

Draft

Homeland Security Exercise and Evaluation Program (HSEEP)  
After Action Report/Improvement Plan Massachusetts Department of Environmental Protection  
(AAR/IP) Salem/Beverly Harbor GRP Deployment Exercise

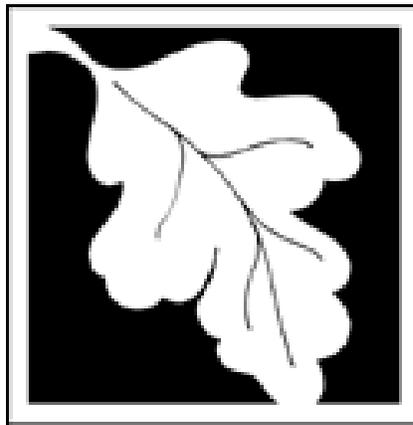
**Salem/Beverly Harbor Geographic Response Plan  
Deployment Exercise**

May 16, 2012

Draft

**AFTER ACTION  
REPORT/IMPROVEMENT PLAN**

June 2012



---

Draft



## HANDLING INSTRUCTIONS

1. The title of this document is the Massachusetts Department of Environmental Protection Salem/Beverly Harbor Oil Spill Boom Deployment Exercise
2. The information gathered in this AAR/IP is unclassified
3. Points of Contact:

State POC:

Rich Packard  
Program Manager  
MassDEP Oil Spill Prevention and Response Program  
20 Riverside Drive  
Lakeville, MA 02347  
508.946.2856 (office)  
[Richard.Packard@state.ma.us](mailto:Richard.Packard@state.ma.us)

[Federal POC:]

LTJG Douglas Mansell  
USCG Sector Boston  
427 Commercial St.  
Boston, MA 02109  
617-223-3010 (office)  
[Douglas.A.Mansell@uscg.mil](mailto:Douglas.A.Mansell@uscg.mil)

Exercise Facilitators:

Elise DeCola, Operations Manager  
Mike Popovich, Project Manager  
Nuka Research and Planning Group  
10 Samoset Street  
Plymouth, MA 02360  
508.454.4009 (cell)  
[elise@nukaresearch.com](mailto:elise@nukaresearch.com)

**Draft**

**Homeland Security Exercise and Evaluation Program (HSEEP)  
After Action Report/Improvement Plan      Massachusetts Department of Environmental Protection  
(AAR/IP)      Salem/Beverly Harbor GRP Deployment Exercise**

---

This page is intentionally blank.

## CONTENTS

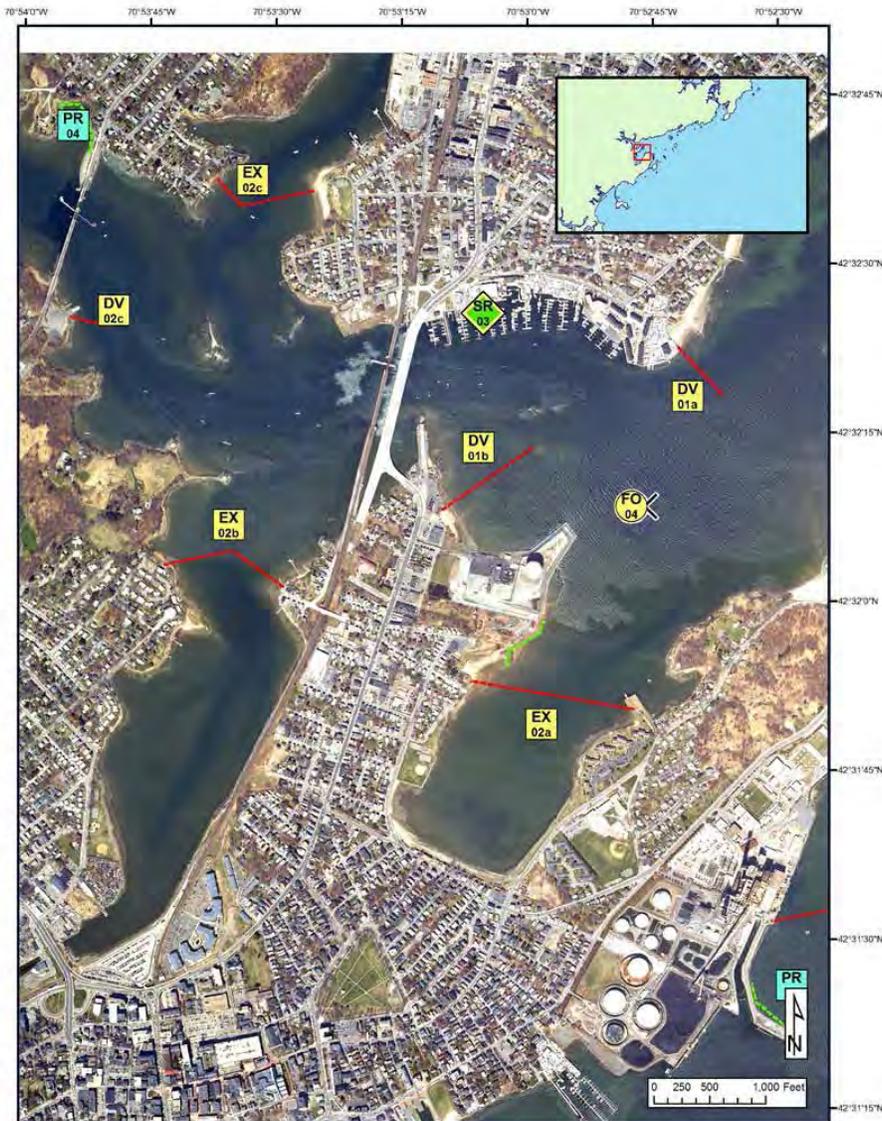
<b>Handling Instructions .....</b>	<b>1</b>
<b>Contents .....</b>	<b>3</b>
<b>Executive Summary .....</b>	<b>5</b>
Major Strengths.....	9
Primary Areas for Improvement .....	9
<b>Section 1: Exercise Overview .....</b>	<b>10</b>
Exercise Details .....	10
Exercise Planning Team .....	11
<b>Section 2: Exercise Design Summary .....</b>	<b>14</b>
Exercise Purpose and Design.....	14
Exercise Objectives, Capabilities, and Activities .....	14
<b>Section 3: Analysis of Capabilities.....</b>	<b>19</b>
Capability 1: Planning.....	19
Capability 2: Communications .....	20
Capability 3: Community Preparedness and Participation .....	22
<b>Section 4: Conclusion.....</b>	<b>26</b>
<b>Appendix A: Improvement Plan .....</b>	<b>27</b>
Improvement Plan Matrix .....	27
<b>Appendix B: Lessons Learned.....</b>	<b>29</b>
Exercise Lessons Learned.....	29
<b>Appendix C: Exercise Evaluation Form .....</b>	<b>31</b>
<b>Appendix D: Exercise Events Summary Table.....</b>	<b>32</b>
Schedule of Events.....	32
<b>Appendix E: Acronyms.....</b>	<b>33</b>
Acronym Table .....	33



