



MassDEP Geographic Response Strategy - 2022 Fairhaven/Mattapoissett GRS Exercise – Mattapoissett, MA

After-Action Report/Improvement Plan

September 20, 2022

The After-Action Report/Improvement Plan (AAR/IP) aligns exercise objectives with preparedness doctrine 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.

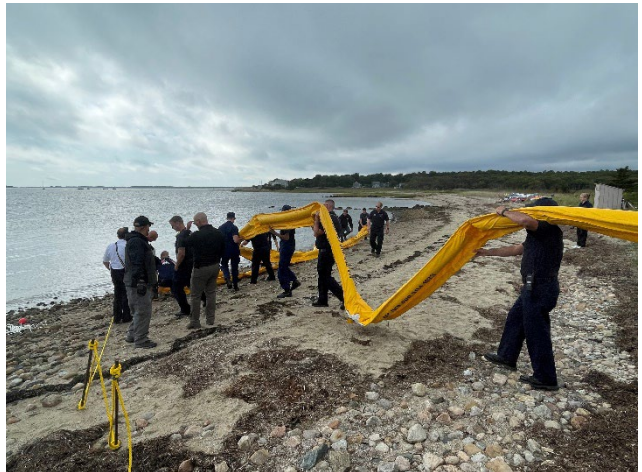
EXERCISE OVERVIEW

Exercise Name	2022 Fairhaven/Mattapoisett GRS Exercise
Exercise Dates	September 20, 2022
Scope	This is a full-scale exercise, planned for approximately 6 hours with classroom instruction held in the Mattapoisett Fire Station, and the exercise held in Buzzards Bay. Exercise play is limited to Buzzards Bay in the vicinity of Brant Beach, Brant Island Cove, and the adjacent shorelines.
Mission Area(s)	Response
Capabilities	Planning, 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 Strategy (GRS) tactics.</p> <p>Objective 2: Demonstrate the ability to assemble a spill response organization utilizing Incident Command System (ICS) principles through development and execution of an 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, harbor masters, and other state and federal first responders using UHF and/or VHF communications.</p>
Threat/Hazard	Discharge of oil into a navigable waterway
Scenario	An oil spill has occurred that threatens the area around Brant Beach and Brant Island Cove. The Fairhaven and Mattapoisett Fire Departments and Harbor Masters will utilize the Brant Island Cove (BB-14) Geographic Response Strategy (GRS) to protect sensitive resources in Brant Beach, Brant Island Cove and the surrounding area.
Sponsor	Massachusetts Department of Environmental Protection
Participating Organizations	See Appendix A: Exercise Participants
Point of Contact	<p>Julie Hutcheson, Program Coordinator Massachusetts Department of Environmental Protection Oil Spill Prevention and Response Program 100 Cambridge St. Boston, MA 02114 (617) 366-7424 julie.hutcheson@mass.gov</p>

Participants practice tossing a heaving line



Participants prepare boom for deployment



Photos courtesy of Nuka Research and Ed Pepin: Fairhaven Fire Department Photographer

Participants prepare marine anchor systems for deployment



Participants learn the differences of sorbent boom types



Photos courtesy of Nuka Research and Ed Pepin: Fairhaven Fire Department Photographer



Figure 1. Exercise Tactics Map

ANALYSIS OF CAPABILITIES

Aligning exercise objectives and 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 capabilities, and performance ratings for each capability as observed during the exercise and determined by the evaluation team.

Objective	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 Strategy (GRS) tactics.	Environmental Response/Health and Safety		S		
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 harbormaster departments using VHF and UHF communications	Operational Communications	P			
<p>Ratings Definitions:</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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).</p>					

