



MassDEP Geographic Response Plan – 2018 Lynn Harbor (NS-29) Exercise

After Action Report

May 17, 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 Lynn Harbor (NS-29) Exercise
Exercise Date	May 17, 2018
Scope	This exercise was a Full Scale Exercise, planned for approximately six hours in Nahant, MA and upon the waters of Lynn Harbor. Exercise play was limited to Lynn Harbor and the 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 that threatens Lynn Harbor in the vicinity of the Massachusetts Department of Conservation and Recreation (MassDCR) Boat Ramp. The Lynn and Nahant Fire Departments and Harbormaster staffs will utilize GRP NS-29 to deploy boom to protect sensitive resources in Lynn Harbor near the MassDCR Boat Ramp.
Sponsor	Massachusetts Department of Environmental Protection (MassDEP).

Participating Organizations

Participating organizations included:

- Lynn Fire Department (LFD)
- Lynn Harbormaster (LHM)
- Lynn Emergency Management Agency (LEMA)
- Nahant Fire Department (NFD)
- Nahant Harbormaster (NHM)
- MassDEP
- Massachusetts Department of Fire Services (DFS)
- 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

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Vessels from Lynn and Nahant deploy oil spill boom in Lynn Harbor.



An operations brief is conducted by the Incident Commander at the DCR boat ramp.



Photos courtesy of Nuka Research & Planning Group



Figure 1. Lynn Harbor GRP (NS-29)



Figure 2. NS-29 DV-02 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			
<p>Ratings Definitions:</p> <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 equipment was readily available in both trailers with two exceptions. In the Lynn trailer, there was a damaged section of 18" boom and one of the 12" sections of boom did not have any connection pins attached to one end of the boom. Recommendation: <u>Repair or replace both sections of boom in the Lynn Trailer</u> • The roof on the Nahant trailer was stove-in due to apparent snow loading and one of the brake lights was inoperative. Recommendation: <u>Repair the roof of the Nahant Trailer and the brake light.</u> • The 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. The Mayor of Lynn visited the exercise during this part of the training evolution. • Marine 31 (Nahant FD) got swamped when trying to pull a 300' section of 18" boom. Recommendation: <u>Nahant Fire Department should consider procuring a larger boat to enable them to safely conduct booming operations in routine weather conditions.</u> • The Engine 3 boat (Lynn FD) had no cleats to safely and effectively pull boom. Its low freeboard allowed the crew to effectively connect boom in the water and handle anchor connections as well. Recommendation: <u>Lynn Fire Department should consider procuring a larger boat to enable them to safely conduct booming operations in routine weather conditions.</u> • Nahant FD indicated that they had recently deployed boom for an oil spill and there is no corresponding use report in the Trailer Tracking System. Recommendation: <u>Follow up with the Nahant FD to document the use of the trailer and its equipment to respond to oil spills and ensure those circumstances match up with reported activities.</u>
	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) • All operations conducted in a safe manner. • IC made initial decision to deploy 1000' of boom from the trailer and transfer it to the beach in 3 sections before connecting together and pulling it into the DV-02 configuration. During the first pull of 300 feet, the IC decided to anchor that section in place and build out the tactic by connecting the two remaining sections in the water. Either approach to executing DV-02 would have worked. The revised approach by the IC appeared be the more rapid approach for deploying boom. • Lynn and Nahant FD/HM boats changed positions when deploying the boom.

			<p>Boat crews from both municipalities worked extremely well together. It was readily apparent that they maintain excellent working relationships.</p> <ul style="list-style-type: none"> • In anticipation of potential deployment plan changes and in order to facilitate rapid boom anchoring and towing, boat crews had an extra bridle and anchor system in each boat. • Trailer personnel showed great teamwork in getting boom out of trailer. This preparation enabled the boats to pull all 1000 feet of boom out of trailer. In terms of length, this boom deployment was as large as any GRP Exercise conducted to date. • 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 lines and shore anchor, and ensured overall safe booming operations.
	Implement Tactics in GRP	Diversion Boom (DV-02)	<ul style="list-style-type: none"> • Performed Without Challenges (P) • Engine 3 expertly deployed surrogate but the tide was not very strong to sufficiently test the strategy. The wind was the primary driver and put the surrogate into the boom but it did not divert to shore. • DV-02 was a good training strategy but a review of the GRP is necessary to determine whether this strategy would be effective in diverting oil in Lynn Harbor to the designated shore side recovery location. It would seem that oil entering Lynn Harbor would likely follow the channel into the harbor because that is where the current would be strongest. Therefore, an additional section of boom deployed in a cascade array extending into the main channel should be considered. Such a length would have to be, at a minimum, 600 feet of 18" boom. The exercise also revealed that the designated shore side recovery location is most likely ideally placed. Recommendation: <u>Review and/or revise DV-02 in NS-29 to improve its effectiveness.</u> • Multiple anchors were used to deploy the 1000' tactic. The use of trip lines allowed for easy adjustment of the anchors for deploying the diversion booming tactic.
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. • The IC provided an operations brief that described response actions being taken in great detail by the combined Lynn/Nahant first responders. • The large-scale printout of the GRP was extremely useful for the IC to use during the exercise. • Special thanks to the Department of Fire Services for providing the ISU and the Rehab Unit.