## EXECUTIVE SUMMARY

The Massachusetts Department of Environmental Protection Salem/Beverly Harbor Geographic Response Plan (GRP) Deployment Exercise occurred on May 16, 2012. The goal was to deploy a closed chevron exclusion booming array, utilizing as many responders as possible from three Northeast region towns (Salem, Beverly, and Danvers) to exercise the existing North Shore Geographic Response Plan NS-24 developed for Salem/Beverly Harbor (See Figure 1) and provide hands-on experience for oil spill first responders.

Figure 1. Salem/Beverly Harbor GRP (NS-24)



Homeland Security Exercise and Evaluation Program (HSEEP)  
After Action Report/Improvement Plan Massachusetts Department of Environmental Protection  
(AAR/IP) Salem/Beverly Harbor GRP Deployment Exercise

---

The Massachusetts Department of Environmental Protection (MassDEP) GRP Program exercise at Salem/Beverly Harbor was developed to exercise local area first responder's Inter-Agency Planning and Coordination, Resource Coordination, and Local Oil Spill Preparedness capabilities. The exercise planning team was composed of several agencies, including the Salem Fire Department, the Salem Harbormaster Department, Salem Department of Emergency Management, the Beverly Fire Department, the Beverly Harbormaster Department, the Danvers Fire Department, the Danvers Harbormaster Department, Beverly Emergency Management Department, Massachusetts Department of Environmental Protection, NERAC, and Nuka Research and Planning Group (See Figure 2).

In preparation for this exercise, Initial, Mid-Term, and Final Planning Conferences were held.

The Initial Planning Conference (IPC) was held on March 15, 2012 at Winter Island Park Hall in Salem, MA. A Mid-Term Planning Conference (MPC) was held on May 2, 2012 at the Beverly Emergency Management Building in Beverly, MA. A Final Planning Conference (FPC) was held via teleconference on May 14, 2012.

During the course of the IPC the exercise planning team discussed and determined:

- Exercise scope
- Exercise objectives
- Design requirements and conditions including:
  - Timing of the exercise in relation to tidal schedule
  - Potential use of an oil surrogate to simulate spilled oil and determine efficacy of the booming strategy

During the MPC, the exercise planning team further refined the exercise tasks and objectives and determined:

- Exercise scenario and schedule
- Manpower and vessel needs
- Logistical issues including identification of staging and field locations.
- Administrative and documentation requirements and assignments.

During the FPC, a comprehensive review of all exercise objectives was conducted as well as detailed, final discussions to review logistics and resolve all open issues.

Based on the exercise planning team's deliberations, the following objectives were developed for the Salem/Beverly Harbor site:

- Objective 1: Foster Inter-Agency Planning and Coordination by providing the opportunity for local responders to work with Federal (USCG) and State (MADEP) responders to plan for and deploy a GRP protective booming tactic during a simulated incident (Figure 2).

