



Geographic Response Strategy Exercise Series – Kingston/Plymouth First Responder Exercise

After-Action Report/Improvement Plan

May 5, 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 Kingston/Plymouth First Responder Exercise
Exercise Dates	May 5, 2022
Scope	This is a full-scale exercise, planned for approximately 5 hours in Plymouth Harbor in Plymouth, MA. Exercise play is limited to Plymouth Harbor in the vicinity of the Leo DeMarsh State Boat Ramp and the adjacent shorelines.
Focus Area(s)	Prevention, Protection, Response
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 Strategy (GRS) 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, harbor masters, 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 that threatens Plymouth Harbor. The Kingston and Plymouth Fire Departments and Harbor Masters will utilize various common Geographic Response Strategy (GRS) tactics to protect sensitive resources in Plymouth Harbor and the surrounding area.
Sponsor	Massachusetts Department of Environmental Protection (MassDEP)
Participating Organizations	<p>Participating organizations included:</p> <ul style="list-style-type: none"> • Kingston Fire Department • Plymouth Fire Department • Plymouth Harbor Master • Plymouth Emergency Management • Massachusetts Department of Environmental Protection (MassDEP) • U.S. Coast Guard Sector Boston • Moran Environmental Recovery • Nuka Research <p>Note: See Appendix B for participant count</p>
Point of Contact	<p>Julie Hutcheson, Marine Oil Spill Program Coordinator Massachusetts Department of Environmental Protection Oil Spill Prevention and Response Program 1 Winter St. Boston, MA 02108 (617) 366-7424 julie.hutcheson@mass.gov</p>

First Responders participate in the classroom portion of the exercise



Moran Environmental Recovery provides trailer familiarization to the first responders