Table 1. Summary of Core Capability Performance

Core Capability	Organizational Capability Target	Associated Critical Tasks	Exercise Observations
<p>Environmental Response/ Health and Safety</p>	<p>Overview of Response Equipment</p>	<ul style="list-style-type: none"> • Access Mass DEP Trailer • Identify boom and sorbents • Connect boom together • Connect towing bridle to boom • Connect components of anchor system together 	<ul style="list-style-type: none"> • Both trailers were accessible and contained all the appropriate equipment • Participants were attentive and engaged during trailer overview sessions • Participants struggled restowing boom in trailer post-deployment
	<p>Basic Booming Operations</p>	<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"> • Despite participants encountering some difficulty due to the rocky shoreline, the shoreside anchor system was successfully set up. The forward section of rebar did bend slightly due to boom tension once boom was anchored in the water • Anchor systems were loaded onto the Mattapoisett HM vessel (M28) by personnel via the end of the jetty at Brant Beach. • 600 ft of exclusion boom was transferred from the shoreline to Fairhaven FD Marine 25 using the heaving line and then transported to the exclusion tactic site utilizing a bow tow. • During demobilization, Fairhaven Marine 25 and Mattapoisett FD Marine 1 and Marine 28 towed boom around the Brant Island point to the boat ramp at Brant Cove Marina
	<p>Implement Tactics in GRS</p>	<ul style="list-style-type: none"> • Deploy containment around a vessel at a mooring • Deploy exclusion boom (EX) around Brant Beach shoreline 	<ul style="list-style-type: none"> • Due to time constraints, the exclusion booming strategy was modified, utilizing only 600 of the 900 feet of boom prescribed in the existing tactic. • Marine 25 deployed 600 ft of boom in a similar configuration to that depicted on the BB14 GRS. Due to the shortened length of boom (as mentioned above) the western end of the boom section did not reach the shoreline but for the purposes of training, the objective was achieved. • Three anchor systems were successfully deployed to anchor EX01c in place. • Oil surrogate was deployed seaward of the EX01c tactic, but prevailing wind carried it westward and away from the boom. The Incident Commander (IC) took advantage of the conditions and ordered the boom section to be reconfigured as a containment boom tactic by

Core Capability	Organizational Capability Target	Associated Critical Tasks	Exercise Observations
			moving the western anchor point closer to shore and deploying oil surrogate along the shoreline to simulate a land-based spill. The containment boom strategy successfully contained the oil surrogate. <ul style="list-style-type: none"> Personnel mentioned in the exercise debrief that they had minor issues deploying the anchor at the western end of the boom
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 made as necessary Participants demonstrate command and control of exercise 	<ul style="list-style-type: none"> The IC and the Operations Section Chief worked well together, assigning all personnel to appropriate strike teams, overseeing the entire deployment, and adjusting the deployment plan based on on-scene conditions.
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"> Command Staff displayed effective coordination with on-water and shoreside strike teams, effectively communicated each team's role in the exercise and coordinated all deployment activity. Radios were used with no issues in communicating with all strike teams.

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 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 Strategy (GRS) tactics

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

Capability 1: Environmental Response/Health and Safety

Strengths

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

Strength 1: Participants were attentive during the classroom and hands-on training sessions, asking informed questions throughout and providing immediate feedback.

Strength 2: Vessel strike teams did an excellent job of adapting deployment strategies to adhere to last-minute changes and in further repositioning the deployed boom and anchor points when it was determined that the peat moss would not impact the exclusion boom configuration due to prevailing winds

carrying it westward.

Strength 3: Command Staff rotated participants to maximize the involvement of personnel in this training.

Areas for Improvement

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

Area for Improvement 1: Participants did not adequately consider/monitor the impact of wind and current conditions on the movement of deployed oil surrogate in relation to the boom configuration, forcing adjustments to the deployment strategy.

Analysis: To properly anticipate the direction and movement of peat moss during an exercise, personnel would benefit from an accurate on-site reading of current and wind conditions. This will help avoid the need to adjust the boom configuration once peat moss is deployed in the water. This can be achieved by obtaining the ability to gauge and monitor real-time weather and current conditions using an on-site portable weather monitoring station and available GIS-based current speed calculators.

Area for Improvement 2: Participants encountered difficulty in transferring towing and tending lines from shore to vessel with heaving lines, resorting to multiple attempts to successfully toss heaving lines to the awaiting on-water vessel.

