

Seattle Fault Emergency Exercise

After-Action Report/Improvement Plan

October 11, 2019

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.

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EXECUTIVE SUMMARY

Different parts of NOAA have different capabilities, roles and mission responsibilities in an emergency situation. This is not always well understood and can lead to internal NOAA and public confusion during an event and an inability to effectively respond and manage corporate risks to personnel, mission and infrastructure (PMI) over the duration of an emergency situation. This is of particular concern in areas where there are high concentrations of NOAA PMI, such as Seattle, Washington.

There are 1,370 employees with a duty station in Seattle and the city is home to the largest and most diverse concentration of NOAA workforce outside of Silver Spring, MD¹. Five of six line offices and multiple staff offices have employees based out of Seattle, with the majority assigned to NOAA's Western Regional Center (WRC) campus. The WRC also serves as the devolution site for the National Ocean Service (NOS), National Marine Fisheries Service (NMFS), Office of the Chief Information Officer (OCIO), and the Office of the Chief Financial Officer (CFO) corporate operations². This fact further supports the need for well-coordinated internal NOAA emergency planning and response.

There is currently no cross-line or staff office organizing agent with the authority and responsibility to internally coordinate emergency planning and response across NOAA's complex of personnel and infrastructure in the Seattle-metro area. In 2019, the NOAA Western Regional Collaboration Team (NOAA West) identified this as a gap and undertook a project with the goal of improving cross-line and staff office emergency preparedness in the Seattle-metro area. The project assumed that an organization built upon trust, confidence, transparency and common practice would be more resilient to sudden change and disruption. The team undertook this project in collaboration with NOAA's Disaster Preparedness Program, Disaster Response Center (DRC).

Approach: To test NOAA's Seattle-based capacity for a well-coordinated internally focused emergency response, a team of line and staff office representatives planned and executed a table-top exercise, under the direction and guidance of an expert DRC trainer. This planning team identified three key objectives to test and evaluate capabilities:

- **Objective 1:** Demonstrate and explain the capability of each represented NOAA office to increase agency-wide collaboration during a hazardous situation;
- **Objective 2:** Discuss the capability to deliver coordinated, prompt, reliable, and actionable information between regionally-based NOAA line and staff offices, "NOAA Adjacent" partners, and upper management (both regionally and at the HQ level), as well as identify the best tools to accomplish this; and

¹ NOAA Staff Directory, Facility Office Report: <https://nsd.rdc.noaa.gov/report>. Accessed 26Sept2019.

² As designated in the July 2019, NOAA COOP Plan, Quick Reference Directory.

- **Objective 3:** Evaluate NOAA's capacity to maintain a coordinated response in a hazardous situation through discussion of line and staff office management of staff, resources, and communications.

The exercise was conducted June 5-6, 2019 and practiced NOAA's internal corporate focused response to a magnitude 7.2 earthquake of the Seattle fault causing major damage and casualties in the city of Seattle and surrounding areas. Thirty four people, representing six line offices, three staff offices and two NOAA adjacent partners in the Seattle-metro area participated in the tabletop exercise.

The scenario focused on NOAA's internal corporate response to direct earthquake impacts on buildings, residences, and bridges (transportation corridors); power, utility (gas and water) and communication systems; and impacts from liquefaction based on scientific information on NOAA's Western Regional Center and Montlake campus site locations; and consideration of widespread tsunami flooding in some areas of downtown Seattle and nearby shorelines. The exercise timeframe spanned NOAA's internally focused recovery tasks and goals from the time of the earthquake to one month post event.

As a result of this exercise, participants gained deeper awareness of cross-NOAA mission interests and response actions throughout an event lifecycle, met others across the organization that share responsibility for emergency planning and response, and worked together to identify emergency response assumptions and emergency planning needs and gaps. This learning is foundational to functioning in a more unified way during an event and growing a community of practice that is capable of identifying and addressing situational emergency needs and gaps.