Photos courtesy of Nuka Research

First responders practice throwing a heaving line

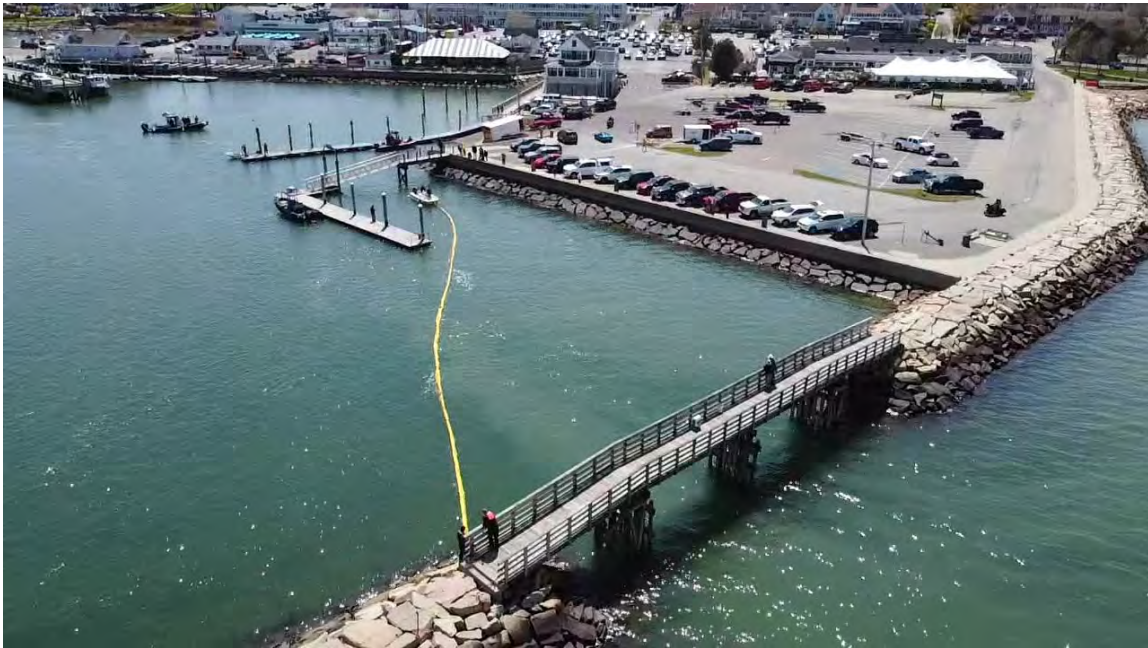


First responders practice assembling the boom



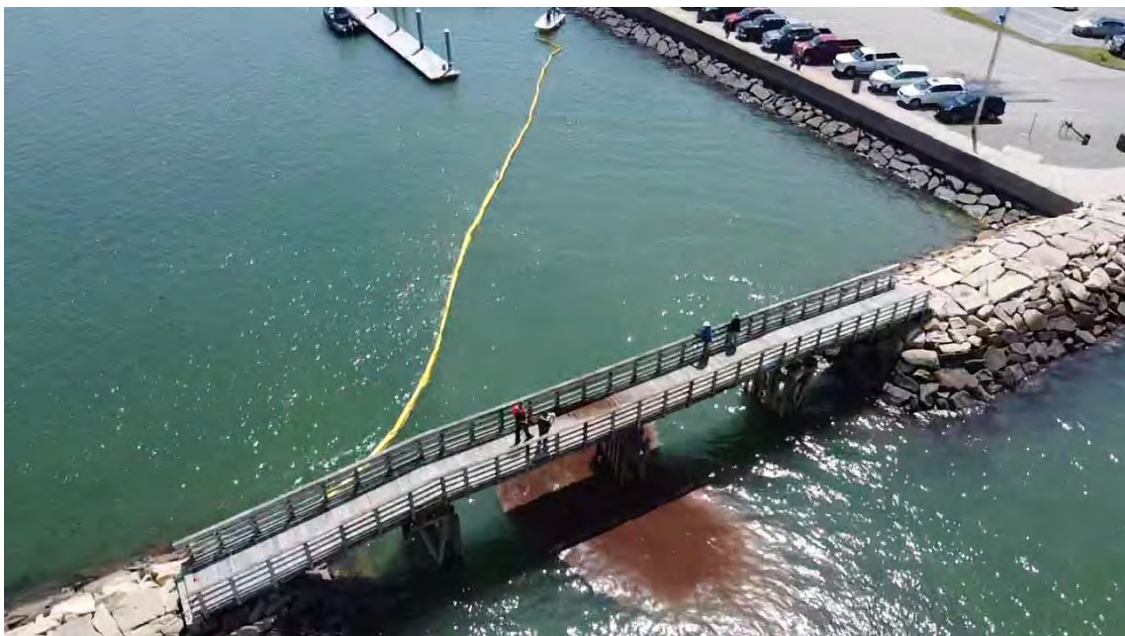
Photos courtesy of Nuka Research

On water team tows boom to the shoreline anchor point to create a diversion configuration



Photos courtesy of Nuka Research

Shore team deploys peat moss as an oil surrogate to test the diversion boom strategy



