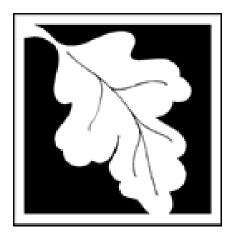
Stage Harbor Geographic Response Plan Deployment Exercise

September 27, 2011

AFTER ACTION REPORT/IMPROVEMENT PLAN

September 2011



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HANDLING INSTRUCTIONS

- 1. The title of this document is the Stage Harbor Geographic Response Plan After Action Report.
- 2. The information gathered in this AAR/IP is unclassified.
- 3. Points of Contact:

<u>State POC:</u> Rich Packard Program Manager MA DEP Oil Spill Prevention and Response Program 20 Riverside Drive Lakeville, MA 02347 508-946-2856 (office) Richard.Packard@state.ma.us

<u>Federal POC:</u> Michael Popovich Senior Chief Petty Officer, Ret.USCG First Coast Guard District District Response Advisory Team (DRAT) 408 Atlantic Ave. Boston, MA 02110 617-223-8441 Michael.D.Popovich@uscg.mil

Exercise Facilitator: Elise DeCola Operations Manager Nuka Research & Planning Group, LLC PO Box 1672 Plymouth, MA 02362 508-454-4009 (cell) elise@nukaresearch.com This page is intentionally blank.

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EXECUTIVE SUMMARY

The Massachusetts Department of Environmental Protection Stage Harbor GRP Deployment Exercise occurred on September 27, 2011. The goal was to deploy multiple tactics, including diversion and exclusion booming, utilizing as many responders as possible from multiple jurisdictions to provide hands-on experience with oil spill response equipment and evaluating the site as an effective staging location.

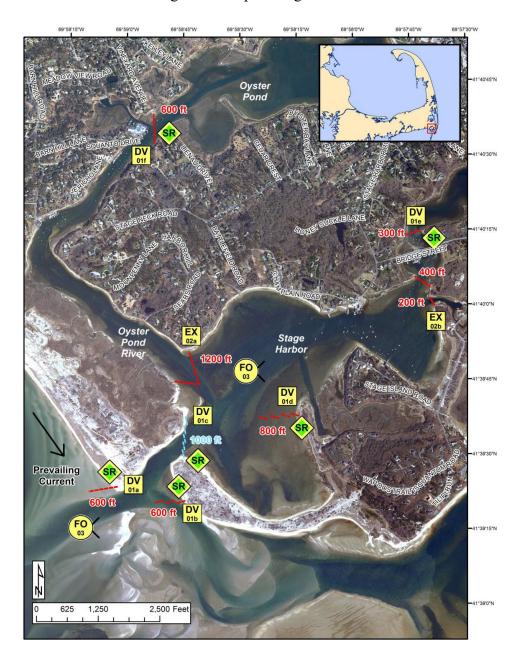


Figure 1. Map of Stage Harbor

Homeland Security Exercise and Evaluation Program (HSEEP) After Action Report/Improvement Plan MassDEP (AAR/IP) Stage Harbor GRP Deployment Exercise

The Massachusetts Department of Environmental Protection Geographic Response Plan Program exercise at Stage Harbor was developed to test local area first responder's Planning, Communications, and Community Preparedness and Participation capabilities. The exercise planning team was composed of numerous and diverse agencies, including the Chatham Fire Department, Harwich Fire Department, Chatham Harbormaster Department, Harwich Harbormaster Department, U.S. Coast Guard, Massachusetts Department of Environmental Protection, and Nuka Research and Planning Group (contractor) (See Figure 2).

Figure 2. Participants gathered during briefing



The exercise planning team discussed staging and field locations, manpower and vessel needs, timing of the exercise in relation to tidal schedule, and establishing objectives. Over six months there were two group meetings, one teleconference, and multiple email communiqués. The exercise objectives were focused on inter-agency planning and coordination, communication and on site incident management for the purpose of improving initial response capacity to oil spills in the towns of Chatham and Harwich.

The exercise planning team also considered proposed locations for the boom deployment and their feasibility in terms of access, staging, mobilization/demobilization of equipment, low vessel traffic, and tidal schedule (See Figure 3). Once the site was chosen, the team focused on equipment and manpower needs and scheduling the exercise at a date and time that was optimal for availability of responders and tide cycle.