Findings: The DRC trainer and exercise planning team synthesized and analyzed participant input. Sixteen areas of improvement and twenty-one corresponding corrective actions were identified across the three training objectives as well as during the table top exercise (Appendix A). Collectively these areas of improvement characterize risks to NOAA personnel, mission and infrastructure in the Seattle-metro area during times of emergency as identified by field based personnel with responsibility for emergency preparedness and response.

There are significant deficiencies that can be remedied through corrective action. However, undertaking corrective actions requires a management agent (i.e., person, work group, or other management body) with the responsibility, authority and resources to coordinate and implement corrective measures across the full spectrum of NOAA mission and workforce in the Seattle-metro area. This entity does not currently exist and this deficiency directly impacts NOAA's ability to implement all other corrective actions and manage risks.

Therefore, the project team recommends above all the establishment of a management agent with the responsibility and authority to convene and coordinate across line and staff offices in Seattle and surrounding areas for the purposes of identifying and addressing internal cross-NOAA emergency preparedness planning needs and gaps to improve NOAA's organizational response and resilience to emergency events.

EXERCISE OVERVIEW

Exercise Name	Seattle Fault Emergency Exercise
Exercise Dates	June 5-6, 2019
Scope	This exercise is a tabletop exercise, planned for two (2) days at the NOAA Western Regional Center (WRC) 7600 Sandpoint Way NE, Seattle, WA in building 3, Oceanographer room 2104.
Mission Area(s)	Response, Recovery
Core Capabilities	Situational Assessment; Communication; Finance, Legal, and Administration
Objectives	<ol style="list-style-type: none"> 1. Demonstrate and explain the capability of each represented NOAA office to increase agency-wide collaboration during a hazardous situation. 2. Discuss the capability to deliver coordinated, prompt, reliable, and actionable information between regionally-based NOAA Line and Staff Offices, “NOAA Adjacent” partners (e.g., Sea Grant and the Integrated Ocean Observing System Regional Association), and upper management (both regionally and at the HQ level), as well as identify the best tools to accomplish this. 3. Evaluate NOAA’s capacity to maintain a coordinated response in a hazardous situation through discussion of Line and Staff Office management of staff, resources, and communications.
Threat or Hazard	Earthquake and resulting tsunami
Scenario	A magnitude 7.2 earthquake on the Seattle fault causes major damage and casualties in the city of Seattle and surrounding areas. The earthquake’s effects include structural damage to buildings, residences, and bridges; damage from liquefaction and landslides; widespread power and communication outages; widespread loss of water pressure; and tsunami flooding in some areas of downtown Seattle and nearby shorelines.
Sponsor	Western Regional Collaboration Team (NOAA West) and Disaster Preparedness Program (DPP)
Participating Organizations	NOAA (various offices) and “NOAA Adjacent” partners
Point of Contact	Crescent Moegling, NOAA West Project Team Lead, (206) 526-6840 or April Cooper, NOAA West Project Manager, (253) 351-3741

ANALYSIS OF EXERCISE OBJECTIVES

For an exercise to be successful, it must include objectives that are designed to test and evaluate certain aspects of a group's capabilities. The group's ability to meet the exercise objectives are observed throughout the duration of the exercise and then assessed by the Evaluation Team. The following section breaks down each identified objective and outlines the correlating strengths and areas for improvement, including recommended corrective actions for each objective that was not fully achieved. *Associated corrective actions identified for each exercise objective and area for improvement are found in Appendix A: Improvement Plan.*

Objective 1: Demonstrate and explain the capability of each represented NOAA office to increase agency-wide collaboration during a hazardous situation.

The strengths and areas for improvement for this objective are described in this section.

Strengths

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

Strength 1: Those NOAA offices that were represented during the exercise were able to share many of the most important aspects of their mission(s), daily activities, as well as disaster activities with the group to provide an idea of what their office does on a regular basis.