Reference: MassDEP GRS Exercise Classroom Curriculum

Analysis: Due to close to shore water depths and draft restrictions, shoreside strike team members donned waders, walked waist deep into the water, and utilized a heaving line to transfer boom tending/towing lines to vessel strike teams. Although the shoreside strike team was eventually able to get the heaving lines to the vessels, and the vessels were able to secure and tow the boom successfully to the deployment location, it took several attempts to throw the heaving line an appropriate length. This highlights the need to increase the amount and duration of hands-on heaving line throwing training. This process could be accomplished through extended exercise day heaving line practice.

Area for Improvement 3: Exercise trainers did not adequately emphasize best practices for re-packing boom into the oil spill response trailer, leading to participants improperly re-packing boom once demobilization began.

Reference: MassDEP GRS Exercise Planning/Training

Analysis: Participants struggled re-packing boom into the Fairhaven oil spill response trailer to the point where rope was tied around the boom to compact it and keep it in place inside the trailer. Trailer equipment familiarization trainings should include a briefing on how to properly re-load boom and supplies into trailers to ensure that all equipment fits properly without the need for additional means to secure the boom, allowing for the closure of all doors.

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

The strengths for each capability aligned to this objective are described in this section. There were no identified areas in need of improvement.

Capability 2: Operational Coordination

Strengths

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

Strength 1: Command Staff adequately identified the roles and responsibilities of all on-scene personnel.

Strength 2: All vessel strike teams worked well together, independently coordinating on-water activity and actively providing instruction as needed to less experienced vessel operators.

Strength 3: Command Staff independently identified an Operations Chief, who was integral in overseeing efficient equipment staging, boom deployment, and demobilization evolutions.

Objective 3: 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

The strengths for each capability aligned to this objective are described in this section. There were no identified areas in need of improvement.

Capability 3: Operational Communications

Strengths

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

Strength 1: Participants from all agencies were able to determine the appropriate radio frequencies and utilized radios adequately to communicate deployment tactics and adjustments.

Strength 2: Command Staff utilized the safety and operations brief to adequately communicate tactics prior to deployment.

Strength 3: Vessel strike teams showed an ability to adjust to altered boom deployment tactics and follow instructions as they were communicated from the Command Staff.

Shoreside crews assist with preparing boom for tow



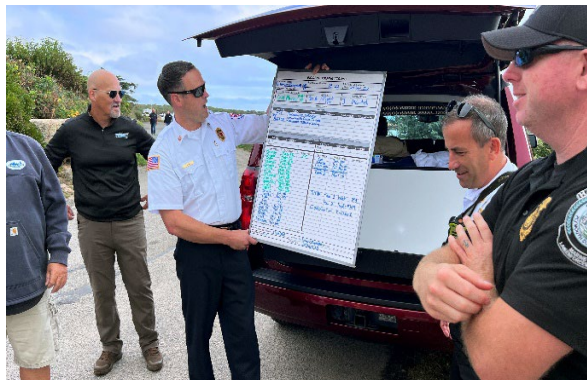
Vessel crews tow boom to the deployment site



Vessel crews attach an anchor to a section of boom



Incident Commander Andy Murray reviews roles and responsibilities prior to deployment



Photos courtesy of Nuka Research and Ed Pepin: Fairhaven Fire Department Photographer

APPENDIX A: IMPROVEMENT PLAN

The Improvement Plan lists each area for improvement observed during exercise conduct and identifies the measurable corrective actions that can be taken to strengthen each associated capability. The purpose of an Improvement Plan is to help shape each organization’s preparedness priorities and support continuous improvement. As shown in the table below, each area for improvement is accompanied by a corrective action and the most relative capability element. The table also lists each corrective action’s primary responsible organization and POC. The primary responsible organization and POC provide the oversight to ensure each corrective action is initiated by the start date and completed by the completion date listed in the table.

