

**North River (SS-06) Geographic Response Plan  
Deployment Exercise**

**September 24, 2013**

**AFTER ACTION  
REPORT/IMPROVEMENT PLAN**

**October 2013**



Massachusetts Department of  
Environmental Protection

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## HANDLING INSTRUCTIONS

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2. The information gathered in this AAR/IP is unclassified.
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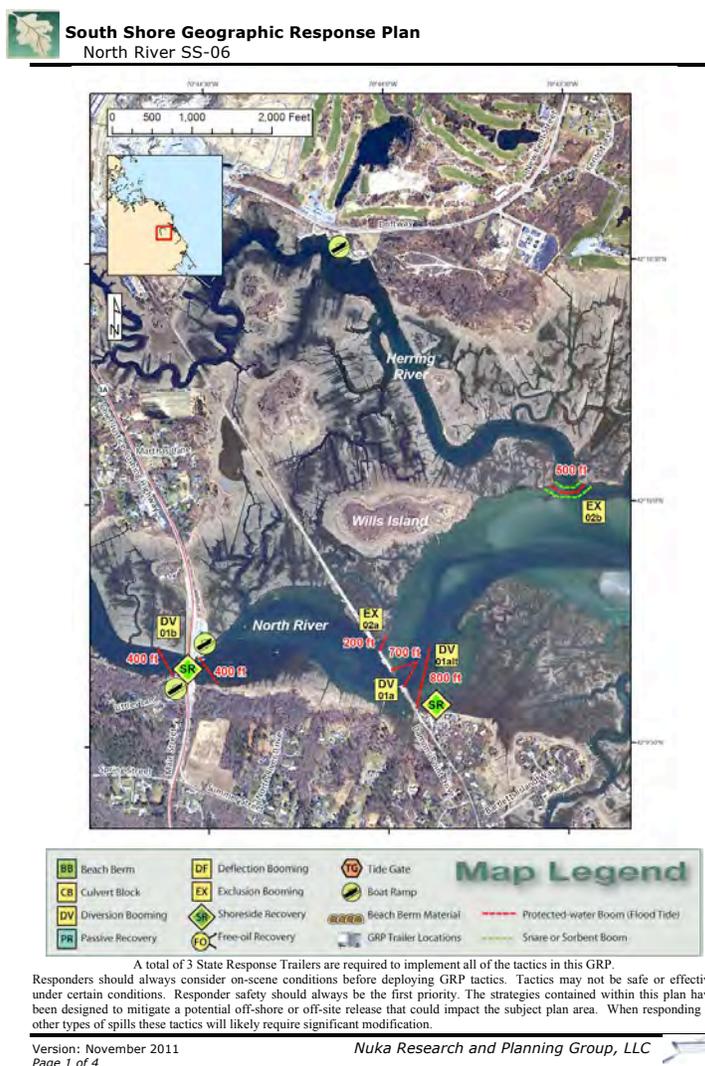
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## EXECUTIVE SUMMARY

The Massachusetts Department of Environmental Protection North River (SS-06) Geographic Response Plan (GRP) Deployment Exercise occurred on September 24, 2013. The goal was to deploy diversion booming arrays, utilizing as many responders as possible from three towns in the South Shore Region (Duxbury, Marshfield, Scituate) to exercise the existing South Shore Geographic Response Plan SS-06 developed for North River (Figure 1) and provide hands-on experience for oil spill first responders.