Strength 2: "NOAA Adjacent" partners that were present during the exercise were able to share many of the most important aspects of their mission(s), daily activities, as well as disaster activities with the group to provide an idea of what their office does on a regular basis.

Areas for Improvement

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

Area for Improvement 1: Not all NOAA Line and Staff Offices located within the city of Seattle and surrounding areas were available to attend the exercise which resulted in key information gaps and limited the ability to fully demonstrate and explain NOAA's agency-wide capability in Seattle and surrounding areas.

Area for Improvement 2: Not all "NOAA Adjacent" partners located within the city of Seattle and surrounding areas were available to attend the exercise which resulted in key information gaps in demonstrating and explaining NOAA-funded partner network capabilities.

Area for Improvement 3: Many NOAA Line and Staff Office representatives assumed operational capabilities in an emergency situation that may or may not be actualized during an event.

Analysis of Corrective Actions

Corrective Action 1: Contact specific/desired offices prior to next exercise/meeting to determine most appropriate time/date in an effort to ensure more comprehensive line and staff office participation. If key line and staff office representation is not feasible, consider requesting a short presentation or one-pager to share with those who attend to help fill in information gaps.

Corrective Action 2: Comprise a comprehensive list of “NOAA Adjacent” partners within the region to better identify those who play a role in NOAA emergency response activities (or vice versa).

Corrective Action 3: Identify then validate (test) assumptions about operational capabilities and response functions to ensure emergency preparedness plans are based on accurate information.

Objective 2: Discuss the capability to deliver coordinated, prompt, reliable, and actionable information between regionally-based NOAA Line and Staff Offices, “NOAA Adjacent” partners, and upper management (both regionally and at the HQ level), as well as identify the best tools to accomplish this.

The strengths and areas for improvement for this objective are described in this section.

Strengths

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

Strength 1: Of those who participated in the exercise, there was a wide variety of staff from different levels within the organization who had varying amounts of experience, knowledge, and skills that resulted in well-rounded discussion.

Strength 2: The NOAA Homeland Security Program Office (HSPO) acts as a conduit between the Line Offices and Leadership to provide coordinated, prompt, reliable, and actionable updates during disaster situations.

Strength 3: The National Ocean Service (NOS) uses the Disaster Coordination Dashboard (Google Site) to coordinate NOS-related information and updates during disaster situations.

Areas for Improvement

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

Area for Improvement 1: NOAA has many tools and platforms to collect and disseminate information. However, there is no one source for this information that is used across the agency and easy to access by all levels of NOAA staff. In addition, many (if not all) dissemination is dependent on functioning and accessible internet which may not be operational during an event or in the days following.

Area for Improvement 2: Information from the field to HQ management and leadership flows through requests by Senior Management Team (SMT) members and the Homeland Security Program Office (HSPO). However, information from HQ to the field offices does not always flow through clear and consistent communication pathways resulting in gaps in vital information.

Area for Improvement 3: Discussions of policy, procedures, corporate risks, and vulnerabilities are an important component of a disaster preparedness exercise. Discussions may result in recommendations for improvement that require senior leadership authority and line or staff office resources to implement. Therefore disaster preparedness exercises should include office management, program directors, and line and staff office leadership. This will better ensure the consistent sharing and understanding of information at leadership levels and with the field, demonstrate the value that leadership places on disaster preparedness, and enable improvements that result in better coordinated responses to actual events.

Analysis of Corrective Actions

Corrective Action 1: Poll other NOAA regional teams and line offices to compile a list of programs or platforms commonly used to collect and disseminate information during an emergency. Evaluate available program and platforms for their utility (accessibility and functionality) when internet is not operational. Meet with key decision-makers to discuss findings and determine which tools will best serve NOAA needs during periods of limited or no internet connectivity.

Corrective Action 2: Explore and discuss effective ways line and staff offices provide vital information to field offices during a disaster and identify best practices. Discuss best practices with key decision-makers and determine feasibility of incorporating best practices into corporate processes to ensure regional offices receive information.