Photos courtesy of Nuka Research

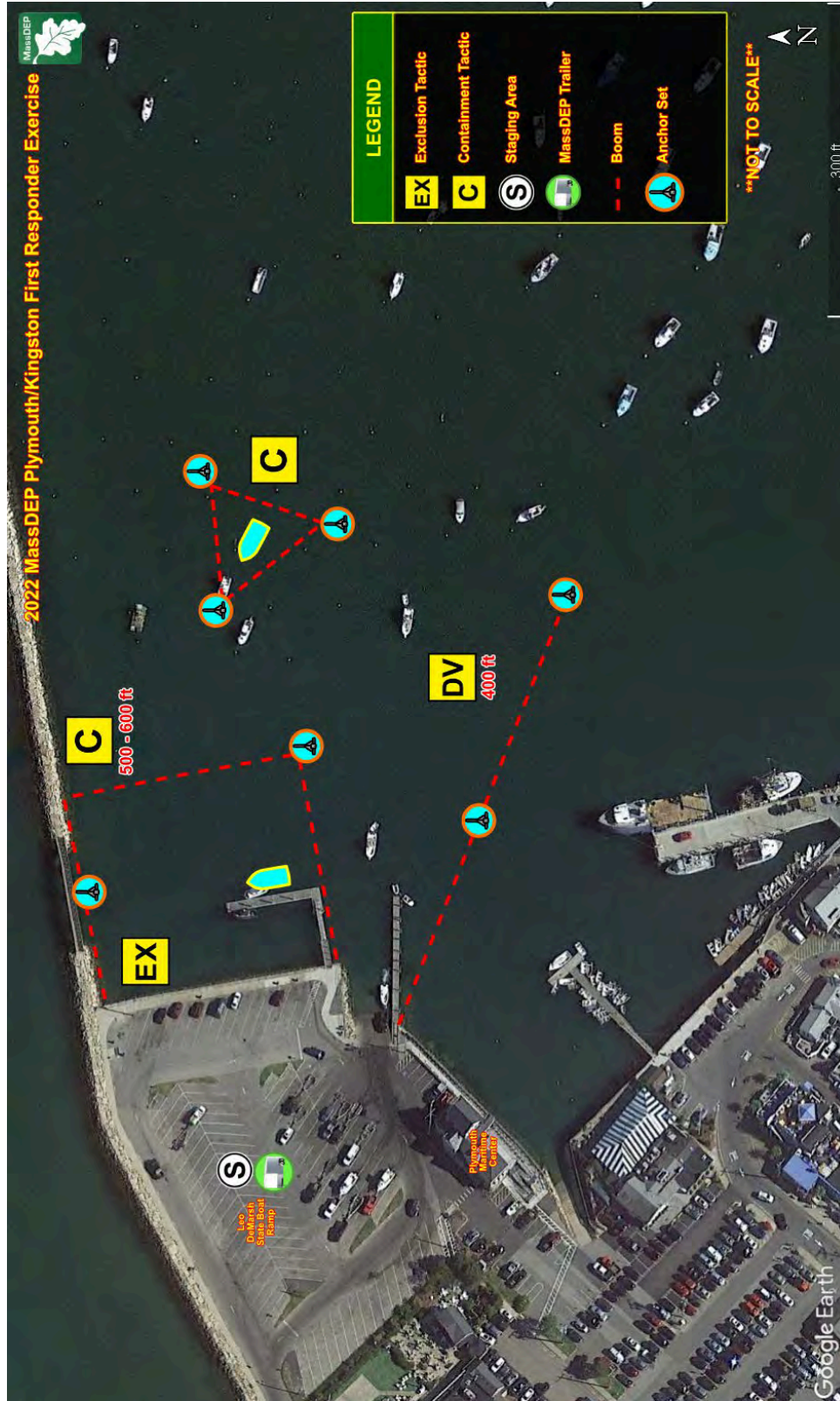


Figure 1. Exercise Tactics Map

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		S		
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		S		
Ratings Definitions: 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

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

Capability: Environmental Response/Health and Safety

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

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.

Objective 1.1: Overview of Response Equipment

Associated Critical Tasks

- Access Mass DEP Trailer
- Identify boom and sorbents
- Connect boom together
- Connect towing bridle to boom
- Connect components of marine and shoreside anchor systems together

Objective 1.2: Basic Booming Operations

Associated Critical Tasks

- Transfer boom and equipment between shore and vessel
- Transport and tow boom.
- Anchoring and Connecting boom to shore
- Safe vessel and crew operations.

Objective 1.3: Implement Tactics in GRS

Associated Critical Tasks

- Deploy Diversion Boom Tactic (200 ft)
- Deploy Containment Boom Tactic around a vessel at a mooring (200 ft)

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 feedback.

Strength 2: In order to take advantage of the prevailing conditions, the initial 400 ft diversion boom strategy location and length (see Figure 1 above) was modified. Instead of deploying 400 ft of boom in the configuration and location depicted, 200 ft of diversion boom was instead deployed between the jetty bridge and the boat ramp seawall. Vessel strike teams did an excellent job in adapting to this last-minute change and in adjusting the deployment angle and anchor point when it was determined that the estimated 200 ft boom section would not reach the initial targeted point along the seawall close to the boat ramp and harbor master dock gangway.

Areas for Improvement

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

Area for Improvement 1: Connecting and configuring boom.

Reference: MassDEP GRS Exercise Planning/Training

Analysis: While vessel strike teams generally did a good job towing and anchoring boom segments, and configuring various booming strategies, they did encounter some difficulty in certain circumstances in configuring the containment boom strategy and in connecting boom sections. Vessel strike teams experienced some difficulty in configuring the containment boom strategy around the floating dock (simulating an anchored vessel) and had brief difficulty in connecting the containment boom sections because the end of at least one boom section had already been anchored. As was pointed out during the hot wash, these tasks not only became easier as the deployment progressed, but generally become easier the more often first responders participate in these types of exercises.

Capability: Operational Coordination

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

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

Objective 2.1: Execute an Incident Brief (ICS 201)

Associated Critical Tasks

- Assignments in ICS 201 followed/on-scene adjustments made
- Participants demonstrate command and control of exercise

Strengths

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

Strength 1: All vessel strike teams worked well together, independently coordinating on-water activity and actively providing instruction as needed to less experienced vessel operators.