Figure 1. North River (SS-06)

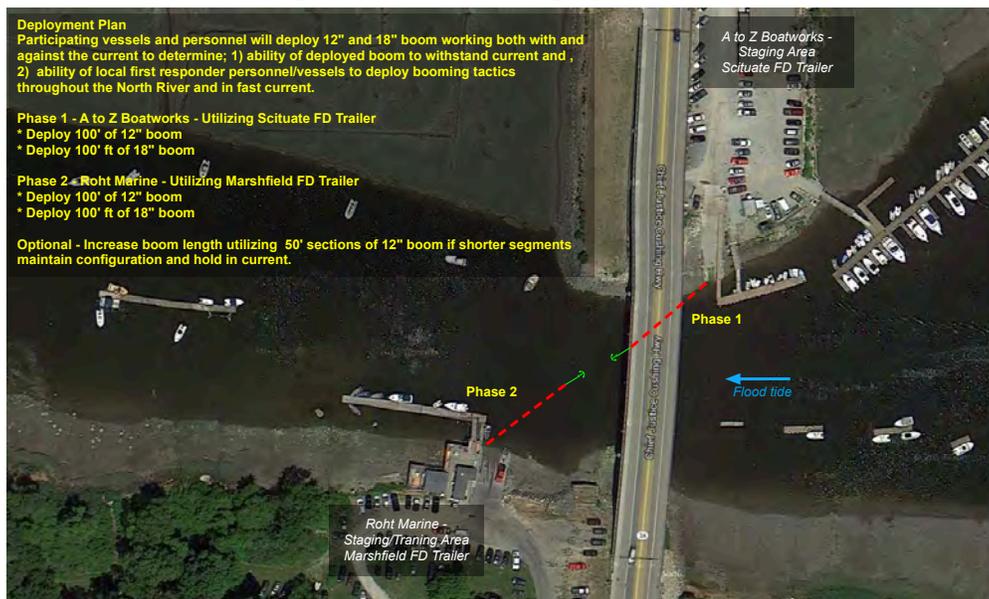




Note: During the development phase of this exercise, planners expressed concern over the ability to successfully deploy the recommended strategies depicted on the North River GRP (Figure 1) because of the high current speeds common throughout the North River during both ebb and flood tide. Following discussions between MassDEP, Nuka Research, Moran Environmental Recovery, and key Exercise Planning Team members, a decision was made to utilize this GRP Exercise as an opportunity to generally test different deployment arrays at the site of DV01b during flood tide to determine overall booming efficacy on the North River rather than to test a specific GRP strategy as is typically done. The exercise sponsor and EPT members determined that this approach would prove beneficial in providing valuable data to potentially revise and update all of the booming tactics and strategies contained on the North River (SS-06) GRP while still providing a useful training benefit for first responders. Based on this decision, a modified deployment plan was developed as depicted in Figure 2.

The exercise objectives focused on inter-agency coordination and resource coordination for improving initial response capacity to oil spills in the towns of Duxbury, Marshfield, and Scituate.

Figure 2. Modified Deployment Plan



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 tactics and strategies as necessary to safely meet objectives.
- Assets from all three communities were integrated effectively to support the exercise objectives. Additional support in way of the Mass. Department of Fire Services (DFS) Incident Support Unit (ISU) was requested to support inter-departmental communications during the exercise.
- Clear, concise, and effective communications.

## Primary Areas for Improvement

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

- Exercise Facilitators and the Exercise Planning Team should structure these GRP exercises in a way that provides a training benefit to First Responders who have never deployed oil spill containment boom before while at the same time incorporating ICS and incident management elements that allow first responders to direct certain aspects of exercise activity utilizing the skills they already possess.
- Additional equipment (as part of standard trailer equipment) including anchor crown buoys and snap rings for connecting towing line and anchors to boom will benefit safer, faster, and easier boom deployment.
- Additional boom deployments and surrogate tests should be conducted to determine appropriate booming tactics and strategies on the North River. The North River GRP (SS-06) should be updated based on these tests.

Overall, the exercise was successful in providing an opportunity for first responders to deploy boom and strengthen inter-agency participation. Future exercises, both formally planned full-scale exercises as well as smaller inter and intra-departmental exercises and drills 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 coordination.