Homeland Security Exercise and Evaluation Program (HSEEP)  
 After Action Report/Improvement Plan Massachusetts Department of Environmental Protection  
 (AAR/IP) Salem/Beverly Harbor GRP Deployment Exercise

- Objective 2: Promote Resource Coordination among local responders by coordinating use of assets from all three towns and from NERAC cache. (See Table 1 and Figure 3).
- Objective 3: Improve local Oil Spill Preparedness by deploying equipment from the trailer, providing participants hands-on experience mobilizing and demobilizing boom in the field, and providing an opportunity to evaluate the effectiveness of the booming tactic and identify any modifications necessary (See Figure 4).

Beverly	Danvers	Salem	NERAC	MADEP
Spill Response Trailer	HM Vessel (19')	Spill Response Trailer	Cache Trailer	Spill response trailers
Marine 1 (vessel)	Vessel (12')	HM Vessel	Wireless Router	
Fire Vessel (12')		Portable Radios	Computers	
HM Vessel (27')			WebEOC	
			Tents	

Table 1: Assets Supplied for Exercise by Town/Agency

The exercise objectives focused on inter-agency coordination and resource coordination for the purpose of improving initial response capacity to oil spills in the towns of Salem, Beverly, and Danvers.

Figure 2. Participants Gathered During Initial Operations Briefing



Photo Courtesy of Massachusetts Task Force 1 (MATF)

Figure 3. NERAC Cache Trailer



Photo Courtesy of MATF

Figure 4. Staging Area/Boat Ramp



Photo courtesy of MATF

The purpose of this report is to analyze exercise results, identify strengths to be maintained and built upon, identify potential areas for further improvement, and support development of corrective actions.

## Major Strengths

The major strengths identified during this exercise are as follows:

- Local agencies worked together to achieve objectives.
- Local responders demonstrated ability to adapt and modify IAP as necessary to safely meet objectives.
- Assets from all three communities and from NERAC were integrated effectively to support the exercise objectives.
- Clear, concise, and effective communications.

## Primary Areas for Improvement

The primary areas for improvement identified during this exercise, including recommendations, are as follows:

- First responders would benefit from additional opportunities to practice boom deployment in a variety of environmental conditions.
- Responders should limit amount of boom to be towed to a manageable amount, especially when maneuvering in channels and congested areas.
- Because most exercise participants in these GRP exercises are first responders (i.e. firefighters), and as such have volatile schedules and watch rotations, it is difficult to ascertain ahead of time the exact number (and experience level) of participants that will participate in each exercise. This often results in a great deal of time spent (sometimes during the Operations Brief) assigning personnel and resources, and completing the Incident Action Plan filling ICS positions in order to meet all exercises objectives. Additionally, each exercise timeline is fairly limited due to either weather or tidal variables that inherently limit the time available on any given day to complete these deployments. When possible, every effort should be made to allow exercise facilitators to meet immediately prior to exercise commencement, and ideally prior to exercise participants' arrival to compile a list of available participants and make assignments prior to commencement of the exercise.

Overall, the exercise was successful in providing an opportunity for first responders to deploy boom and strengthen inter-agency participation. Future exercises will be beneficial in strengthening local first responders skill in deploying oil spill containment boom and will provide additional opportunities for inter-town and state (MA DEP, NERAC) coordination.

## SECTION 1: EXERCISE OVERVIEW

### Exercise Details

**Exercise Name**

Massachusetts Department of Environmental Protection Salem/Beverly Harbor GRP Deployment Exercise

**Type of Exercise**

Functional Exercise

**Exercise Start Date**

May 16, 2012

**Exercise End Date**

May 16, 2012

**Duration**

5 hours

**Location**

The exercise in-briefing took place at the McCabe Marina parking lot, with the exercise following at the boat ramp and on the Bass River, in the city of Salem, MA.

**Sponsor**

The Massachusetts DEP was the sponsor of the exercise, with input from the participating towns, NERAC, and the U.S. Coast Guard and facilitation by Nuka Research and Planning Group, LLC (contractor to MassDEP).

**Program**

Massachusetts GRP Exercise Program

**Mission**

This exercise was designed to provide an opportunity for participants to practice protective booming of a sensitive area in response to a simulated oil spill.

**Capabilities**

Planning, Communications, Community Preparedness and Participation

**Scenario Type**

The scenario is a simulated oil spill in Beverly Harbor.

