



MassDEP Geographic Response Plan – 2018 Mystic River (BH-03) Exercise

After Action Report

May 02, 2018

The After-Action Report/Improvement Plan (AAR/IP) aligns exercise objectives with preparedness doctrine to include the National Preparedness Goal and related frameworks and guidance. Exercise information required for preparedness reporting and trend analysis is included; users are encouraged to add additional sections as needed to support their own organizational needs.

EXERCISE OVERVIEW

Exercise Name	2018 Mystic River (BH-03) Exercise
Exercise Date	May 02, 2018
Scope	This exercise is a Full Scale Exercise, planned for approximately six hours in Everett, MA and upon the waters of the Mystic River. Exercise play is limited to the confluence of the Mystic and Island End Rivers, Mary O'Malley State Park and adjacent shoreline.
Mission Area(s)	Response
Core Capabilities	Environmental Response/Health and Safety, Operational Coordination, Operational Communications.
Objectives	<p>Objective 1: Demonstrate the ability to deploy oil spill equipment from one or more MassDEP pre-positioned oil spill response trailers utilizing common Geographic Response Plan (GRP) tactics.</p> <p>Objective 2: Demonstrate the ability to assemble a spill response organization utilizing Incident Command System (ICS) principles through execution of an Incident Briefing (ICS 201) and implementation of on-site incident management and tactical operations.</p> <p>Objective 3: Demonstrate the ability to effectively communicate between multiple local, state, and federal agencies including fire departments, police departments, harbormasters, and other state and federal first responders using VHF and UHF communications.</p>
Threat or Hazard	Discharge of oil into a navigable waterway
Scenario	An oil spill has occurred in Boston Inner Harbor that threatens the Mystic River in the vicinity of the Island End River. The Chelsea and Everett Fire Departments and Harbormaster staffs will utilize GRP BH-03 to deploy protective booming to protect sensitive resources in the Island End River.
Sponsor	Massachusetts Department of Environmental Protection (MassDEP).

Participating Organizations

Participating organizations will include:

- Chelsea Fire Department (CFD)
- Chelsea Police Department/Harbormaster (CPD)
- Chelsea Office of Emergency Management (OEM)
- Everett Fire Department (EFD)
- Everett Police Department/Harbormaster (EPD)
- MassDEP
- U.S. Coast Guard Sector Boston (USCG)
- Moran Environmental Recovery (MER)

Nuka Research and Planning Group, LLC (Nuka Research)Note: See Appendix B for participant count

Point of Contact

Julie Hutcheson, Oil Spill Program Coordinator
Massachusetts Department of Environmental Protection
Oil Spill Prevention and Response Program
1 Winter St.
Boston, MA 02108
(617) 556-1191
julie.hutcheson@state.ma.us

Classroom training is held at the Everett
Distrigas Visitors Center facility.



Vessels deploy exclusion booming tactic to protect
sensitive resources in the Island End River.