## SECTION 1: EXERCISE OVERVIEW

### Exercise Details

#### Exercise Name

Massachusetts Department of Environmental Protection North River (SS-06) GRP Deployment Exercise

#### Type of Exercise

Full Scale Exercise

#### Exercise Start Date

September 24, 2013

#### Exercise End Date

September 24, 2013

#### Duration

5 hours

#### Location

The exercise briefing took place at Roht Marine in the town of Marshfield, MA, with the field exercise following at Roht Marine in Marshfield, MA and A to Z Boat Works in Scituate, MA.

#### Sponsor

The MassDEP was the sponsor of the exercise, with input from the participating towns, the U.S. Coast Guard, the Southeast Regional Planning & Economic Development District (SRPEDD), and facilitation by Nuka Research.

#### Program

Massachusetts GRP Exercise Program

#### Mission

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

#### Capabilities

Planning, Communications, and WMD and Hazardous Materials Response and Decontamination.

#### Scenario Type

A tanker truck rollover has occurred on Route 3A Northbound and has resulted in a 3,000 gallon No. 2 fuel oil spill that threatens the North River, North & South River Estuary, and Rivermoor Habitat Park. While the scene has been stabilized and fire suppression measures have been taken, 7,000 gallons of fuel oil remains contained on the tank truck and due to its current condition, structural integrity is unknown and there is a potential for a catastrophic loss and discharge of the remaining fuel oil.

## Exercise Planning Team

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## Participating Organizations

Participating organizations included:

- Duxbury Fire Department
- Marshfield Fire Department
- Scituate Fire Department
- Marshfield Harbormaster
- Scituate Harbormaster
- Massachusetts Department of Environmental Protection
- Moran Environmental Recovery
- Roht Marine
- A to Z Boatworks
- Nuka Research and Planning Group, LLC
- United States Coast Guard Sector Boston

## Number of Participants

- Players: 44
- Controllers: 1
- Facilitators: 4
- Observer/Evaluators: 5

## 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 fifth 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 HSEEP grant funding to cover overtime and backfill costs.

The purpose of these exercises is twofold; 1) Test existing GRPs developed between 2009 and 2012 as part of the MassDEP GRP Program to determine their efficacy, and 2) Provide an opportunity for local first responders to improve skills utilizing the pre-positioned oil spill response equipment provided to them by MassDEP.

### Exercise Objectives, Capabilities, and Activities

Capabilities-based planning allows EPTs 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 EPT decided to demonstrate the following capabilities during this exercise:

- **Objective 1:** Foster Inter-Agency Planning and Coordination by providing the opportunity for local responders to work with Federal (USCG) and State (MassDEP) responders to plan for and deploy a GRP protective booming tactic during a simulated incident.
  - **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:** Promote Resource Coordination among local responders by coordinating use of assets from multiple towns.
  - **Communications:**
    - Assign common operating frequency for Command and Operations;
    - Supply radios as needed to support interoperable communications; and
    - Communicate effectively during drill between shoreside/on-water responders, the Incident Commander (IC), and exercise controllers and facilitators.
  
  - **Objective 3:** Improve local Oil Spill Preparedness by deploying equipment from one or more MassDEP provided Oil Spill Response trailers, providing participants hands-on experience mobilizing and demobilizing boom in the field.
    - **WMD and Hazardous Materials Response and Decontamination:**
      - Direct WMD and Hazardous Material Response and Decontamination Tactical Operations;
      - Demobilize WMD and Hazmat Response and Decontamination.

## Scenario Summary

The scenario involved a tank truck rollover that occurred on Route 3A Northbound and resulted in a 3,000 gallon No. 2 fuel oil spill that threatened the North River, North & South River Estuary, and Rivermoor Habitat Park. While this scenario was developed to generally provide an impetus for the exercise, the scenario specifics did not drive exercise play. The exercise objectives and the need to determine overall booming efficacy, as outlined in the Executive Summary above, dictated overall exercise play.

