



U.S. Environmental Protection Agency Geographic Response Plan - 2018 Moose River (MO-01) Exercise

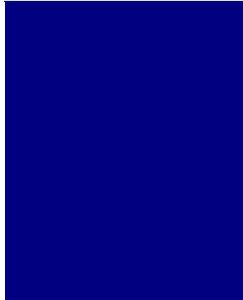
After Action Report

August 15, 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 Moose River (MO-01) Exercise |
| Exercise Date | August 15, 2018 |
| Scope | This exercise was a Full Scale Exercise, planned for approximately six hours in Gorham, NH, and upon the waters of the Moose River. Exercise play was limited to the Moose River and the adjacent shoreline in the vicinity of the River access road behind Irving Gas Station at 350 Main St, Gorham, NH. |
| 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 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 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, and other state and federal first responders.</p> |
| Threat or Hazard | Discharge of oil into a navigable waterway. |
| Scenario | An oil spill has occurred in a section of the Portland Pipeline along Route 2 in Randolph and made its way into the Moose River. Gorham, NH has been designated as the best location to respond to the spill. Responders will utilize GRP MO-01 to deploy boom to protect sensitive resources in the vicinity of Gorham, NH and other areas downriver. |
| Sponsor | U.S. Environmental Protection Agency. |
| Participating Organizations | Participating organizations included: <ul style="list-style-type: none">• Gorham Fire Department• New Hampshire Department of Environmental Services (DES) |



- New Hampshire Department of Cultural Resources, Division of Historical Resources
- U.S. Coast Guard (USCG)
- U.S. Environmental Protection Agency (EPA)
- Portland Pipeline Corporation
- Nuka Research and Planning Group, LLC (Nuka Research)

Note: See Appendix B for participant count.



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NH DES personnel provide hands on demonstration of boom to be used in the exercise.



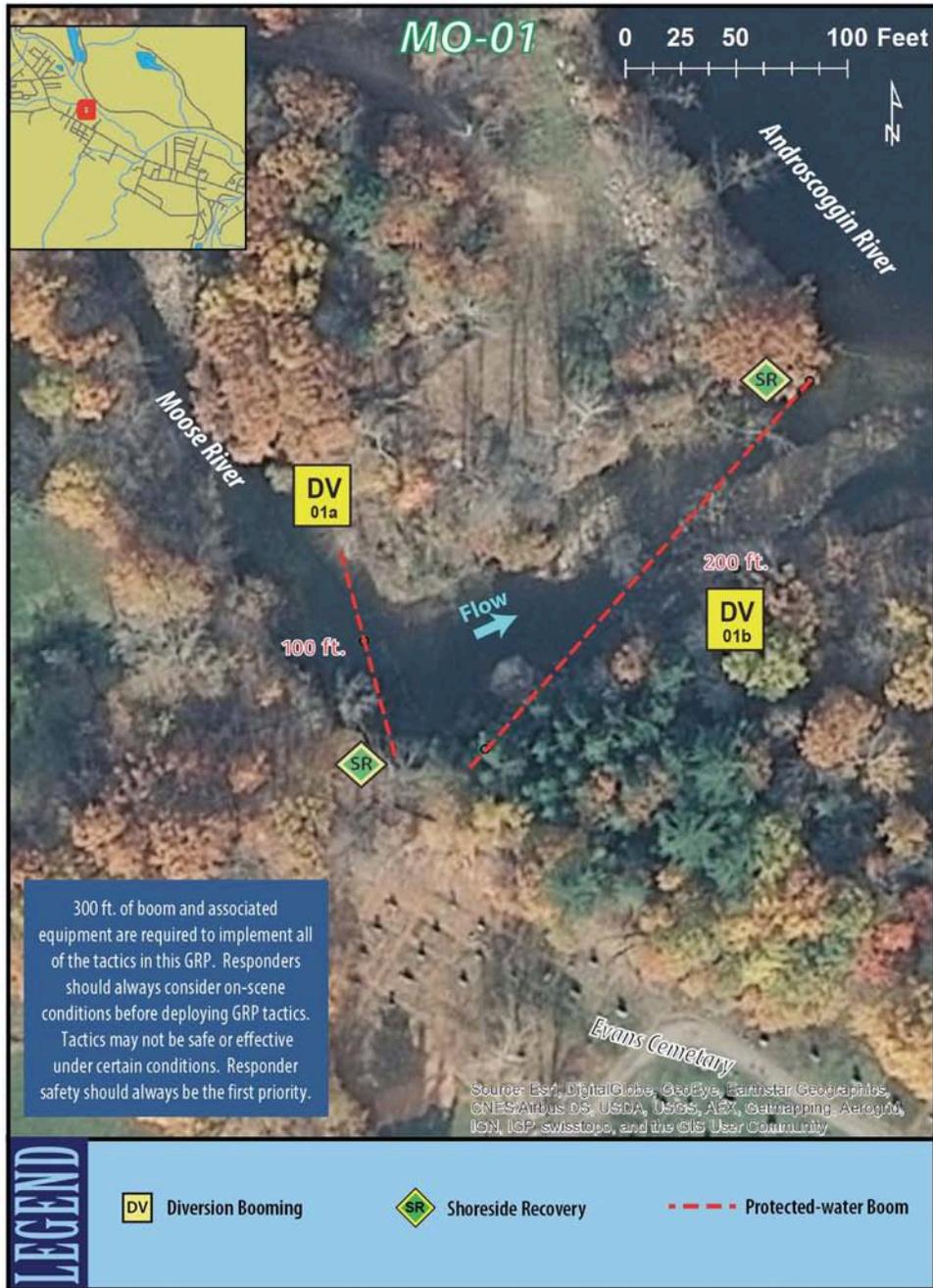
First responders deploy boom in the Moose River.