Photos courtesy of Nuka Research & Planning Group

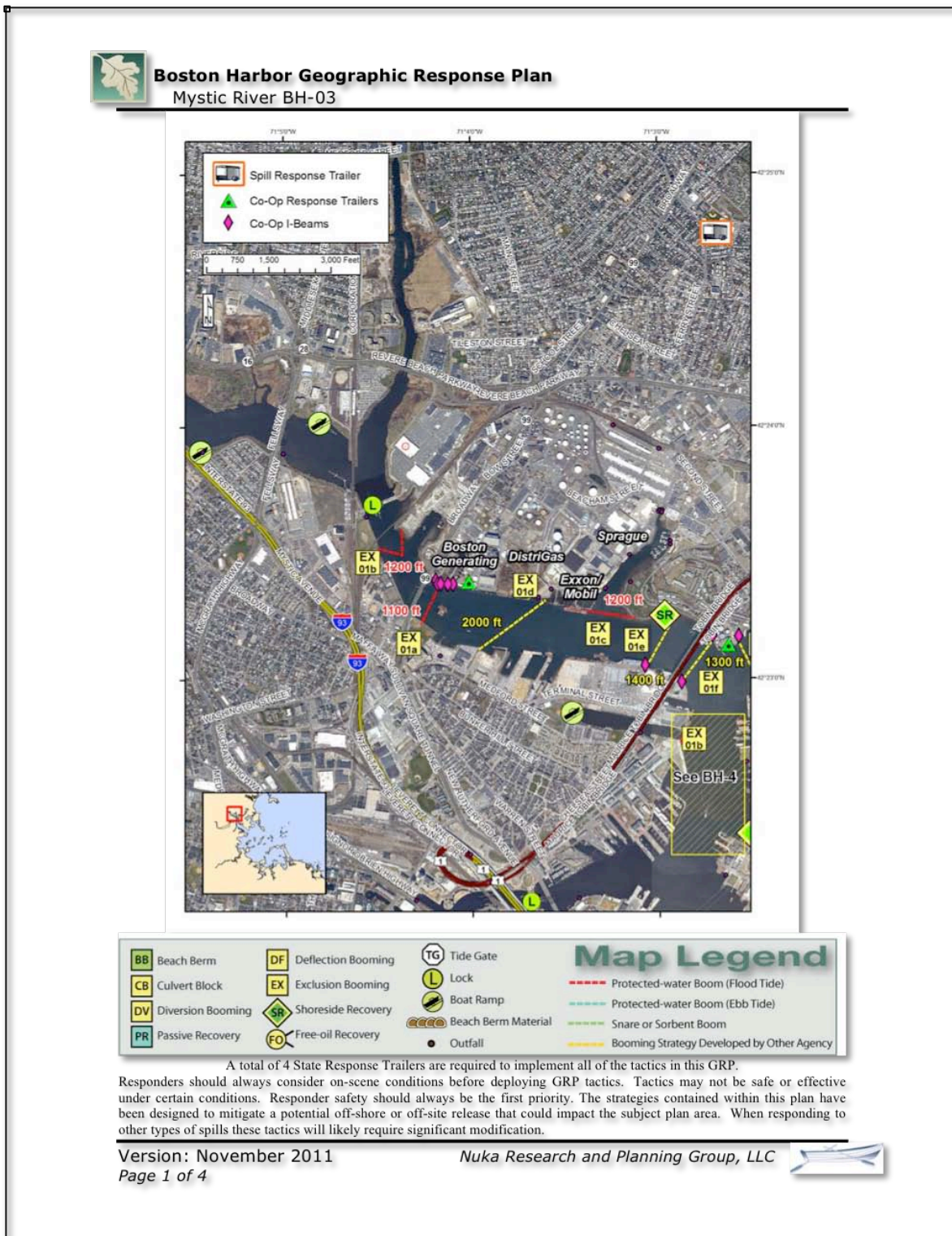


Figure 1. Mystic River GRP (BH-03)



Figure 2. Revised EX-01c Tactic

ANALYSIS OF CORE CAPABILITIES

Aligning exercise objectives and core capabilities provides a consistent taxonomy for evaluation that transcends individual exercises to support preparedness reporting and trend analysis. Table 1 includes the exercise objectives, aligned core capabilities, and performance ratings for each core capability as observed during the exercise and determined by the evaluation team. Table 2 includes compiled data from the Exercise Evaluation Guide (EEG) including the organizational capability targets, associated critical tasks, and observations as observed during the exercise and determined by the evaluation team.

Objective	Core Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
Demonstrate the ability to deploy oil spill equipment from one or more MassDEP pre-positioned oil spill response trailers utilizing common Geographic Response Plan (GRP) tactics.	Environmental Response/ Health and Safety	P			
Demonstrate the ability to assemble a spill response organization utilizing Incident Command System (ICS) principles through execution of an Incident Briefing (ICS 201) and implementation of on-site incident management and tactical operations.	Operational Coordination	P			
Demonstrate the ability to effectively communicate between multiple local, state, and federal agencies including fire, police and harbor master departments using VHF and UHF communications	Operational Communications	P			
Ratings Definitions: <ul style="list-style-type: none"> Performed without Challenges (P): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. Performed with Some Challenges (S): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. However, opportunities to enhance effectiveness and/or efficiency were identified. Performed with Major Challenges (M): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s), but some or all of the following were observed: demonstrated performance had a negative impact on the performance of other activities; contributed to additional health and/or safety risks for the public or for emergency workers; and/or was not conducted in accordance with applicable plans, policies, procedures, regulations, and laws. Unable to be Performed (U): The targets and critical tasks associated with the core capability were not performed in a manner that achieved the objective(s). 					