Corrective Action 3: Prior to organizing and implementing future tabletop exercises, schedule meetings with key decision-makers to understand their risks and vulnerabilities; policies and procedures; inform them of likely issues of discussion, and encourage their participation.

Objective 3: Evaluate NOAA’s capacity to maintain a coordinated response in a hazardous situation through discussion of Line and Staff Office management of staff, resources, and communications.

The strengths and areas for improvement for this objective are described in this section.

Strengths

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

Strength 1: Many of the participants had a good working knowledge of the building(s): NOAA Western Regional Center (WRC), Montlake Laboratory (Northwest Fisheries Science Center), Center Weather Service Unit (CWSU), and the University of Washington—as well as verbal emergency plans that have been in place for years.

Strength 2: The participants had a wide variety of knowledge, skills, and abilities that could be utilized during a disaster situation.

Strength 3: The WRC campus houses a wide variety of NOAA programs and offices and some have access to resources that would be beneficial during a disaster situation such as satellite phones/mobile communications, transportation assets, and supply stores.

Areas for Improvement

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

Area for Improvement 1: NOAA’s Continuity of Operations Plans (COOP) for personnel, mission, and infrastructure (PMI) in Seattle and the surrounding areas are not visible enough at the field level to be effective in ensuring continuity. In addition, other emergency-related plans and documents are either extremely outdated (10+ years), are not well known around the Western Regional Center campus and region, or are non-existent.

Area for Improvement 2: There is no comprehensive list or database of NOAA staff in Seattle and surrounding areas who are trained and knowledgeable in disaster response skills (e.g., CPR, triage, critical incident stress management/counseling, communications, etc.) and could be deployed to assist during a disaster.

Area for Improvement 3: There is no comprehensive list or database populated for this region compiling assets and resources that could be used during a disaster.

Area for Improvement 4: There is currently no person or coordinating body with the responsibility and authority to convene and coordinate across-line and staff offices in Seattle and surrounding areas for the purposes of coordinated emergency planning, exercising disaster preparedness tabletop scenarios, and implementing organizational improvements to improve NOAA’s emergency preparedness posture.

Analysis of Corrective Actions

Corrective Action 1: Collect any/all (even outdated) COOPs, emergency plans, etc. related to NOAA in Seattle. Explore option to partner with Disaster Preparedness Program to develop/update COOPs for the region. Use other NOAA COOP and emergency plans that exist at locations with large and diverse concentrations of NOAA workforce as a template for development of WRC-specific plans (e.g., Silver Spring Metro Center (SSMC) and Inouye Regional Center (IRC)).

Corrective Action 2: Poll Seattle-based NOAA employees through their affiliated line and staff offices to identify staff who are able/willing to deploy during an emergency and identify staff knowledge, skills, and expertise. Engage decision-makers in discussion to identify appropriate locations to house and access this employee information.

Corrective Action 3: Poll Seattle-based line and staff offices for information about regional assets that could be used during a disaster. Partner with the Disaster Preparedness Program (DPP) to update and maintain a list of regional assets within NRAD.

Corrective Action 4: Determine feasibility of developing an in-region coordinating body to share information, exercise scenarios, and achieve improvements in emergency response.

The following were topics and corrective actions not tied to any specific exercise objective, but highlighted throughout exercise and discussions.

Area for Improvement 1: Need for additional understanding of the Incident Command System (ICS).

- Explore the option to provide an additional offering of NOAA-specific ICS 300.
- Begin to incorporate ICS terminology into daily operations to ensure cohesiveness during disaster situations.

Area for Improvement 2: Need to coordinate better with on-campus childcare group to ensure safety and knowledge during disaster situations.

- Meet with childcare management to discuss current disaster plans.
- Explore additional procedures/ways to integrate WRC and childcare program's emergency plans to better ensure the safety of children and caregivers during disasters.