Photos courtesy of Nuka Research & Planning Group



Moose River Geographic Response Plan
Gorham Upper Village MO-01



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Nuka Research and Planning Group, LLC
Data Sources: Nuka Research & Planning Group, LLC, US EPA Region 1

Figure 1. Moose River MO-01 GRP Map

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 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 development and 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 departments, police departments and other state and federal first responders. | 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 | 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. • Deployment team did an excellent job of securing the boom to the trees or used shore anchor where appropriate. They showed great teamwork in deploying and retrieving the boom. • Transferring the boom from the trailer to the water was easy due to the lightweight 12” fence boom being used. It was very easy to use and the wing nut connectors allowed for quick connections. Recovery was also extremely simple and straightforward for the deployment team. • Hands on training by NH DES with the fence boom was excellent and facilitated deployment by the deployment team. • NH DES Command post was an extremely useful asset for the exercise and the first aid kit in it was used when an exercise controller was stung multiple times after accidentally disturbing a hidden (within a cluster of low-hanging tree branches) bald-faced hornet nest along the river bank. • NH DES demonstrated how to construct a “tripod” shore anchor using fence stakes (otherwise known as U-posts). This setup was very effective in connecting the boom to the shore for DV-01b tactic. • A poster size GRP would have been helpful in facilitating the operations briefing for this exercise. Recommendation: <u>Include poster sized GRP for operational briefings for future exercises.</u> • The Gorham Fire Department generously allowed for the use of their training room and parking lot. This facilitated the operations briefing along with some ad-hoc training and the hands on demonstration for the fence booming. Their support and participation in the exercise was greatly appreciated. |
| | Implement Tactics in GRP | Diversion Boom (DV-01a) | <ul style="list-style-type: none"> • Performed Without Challenges (P) • DV-01a was effectively deployed as planned. Surrogate showed the anticipated shore side recovery area would be an effective location to collect and remove spilled oil. There was significant movement along the face of the boom in addition to no evidence of entrainment. • Water flow in the river on the day of the exercise was above normal. Deployment team used waders to cross and move boom from the east bank to the west bank. While this was effective, increased water levels or the presence of oil in the water would preclude this access option. Thus, another means of getting a heaving line across the river should be considered. Recommendation: <u>Revise special considerations section of the MO-01 GRP to reflect that an additional means of passing a line across the river will need to be available if river conditions preclude walking the boom across.</u> |