Table 1. Summary of Core Capability Performance

Core Capability	Organizational Capability Target	Associated Critical Tasks	Observation Notes
Environmental Response/ Health and Safety	Overview of Response Equipment	<ul style="list-style-type: none"> Access Mass DEP Trailer Identify boom and sorbents Connect boom together Connect towing bridle to boom Connect components of anchor system together 	<ul style="list-style-type: none"> Performed Without Challenges (P) All operations conducted in a safe manner. All equipment was readily available in both trailers with one exception. One 50 foot segment of 12-inch boom in the Chelsea trailer was missing. Recommendation: <u>Replace one segment of the 12-inch boom in the Chelsea trailer.</u> There was additional sorbent boom in the Chelsea trailer well in excess of the standard allotted inventory. Several members of the Chelsea FD informed exercise controllers that the trailers had been used several times for actual spills since arriving in Chelsea. It appears that there is more use of the Chelsea trailer than is currently documented. Recommendation: <u>Follow up with the Chelsea FD to document how many times they have used the trailer and its equipment to respond to oil spills and ensure those circumstances match up with reported activities.</u> Participation by the Fire, Police and Harbormaster Departments from Chelsea and Everett were excellent and they worked well together. All exercise participants were extremely engaged and actively involved. Hands on training at multiple stations was very effective. Many participants had never connected the boom together. The anchor station benefitted greatly from the diagram of how to put together an anchor system.
	Basic Booming Operations	<ul style="list-style-type: none"> Transport and tow boom. Anchoring and Connecting boom to shore Safe vessel and crew operations. (Refer to ICS-208) 	<ul style="list-style-type: none"> Performed Without Challenges (P) The shore team did an outstanding job of faking the boom out on the shore and deploying it into the water over the riprap and stones along the park waterfront and they also effectively accomplished boom retrieval. During the hot wash, one of the participants suggested using sections of fire hose as chafing gear to keep the polypropylene line from being damaged by the sharp rocks making up the riprap shoreline. The shore team did an excellent job of setting a shore anchor and securing the boom to it. As the boom was set in place, the shore team showed outstanding initiative by taking the slack out of the line and keeping the end of the boom close to shore Safety Officer did an outstanding job of ensuring lifejackets were worn at all times, personnel kept clear of shore anchor and ensured safe booming operations. The use of trip lines allowed for easy adjustment of the anchor for the exclusion booming tactic. The Cheryl Mac (MER work boat) worked well with Chelsea FD Marine 1 on deploying the exclusion tactic. Cheryl Mac pulled the boom with Marine 1

			<p>assisting. The crew of Chelsea FD “Marine 1” attempted to, but was unable to tow the second section of boom to the eastern bank of the Island End River. This was primarily attributed to a lack of horsepower in what were fairly routine environmental conditions. Also, the lack of cleats on Marine 1 limited its ability to be involved in booming operations. Recommendation: <u>Chelsea Fire Department should consider procuring a larger boat to enable them to conduct booming operations in routine weather conditions.</u></p>
	Implement Tactics in GRP	Exclusion Boom (EX-01c)	<ul style="list-style-type: none"> • Performed Without Challenges (P) • The EX-01c GRP tactic was modified prior to the exercise to form a chevron to prevent entrainment expected with flood tide conditions. Also the shore anchor points were changed to provide for more effective exclusion or the Island End River. This shortened the needed boom length from a 1,200 foot to 800 foot tactic so a single trailer can provide enough boom to accomplish this tactic. Recommendation: <u>Modify EX01c for GRP BH-03 to reflect the tactic used in the exercise.</u> • It was noted during the classroom training that EX-01c was originally designed as an ebb tide strategy meant to contain spills from shoreside sources that might impact the Island End River from spreading into the Mystic River and Boston Harbor. This participant showed exercise controllers the location of two 10 foot outfalls at the northern terminus of the Island End River that are connected to multiple properties in Chelsea through a series of historic drains and piping systems, leading to the possibility that inland spills in Chelsea can potentially find their way to the Island End River, Mystic River and the inner Boston Harbor area. This could be depicted with an inset map. Recommendation: <u>Include a containment tactic at the north end of the Island End River to make first responders aware of these outfalls.</u> • Strong winds drove the surrogate along the length of the boom and the surrogate ended up collecting at the anticipated shore side recovery location. During the hot wash, one of the participants suggested using an additional length of boom to prevent diverted oil from penetrating the riprap shoreline and creating a “pocket” for oil to be collected for recovery.
Operational Coordination	Create and Execute An Assignment List (ICS 201)	<ul style="list-style-type: none"> • Fill out ICS 201 • Assignments in ICS 201 are followed and on-scene adjustments. • Participants demonstrate command and control of exercise 	<ul style="list-style-type: none"> • Performed without Challenges (P) • IC effectively controlled exercise. Strike teams were well organized and effectively carried out assigned tasks. • Tasking was clear. Assignments were followed and adjustments were rapidly/effectively made by boat crews and shore team. • Large-scale printout of the GRP was extremely useful for the IC to use during the exercise.