Local responders from the Duxbury, Marshfield, and Scituate Fire Departments, and the Marshfield and Scituate Harbormasters were directed by the exercise controller to deploy various lengths of 12- and 18-inch hard boom as depicted in Figure 2. Shore side personnel were divided into two Strike Teams with one operating from A to Z Boat Works on the North Shore and Roht Marine on the South Shore. Participating vessels launched both from A to Z Boat Works and Roht Marine. Safety officers from the Marshfield and Scituate Fire Departments were assigned (for North and South Shore operations), and after initial safety and operations briefings and hands-on equipment demonstration and familiarization (Figures 3-5), the field responders transported, deployed, evaluated, demobilized, and stored the boom and anchors used in the exercise (See Figures 6-13). An oil surrogate (oranges) was deployed to evaluate the effectiveness of the strategy as deployed. Professional spill responders from Moran Environmental Recovery provided assistance and direction to the town responders. Personnel from Nuka Research and MassDEP acted as controllers and facilitators, providing direction,

answering questions, and managing the exercise timetable.

After the boom was loaded back in the trailer, there was a post-exercise Hot Wash, during which participants were asked to share any insights learned during the exercise and/or any suggestions on modifications needed to successfully deploy the tactic. There was a group of observer/evaluators who observed part or all of the exercise and were asked to fill out evaluation forms. The observers included representatives from the Coast Guard, MassDEP, Roht Marine, Massachusetts Office of Coastal Zone Management, and members of the Duxbury, Marshfield, and Scituate Fire Departments.

Figure 3. Trailer-side GRP information session



Photo Courtesy of Nuka Research and Planning Group<sup>1</sup>

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<sup>1</sup> All photos in document courtesy of Nuka Research and Planning Group, LLC

Figure 4. Equipment Overview



Figure 5. Hands-On Equipment Familiarization



Figure 6. Overview of exercise site



Figure 7. Multiple Towns and Agencies Work Together to Deploy Oil Spill Containment Boom



Figure 8. Multiple Towns and Agencies Work Together to Deploy Oil Spill Containment Boom



Figure 9. Multiple Towns and Agencies Work Together to Deploy Oil Spill Containment Boom



Figure 10. Participants raising an anchor attached to Oil Spill Containment Boom



Figure 11. Oil Spill Booming Tactic deployed



Figure 12. Two sections of Oil Spill Containment Boom being deployed on the North River



Figure 13. Final Oil Spill Containment Boom formation on North River



<b>Duxbury</b>	<b>Marshfield</b>	<b>Scituate</b>	<b>Department of Fire Services</b>	<b>MassDEP</b>
FD Vessel - 18' parker	Spill Response Trailer	Spill Response Trailer	Mobile Incident Support Unit 3	Spill Response Trailers
FD – Fire/Rescue Ambulance	Engine/Pump Truck	HM Vessel – 21' Boston Whaler		Exercise facilitators
	Harbormaster Vessel - 31' SAFE Boat (Safety)			Spill response contractor/trainer
	Harbormaster Vessel - 19' Carolina Skiff			

Table 1: Assets Supplied for Exercise by Town/Agency

## 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 South Shore (SS-06) 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 full-scale exercise. The capability required Fire Chiefs and local officials from Duxbury, Marshfield, and Scituate 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. All fire or 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 including Harbormasters.

**Recommendations:** Consider future multi-jurisdictional oil spill response operations-based exercises, including drills and functional exercises.

**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 and integrated town equipment, vessels, and manpower. Multi-jurisdictional strike teams were assembled creating a training environment that fostered mentoring between responders with varying levels of experience.

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

**Analysis:** Logistical pre-planning led to a smooth exercise. Each community supplied vessels, equipment and responders, providing an opportunity to work together in a strike team setting with mixed crews from all towns.

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

### Observation 2.1:

Strength: While there were some minor communication issues early on relating to the use of ISU the crosspatch service, this capability proved to be effective in facilitating communication between UHF and VHF radios.