Capability	Issue/Area for Improvement	Corrective Action	Capability Element ¹	Primary Responsible Organization	Organization POC	Start Date	Completion Date
Capability 1: Environmental Response/Health and Safety	Participants did not adequately consider/monitor the impact of wind and current conditions on the movement of deployed oil surrogate in relation to the boom configuration, forcing adjustments to the deployment strategy.	Nuka Research will look into acquiring an on-site portable weather monitoring station and GIS-based current speed calculator prior to on-water deployment to identify, monitor, and document real-time weather and current conditions and to better prepare for on water deployment and adjustment of boom and oil surrogate deployment tactics if necessary.	Equipment and Systems	Nuka Research	M. Popovich	Fall 2022	Spring 2023
Capability 1: Environmental Response/Health and Safety	Participants encountered difficulty in transferring towing and tending lines from shore to vessel with heaving lines, resorting to multiple attempts to successfully toss heaving lines to the	Exercise trainers will revise trailer familiarization sessions to increase the amount and duration of hands-on heaving line throwing training and allow exercise participants more opportunities to	Training	Nuka Research	M. Popovich	Fall 2022	Spring 2023

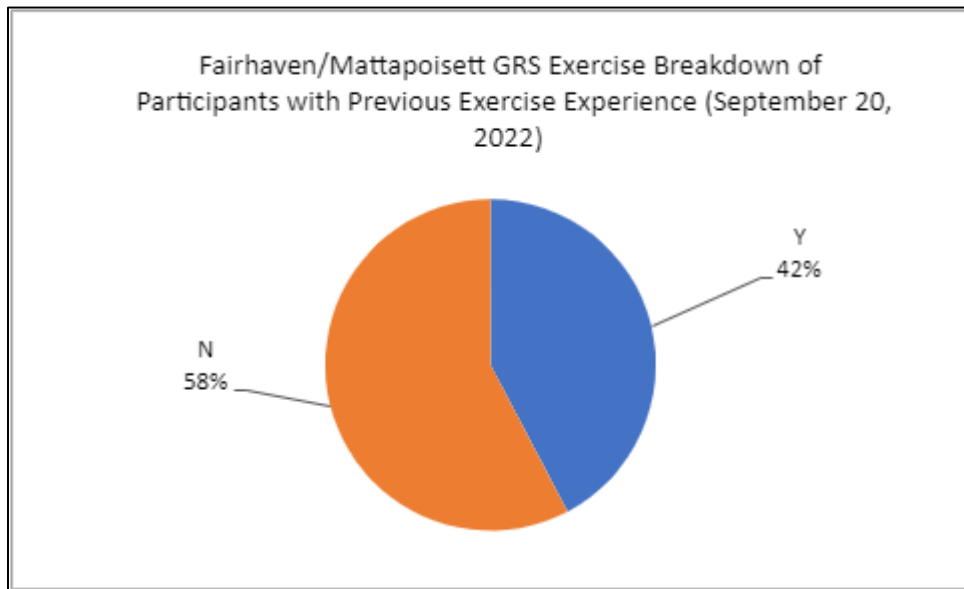
¹ Capability Elements are Planning, Organization and Leadership, Personnel, Equipment and Systems, Training, or Exercise

Capability	Issue/Area for Improvement	Corrective Action	Capability Element ¹	Primary Responsible Organization	Organization POC	Start Date	Completion Date
	awaiting on-water vessel.	practice this tactic prior to on-water deployment.					
Capability 1: Environmental Response/Health and Safety	Exercise trainers did not adequately emphasize best practices for re-packing boom into the oil spill response trailer, leading to participants improperly re-packing boom once demobilization began.	Exercise trainers will revise trailer familiarization sessions to include a briefing on how to properly re-load boom and supplies into trailers and ensure that all equipment fits properly without the need for additional means to secure the boom and allowing for the closure of all doors.	Training	Nuka Research	M. Popovich	Fall 2022	Spring 2023

This IP is developed specifically for MassDEP, MER, Nuka Research, Fairhaven, and Mattapoisett as a result of the 2022 Fairhaven/Mattapoisett GRS Exercise conducted on September 20, 2022.