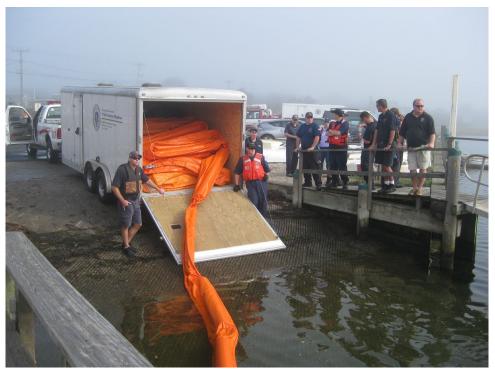


Figure 3. Stage Harbor boat ramp staging area

Based on the exercise planning team's deliberations, the following objectives were developed for the Stage Harbor Geographic Response Plan exercise.

- Objective 1: Foster inter-agency planning 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.
- Objective 2: Promote communication among responders from vessel to vessel and vessel to shore and assess ability to establish and utilize effective interoperable communications plan. Establish common operating frequency between the fire departments and harbormaster departments from two separate towns.
- Objective 3: Provide opportunity for responders to increase level of preparedness for oil spill response and gain experience by participating in an oil spill boom deployment.

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 smoothly together to achieve objectives
- Local responders indicated ability to make adaptations as needed
- Communications were clear and concise

Primary Areas for Improvement

Throughout the exercise, the interoperability of the towns was excellent. The primary areas of improvement were in actual technical details and tactics of the deployment. The primary areas for improvement, including recommendations, are as follows:

- Although the responders initially experienced dense fog, the conditions greatly improved as the exercise progressed. Due to the optimum conditions experienced during the test, first responders would benefit from additional opportunities to practice boom deployment in a variety of environmental conditions.
- The responders discovered that some of the areas necessary for boom deployment/recovery were too shallow for the larger vessel (COMMANDER) to navigate and was unable to deploy the boom.
- The boom in the Town of Chatham trailer (24') would not connect with the boom from the state trailer (400'). Several alternative solutions were discussed including lashing them together and inserting sorbent boom in the gap.



Figure 4. Chatham Construction Boom

Overall, the exercise was successful in providing an opportunity for first responders to deploy boom and achieve a common goal with inter-agency participation. Further exercises would be welcomed to continue coordination between the two towns, to incorporate other local towns, and to gain additional experience.

SECTION 1: EXERCISE OVERVIEW

Exercise Details

Exercise Name

Massachusetts Department of Environmental Protection Stage Harbor Geographic Response Plan Deployment Exercise

Type of Exercise

Functional Exercise

Exercise Start Date

September 27, 2011

Exercise End Date September 27, 2011

Duration Four and a half hours

Location

In briefing took place at the Chatham Harbormaster's Office at 613 Stage Harbor Road and field exercise followed at the Stage Harbor Boat Ramp on Stage Harbor, in the town of Chatham, Massachusetts.

Sponsor

The Massachusetts DEP was the sponsor of the exercise, with input from the United States 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 Stage Harbor.

Exercise Planning Team

- Rich Packard, facilitator MADEP 508-946-2856 Richard.Packard@state.ma.us
- Elise DeCola, facilitator Nuka Research and Planning Group 508-454-4009 elise@nukaresearch.com
- Chief Michael Ambriscoe Chatham Fire Department 508-945-2324 firechief@chatham-ma.gov
- Chief William Flynn, Jr. Harwich Fire Department 508-430-7546 x4100 w.flynn@harwichfire.com
- Deputy Chief Dick Hunter Chatham Fire Department 508-945-2324 deputyfirechief@chatham-ma.gov
- Mike Popovich, coach USCG, District 1 617-223-8441 Michael.D.Popovich@uscg.mil
- John Duponte, coach Moran Environmental Recovery jduponte@moranenvironmental.com

Participating Organizations

Participating organizations included: Chatham Fire Department, Chatham Harbormaster Department, Harwich Fire Department, Harwich Harbormaster Department, Massachusetts Environmental Police, United States Coast Guard First District, United States Coast Guard Sector Southeastern New England, Massachusetts Department of Environmental Protection, Moran Environmental, and Nuka Research and Planning Group.

Number of Participants

- Players 17
- Controllers 1
- Facilitators 3
- Observers/Evaluators 13

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 a hands-on opportunity for local responders to practice deploying spill response equipment.

The MassDEP GRP Exercise Program is currently in the third 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, NOAA). The exercise design, facilitation, planning, and reporting are funded by MassDEP. Participating towns received 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 has decided to demonstrate the following capabilities during this exercise:

• Objective 1:

- Planning:
 - Initial meeting to discuss exercise location, objectives, and structure;
 - Teleconference to designate manpower and equipment
- Objective 2:
 - Communications:
 - Assign channel (VHF FM Ch. 66);
 - Supply radios as needed;
 - Communicate effectively during drill between shoreside/on water responders and IC

• Objective 3:

- Community Preparedness and Participation:

- Simulate incident; assign responders;
- Develop IAP;
- Deploy boom;
- Demobilize boom

Scenario Summary

The scenario was a simulated oil spill in Stage Harbor that migrates northeast toward the Mitchell River. Staff from the Chatham Fire Department, the Harwich Fire Department, the Chatham Harbormaster Department and the Harwich Harbormaster Department were the primary field responders for this deployment exercise. After initial safety and operations briefings, the field responders transported, deployed, demobilized, and stored the boom and anchors used in the exercise (See Figures 5 through 7). 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 keeping the process moving.