## Exercise Planning Team

- Rich Packard, facilitator  
MADEP  
508-946-2856  
[Richard.Packard@state.ma.us](mailto:Richard.Packard@state.ma.us)
- Elise DeCola, facilitator  
Nuka Research and Planning Group  
508-454-4009  
[elise@nukaresearch.com](mailto:elise@nukaresearch.com)
- Chief Dave Cody  
Salem Fire Department  
978-744-6990  
[dcody@salem.com](mailto:dcody@salem.com)
- Bill McHugh  
Salem Harbormaster  
978-741-0098  
[wmchugh@salempd.net](mailto:wmchugh@salempd.net)
- Dennis Levasseur  
Salem Department of Emergency Management  
978-744-3936  
[dlevasseur@salem.com](mailto:dlevasseur@salem.com)
- Robert W. Atherton, Jr.  
Beverly Fire Department  
978-479-2212  
[ratherton@beverlyfire.org](mailto:ratherton@beverlyfire.org)
- Chief Kevin Farrell  
Danvers Fire Department  
978-762-0245  
[kfarrell@mail.danvers-ma.org](mailto:kfarrell@mail.danvers-ma.org)
- Christopher Sanborn  
Danvers Harbormaster  
978-962-0210  
[csanborn@mail.danvers-ma.org](mailto:csanborn@mail.danvers-ma.org)

Draft

Homeland Security Exercise and Evaluation Program (HSEEP)  
After Action Report/Improvement Plan    Massachusetts Department of Environmental Protection  
(AAR/IP)    Salem/Beverly Harbor GRP Deployment Exercise

---

- Mark Foster  
Beverly Emergency Management  
978-922-5680  
[mfooster@beverlyma.gov](mailto:mfooster@beverlyma.gov)

## Participating Organizations

Participating organizations included:

- Beverly Harbormaster Department
- Beverly Fire Department
- Beverly Emergency Management Agency
- Danvers Harbormaster Department
- Danvers Fire Department
- Massachusetts Department of Environmental Protection
- Massachusetts Environmental Police
- Metropolitan Area Planning Council
- Moran Environmental Recovery
- Northeast Homeland Security Regional Advisory Council
- Nuka Research and Planning Group.
- Salem Fire Department
- Salem Harbormaster Department
- Salem Department of Emergency Management
- United States Coast Guard Sector Boston

### Number of Participants

- Players: 27
- Controllers: 1
- Facilitators: 3
- Observer/Evaluators: 7

## SECTION 2: EXERCISE DESIGN SUMMARY

### Exercise Purpose and Design

Geographic Response Plans (GRP) are tactical oil spill response plans tailored to protect a specific sensitive area from impacts following a spill. GRPs are developed by collaborative work groups that include local, state, and federal agencies, natural resource organizations, spill response organizations, and the oil industry. GRPs are incorporated into the state/federal Area Contingency Plans for oil spill and hazardous materials response. The Area Contingency Plan implements the National Contingency Plan and aligns with the National Response Framework. Once the GRPs have been published in the Area Plan, the next step in the planning and preparedness process involves exercising the GRPs to (1) field verify the resources and tactics identified in the GRP and (2) provide an opportunity for local responders to practice deploying spill response equipment utilizing an ICS framework.

The MassDEP GRP Exercise Program is currently in the fourth year of field exercises involving local fire, harbor, police, shellfish, and emergency management personnel along with state and federal agencies (Mass Division of Marine Fisheries, U.S. Coast Guard, Mass Environmental Police, National Oceanic and Atmospheric Administration). The exercise design, facilitation, planning, and reporting are funded by MassDEP. Participating towns may receive grant funding to cover overtime and backfill costs. These exercises are designed to examine the strategies and provide experience to the responders.

### Exercise Objectives, Capabilities, and Activities

Capabilities-based planning allows for exercise planning teams to develop exercise objectives and observe exercise outcomes through a framework of specific action items that were derived from the Target Capabilities List (TCL). The capabilities listed below form the foundation for the organization of all objectives and observations in this exercise. Additionally, each capability is linked to several corresponding activities and tasks to provide additional detail.

Based upon the identified exercise objectives below, the exercise planning team decided to demonstrate the following capabilities during this exercise:

- **Objective 1:**
  - **Planning:**
    - Successfully demonstrate the ability to plan and coordinate a multi-town/multi-jurisdictional exercise
      - Initial, Mid-Term, and Final Planning Conferences as outlined above under Executive Summary.

- **Objective 2:**
  - **Communications:**
    - Assign Command (Salem FD Channel 2) and Operational (Marine Channel 5) frequencies;
    - Supply radios as needed to support interoperable communications; and
    - Communicate effectively during drill between shoreside/on-water responders and IC.
- **Objective 3:**
  - **Community Preparedness and Participation:**
    - Simulate incident; assign responders;
    - Develop IAP;
    - Use WebEOC to post incident updates;
    - Integrate NERAC cache trailer, computers, wireless router, tents, and weather station;
    - Deploy boom; and
    - Demobilize boom.