APPENDIX B: PARTICIPANTS & RESOURCES

Participating Organizations	
Town of Fairhaven, MA	Participant Count
Fairhaven Fire Department	10
Fairhaven Harbormaster	3
Town of Mattapoissett, MA	Participant Count
Mattapoissett Fire Department	9
Mattapoissett Harbormaster	4
State	
Massachusetts Department of Environmental Protection (MassDEP)	2
Moran Environmental Recovery (MER) *	3
Nuka Research and Planning Group, LLC (Nuka Research) *	3
Federal	
United States Coast Guard	2
TOTAL	36



List of Resources			
Agency	Resource	Kind	Exercise Function
Fairhaven FD	Defender/25'		Multiple roles
Mattapoisett FD	Center Console/21'		Multiple roles
Mattapoisett HM	Stanley Landing Craft/28'		Multiple roles
Mattapoisett	Oil spill response trailer		Trailer familiarization
Fairhaven FD oil spill response trailer	Oil spill response trailer		Boom deployment

APPENDIX C: PARTICIPANT FEEDBACK

Participant feedback was solicited from the group using the combination of online and paper feedback forms. Participants were asked to rate each question using the scale listed below:

- 1 = Strongly Disagree
- 2 = Mildly Disagree
- 3 = Neutral
- 4 = Mildly Agree
- 5 = Strongly Agree

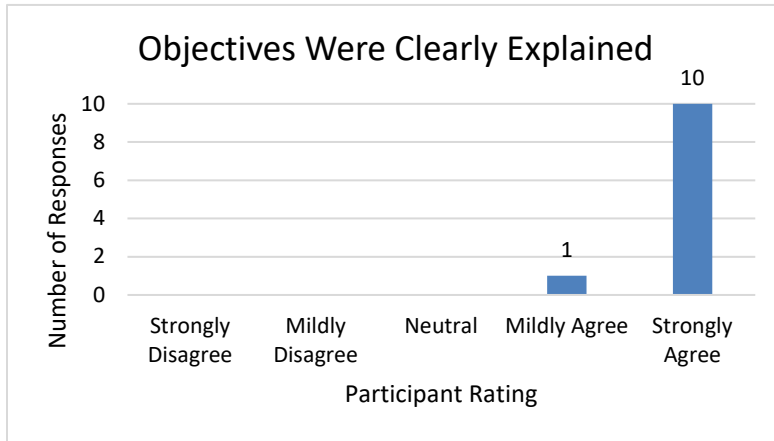
Participant feedback questions included the following:

- The objectives were clearly explained, and the exercise met those objectives
- The material appropriately challenged me, and the pace of instruction was correct
- The instructor(s) did an excellent job
- I found the classroom to be a comfortable learning environment
- I feel more prepared to respond to an oil spill than I did before this exercise

After each question above is ranked, participants are then asked to provide their open text responses to identify both the best thing about the training and any suggested improvements. A summary of this exercise's participant feedback is listed on the succeeding pages.

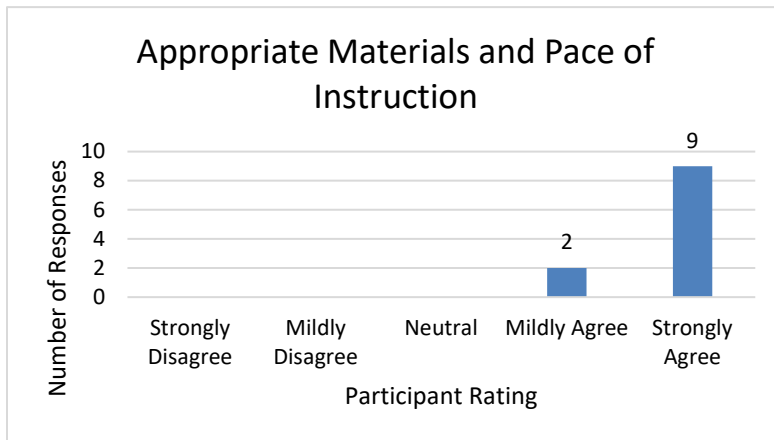
Participant Feedback Summary

The following feedback was received from 11 of the 36 participants.