Figure 5. Exclusion Boom in Mitchell River



Figure 6. Shoreside Team Anchoring Diversion Boom

Figure 7. Rinsing and storing boom in trailer



Homeland Security Exercise and Evaluation Program (HSEEP) After Action Report/Improvement Plan (AAR/IP) MassDEP Stage Harbor GRP Deployment Exercise

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 and participate in the debriefing. The observers included representatives from the Coast Guard, MassDEP, Senior Volunteer Environmental Corps and members of the Chatham and Harwich Fire Departments without specific assignments.

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 Massachusetts Department of Environmental Protection Stage Harbor Geographic Response Plan 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 exercised during pre-exercise meetings and during the functional exercise. The capability required Fire Chiefs and Deputies from Chatham and Harwich 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 smoothly functioning exercise.

Activity 1.1: Initial Meetings to Discuss Site Selection and Exercise Objectives

Observation 1.1:

Strength: Representatives from both towns worked well together, offering suggestions and weighing the merit of these before accepting or rejecting aforementioned suggestions and providing alternatives.

References: N/A

Analysis: Town-level objectives were well aligned and exercise design proceeded smoothly. It was evident that Chatham and Harwich participate closely in other joint exercises and operations, which made planning and coordination fairly smooth. Both fire 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: Teleconference and follow-up meetings to assign manpower and equipment and work through exercise logistics.

Observation 1.2:

Strength: Both towns filled out requisite paperwork for funding to allow appropriate number of key personnel to participate in exercise. Vessels were provided from both towns. Response crews mixed towns and departments allowing for coordination.

References: N/A

Analysis: Logistical pre-planning led to a smooth exercise. Both towns provided vessels which provided an opportunity to work together in a task force setting with mixed crews from both town fire departments. Both towns were able to familiarize themselves with the equipment in the state trailers as well as boom from the Town of Chatham trailer.

Recommendations: Continue to periodically exercise using spill response equipment and mixed crews.

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 Channel

Observation 2.1:

Strength: The assignment of VHF-FM Channel 66 was used. It was effective and clear to all responders.

References: N/A

Analysis: Both towns share the practice of 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 in a very streamlined manner.

Recommendations: None.

Activity 2.2: Supply Radios as Needed

Observation 2.2:

Strength: Portable radios were utilized to communicate between the vessels and the onshore personnel. Radios were supplied by both the towns of Chatham and Harwich.

References: N/A

Analysis: Due to the use of a common working frequency, both municipalities had interoperable communications and equipment. The interoperability between the two

towns was seamless.

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.

References: N/A

Analysis: Common operational practices among the two fire departments (minimize unnecessary radio chatter) and the U.S. Coast Guard 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 towns of Chatham and Harwich 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 two towns to work together to improve their spill response capacity.

Activity 3.1: Simulate Incident; Assign Responders

Observation 3.1:

Strength: Participants from both towns volunteered or were assigned 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.

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 mixed responders from the two towns together to promote interagency coordination. Captains from both the Chatham and Harwich Fire Departments and the Chatham Harbormaster acted as Incident Commanders and coordinated their activities to ensure an effective response. Coast Guard Petty Officer Nick Morgan acted as Safety Officer.

Recommendations: None

Activity 3.2: Develop IAP

Observation 3.2:

Strength: With input from Incident Command and the facilitators, the unified command drafted an Incident Action Plan and disseminated it to key personnel.

References: N/A

Analysis:

Recommendations: None

Activity 3.3: Deploy Boom

Observation 3.3:

Strength: Participants from both towns volunteered or were assigned to task forces. Vessel and shore crews worked well together to implement the booming tactic under optimum environmental conditions.

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 diversion and exclusion boom configurations for the Mitchell River area was successfully deployed by three vessel crews and three shoreside crews (transported via vessels). The ideal environmental conditions allowed responders to properly deploy and set the equipment without the additional challenge of extreme weather. Responders demonstrated the ability to adjust their tactics when they encountered something unexpected, such as mooring buoys which caused the boom to get snagged. Vessel-based responders coordinated their activities towing, anchoring, and positioning boom and worked well together throughout.

Recommendations: Conduct future exercises to keep boom deployment skills current.