Strength 2: Despite a lack of experience in overseeing on water oil spill boom deployment operations, as well as some initial delays and difficulties in getting all strike teams organized and tasked, and despite a shortage of shoreside support personnel, the Incident Commander (IC) did a good job overall managing a shoreside support strike team and multiple vessel strike teams in deploying both boom configurations.

Areas for Improvement

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

Area for Improvement 1: Assignment of a Shoreside Support Personnel

Reference: Exercise Plan, ICS 201

Analysis: An inadequate number of shore team support personnel were assigned. Most notably during the diversion boom deployment, inadequacies in the number of shoreside support personnel were recognized as a small group of only two personnel were tasked with supporting boom extraction and pre from the trailer at the boat ramp, as well as setting up two shoreside anchor points and securing the boom to these two points, as well as deployment of the peat moss (oil surrogate) from the jetty bridge north of the boat ramp. Exercise controllers stepped in to assist with shoreside anchoring at the location along the boat ramp seawall.

Capability: Operational Communications

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

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

Objective 3.1: Effectively Communicate Using UHF/VHF Equipment

Associated Critical Tasks

- **Create Communications Plan**
- **Communicate with other participants using UHF or VHF equipment**

Strengths

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

Strength 1: Despite a general lack of communication and organization in the early stages of on-water deployment, participants, especially vessel strike teams, quickly overcame this and maintained clear and frequent communications to effectively deploy both boom configurations.

Areas for Improvement

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

Area for Improvement 1: Command Staff to strike team communication.

Reference: Exercise Plan, ICS 201

Analysis: While an operations brief was conducted, personnel assignments were made after the brief and there appeared to be a lack of understanding by members of both shoreside and vessel strike teams as to what tasks needed to be performed by each element to accomplish the intended deployment strategies. This was exacerbated by a lack of communication and coordination in the early stages of the on-water deployment. This could likely have been avoided had the IC clearly outlined expected tasks to each strike team and more frequently communicated tasking once on-water deployment commenced.

Appendix A: IMPROVEMENT PLAN

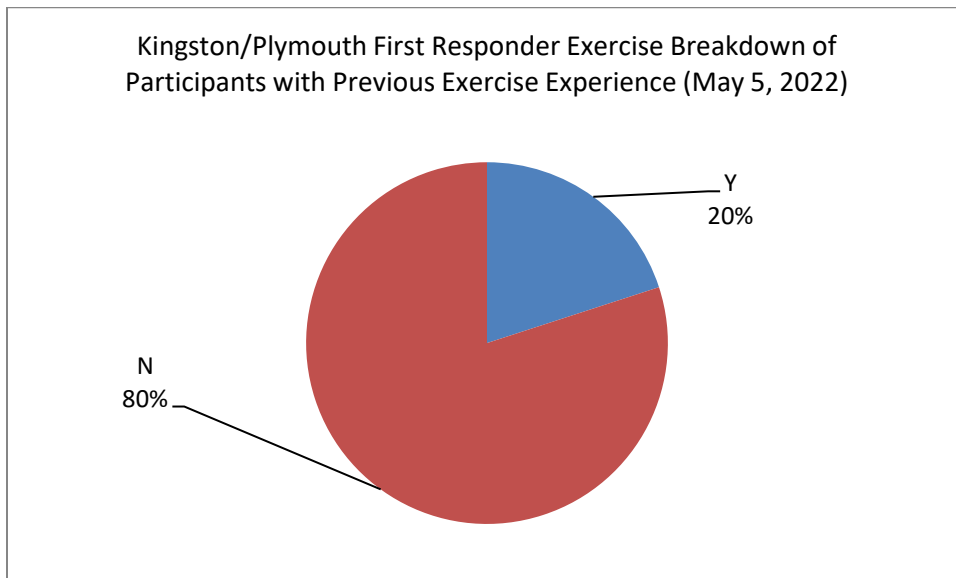
This IP is developed specifically for MassDEP, MER, Nuka Research and the towns of Kingston and Plymouth, MA as a result of the MassDEP First Responder Exercise conducted on May 5, 2022.