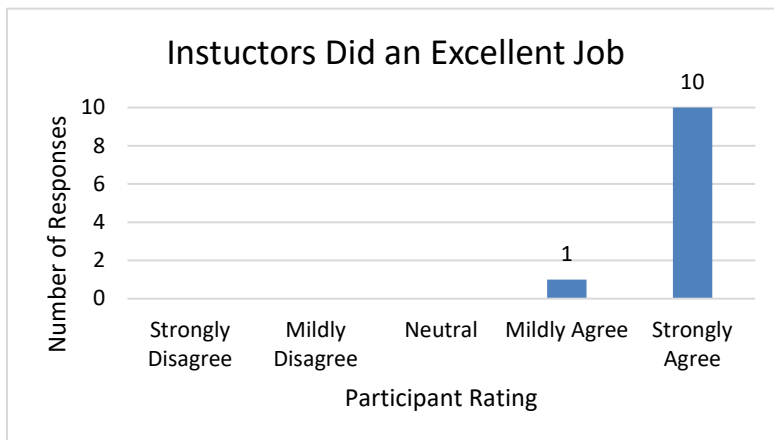


Comments: Great info, delivered well and extremely personable instructors.

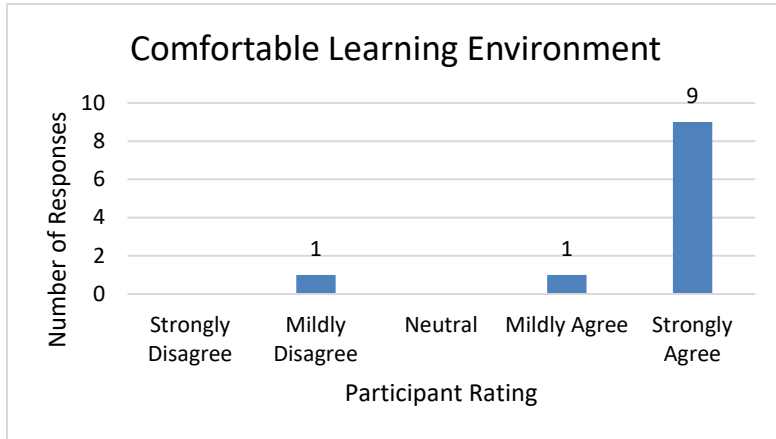
Thank you for the education and knowledge to mitigate future events.



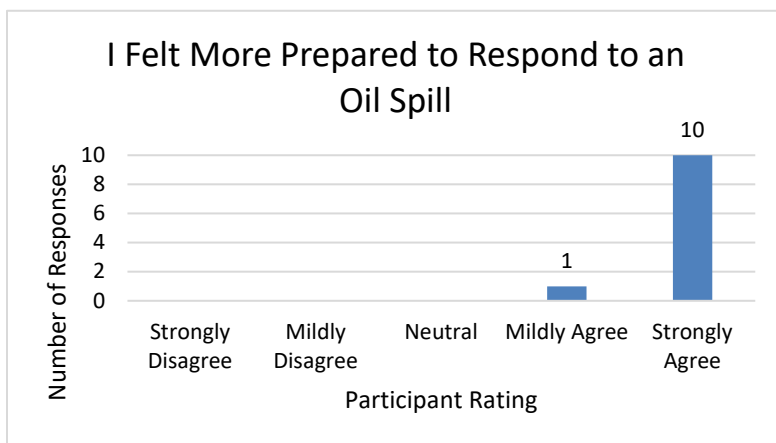
Comments: None



Comments: None



Comments: Hands on training was better for information retention



Comments: Knowledge is the key to future events

I would recommend starting earlier than 10 a.m. to provide more hands-on training

The best thing about this training was...	This training could be improved by...
The hands-on experience	More hands-on training
Instructor delivery	Combination of some of the trailer stations
Instructors were very knowledgeable and helpful. They explained materials well and provided helpful tips	Send out the PowerPoint prior to class to expedite the training and allow the departments to train members that were not able to attend the exercise
The on-water experience	Less classroom instruction
The opportunity to get everybody on the same page and working together	
Working with neighboring municipalities and agencies to coordinate large scale efforts	
It was a practical scenario	