Activity 3.4: Demobilize Boom

Observation 3.4:

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. Participants received instruction from John Duponte of Moran Environmental on the proper cleaning and stowing of gear to ensure the equipment would be readily available for its next use. Observers noticed the knots slipping when pulling the boom anchors in.

Recommendations: Further training and instruction on proper knot tying/securing may be necessary. MassDEP has an instructional video available.

SECTION 4: CONCLUSION

The GRP deployment exercise at Stage Harbor was held in ideal weather conditions during a flooding tide, allowing participants the optimum conditions to deploy boom. Initially, the responders experienced low visibility due to dense fog, but it quickly dissipated allowing the crews favorable environmental conditions. However, environmental conditions in Stage Harbor can be extreme with severe winds and seas. The participants were familiar with the possibility of rapidly changing conditions and knew they would have to adjust their vessels and strategies for the conditions. The group demonstrated the capability to assign participants to various roles, including Incident Commander, Safety Officer, shore-based and vessel-based task forces, and observers (See Figure 8). Equipment from both the Chatham and Harwich Oil Spill Response trailers was deployed from vessels provided by both towns, and the group 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. Interagency communications were successful, using both installed and portable VHF radios.



Figure 8. Unified Command

The exercise was successful on many levels. Deploying multiple tactics proved to be a useful strategy for this exercise. The GRP diversion booming tactic was deployed as intended, and found to be an effective tactic for diverting oil away from the Mitchell River. For the exclusion booming tactic, the task force deployed 6" construction boom from the Town of Chatham. This boom worked well in the ideal conditions experienced that day, but would be ineffective in any conditions exceeding 6" wave heights. This provided a good opportunity to further discuss the conditions and equipment. Additionally, an alternate location to launch the boom was identified from the bridge. The two towns worked together seamlessly. The boom deployment was

accomplished quickly. The staging area worked well with sufficient vessels required for the exercise. Since Stage Harbor is located on the outermost part of Cape Cod, it is important for the towns to partner with state and federal agencies to provide an effective response. The United States Coast Guard Station Chatham sent a vessel to act in a safety role, which worked very well.

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.
- Responders from Chatham became familiar with the capabilities and limitations of their 6" construction boom.
- An alternate boom deployment site was identified for EX-02b.
- Due to the abundance of fringing marsh in the area, alternate oil collection points may be need to be identified.
- The Stage Harbor boat ramp is a good staging area.

Stage Harbor GRP Deployment Exercise

APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for Massachusetts, Barnstable County, as a result of the Massachusetts Department of Environmental Protection Stage Harbor Geographic Response Plan Exercise conducted on September 27, 2011. These recommendations draw on both the After Action Report and the After Action Conference.

Capability	Observation Title	Recommendation	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 3: Community Preparedness and Participation	1. Towns would benefit from further deployment exercises	3.1 Seek out opportunities to participate in other oil spill response deployment exercise to continue to gain experience	3.1.1 Volunteer to host another exercise	Community Preparedness and Participation	Chatham and Harwich Fire Depts.	Fire Chiefs	Mar. 1, 2012	Mar 1, 2013

Table A.1 Improvement Plan Matrix

(AAR/IP)

APPENDIX B: SIGN IN SHEET

APPENDIX C: STAGE HARBOR EVALUATION FORM

GRP Deployment Exercise Evaluation Form					
Stage Harbor GRP Deployment Exercise	xercise d	rcise date: 09/27/11			
Instructions to Evaluators: Complete this form based on your observations of the GRP exercise. Please turn this form into the facilitators, fax to 240-368-7467 or mail to Nuka Research, PO Box 1672 Plymouth, MA 02362.					
Evaluator Name:		or Organ	ization	:	
What was your role in exercise? (responder, observer, facilitator, etc.)					
What was your level of spill response e	xperience	e prior to	this e	xercise?	
Please check a box to respond to the fo	llowing.	١	/ES	NO	
1. I feel more prepared to deploy GRPs than I did prior to this exercise.	s now				
2. I have a better understanding of spi response tactics than I did prior to this					
3. I would participate in future GRP de at other sites.					
4. The objectives were clearly explained deployment exercise met the objectives		e			
5. The exercise was conducted safely.					
Other comments or suggestions about	exercise (design &	facilita	ation?	

APPENDIX D: TEST CONDITIONS DATA SHEET

APPENDIX E: INCIDENT ACTION PLAN

APPENDIX F: ACRONYMS

Table F.1: Acronyms

Acronym	Meaning
GRP	Geographic Response Plan
IC	Incident Command
MADEP	Massachusetts Department of Environmental Protection
NOAA	National Oceanic and Atmospheric Administration
PFD	Personal Flotation Device
USCG	United States Coast Guard
GRP	Geographic Response Plan