## Scenario Summary

The scenario was a simulated oil spill in Beverly Harbor that migrates toward the Danvers River and into the Bass River. Local responders from the Salem Fire Department, the Beverly Fire Department, the Danvers Fire Department, Salem Harbormaster Department, Salem Department of Emergency Management, Beverly Harbormaster Department, and the Danvers Harbormaster Department were directed by the IC (Salem Fire Chief) to deploy tactic EX-02c from GRP NS-24 (Figure 1). The IC utilized WebEOC via a NERAC cache trailer and computers. The Exercise Design Team developed an Incident Action Plan (IAP), which was utilized during the exercise. A safety officer from the Massachusetts Environmental Police was assigned and after initial safety and operations briefings, the field responders transported, deployed, evaluated, demobilized, and stored the boom and anchors used in the exercise (See Figures 5-8). Peat moss was deployed as an oil surrogate to evaluate the boom effectiveness. Professional spill responders from Moran Environmental and the U.S. Coast Guard provided assistance and direction to the town responders. Personnel from Nuka Research and MassDEP acted as facilitators, providing direction, answering questions, and managing the exercise timetable.

Figure 5. Deploying Initial Boom Segments from MassDEP Trailer



Photo courtesy of Nuka Research and Planning Group

Figure 6. Deploying Shoreside Anchor for West Leg of EX-02c



Photo Courtesy of NERAC

Figure 7. Boom Collecting Surrogate (peat moss)



Photo Courtesy of MATF

Figure 8. Multiple Town Agencies Work Together to Deploy oil spill Containment Boom



Photo courtesy of Nuka Research and Planning Group



## SECTION 3: ANALYSIS OF CAPABILITIES

This section of the report reviews the performance of the exercised capabilities, activities, and tasks. In this section, observations are organized by capability and associated activities. The capabilities linked to the exercise objectives of the Salem/Beverly Harbor GRP Deployment Exercise are listed below, followed by corresponding activities. Each activity is followed by related observations, which include references, analysis, and recommendations.

### Capability 1: Planning

**Capability Summary:** The Planning capability was implemented during pre-exercise planning conferences and during the functional exercise. The capability required Fire Chiefs and local officials from Salem, Beverly, and Danvers to identify objectives, select an exercise location, select a GRP tactic to be tested, and assign manpower, vessels, and other resources to support the exercise. Effective pre-planning led to a successful exercise.

**Activity 1.1:** Initial and Mid-Planning Conferences to discuss site selection, exercise objectives and other issues outlined above in the Executive Summary.

**Observation 1.1:** Strength: Representatives from all communities worked well together, offering suggestions and weighing the merit of each before accepting or rejecting them and providing alternatives.

**References:** Homeland Security Exercise and Evaluation Program, Volume II, February 2007

**Analysis:** Town-level objectives were well aligned and exercise design proceeded smoothly. It was evident that Salem, Beverly, and Danvers participate in other joint exercises and operations, which simplified planning and coordination efforts. All fire and harbor departments committed manpower and vessels to the exercise. There was agreement that the exercise should provide an opportunity for broad participation by as many local responders as possible.

**Recommendations:** Consider future joint oil spill response exercises, possibly involving other towns or agencies.

**Activity 1.2:** Mid-Term and Final Planning Conferences to assign manpower and equipment, work through exercise logistics, and additional activities outlined above in the Executive Summary.

**Observation 1.2:** Strength: All communities coordinated the integration of town equipment, vessels, and manpower with NERAC assets. Task Forces were comprised of first

responders from different towns and departments allowing for coordination among towns and agencies, and created a training environment that fostered mentoring between responders with varying levels of experience.

**References:** N/A

**Analysis:** Logistical pre-planning led to a smooth exercise. Each community supplied vessels, equipment and responders, providing an opportunity to work together in a task force setting with mixed crews from all towns. NERAC assets supported the exercise on many levels.

**Recommendations:** Continue to periodically test GRPs and conduct exercises using spill response equipment and multi-jurisdictional approach.

## Capability 2: Communications

**Capability Summary:** On-water spill response operations require a common tactical communications capability so that responders from multiple agencies can work together safely and effectively on the water and shoreline, and so that the Incident Command can maintain situational awareness of tactical operations.

**Activity 2.1:** Assign Communications Channels:

- Command (Salem FD Channel 2)
- Operational (Marine Channel 5)

### Observation 2.1:

Strength: The assignment of a separate command and operations frequency was beneficial in that it allowed clear and separate communications between command and operational task forces without undue chatter between command personnel and responders. Assignment of Command frequency allowed IC to communicate directly with Operations Section Chief who then relayed tasking to on-water and shore-side task forces. Responders from Beverly, Danvers, and other agencies were assigned handheld radios by Salem Fire as needed.

**References:** N/A

**Analysis:** All participants maintain good radio discipline minimizing radio “chatter” and confining radio communications to essential information. This practice was evident throughout the exercise, during which Incident Command as well as exercise facilitators monitored radio communications and observed that while the responders communicated key information needed to deploy the boom, they did so quickly, succinctly, and without undue extraneous chatter.

**Recommendations:** Continue to observe good radio practices and utilize separate channels for IC and Tactical Ops.

**Activity 2.2:** Future exercises to reinforce good practices.

**Observation 2.2:**

Strength: The Town of Salem recognized the need for portable radios for Beverly and Danvers responders, due to the fact that Tactical Marine Channel 2 was unavailable to them, and provided these to vessels and shoreside responders.

