



MassDEP Geographic Response Plan – 2015 Neponset River (BH-06) Exercise

October 16, 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 GRP Exercise
Exercise Dates	October 16, 2015
Scope	This exercise is a Full Scale Exercise, planned for approximately six hours in Quincy, MA and upon the waters of the Neponset River and Squantum Channel. Exercise play is limited to the Neponset River, Squantum Channel 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 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 the Neponset River and Squantum Channel. The Quincy and Boston Fire Departments and Harbormasters staff will utilize GRP BH-06 to deploy protective booming to protect sensitive resources in and near the Neponset River and Squantum Channel.
Sponsor	Massachusetts Department of Environmental Protection. Urban Areas Security Initiative (UASI) program funds (through the City of Boston's Mayor's Office of Emergency Management) are being utilized for backfill and overtime (BF/OT) costs for Boston and Quincy first responders.

Participating Organizations

Participating organizations will include:

- Quincy Fire Department (QFD)
- Quincy PD/Harbormaster (QPD)
- Boston Fire Department (BFD)
- Boston PD/Harbormaster (BPD)
- City of Boston, Mayor’s Office of Emergency Management
- Massachusetts State Police
- MassDEP
- U.S. Coast Guard Sector Boston (USCG)
- Moran Environmental Recovery (MER)
- NOAA Office of Response and Restoration (D1 SSC)
- Nuka Research and Planning Group, LLC (Nuka Research)

Note: See Appendix B for participant count

Point of Contact

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Quincy and Boston Police boats participating in the GRP exercise.



Photo courtesy of Nuka Research & Planning Group

Quincy Fire Department Boat towing boom into place.



Photo courtesy of Nuka Research & Planning Group

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 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 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 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
<p>Environmental Response/ Health and Safety</p>	<p>Overview of Response Equipment</p>	<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 • MassDEP trailers were readily accessible. All boom components identified and discussed for instructional purposes. • All personnel had the opportunity to connect boom sections for familiarization. • Both Quincy Fire and Boston Fire Trailer (plate # E644) did not have slide hammers. Recommendation: MER replace the sledgehammers in these trailers with slide hammers during the routine maintenance cycle.
	<p>Basic Booming Operations</p>	<ul style="list-style-type: none"> • Transport and tow boom. • Anchoring and Connecting boom to shore • <i>Safe</i> vessel and crew operations. (Refer to ICS-208) 	<ul style="list-style-type: none"> • Performed Without Challenges (P) • Excellent job by all participants. • Boom successfully deployed from trailer using bow tow method. • All boats conducted safe boom towing operations. • Trailer team showed great teamwork in getting boom out to boats from boat ramp. Trailer team noted that monkey fists or some other heaving line would have been extremely useful in getting the towline to boats in the constrained boat ramp area. Recommendation: Add monkey fist or heaving lines to MassDEP trailer equipment inventory. • Squantum shore team did an outstanding job of setting up a shore anchor using double rebar. • Shore anchor modified to pier at Old Colony Yacht Club (OCYC) site due to rocky shoreline and limited access to Keyspan LNG site. Modified site is better suited for shore side recovery. Recommendation: GRP be adjusted to shift west shore side recovery location to just north of the OCYC pier. • Additional training on shoreline anchoring paid off as Squantum shore team on did an excellent job. Recommendation: Create simulated rebar shore anchor for students to practice tying knots. • Boston Fire Marine 9 did an excellent job of adjusting anchors after initially deploying the eastern deflection boom to obtain the desired boom configuration called for in the modified GRP tactic.

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

Core Capability	Organizational Capability Target	Associated Critical Tasks	Observation Notes
	Implement Tactics in GRP	<ul style="list-style-type: none"> Deploy Diversion Boom Tactic 	<ul style="list-style-type: none"> Performed Without Challenges (P) Booming tactic successfully deployed as modified due to time considerations and to allow the channel to be kept open for traffic. Modification was implemented as planned. Participants noted that there are

			<p>several yacht clubs not annotated on the GRP that can serve as staging areas. Recommendation: Use the data in Mass GIS to identify these areas and update the GRP.</p> <ul style="list-style-type: none"> The boom captured surrogate deployed along the western diversion leg. No evidence of entrainment. Wind was the primary driver for the direction in which the oil surrogate travelled.
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) IC was effective in directing the exercise, which involved multiple assets and shore teams in a complex boom configuration. All units operated in a safe manner. Assignments were followed and adjustments made as necessary by boat crews and shore teams.
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 plan was followed as designed. All participants used the identified frequency for exercise communications. "Metro Red 1" worked well as a communications frequency. All participants had access to UHF radios. Communications between shore side trailer and towing vessel struggled somewhat due to reliance on visual and audible cues. An additional radio for the shore team leader would have simplified communications.

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 (Boston, Quincy Moran Environmental, MassDEP) worked well together to complete assigned tasks

Strength 2: All participants conducted the boom 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: Revise Neponset River GRP (BH-06) to change the boom configuration and shore side recovery location in tactic (DV01a). Also incorporate data from Mass GIS on other yacht clubs in the area to identify potential staging areas in the GRP.

Reference: Massachusetts Geographic Response Plan Tactics Guide

Analysis: The Neponset River GRP (BH-06) GRP needs to be revised to include updated data on other potential staging areas. Also, the modification made to this tactic was successful in diverting the simulated oil to an area more suitable for shore side recovery than originally called for in the GRP. The angle of the modified boom configuration was sufficient to prevent the entrainment of surrogate in a very strong wind. The GRP should be revised to include these changes.