<p>Operational Communications</p>	<p>Effectively Communicate Using VHF equipment</p>	<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) • VHF/UHF communications were flawless. Radios were tested before use in the field. The communications plan executed by the Incident Support Unit (ISU) underscores the proof of concept for combining Marine Channel 17 with Fireground Channel 3 communications to create maritime/land interoperability. • The ISU also had a video capability that was effectively used to view offshore booming operations by using the vertically extendable boom camera to zoom in on the response boats as they deployed the boom.
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Table 2. Summary of Organizational Capability Targets and Associated Critical Tasks

DFS Rehab and Incident Support Unit (ISU) support exercise participants



Photo courtesy of Nuka Research & Planning Group

Classroom instruction is provided prior to the exercise.



Photo courtesy of Nuka Research & Planning Group

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 Lynn and Nahant 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: Repair or replace sections of boom requiring repair in the Lynn Trailer.

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

Analysis: In the Lynn trailer, there was a damaged section of 18” boom and one of the 12” sections of boom did not have any connection pins attached to one end of the boom.

Area for Improvement 2: Repair the roof of the Nahant Trailer and the brake light.

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

Analysis: The roof on the Nahant trailer was stove-in due to apparent snow loading and one of the brake lights was inoperative.

Area for Improvement 3: Follow up with the Nahant FD to document use of their 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: Members of the Nahant FD indicated that they had recently deployed boom for an oil spill and there is no corresponding use report in the Trailer Tracking System. It appears that there is more use of the Nahant trailer than is currently documented.

Area for Improvement 4: Nahant Fire Department should consider procuring a larger boat to enable them to safely conduct booming operations in routine weather conditions.

Reference: Massachusetts GRP Tactics Guide.

Analysis: Marine 31 (Nahant FD) got swamped when trying to pull a 300’ section of 18” boom. This was primarily attributed to inadequate vessel size in what were fairly routine environmental conditions.

Area for Improvement 5: Lynn Fire Department should consider procuring a larger boat to enable them to safely conduct booming operations in routine weather conditions

Reference: Massachusetts GRP Tactics Guide.

Analysis: The Engine 3 boat (Lynn FD) had no cleats to safely and effectively pull boom. Its low freeboard allowed the crew to effectively connect boom in the water and handle anchor connections as well.

Area for Improvement 6: Review and/or revise DV-02 in NS-29 to improve its effectiveness.

Reference: Massachusetts GRP Tactics Guide.

Analysis: DV-02 was a good training strategy but a review of the GRP is necessary to determine whether this strategy would be effective in diverting oil in Lynn Harbor to the designated shore side recovery location. It would seem that oil entering Lynn Harbor would likely follow the channel into the harbor because that is where the current would be strongest. Therefore, an additional section of boom deployed in a cascade array extending into the main channel should be considered. Such a length would have to be, at a minimum, 600 feet of 18” boom. The exercise also revealed that the designated shore side recovery location is most likely ideally placed.

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.

Strength 2: The Rehab Unit provided by the Department of Fire Services provided outstanding support to exercise participants.

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. The communications plan executed by the Incident Support Unit (ISU) underscores the proof of concept for combining Marine Channel 17 with Fireground Channel 3 communications to create maritime/land interoperability.

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

Hands on training is conducted on assembling anchors for the exercise.



Photo courtesy of Nuka Research & Planning Group

Boom from the Lynn trailer is faked out on the DCR boat ramp prior to being deployed from the boat ramp.



Photo courtesy of Nuka Research & Planning Group

Lynn Engine 3 and Nahant Marine 31 work together to deploy boom.



