guidance, April 2013, National Incident Management System

Analysis: N/A

First Responders deploy culvert plug



Photo courtesy of Nuka Research & Planning Group

Winthrop Harbormaster personnel safely tow boom



Photo courtesy of Nuka Research & Planning Group

Winthrop FD deploys containment boom around vessel



Photo courtesy of Nuka Research & Planning Group

First Responders work together to complete objective



Photo courtesy of Nuka Research & Planning Group

APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for Kingston and Plymouth Fire Departments and the Plymouth Harbormaster following the Massachusetts Department of Environmental Protection 2015 Kingston GRP Exercise conducted on September 16th, 2015.

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	1. Implement Tactics in GRP	Revise Kingston GRP (SS-11) to replace EX-01a with DV-01 and an associated shoreside recovery tactic. Other Exclusion tactics need to be renumbered.	Planning	Nuka Research	Mike Popovich	10/15/15	
Core Capability 1: Environmental Response/Health and Safety	2. Overview of Response Equipment	Recommend replacing the sledgehammer in the Kingston FD trailer with a slide hammer for safety reasons.	Planning	MER	John Dupont, Jr	10/15/15	
Core Capability 2: Operational Coordination	N/A						
Core Capability 3: Operational Communications	N/A						

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

APPENDIX B: EXERCISE PARTICIPANTS

Participating Organizations	
Federal	Participant Count
United States Coast Guard Sector Boston	4
State	
Massachusetts Department of Environmental Protection (MassDEP)	3
Nuka Research and Planning Group, LLC (contractor for MassDEP)	3
Moran Environmental Recovery (contractor for MassDEP)	1
Town of Winthrop, MA	
Winthrop Fire Department	11
Withrop Harbormaster	7
Town of Nahant, MA	
Nahant Fire Department	3
Nahant Harbormaster	1
TOTAL	33

APPENDIX C: EXERCISE EVALUATION FORM

Massachusetts DEP 2015 Boston Harbor First Responder Exercise – PARTICIPANT EVALUATION

Winthrop/Nahant – First Responder Exercise		Exercise date: 23SEP15	
Participant Name (optional):		Participant Organization:	
What was your role in exercise? (participant, evaluator, observer, etc.)			
What was your level of spill response experience prior to this exercise?			
NONE TRAINING ONLY SOME SPILL RESPONSE A LOT			
Please check a box to respond to the following.		YES	NO
1. I feel more prepared to deploy oil spill response equipment now than I did prior to this exercise.			
2. I have a better understanding of spill response tactics than I did prior to this exercise.			
3. I would participate in future oil spill response equipment or Geographic Response Plan deployments at other sites.			
4. The objectives were clearly explained and the deployment exercise met the objectives.			
5. The exercise was conducted safely.			
Based on your experience today, would you feel comfortable setting a similar boom array during an actual incident?			
NOT AT ALL A LITTLE MODERATELY VERY			
Please evaluate how well the Winthrop Town Landing worked for deploying and demobilizing boom from the trailer for this deployment:			
___ <u>Ideal</u> staging area for boom for this tactic.			
___ <u>Sufficient</u> as a staging area for boom for this tactic.			
___ <u>Not sufficient</u> as a staging area for boom for this tactic.			
Did the Exercise Plan (map diagram) provide clear direction as to how and where to deploy the boom? If not, please identify problems & suggest improvements.			

**PLEASE USE THE BACK OF THIS PAGE
FOR ANY ADDITIONAL COMMENTS**

	Yes	No
Prior Oil Spill Experience	80%	20%
More Prepared after Exercise	100%	0%
Better Understanding of Deploying Spill Response Tactics	100%	0%
Participate in Future GRP Deployments	100%	0%
Field Objectives Clearly Explained and/or Met	100%	0%



Based on experience today, comfort level with setting a similar boom array in actual incident