Area for Improvement 2: MER replace the sledgehammers in the Quincy and Boston Fire Department trailers with slide hammers during the routine maintenance cycle.

Reference: N/A

Analysis: Slide hammers are much safer than sledgehammers for driving rebar stakes into the ground. Replacements have been already been made in other trailers. The Boston and Quincy Fire Department trailers should have their sledgehammers replaced during the routine maintenance cycle.

Area for Improvement 3: Create simulated rebar shore anchor (cut rebar placed into a wood base) for students to practice tying knots.

Reference: N/A

Analysis: Providing students with additional training in tying the knots for the rebar shore anchor has resulted in highly successful results during the exercise. A training aid simulating two rebar stakes driven half way into the ground at 45 degree angles would be extremely useful to give students to opportunity practice this skill when there is no sandy beach immediately available.

Area for Improvement 4: Add monkey fist or heaving lines to MassDEP trailer equipment inventory.

Reference: N/A

Analysis: There were several instances during this drill where a heaving line of some sort would have been useful for passing towlines for boom from the shore team to a boat. A cost/benefit analysis should be conducted at the end of the season to determine if adding this equipment to

the MassDEP trailer inventories is a viable option.

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 excellent job of controlling the many assets involved in this exercise. All teams knew their tasks and objectives during the exercise and appropriate direction was provided.

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. “Metro Red 1” worked well as a communications frequency. All participants had access to UHF radios.

Areas for Improvement

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

Area for Improvement 1: None.

Reference: Massachusetts Statewide Communications Interoperability Plan.

Analysis: N/A

A shore anchor comprised of rebar hammered into the sand on the eastern shore of the Neponset River is holding the boom in place.



Photo courtesy of Nuka Research & Planning Group

Boston Police boat towing boom into position for anchoring.



Photo courtesy of Nuka Research & Planning Group

Students from Boston and Quincy participate in classroom and hands on training prior to the exercise. With 70 participants, this exercise was one of the largest GRP exercises in the history of the program.



Photos courtesy of Nuka Research & Planning Group

Boom on the west shore of the

Boston fire boat attaches

Neponset River is demobilized.



Photo courtesy of Nuka Research & Planning Group

anchor to a segment of boom.



Photo courtesy of Nuka Research & Planning Group

APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for Boston and Quincy Fire Departments and Police Departments following the Massachusetts Department of Environmental Protection Neponset River GRP Exercise conducted on October 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 Neponset River GRP (BH-06) and incorporate data from Mass GIS on other potential staging areas in the GRP.	Planning	Nuka Research	Mike Popovich	11/15/15	2/15/16
Core Capability 1: Environmental Response/Health and Safety	2. Overview of Response Equipment	MER replace the sledgehammers in Boston and Quincy trailers with slide hammers	Equipment	MER	John Duponte	11/15/15	4/1/16
Core Capability 1: Environmental Response/Health and Safety	3. Overview of Response Equipment	Create simulated rebar shore anchor (cut rebar placed into a wood base) for students to practice tying knots.	Training	Nuka/MER	Mike Popovich/John Duponte	11/15/15	2/15/16
Core Capability 1: Environmental Response/Health and Safety	4. Overview of Response Equipment	Add monkey fist or heaving lines to MassDEP trailer equipment inventory.	Equipment	Nuka/MER	Mike Popovich/John Duponte	11/15/15	4/1/16
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	
City of Quincy, MA	Participant Count
Quincy Fire Department	7
Quincy PD/Harbormaster	12
City of Boston MA	
Boston Fire Department	25
Boston PD/Harbormaster	12
TOWN PARTICIPANTS	56
Federal	
United States Coast Guard (USCG)	4
State	
Massachusetts Department of Environmental Protection (MassDEP)	3
Massachusetts State Police	1
Nuka Research and Planning Group, LLC (contractor for MassDEP)	3
Moran Environmental Recovery (contractor for MassDEP)	2
TOTAL	69

APPENDIX C: EXERCISE EVALUATION FORM

Massachusetts DEP 2015 Boston Harbor GRP Exercise – PARTICIPANT EVALUATION

Quincy/Boston – Neponsett River GRP Exercise		Exercise date: 16OCT15	
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 Old Colony Yacht Club 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.			

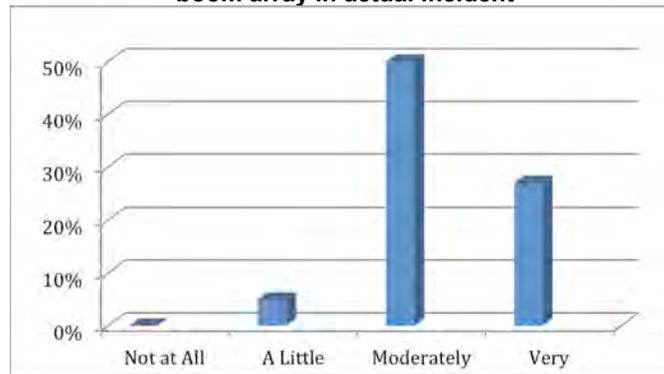
**PLEASE USE THE BACK OF THIS PAGE
FOR ANY ADDITIONAL COMMENTS**

	Yes	No
Prior Oil Spill Experience	83%	17%
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%



44 Respondents

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



Old Colony Yacht Club as Staging Area