**References:** N/A

**Analysis:** The assignment and tracking of radios for interoperable communications provided a workable solution to address the fact that although the three towns do share tactical frequencies among their UHF radios, the channel used by the IC (Salem Fire Channel 2) was not shared. There were plenty of handheld radios available to ensure that all crews (vessel and shore) could communicate with the IC, Operations Chief, Safety Officer, and exercise facilitators. There was also a communication link to the mobile command vehicle.

**Recommendations:** None

**Activity 2.3:** Communicate Effectively During Drill Between On-Water/Shoreside Responders and IC.

**Observation 2.3:**

Strength: Incident Command shared information concisely and clearly between responders on vessels and shoreside. NERAC set up their trailer and the IC utilized WebEOC to update information during the exercise.

**References:** N/A

**Analysis:** Common operational practices among the three fire departments and the use of a separate channel (to minimize unnecessary radio chatter) helped to ensure that radio communications were streamlined and effective. Incident Command and Safety Officer maintained good situational awareness throughout the exercise.

**Recommendations:** None

### Capability 3: Community Preparedness and Participation

**Capability Summary:** MassDEP has developed a community-based oil spill response capacity throughout coastal regions of the state by providing oil spill response equipment trailers to local fire departments, developing GRPs (tactical plans to protect sensitive areas from oil spill impacts), and providing initial training to local first responders. This functional exercise provided a key link by allowing first responders from the communities of Salem, Beverly, and Danvers to work together in a task force setting to exercise their ability to deploy boom from a state spill response trailer during a mock oil spill. The community-based spill response program requires that towns be able to work together, since a major oil spill may require significant mutual aid and assistance. This field exercise provided a realistic scenario for the communities to work together to improve their spill response capacity.

#### Activity 3.1: Simulate Incident; Assign Responders

##### Observation 3.1:

Strength: Participants from both towns were assigned by the Incident Commander (IC) to on-water or shoreside task forces. Task forces were intentionally configured to include participants from different towns and departments to promote inter-jurisdictional cooperation (See Figure 9).

**References:** N/A

**Analysis:** The process of assigning responders to various task forces provided an opportunity for the departmental leadership to consider the strengths and abilities of their responders for various spill response functions. Responders were assigned either to vessels or to shore teams. Each team was comprised of responders from each participating community to promote interagency coordination. The Salem Fire Chief acted as IC, while the representative from the Massachusetts Environmental Police acted as Safety Officer.

**Recommendations:** None

Homeland Security Exercise and Evaluation Program (HSEEP)  
 After Action Report/Improvement Plan Massachusetts Department of Environmental Protection  
 (AAR/IP) Salem/Beverly Harbor GRP Deployment Exercise

Figure 8. Salem/Beverly Harbor Exercise Assignment List

DIVISION ASSIGNMENT LIST		1. Branch	2. Division/Group				
3. Incident Name SALEM/BEV/BEV SPAUL		4. Operational Period Date: 16 MAY 2012 Time:					
5. Operations Personnel							
Operations Chief/IC COOT		Division/Group Supervisor					
Branch Director		Air Attack Supervisor No.					
6. Resources Assigned this Period							
Strike Team/Task Force/Resource Designator	Leader	Number Persons	Trans. Needed	Drop Off PT/Time	Pick Up PT/Time		
BEV 27	QUELETTE						
UNIT 18	MULLIGAN						
DIVERS 19	SALBORE						
DIVERS 12	LONDO						
BEV 12	GRANT						
MARINE 1	QUERON						
7. Control Operations							
BEV 27	UNIT 18	DIV 19	DIV 12	BEV 12	SHORE 1		
QUELETTE DUPONT	MULLIGAN DOLINE BRACO	SALBORE CROSER	JULIAN LONDO	GRANT GLEN	DONEY REYVIN		
8. Special Instructions							
SHORE 2 MARINE 1 QUERON DECOR BIDEOUT USCG REDFORD DILEY							
9. Division/Group Communication Summary							
Function	System	Grp/Channel	Frequency	Function	System	Grp/Channel	Frequency
Command		2		Support			
CPS		5					
BEV		WEB BOX					
Prepared by (RESL)		Approved by (PSC)		Date		Time	

**Activity 3.2:** Use WebEOC to capture exercise in real-time.

**Observation 3.2:**

Strength: The IC, using NERAC assets (computers and WebEOC/internet) to assist, updated the chronology of the exercise on the web in real time.

**References:** N/A

**Analysis:** The simulated oil spill gave the IC an opportunity to work with assets provided by NERAC, to gather information, review, edit and clarify, and create a living document.

**Recommendations:** None

**Activity 3.3:** Integrate NERAC cache trailer, computers, wireless router, tents, and weather station;

**Observation 3.3:**

Strength: Trailer was set up at staging site and NERAC representatives used assets including laptop computers, wireless router, and dedicated weather monitor. NERAC tents were used as shelter for participants.