Operational Communications	Effectively Communicate Using VHF equipment	<ul style="list-style-type: none">• Create Communications Plan• Communicate with other participants using organic VHF equipment	<ul style="list-style-type: none">• Performed without Challenges (P)• Communications were outstanding. UTAC 42D was used and there was an abundance of portable radios in addition to using voice communications when appropriate. The Chelsea OEM Mobile Command Post was also on scene and was able to seamlessly cross patch the UTAC channel with Marine VHF channel 17. The Chelsea OEM Mobile Command Post also videotaped the exercise with its camera system.
-----------------------------------	--	--	---

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

The following sections provide an overview of the performance related to each exercise objective and associated core capability, highlighting strengths and areas for improvement.

Objective 1: Demonstrate the ability to deploy oil spill equipment from one or more MassDEP pre-positioned oil spill response trailers utilizing common Geographic Response Plan (GRP) tactics

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability 1: Environmental Response/Health and Safety

Strengths

The full capability level can be attributed to the following strengths:

Strength 1: Participation by the Fire, Police and Harbormaster Departments from Chelsea and Everett were excellent and they worked well together. All exercise participants were extremely engaged and actively involved.

Strength 2: Hands on training in multiple stations were very effective. Many participants had never connected the boom together. The anchor station benefitted greatly from the diagram of how to put together an anchor system.

Areas for Improvement

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

Area for Improvement 1: Replace one segment of the 12-inch boom in the Chelsea trailer.

Reference: MassDEP Standard Operating Procedure – Oil Spill Response Trailers Activation & Deployment (2010).

Analysis: All equipment was readily available in both trailers with one exception. One 50-foot segment of 12-inch boom in the Chelsea trailer was missing.

Area for Improvement 2: Follow up with the Chelsea FD to document how many times they have used the trailer and its equipment to respond to oil spills and ensure those circumstances match up with reported activities.

Reference: MassDEP Standard Operating Procedure – Oil Spill Response Trailers Activation & Deployment (2010).

Analysis: There was additional sorbent boom in the Chelsea trailer well in excess of the standard allotted inventory. Several members of the Chelsea FD informed exercise controllers that the trailers had been used several times for actual spills since arriving in Chelsea. It appears that there is more use of the Chelsea trailer than is currently documented.

Area for Improvement 3: Chelsea Fire Department should consider procuring a larger boat to enable them to conduct booming operations in routine weather conditions.

Reference: Massachusetts GRP Tactics Guide.

Analysis: The crew of Chelsea FD “Marine 1” attempted to, but was unable to tow the second section of boom to the eastern bank of the Island End River. This was primarily attributed to a lack of horsepower in what were fairly routine environmental conditions. Also, the lack of cleats on Marine 1 limited its ability to be involved in booming operations.

Area for Improvement 4: Modify EX01c for GRP BH-03 to reflect the tactic used in the exercise.

Reference: Massachusetts GRP Tactics Guide.

Analysis: • The EX-01c GRP tactic was modified prior to the exercise to form a chevron to prevent entrainment expected with flood tide conditions. Also the shore anchor points were changed to provide for more effective exclusion of the Island End River. This shortened the needed boom length from a 1200-foot to 800-foot tactic so a single trailer can provide enough boom to accomplish this tactic.