Area for Improvement 3: Desire for distribution of “regular” recovery-based updates to NOAA staff.

- Explore the possibility of the Disaster Preparedness Program (DPP) sharing recovery-based updates across NOAA through a newsletter or similar publication.

Area for Improvement 4: Interest in wider NOAA use of NOS Disaster Dashboard.

- Explore the feasibility of and options for expanding the Dashboard to include other NOAA Line Offices.

Area for Improvement 5: WRC staff feel unprepared for a disaster while at the office.

- Explore options and resource requirements for deployment of “go-bags” at each desk or on-site in known and accessible cache locations.
- Determine ways to share supplies and identify strategic locations to store resources.
- Continue emergency training and exercises.
- Determine GETS/WPS needs.

Area for Improvement 6: Additional need for resourcing throughout the region.

- Need to identify, fund, and hold accountable a responsible organization(s) for corrective actions.

APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for the NOAA Western Regional Collaboration Team (NOAA West) as a result of the Seattle Fault Emergency Exercise conducted on June 5-6, 2019.

Objective	Area for Improvement	Corrective Action	Primary Responsible Organization	Organization POC	Start Date	Completion Date
1: Demonstrate and explain the capability of each represented NOAA office to increase agency-wide collaboration during a hazardous situation.	1. Not all NOAA Line and Staff Offices located within the city of Seattle and surrounding areas were available to attend the exercise which resulted in key information gaps and limited the ability to fully demonstrate and explain NOAA's agency-wide capability in Seattle and surrounding areas.	Contact specific/desired offices prior to next exercise/meeting to determine most appropriate time/date in an effort to ensure more comprehensive line and staff office participation. If key line and staff office representation is not feasible, consider requesting a short presentation or one-pager to share with those who attend to help fill in information gaps.				
	2. Not all "NOAA Adjacent" partners located within the city of Seattle and surrounding areas were available to attend the exercise which resulted in key information gaps in demonstrating and explaining NOAA-funded partner network capabilities.	Comprise a comprehensive list of "NOAA Adjacent" partners within the region to better identify those who play a role in NOAA emergency response activities (or vice versa).				
	3. Many NOAA Line and Staff Office representatives assumed operational capabilities in an emergency situation that may or may	Identify then validate (test) these assumptions about operational capabilities and response functions to ensure additional				

	not be actualized during an event.	preparedness plans are based on accurate information.				
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Objective	Area for Improvement	Corrective Action	Primary Responsible Organization	Organization POC	Start Date	Completion Date
2: Discuss the capability to deliver coordinated, prompt, reliable, and actionable information between regionally-based NOAA Line and Staff Offices, "NOAA Adjacent" partners, and upper management (both regionally and at the HQ level), as well as identify the best tools to accomplish this.	1. NOAA has many tools and platforms to collect and disseminate information. However, there is no one source for this information that is used across the agency and is easy to access by all levels of NOAA staff. In addition, many (if not all) dissemination is dependent on functioning and accessible internet which may or may not be operational during an event or in the days following.	Poll other NOAA regional teams and line offices to compile a list of programs or platforms commonly used to collect and disseminate information during an emergency. Evaluate available program and platforms for their utility (accessibility and functionality) when internet is not operational. Meet with key decision-makers to discuss findings and determine which tools will best serve NOAA needs during periods of limited or no internet connectivity.				
	2. Information from the field to HQ management and leadership flows through requests by Senior Management Team (SMT) members and the Homeland Security Program Office (HSPO). However, information from HQ to the field offices does not always flow through clear and consistent communication pathways resulting in gaps in vital information.	Explore and discuss any effective ways Line Offices provide vital information back down to field offices during a disaster in an effort to identify best practices. Discuss best practices with key decision-makers and determine feasibility of incorporating best practices into corporate processes to ensure regional offices receive information.				
	3. Discussions of policy, procedures, corporate risk, and vulnerabilities are an important component of a disaster preparedness exercise. Discussion may	Prior to organizing and implementing future tabletop exercises, schedule meetings with key decision-makers to understand their risks and vulnerabilities;				