**References:** Homeland Security Exercise and Evaluation Program, Volume II, February 2007, National Incident Management System

**Analysis:** Marshfield Fire Department requested the use of the Massachusetts Department of Fire Services (DFS) Incident Support Unit (ISU) 3 vehicle to provide communications support. All fire department and landside personnel would utilize Plymouth County Fire Network Central-Channel 2 (UHF) while on-water units with VHF capability would utilize Marine Channel 14 (VHF). ISU 3 provided UHF/VHF crosspatch capability so that all participants could communicate. The ISU provided hand-held radios for all shore-side participants as well as for those participating vessels that did not have VHF capabilities. All participants maintained good radio discipline minimizing radio “chatter” and confining radio communications to essential information. This practice was evident throughout the exercise, during which the exercise controller, facilitators, and participants monitored radio communications and observed that while the responders communicated key information needed to deploy the boom often, they did so quickly, succinctly, and without undue extraneous chatter. Having ISU 3 available to provide crosspatch capability facilitated effective communications.

**Recommendations:** Consider more routine involvement of DFS ISUs during future GRP exercises based on participating municipality needs and otherwise when appropriate.

## Capability 3: WMD and Hazardous Materials Response and Decontamination

**Capability Summary:** MassDEP has developed an 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 different agencies within the South Shore region to work together to improve their preparedness level and exercise their ability to deploy boom from a oil spill response trailer during a mock oil spill. This community-based spill response program requires that towns and agencies 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 agencies to work together to improve their spill response capacity.

**Activity 3.1:** Direct/Activate WMD and Hazardous material Response and Decontamination Tactical Operations

### Observation 3.1:

Strength: the participating fire chiefs, and the exercise controller to on-water strike teams and shoreside strike teams assigned Participants from all three towns. The four on-water strike teams who were assigned to boom deployment were comprised of one Duxbury Fire vessel, one Marshfield and one Scituate Harbormaster vessel. A fourth on-water strike team (Marshfield Harbormaster vessel) served as the safety vessel. The shoreside strike teams (North and South) were also comprised of participants from different towns and worked well together throughout the exercise.

**References:** Homeland Security Exercise and Evaluation Program, Volume II, February 2007, National Incident Management System, GRP SS-06

**Analysis:** The process of assigning responders to various strike teams provided an opportunity for the departmental leadership to consider the strengths and abilities of their responders for various spill response functions. The GRP as modified (see Figure 2) provided a tactical plan that was ready for field implementation. Each team was comprised of responders from each participating community to promote interagency coordination. Direction was provided by the exercise controller and from the participating fire chiefs. With activity taking place at two locations, two safety officers were assigned: one Marshfield Fire Lieutenant (South shore) and one Scituate Deputy Chief (North shore). Fire Department Lieutenant acted as Safety Officer.

**Recommendations:** Continue to promote inter-departmental coordination and cross-pollination during future GRP exercises. When ICS elements are included, adequate pre-planning and identification of personnel to fill key Command-level, Section, Division,

and Group leadership positions is critical to exercise success and should be accomplished at the Final Planning Conference.

### **Activity 3.2:** Deploy Geographic Response Plan

#### **Observation 3.2:**

Strength: Vessel and shore-based Strike teams worked well together to implement the booming tactic/strategy.

#### **References:** Homeland Security Exercise and Evaluation Program, Volume II, February 2007, National Incident Management System, GRP SS-06

**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 will divert, deflect, or exclude oil from the identified sensitive area (s). In this case, and as outlined in the note above under the Executive Summary, the exercise did not focus on deployment of a specific GRP strategy outlined within the GRP, but instead on generally determining if exclusion, diversion, and/or deflection boom tactics could be successfully deployed in the North River due to the high currents.

The diversion boom configuration in North River (SS-06), as depicted in Figure 2 above, was deployed by three vessels (Marshfield and Scituate Harbormasters and Duxbury Fire) and two shoreside teams (multi-jurisdictional). Based on the operational briefing conducted prior to equipment deployment, on-water strike team elements coordinated their activities towing, anchoring, and positioning boom and generally worked well together throughout the deployment and retrieval phases of the exercise.