Capability	Issue/Area for Improvement	Corrective Action	Capability Element ¹	Primary Responsible Organization	Organization POC	Start Date	Completion Date
Capability 1: Environmental Response/Health & Safety	1. Connecting and configuring boom	Encourage more frequent/independent boom deployment training at local level	Training, Exercise	Nuka Research	M. Popovich	04/26/22	05/01/22
Capability 2/3: Operational Coordination/Communication	2. Strike Team assignments and communication	Ensure adequate personnel assignments are made and frequent comms are maintained	Organization, Exercise	Nuka Research	M. Popovich	06/01/22	09/01/22

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


APPENDIX B: PARTICIPANTS & RESOURCES

Participating Organizations	
	Participant Count
Town of Kingston, MA	
Kingston Fire Department	4
Town of Plymouth, MA	
Plymouth Fire Department	6
Plymouth Harbormaster	5
Plymouth Emergency Management	1
TOWN PARTICIPANTS	16
Federal	
United States Coast Guard Boston	2
State/Other	
Massachusetts Department of Environmental Protection (MassDEP)	2
New England Wildlife Center	3
Nuka Research and Planning Group, LLC (contractor for MassDEP)	2
Moran Environmental Recovery (contractor for MassDEP)	2
TOTAL	27



Agency	Resource	Kind	Exercise Function
Kingston FD	KINGSTON BOAT 2 Zodiac 21 ft	Vessel	Boom Deployment/Support
Plymouth FD	Oil Spill Response Trailer	Equipment	Equipment Demo/Deployment
Plymouth HM	HARBORMASTER 3 Safeboat 27 ft	Vessel	Safety/Observation/Boom Deployment/Support
Plymouth HM	HARBORMASTER 6 Whaler 16 ft	Vessel	Boom Deployment/Support

APPENDIX C: PARTICIPANT FEEDBACK



MassDEP
Geographic Response Plan (GRP)
Exercise and Testing Program

Participant Feedback Form

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


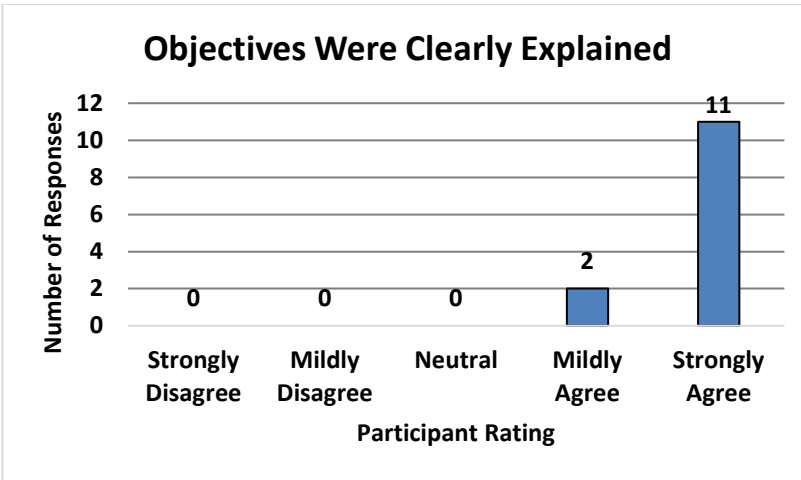
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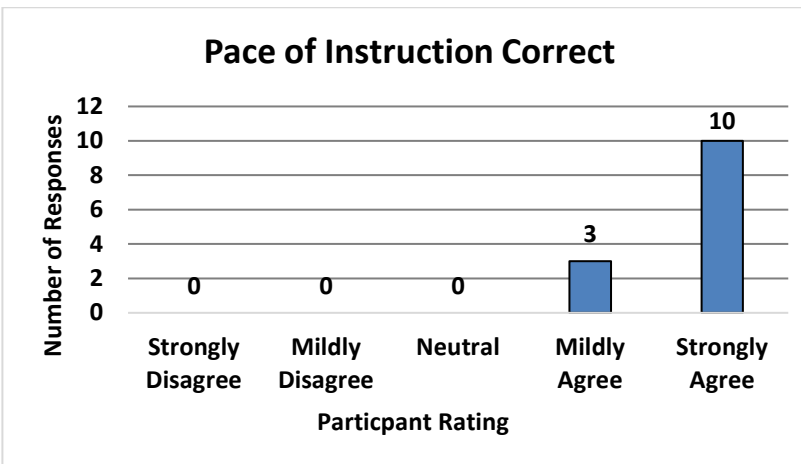
Figure 2. Participant Feedback Form