Area for Improvement 5: Include an exclusion tactic at the north end of the Island End River to make first responders aware of these outfalls.

Reference: Massachusetts GRP Tactics Guide.

Analysis: It was noted during the classroom training that EX-01c was originally designed as an ebb tide strategy meant to contain spills from shoreside sources that might impact the Island End River and eventually spread into the Mystic River and Boston Harbor. This participant showed exercise controllers the location of two 10 foot (approximate) outfalls at the northern terminus of the Island End River that are connected to multiple properties in Chelsea through a series of historic drains and piping systems, leading to the possibility that inland spills in Chelsea can potentially find their way to the Island End River, Mystic River and the inner Boston Harbor area. This could be depicted with an inset map.

Objective 2: Demonstrate the ability to assemble a spill response organization utilizing Incident Command System (ICS) principles through development and execution of an Incident Briefing (ICS 201) and implementation of on-site incident management and tactical operations.

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability 2: Operational Coordination

Strengths

The full capability level can be attributed to the following strengths:

Strength 1: The Incident Commander effectively controlled the exercise. Strike teams were well organized and effectively carried out assigned tasks.

Areas for Improvement

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

Area for Improvement 1: None

Reference: N/A

Analysis: N/A

Objective 3: Demonstrate the ability to effectively communicate between multiple local, state, and federal agencies including fire departments, police departments, harbormasters, and other state and federal first responders using VHF communications

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability 3: Operational Communications

Strengths

The full capability level can be attributed to the following strengths:

Strength 1: Communications were outstanding. UTAC 42D was used and there was an abundance of portable radios in addition to using voice communications when appropriate. The Chelsea OEM Mobile Command Post was also on scene and was able to seamlessly cross patch the UTAC channel with Marine VHF channel 17. The Chelsea OEM Mobile Command Post also videotaped the exercise with its camera system.

Areas for Improvement

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

Area for Improvement 1: None

Reference: N/A

Analysis: N/A

Chelsea Office of Emergency Management Mobile Command Post was used to cross patch UHF and VHF radio channels to ensure vessels and shoreside personnel could seamlessly communicate.



Photo courtesy of Nuka Research & Planning Group

A second segment of boom is deployed by the shore team over riprap from Mary O'Malley State park to complete the chevron exclusion tactic.



Photo courtesy of Nuka Research & Planning Group

An operations brief is conducted prior to deploying boom



A textbook shoreside anchor is set in Mary O'Malley State Park



Photos courtesy of Nuka Research & Planning Group

APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for the municipalities of Chelsea and Everett following the MassDEP GRP Exercise conducted on May 2, 2018.

Core Capability	Issue/Area for Improvement	Corrective Action	Capability Element ¹	Primary Responsible Organization	Organization POC	Start Date	Completion Date
Core Capability 1: Environmental Response/Health and Safety	1. Missing 12" boom in Chelsea trailer	Replace one 50 foot segment of the 12" boom in the Chelsea trailer.	Equipment	MER	John Duponte	6/01/18	9/15/18
	2. Trailer use	Follow up with the Chelsea FD to document how many times they have used the trailer and its equipment to respond to oil spills and ensure those circumstances match up with reported activities.	Planning	Nuka Research	Mike Popovich	6/01/18	9/15/18
	3. More suitable boat to conduct boom operations	Chelsea Fire Department should consider procuring a larger boat to enable them to conduct booming operations in routine weather conditions	Equipment	Chelsea FD	TBD	TBD	TBD
	4. Revise BH-03 GRP	Modify EX01c for GRP BH-03 to reflect the tactic used in the exercise.	Planning	Nuka Research	Mike Popovich	6/01/18	9/15/18
	5. Revise BH-03 GRP	Include a containment tactic at the north end of the Island End River.	Planning	Nuka Research	Mike Popovich	6/01/18	9/15/18
Core Capability 2: Operational Coordination	None.	None.	N/A	N/A	N/A	N/A	N/A
Core Capability 3: Operational Communications	None.	None.	N/A	N/A	N/A	N/A	N/A