Boom was deployed as depicted in Figure 2 (during the early phase of high tide) with only minor difficulty due to the current.

Following deployment of Phase 1 and 2 of the modified DV01b strategy, an additional diversionary strategy was attempted in the vicinity of A to Z Boatworks consisting of 300 ft. of 18 inch boom being deployed from the center of the channel just south of the Phase 1 deployment location and extending westward near the floating dock just east of the Roht Marine boat ramp. The intent in this case was to see if a single diversionary boom section could be deployed to divert oil (on an incoming tide) toward Roht Marine boat ramp for recovery. This deployment proved difficult due to the high current.

Following boom deployment a surrogate, in the form of oranges, was used to simulate floating oil and both generally assess the effectiveness of a the various booming strategies that were deployed, and, through observation, better understand how floating oil might travel through this section of the North River during an incoming tide and under these conditions. The oranges were deployed upstream to the East of the Route 3A bridge. Some of the surrogate was captured by the boom deployed as part of Phase 2 at

Roht Marine but due to current was transported under the boom via entrainment. Most of the oranges that were deployed passed to the North of the phase 2 diversionary boom and continued travelling westward with the current.

**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 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 to 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, towed boom segments do not exceed 200 ft. Utilization of surrogate(s) to assess boom effectiveness should be incorporated as much as practicable in future exercises.

Based on observations made during this exercise, MassDEP will change the DV01b booming strategy for North River (SS-06), update the GRP document accordingly, and, due to the significant current speed throughout the North River, generally reconsider the other strategies depicted on GRP SS-06.

### **Activity 3.3:** Demobilize WMD and Hazmat Response and Decontamination

#### **Observation 3.3:**

Strength: The boom was offloaded, staged, deployed, retrieved, rinsed and restowed without incident.

#### **References:** GRP SS-06A

**Analysis:** Demobilization of boom can be time-consuming and tedious. In this exercise, demobilization and transport was done primarily by hand as the boom itself was deployed directly off the boat ramps at Roht Marine and A to Z Boatworks with the oil spill equipment trailer immediately adjacent to each ramp. Long distance towing was not required either as the deployment location was immediately adjacent to each boat ramp. Responders worked well throughout this process, showing strong teamwork. Marshfield and Scituate Fire provided an engine to support boom rinsing.

**Recommendations:** None

## SECTION 4: CONCLUSION

This was a useful and successful exercise. Limitations in the ability to deploy the DV01b strategy as written were identified during the exercise-planning phase and modifications were made prior to the exercise as indicated above in the Executive Summary. This exercise exposed first responders to the unique challenges in deploying oil containment boom, familiarized them with the pre-positioned oil spill equipment provided to them by MassDEP, and provided an opportunity to work with other local municipalities. All three communities worked together seamlessly. The boom deployment was accomplished relatively quickly and safely under ideal weather conditions. Both A to Z Boatworks and Roht Marine proved to be ideal staging areas.

Weather conditions for the GRP deployment exercise at North River (SS-06) were ideal. As expected, current speed proved to be the biggest limiting factor in successfully deploying boom in this portion of the North River. The group demonstrated the capability to assign participants to various roles, including Safety Officers, vessel-based and shore responders, strike teams, and observers. Equipment from the Marshfield and Scituate Oil Spill Response trailers was deployed from vessels provided by all three communities and participants became more familiar with deploying, setting, and demobilizing boom, anchors, and floats. Both vessel-based and shore-based responders communicated effectively and clearly. Interagency communications were successful utilizing ISU3's crosspatch capabilities.