| | | | |
|-----------------------------------|--|---|---|
| | | Diversion Boom (DV-01b) | <ul style="list-style-type: none"> • Performed Without Challenges (P) • Deployment team showed great initiative in modifying the DV-01b tactic due to the presence of a sand bar area in the middle of the stream. In addition, 200 feet of boom is too large a segment for this tactic. Recommendation: <u>Shorten tactic DV-01b in the MO-01 GRP to 150 feet.</u> • There was significant current at the designated shore side recovery location and evidence of entrainment with not much opportunity to increase the angle of the boom, making it less than ideal to use DV-01b as a single tactic to respond to a spill. Ideally, DV-01b should be used in tandem with DV-01a and perhaps an additional diversion tactic in the vicinity of the Gorham Fire Station. Shore side Recovery would be focused on DV-01a and passive recovery at DV-01b. • It would be very difficult for a vacuum truck to obtain access to the shore side recovery location designated for DV-01b. Small pumps and portable fuel totes should instead be considered for oil removal and temporary storage at this location. |
| Operational Coordination | Create and Execute An Assignment List (ICS 201) | <ul style="list-style-type: none"> • 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 (LTjg Cardoza) effectively controlled the exercise. Strike teams were well organized and effectively carried out assigned tasks. • IC's modification of DV-01b tactic was very effective given the water levels experienced on the day of the exercise and will be incorporated into the revision of the MO-01 GRP. |
| Operational Communications | Effectively Communicate Between Multiple Agencies | <ul style="list-style-type: none"> • Communicate with other participants in accordance with the communications plan. | <ul style="list-style-type: none"> • Performed without Challenges (P) • Due to the close proximity of responders and shore side personnel, voice communications were used exclusively. All communications were effective and efficient. |

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 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 exercise participants from federal, state and local agencies (EPA, USCG, NH DES, Gorham FD) was excellent and they all worked well together. All exercise participants were extremely engaged and actively involved.

Strength 2: The Gorham Fire Department generously allowed for the use of their training room and parking lot for a hands-on demonstration of the fence booming. Their support and participation in the exercise was greatly appreciated.

Areas for Improvement

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

Area for Improvement 1: A poster size GRP would have been helpful in facilitating the operations briefing for this exercise.

Reference: N/A.

Analysis: Include poster sized GRP for operational briefings for future exercises.

Area for Improvement 2: Revise special considerations section of the MO-01 GRP to reflect that an additional means of passing a line across the river will need to be available if river conditions preclude walking the boom across.

Reference: N/A.

Analysis: Water flow in the river on the day of the exercise was above normal. Deployment team used waders to cross and move boom from the east bank to the west bank. While this was effective for the conditions on the day of the exercise, increased water levels or the presence of oil in the water would preclude this access option. Therefore, additional means of getting a heaving line across the river should be considered.

Area for Improvement 3: Shorten tactic DV-01b in the MO-01 GRP to 150 feet.

Reference: N/A.

Analysis: Deployment team showed great initiative to modify the DV-01b tactic due to the presence of a sand bar area in the middle of the stream. In addition, 200 feet of boom is too large a segment for this tactic.

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: IC (LTjg Cardoza) effectively controlled exercise and the ICS-201 was carried out as designed. Strike teams were well organized and effectively carried out assigned tasks.

Strength 2: IC's modification of DV-01b tactic was very effective given the water levels experienced on the day of the exercise and will be incorporated into the revision of the MO-01 GRP.