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

APPENDIX B: EXERCISE PARTICIPANTS

Participating Organizations	
Town of Chelsea, MA	Participant Count
Chelsea Fire Department	11
Chelsea PD/Harbormaster	1
Chelsea OEM	1
Town of Everett, MA	
Everett Fire Department	13
Everett PD/Harbormaster	3
TOWN PARTICIPANTS	29
Federal	
United States Coast Guard (USCG)	3
State	
Massachusetts Department of Environmental Protection (MassDEP)	3
Nuka Research and Planning Group, LLC (contractor for MassDEP)	4
Moran Environmental Recovery (contractor for MassDEP)	2
TOTAL	41

7% of first responders reported having previous GRP exercise experience.

APPENDIX C: EXERCISE EVALUATION FORM

□



MassDEP Geographic Response Plan (GRP) Exercise and Testing Program

Participant Feedback Form

1 Strongly disagree	2 Mildly disagree	3 Neutral	4 Mildly agree	5 Strongly agree
-------------------------------	-----------------------------	---------------------	--------------------------	----------------------------

Please use the above rating scale to answer the questions for each of the following topics.

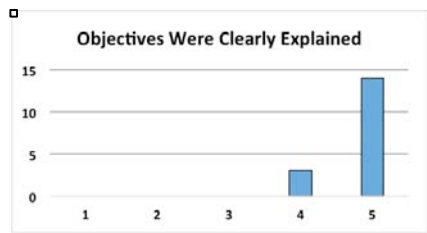
The objectives were clearly explained and the exercise met those objectives.	1 2 3 4 5
Comments:	
The material appropriately challenged me and the pace of instruction was correct.	1 2 3 4 5
Comments:	
The instructor(s) did an excellent job.	1 2 3 4 5
Comments:	
I found the classroom to be a comfortable learning environment.	1 2 3 4 5
Comments:	
I feel more prepared to respond to an oil spill than I did before this exercise.	1 2 3 4 5
Comments:	
The best thing about this training was _____.	
This training could have been improved by _____.	

Please use the back of the sheet if you need more room for comments.

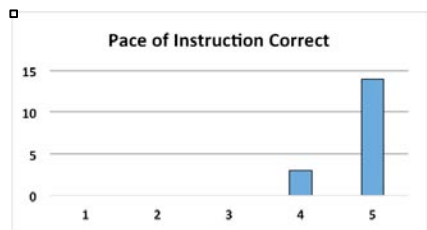
(Rev 2016)



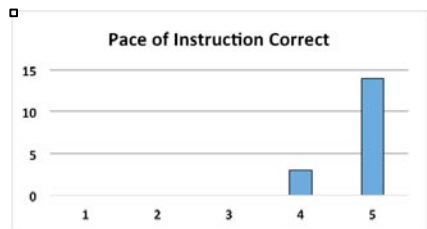
Student Feedback Summary



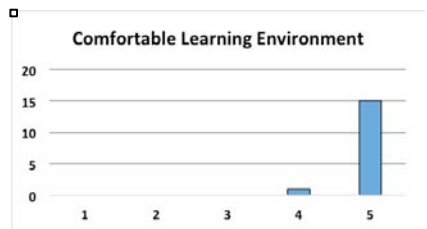
Comments: None



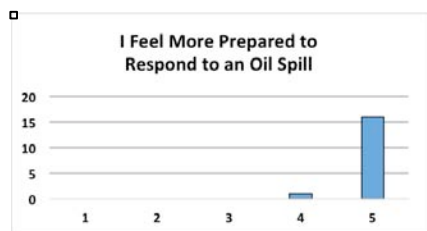
Comments: None



Comments: None



Comments: None



Comments: "Great exercise"

The best thing about this training was... "practicality", "weather! Boat", "Weather and boat", "boom handling", "hands on", "Great Day", "The Drill", "the hands on", "Educational", "hands-on", "showing what was in trailer and having chance to train with it." "The I.C." "working hand+hand w/ different departments as unified command" "the use of a practical test medium for visualizing spilled oil containment"

This training could be improved by.... "less people", "everyone should be wearing P.F.D not a select few", "not sure" "this was spot on." "more boats + rotating jobs between shore + water"