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

- Responders were able to work well in strike team setting that mixed responders from all three towns.
- This exercise and the conditions encountered on the North River highlight the need to choose GRP testing sites that are conducive to both GRP tactics and strategy testing as well as first responder training. In order to maximize the training benefit for first responders that in many cases have never deployed this type of equipment, Exercise Facilitators and the Exercise Planning Teams must consider the level of complexity and anticipated environmental challenges (i.e. strong current) when selecting specific GRPs for testing. A balance must be struck between providing an adequate training benefit without introducing too much complexity and challenge while at the same time determining efficacy of GRP tactics and strategies.
- Exercise Facilitators and the Exercise Planning Team should structure these exercises in a way that provides a training benefit to First Responders who have never deployed oil spill containment boom before while at the same time incorporating ICS and incident management elements that allow first responders to direct certain aspects of exercise activity utilizing the skills they already possess.
- Additional equipment including additional crown anchor buoys and lines as well as D-rings can make towing, setting, and adjusting the boom easier for First Responders. This additional equipment is not currently provided in the pre-positioned trailers.
- A to Z Boatworks and Roht Marine are ideal staging areas.
- During future exercises, participants will benefit from additional discussion and instruction on boom handling techniques, including towing and anchoring best practices.

## APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for Massachusetts, Plymouth County, as a result of the Massachusetts Department of Environmental Protection North River (SS-06) Geographic Response Plan Exercise conducted on September 24, 2013. These recommendations draw on both the After Action Report and the After Action Conference.

### Improvement Plan Matrix

Capability	Observation Title	Recommendation	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 2: Communications	1. Integration of DFS ISUs for cross-patch capability	2.1 Consider more routine involvement of DFS ISUs during future GRP exercises based on participating municipality needs and otherwise when appropriate.	2.1.1 Discuss ISU involvement/activation procedures with DFS. Integrate ISU activation option into exercise planning process.	Communication	MassDEP, MassDFS	DEP and DFS representative	September 2013	September 2014
Capability 3: WMD and Hazardous Materials Response and Decontamination	1. Direct/Activate WMD and Hazardous material Response and Decontamination Tactical Operations	3.1 Continue to promote inter-departmental coordination and cross-pollination during future GRP exercises.	3.1.1 MassDEP's GRP exercise and first responder training program continues through 2015.	WMD and Hazardous Materials Response and Decontamination	MassDEP	DEP representative	September 2013	September 2014
Capability 3: WMD and Hazardous Materials Response and Decontamination	2. Vessel and shore-based strike teams work well together to deploy tactic/strategy	3.2 Existing DV-01b strategy was modified prior to exercise	3.2.2 MassDEP will change the DV01b booming strategy for North River (SS-06) and update the GRP document.	WMD and Hazardous Materials Response and Decontamination	MassDEP	DEP representative	September 2013	September 2014

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## 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 MassDEP 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, MassDEP and Nuka Research and Planning Group, (the contractor