**References:** N/A

**Analysis:** NERAC representatives coordinated well with Incident Command and Safety Officer to consolidate and record information. WebEOC link allowed for real-time updates into the MEMA information system regarding the exercise. The availability of laptop computers with wireless internet allowed for the assignment of a dedicated person to monitor weather conditions and protect responder safety, as the weather forecast included a small threat of thunderstorms. NERAC tent was useful for participant comfort. The exercise afforded an opportunity for state, federal and local responders to appreciate the NERAC assets, and for Mass. Task Force 1/NERAC officials to observe the capabilities available through the Mass Coastal Oil Spill Program.

**Recommendations:** Recommend utilizing NERAC assets to the maximum extent practicable during all future MA DEP GRP exercises and training evolutions.

**Activity 3.4:** Deploy Boom

**Observation 3.4:**

Strength: Vessel and shore-based Task Forces worked well together to implement the booming tactic under challenging environmental conditions. Peat moss was deployed as a surrogate to demonstrate boom's capacity to hold floating oil.

**References:** N/A

**Analysis:** The primary objective of GRPs is to deploy boom ahead of an oil spill to prevent or reduce negative impacts to environmentally sensitive areas. Successful deployment of GRP booming tactics requires that the boom be effectively anchored and positioned so that it would divert, deflect, or exclude oil from the sensitive area. The chevron exclusion boom configuration for Bass River was successfully deployed by three vessel crews and two responders launched from vessels to shore, despite the fact that the current in the channel and an ebbing tide made conditions somewhat challenging. Vessel-based responders coordinated their activities towing, anchoring, and positioning boom and worked well together throughout. While responders from some towns practice boom deployment regularly, others had very limited experience. Even the experienced teams had typically not worked with more than 400 feet of boom at one time. This exercise provided the chance to deploy longer boom arrays and highlighted the challenges of towing longer sections of boom.

A surrogate was deployed once boom was in place to evaluate its effectiveness.

**Recommendations:** Conduct future GRP deployment exercises to keep boom deployment skills current and to test GRP strategies at other locations. Improve boom deployment and tending skills by deploying existing GRPs that call for and incorporate longer boom arrays in different configurations and tending throughout the tide. Deployment of longer boom arrays and those that are relatively more complex (cascade arrays) should not be confused with towing longer sections of boom; a practice that is discouraged. For towing purposes, both due the relatively small size of vessel used by local first responders, harbor masters and others, and due to relative lack of boom towing experience amongst first responders, it is recommended that boom segment be kept between 200-400 ft. Utilization of surrogate(s) to assess boom effectiveness should be incorporated as much as practicable in future exercises.

### Activity 3.5: Demobilize Boom

#### Observation 3.5:

Strength: On water responders towed the boom to the boat ramp where participants who had previously been observing took on the role of rinsing and stowing the boom

**References:** N/A

**Analysis:** Demobilization of boom can be time-consuming and tedious. Responders worked well throughout this process, showing strong teamwork.

**Recommendations:** The same practice of towing shorter segments of boom should be followed for demobilization as it is for deployment. While demobilization during these types of exercises tends to take place at the end of sometimes very long training days, it is important to ensure that boom towing is done in a deliberate manner with good situational awareness, to avoid potential navigation safety issues.

## SECTION 4: CONCLUSION

The exercise was successful on many levels. The GRP closed chevron tactic was deployed as intended, and found to be an effective tactic for excluding oil from the Bass River. The three communities worked together seamlessly. The boom deployment was accomplished quickly and safely despite rain and challenging tidal current conditions. The staging area provided adequate space and the responders were able to effectively use available resources to support the deployment.

The GRP deployment exercise at Salem/Beverly Harbor was held in challenging weather conditions during an ebb tide, yet these conditions did not impede the ability of responders to successfully deploy the boom. The group demonstrated the capability to assign participants to various roles, including Incident Commander, Operations Officer, Safety Officer, vessel-based and shore responders, task forces, and observers. Equipment from the Salem and Beverly Oil Spill Response trailers was deployed from vessels provided by Danvers and Beverly, and participants became more familiar with deploying, setting, and demobilizing boom, anchors, and floats. The Incident Command communicated effectively and clearly with both vessel-based and shore-based responders, while NERAC set up a trailer with wireless access to WebEOC which allowed real-time posting as the exercise progressed. Interagency communications were successful, using Salem Fire's portable VHF radios and available tactical/ops channels.

Lessons learned from this exercise included but were not limited to:

- Responders were able to work well in task force setting that mixed responders from both towns.
- The NERAC assets supported real-time flow of information both in posting updates and receiving weather alerts.
- Shorter boom segments are easier to tow for inexperienced personnel and in an area congested with moorings and other vessels.
- Due to strong tidal currents in the channel, consider using rebar to support shoreside anchors.
- The McCabe Marina boat ramp is a good staging area.