Participant Feedback Summary

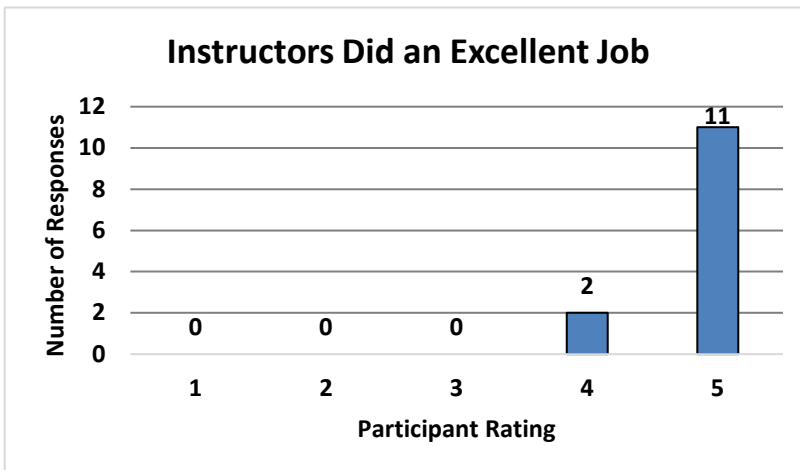
The following feedback was received from 13 of the 16 participants (81%).



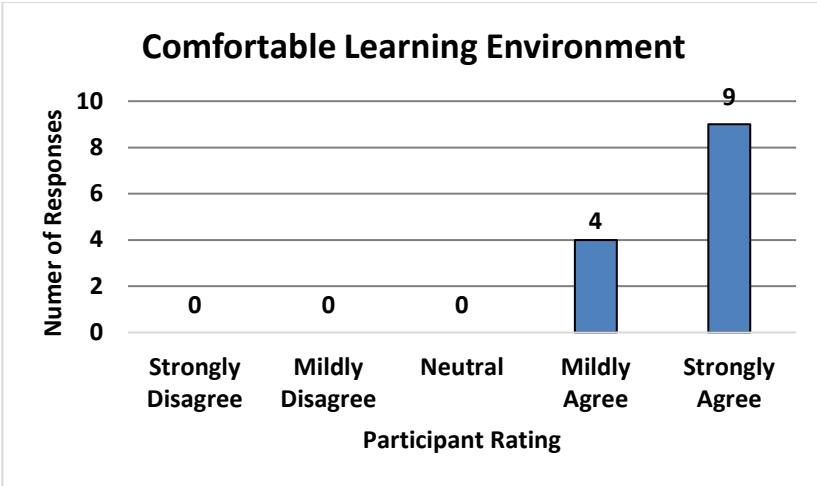
Comments: None



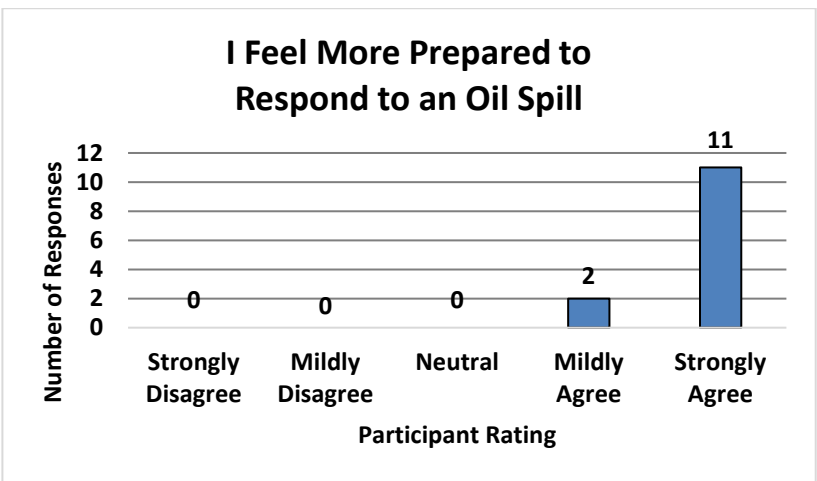
Comments: None



Comments: "The four stations were well taught"



Comments: None



Comments: None

The best thing about this training was..."Hands on and going through trailer", "Hands on implementation of the equipment.", "Doing hands on is the best. Classroom is good but doing things hands on is great.", "Deploying the boom", "Field exercise "

This training could be improved by" Further explaining the process of deploying anchor systems", "Nothing. Great training.", "Nothing! It was great!", "A little more instructor involvement during the exercise", "More time on the field exercise"