## APPENDIX C: EXERCISE EVALUATION FORM

**Massachusetts GRP Deployment Exercise - EVALUATION**

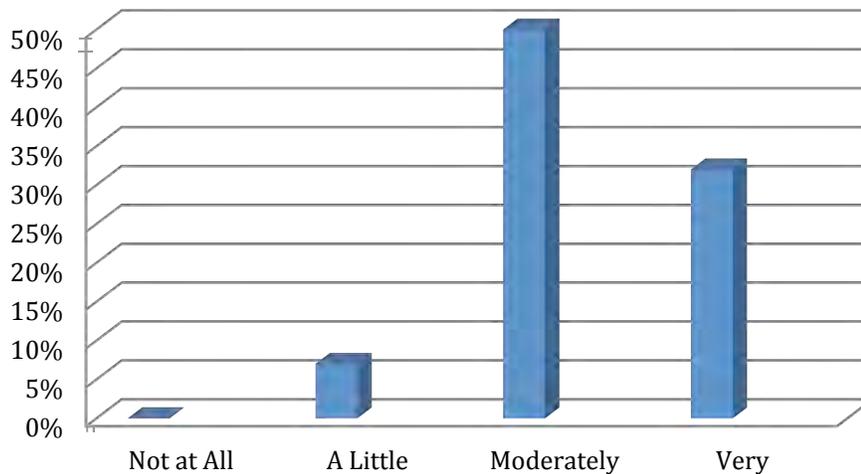
<b>South Shore Region GRP: North River (SS-06)</b>		
<b>Towns: Marshfield, Scituate, Duxbury</b>	<b>Exercise date: Sept. 24, 2013</b>	
Instructions to Evaluators: Complete this form based on your observations of the GRP exercise.		
Evaluator Name:	Evaluator Organization:	
What was your role in exercise? (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 oil spill response equipment now than I did prior to this exercise.	<input type="checkbox"/>	<input type="checkbox"/>
2. I have a better understanding of spill response tactics than I did prior to this exercise.	<input type="checkbox"/>	<input type="checkbox"/>
3. I would participate in future oil spill response equipment or Geographic Response Plan deployments at other sites.	<input type="checkbox"/>	<input type="checkbox"/>
4. The objectives were clearly explained and the deployment exercise met the objectives.	<input type="checkbox"/>	<input type="checkbox"/>
5. The exercise was conducted safely.	<input type="checkbox"/>	<input type="checkbox"/>
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 <b>Roht Marine</b> and <b>A to Z Boatworks</b> 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	79%	18%
More Prepared after Exercise	100%	0%
Better Understanding of Deploying Spill Response Tactics	96%	4%
Participate in Future GRP Deployments	96%	4%
Field Objectives Clearly Explained and/or Met	100%	0%



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



**Roht Marine and A to Z Boatworks as Staging Area**



## APPENDIX D: EXERCISE EVENTS SUMMARY TABLE

### Schedule of Events

Time	Personnel	Activity	Location
<b>September 24, 2013</b>			
0800	All	Mobilize and Stage Equipment	Roht Marine and A to Z Boatworks
0900	All	Conduct equipment familiarization, Safety and Operational Briefing	Roht Marine
1030	All	Deploy and evaluate Phase 1 <sup>2</sup> Diversion (DV) boom segments from boat ramp at A to Z Boatworks	A to Z Boatworks (Phase 2 teams and observers at Roht Marine)
1115	All	Deploy and evaluate Phase 2 <sup>1</sup> Diversion (DV) boom segments from boat ramp at Roht Marine	Roht Marine (Phase 1 teams and observers at A to Z Boatworks)
<b>1200</b>	<b>All</b>	<b>LUNCH</b>	<b>Roht Marine</b>
1230	All	Deploy surrogate (peat moss/oranges) and observe movement downstream to determine likely impact locations	Eastern North River or directly from Route 3A bridge
1300	All	Demobilize all boom segments, rinse and repack equipment	Roht Marine and A to Z Boatworks
1330	All	Hot Wash/Complete and turn in all Participant Feedback Forms	Roht Marine
1400	All	Demobilize/Adjourn	Roht Marine

### Tides (North River, MA-24SEP13)

HIGH				LOW			
AM	ft	PM	ft	AM	ft	PM	ft
<b>3:27</b>	8.6	<b>3:41</b>	9.0	<b>9:43</b>	0.7	<b>10:17</b>	0.4

<sup>2</sup> See Figure 2

## APPENDIX E: ACRONYMS

### Acronym Table

Acronym	Meaning
DFS	Massachusetts Department of Fire Services
DV	Diversion booming
EPT	Exercise Planning Team
EMA	Emergency Management Agency
FPC	Final Planning Conference
GRP	Geographic Response Plan
IAP	Incident Action Plan
IC	Incident Command (er)
IPC	Initial Planning Conference
ISU	Incident Support Unit
LL	Lessons Learned
MassDEP	Massachusetts Department of Environmental Protection
MPC	Mid-Planning Conference
SRPEDD	Southeast Regional Planning & Economic Development District
TCL	Target Capabilities List
UHF	Ultra High Frequency
USCG	United States Coast Guard
VHF	Very High Frequency