	<p>result in recommendations for improvement that require senior leadership authority and line or staff office resources to implement. Therefore, disaster preparedness exercises should include office management, program directors, and line and staff office leadership. This will better ensure the consistent sharing and understanding of information at leadership levels and with the field, demonstrate the value that leadership places on disaster preparedness, and enable improvements that result in better coordinated responses to actual events.</p>	<p>policies and procedures; inform them of likely issues of discussion, and encourage participation.</p>				
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Objective	Area for Improvement	Corrective Action	Primary Responsible Organization	Organization POC	Start Date	Completion Date
3: Evaluate NOAA's capacity to maintain a coordinated response in a hazardous situation through discussion of Line and Staff Office management of staff, resources, and communications.	1. NOAA's Continuity of Operations Plans (COOP) for personnel, mission, and infrastructure (PMI) in Seattle and the surrounding areas are not visible enough at the field level to be effective in ensuring continuity. In addition, other emergency-related plans and documents are either extremely outdated (10+ years), are not well known around the Western Regional Center campus and region, or are non-existent.	Collect any/all (even outdated) COOPs, emergency plans, etc. related to NOAA in Seattle. Explore option to partner with Disaster Preparedness Program to develop/update COOPs for the region. Collect any/all (even outdated) COOPs, emergency plans, etc. related to NOAA in Seattle. Use other NOAA COOP and emergency plans that exist at locations with large and diverse concentrations of NOAA workforce as a template for development of WRC-specific plans (e.g., Silver Spring Metro Center (SSMC) and Inouye Regional Center (IRC)).				
	2. There is no comprehensive list or database of NOAA staff in Seattle and surrounding areas who are trained and knowledgeable in disaster response skills (e.g., CPR, triage, critical incident stress management/counseling, communications, etc.) and could be deployed to assist during a disaster.	Poll Seattle-based NOAA employees through their affiliated line and staff offices to identify staff who are able/willing to deploy during an emergency and identify staff knowledge, skills, and expertise. Engage decision-makers in discussion to identify appropriate locations to house and access this employee information.				

	<p>3. There is no comprehensive list or database populated for this region compiling assets and resources that could be used during a disaster.</p>	<p>Poll Seattle-based line and staff offices for information about regional assets that could be used during a disaster. Partner with the Disaster Preparedness Program (DPP) to update and maintain a list of regional assets within NRAD.</p>				
	<p>4. There is currently no person or coordinating body with the responsibility and authority to convene and coordinate across line and staff offices in Seattle and surrounding areas for the purposes of coordinated emergency planning, exercising disaster preparedness tabletop scenarios, and implementing organizational improvements to improve NOAA's emergency preparedness posture.</p>	<p>Determine feasibility of developing an in-region coordinating body to share information, exercise scenarios, and achieve improvements in emergency response.</p>				

Objective	Area for Improvement	Corrective Action	Primary Responsible Organization	Organization POC	Start Date	Completion Date
4. Misc. Items <i>(not tied to any specific exercise objective, but highlighted throughout exercise and discussions)</i>	1. Need for additional understanding of the Incident Command System (ICS).	Explore the option to provide an additional offering of NOAA-specific ICS 300.				
		Begin to incorporate ICS terminology into daily operations to ensure cohesiveness during disaster situations.				
	2. Need to coordinate better with on-campus childcare group to ensure safety and knowledge during disaster situations.	Meet with childcare management to discuss current disaster plans.				
		Explore additional procedures/ways to integrate WRC and childcare program's emergency plans to better ensure the safety of children and caregivers during disasters.				
	3. Desire for distribution of "regular" recovery-based updates to be sent to NOAA staff.	Explore the possibility of the Disaster Preparedness Program (DPP) sharing recovery-based updates across NOAA through a newsletter or similar publication.				
	4. Interest in wider NOAA use of NOS Disaster Dashboard.	Explore feasibility of and options for expanding the Dashboard to include other NOAA Line Offices.				
5. WRC staff feel unprepared for a disaster while at the office.	Explore options and resource requirements for deployment of "go-bags" at each desk or on-site in known and accessible cache locations.					