**Draft**

This page is intentionally blank.

## APPENDIX B: LESSONS LEARNED

While the After Action Report/Improvement Plan includes recommendations which support development of specific post-exercise corrective actions, exercises may also reveal lessons learned which can be shared with the broader homeland security audience. The Department of Homeland Security (DHS) maintains the *Lessons Learned Information Sharing* (LLIS.gov) system as a means of sharing post-exercise lessons learned with the emergency response community. This appendix provides jurisdictions and organizations with an opportunity to nominate lessons learned from exercises for sharing on *LLIS.gov*.

For reference, the following are the categories and definitions used in LLIS.gov:

- **Lesson Learned:** Knowledge and experience, positive or negative, derived from actual incidents, such as the 9/11 attacks and Hurricane Katrina, as well as those derived from observations and historical study of operations, training, and exercises.
- **Best Practices:** Exemplary, peer-validated techniques, procedures, good ideas, or solutions that work and are solidly grounded in actual operations, training, and exercise experience.
- **Good Stories:** Exemplary, but non-peer-validated, initiatives (implemented by various jurisdictions) that have shown success in their specific environments and that may provide useful information to other communities and organizations.
- **Practice Note:** A brief description of innovative practices, procedures, methods, programs, or tactics that an organization uses to adapt to changing conditions or to overcome an obstacle or challenge.

### Exercise Lessons Learned

The entire MA DEP GRP development and testing program should be considered a best practice as it provides a model for other states to follow. This program is unlike any other in the country in that it provides a comprehensive method to:

- Develop and test Geographic Response Plans for oil spills
- Train first responders on boom deployment basics as well as specific GRP tactics

Additionally, MADEP:

- Provides equipment in the form of pre-positioned and fully stocked pollution response trailers that are assigned to select Massachusetts coastal communities
- Provides long-term maintenance and support of the equipment via a maintenance and equipment replacement program

This program has proven highly successful and garnered praise from the international community. In 2011, MADEP and Nuka Research and Planning Group, (the contractor



## APPENDIX C: EXERCISE EVALUATION FORM

<b>Beverly Harbor/Salem GRP Exercise (NS-24)</b>	<b>Test date: 05/16/12</b>
Instructions to Evaluators: Complete this form based on your observations of the GRP exercise.	
Evaluator Name:	Evaluator Organization:
What was your role in exercise? (responder, observer, facilitator, 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 GRPs 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 GRP 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 parking lot at McCabe Marina 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 GRP document (map diagram) provide clear direction as to how and where to deploy the boom? If not, please identify problems & suggest improvements.	

## APPENDIX D: EXERCISE EVENTS SUMMARY TABLE

### Schedule of Events

Time	Event	Location/Details
8:30	Meet for briefing and review	McCabe Marina parking lot, Command Post (tent). Will present scenario, assign personnel, review protective booming and equipment, and develop an Operational Plan and Comms Plan.
9:00	Group safety briefing and trailer review	McCabe Marina boat ramp. Safety briefing and review of equipment in Salem, Beverly, and Danvers trailers. Review assignments for deployment.
9:15	Deploy EX-02c. Leave boom in place to evaluate anchor holding	Load boom to vessels from trailer at boat ramp. Responders will deploy boom as drawn in plan. Other task forces and observers/evaluators will watch from shore.
10:30	Evaluate EX-02c. Deploy surrogate	Responders will deploy peat up-current and up-wind of exclusion boom if tide/wind conditions appropriate.
10:45	Demobilize EX-02c	Break down boom and tow back to dock, or to EX-02b deployment site, depending upon timing and direction of IC.
11:00	Deploy EX-02b.	Responders will deploy boom as drawn in plan. Other task forces and observers/evaluators will watch from vessels/shore.
11:45	Evaluate EX-02b	Deploy peat up-wind and up-current if appropriate/time permitting.
12:00	Demobilize EX-02b	Remove boom and anchors, rinse & store boom in trailer.
12:15	Debrief	Reconvene at McCabe Marina parking lot for debrief.
12:30	Adjourn	

#### Tides (Salem Harbor) May 16

High 1		Low 1		High 2		Low 2	
8:52	8.5 ft	2:34	1 ft	21:14	9.2 ft	14:51	0.2 ft

## APPENDIX E: ACRONYMS

### Acronym Table

AAcronym	Meaning
EX	Exclusion booming
FPC	Final Planning Conference
GRP	Geographic Response Plan
IAP	Incident Action Plan
IPC	Initial Planning Conference
IC	Incident Command(er)
LL	Lessons Learned
MADEP(MassDEP)	Massachusetts Department of Environmental Protection
MAPC	Metropolitan Area Planning Commission
MATF	Massachusetts Task Force 1
MPC	Mid-Term Planning Conference
NERAC	Northeast Homeland Security Regional Advisory Council
TCL	Target Capabilities List
USCG	United States Coast Guard
VHF	Very High Frequency
WebEOC	Web Emergency Operations Centers software