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 and other state and federal first responders.

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: Due to the close proximity of responders and shore side personnel, voice communications were used exclusively. All communications were effective and efficient.

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

Boom is attached to the opposite shore in the Moose River at the site of DV-01a



Photo courtesy of Nuka Research & Planning Group

NH DES personnel fashion a "tripod" to anchor boom to the shore.



Photo courtesy of Nuka Research & Planning Group

Exercise participants deploying tactic DV-01b.



Photo courtesy of Nuka Research & Planning Group

NH DES Mobile Command Post provided useful assistance to first responders.



Photo courtesy of Nuka Research & Planning Group

APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for the exercise participants of this Geographic Response Plan (GRP) Exercise conducted on August 15, 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. Audio-visual Aids. | Include poster sized GRP for operational briefings for future exercises. | Exercise | Nuka Research | TBD | TBD | TBD |
| | 2. Revise MO-01 | Revise special considerations section of the MO-01 GRP to reflect that an additional means of passing a line across the river will need to be available if river conditions preclude walking the boom across | Planning | Nuka Research | Mike Popovich | 8/21/18 | 9/1/18 |
| | 3. Revise MO-01 | Shorten tactic DV-01b in the MO-01 GRP to 150 feet | Planning | Nuka Research | Mike Popovich | 8/21/18 | 9/1/18 |
| 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 Gorham, NH | Participant Count |
| Gorham Fire Department* | 3 |
| Federal | |
| United States Environmental Protection Agency (EPA) | 1 |
| United States Coast Guard (USCG)* | 4 |
| Nuka Research and Planning Group, LLC (contractor for US EPA) | 2 |
| State | |
| New Hampshire Department of Environmental Services (DES) | 3 |
| Private Sector | |
| Portland Pipeline Corp | 2 |
| TOTAL | 15 |

58% of participants reported having previous GRP exercise experience.

* Special thanks to the Gorham Fire Department for providing facilities for classroom instruction and hands-on training with boom equipment. Their support and participation in this exercise is greatly appreciated.

APPENDIX C: EXERCISE EVALUATION FORM

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U.S. Environmental Protection Agency 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.

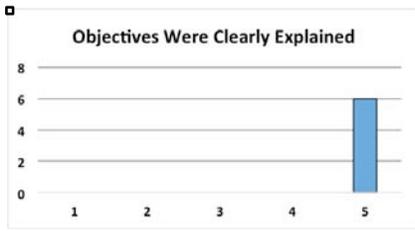
| | |
|--|-------------------|
| The objectives were clearly explained and the exercise met those objectives. | 1 2 3 4 5 |
| Comments: | |
| The hands-on training was useful and the pace of instruction was correct. | 1 2 3 4 5 |
| Comments: | |
| The hands-on training instructor(s) did an excellent job. | 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 2018)



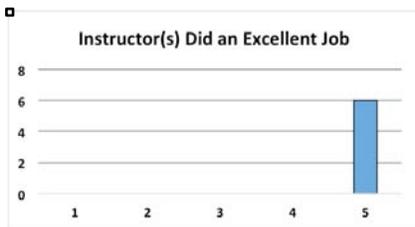
Student Feedback Summary



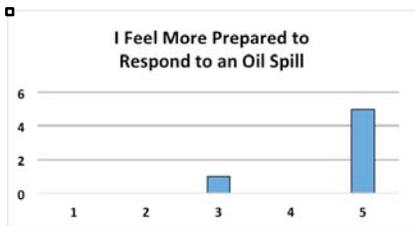
Comments: None



Comments: None



Comments: None



Comments: Videos were excellent.

The best thing about this training was...

Hands on/teamwork. Hands on. Contact with Fire Dept, EPA, etc. Deploying the boom and providing updates to the GRP. Hands on evolution was great and informative. Testing alternative boom type.

This training could be improved by...

No comments.