Photo courtesy of Nuka Research & Planning Group

A textbook shoreside anchor is set on the beach



Photo courtesy of Nuka Research & Planning Group

APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for the municipalities of Lynn and Nahant following the MassDEP GRP Exercise conducted on May 17, 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. Repair boom in Lynn Trailer	Repair damaged sections of 12" and 18" boom.	Equipment	MER	John Duponte	6/15/18	9/15/18
	2. Repair Nahant trailer and equipment	Repair the roof of the Nahant Trailer and the brake light.	Equipment	MER	John Duponte	6/15/18	9/15/18
	3. Document use of Nahant trailer	Follow up with the Nahant FD to document use of their trailer	Planning	Nuka Research	Mike Popovich	6/15/18	9/15/18
	4. Upgrade response vessel.	Nahant Fire Department should consider procuring a larger boat to enable them to safely conduct booming operations in routine weather conditions	Equipment	Nahant FD	TBD	TBD	TBD
	5. Upgrade response vessel	Lynn Fire Department should consider procuring a larger boat to enable them to safely conduct booming operations in routine weather conditions	Equipment	Lynn FD	TBD	TBD	TBD
	6. Revise DV-02	Review and/or revise DV-02 in NS-29 to improve its effectiveness.	Planning	Nuka Research	Mike Popovich	6/15/18	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 Lynn, MA	Participant Count
Lynn Fire Department	12
Lynn Harbormaster	1
Lynn EMA	1
Town of Nahant, MA	
Nahant Fire Department	5
Nahant Harbormaster	2
TOWN PARTICIPANTS	21
Federal	
United States Coast Guard (USCG)	2
State	
Massachusetts Department of Environmental Protection (MassDEP)	1
Nuka Research and Planning Group, LLC (contractor for MassDEP)	3
Moran Environmental Recovery (contractor for MassDEP)	2
Massachusetts Department of Fire Services (DFS)	4
TOTAL	33

23% of first responders reported having previous GRP exercise experience.

APPENDIX C: EXERCISE EVALUATION FORM

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

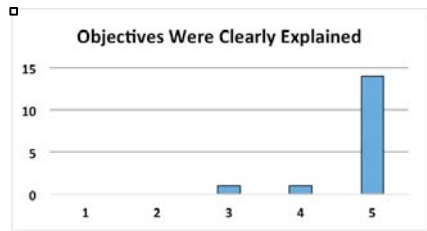
The objectives were clearly explained and the exercise met those objectives.	1 2 3 4 5
Comments:	
The material appropriately challenged me and the pace of instruction was correct.	1 2 3 4 5
Comments:	
The instructor(s) did an excellent job.	1 2 3 4 5
Comments:	
I found the classroom to be a comfortable 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.

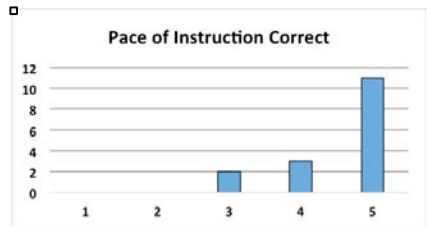
(Rev 2016)



Student Feedback Summary



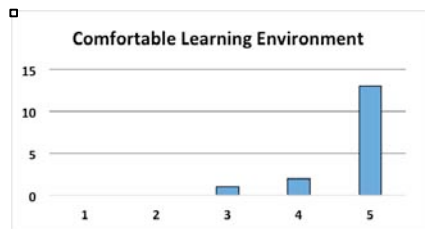
Comments: "very much so classroom was informative"
"classroom instructions was great. Shore instruction was confusing"



Comments: None



Comments: "very professional"



Comments: None



Comments: "yes this is my 4th deployment exercise" "excellent, well presented" "training was well done. Practical portion pulled it all together" "it was a great experience to deploy our equipment in a realistic scenario" "fun drill - easy to deploy"

The best thing about this training was... "hands on to something not done often" "cooperation between communities" "hands on" "the hands on" "using equip" "well organized" "hands on" "the drill" "hands on" "water drill" "getting hands on experience with the equipment in the trailer" "nice day, interesting to see how it flaked out" "being on the water" "location/time"

This training could be improved by.... "no improvement needed" "directing better orders on the shore" "better explanation of hazard in exercise" "ability to rotate crews" "Better equipment (from the dept)" "nothing, very well prepared, presented" "more manpower" "???" "more horsepower"