		Determine ways to share supplies and identify strategic locations to store resources.				
		Continue emergency training and exercises.				
		Determine GETS/WPS needs.				
	6. Additional need for resourcing throughout the region.	Need to identify, fund, and hold accountable a responsible organization(s) for corrective actions.				

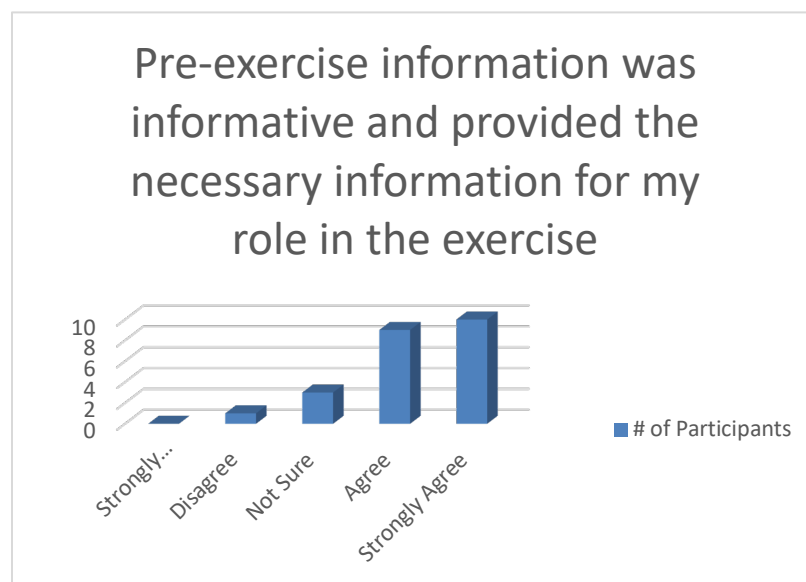
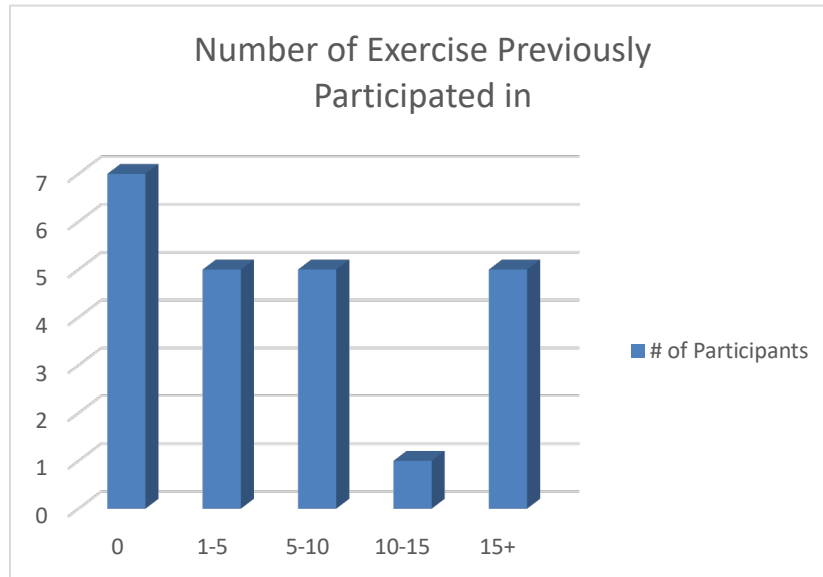
APPENDIX B: EXERCISE PARTICIPANTS

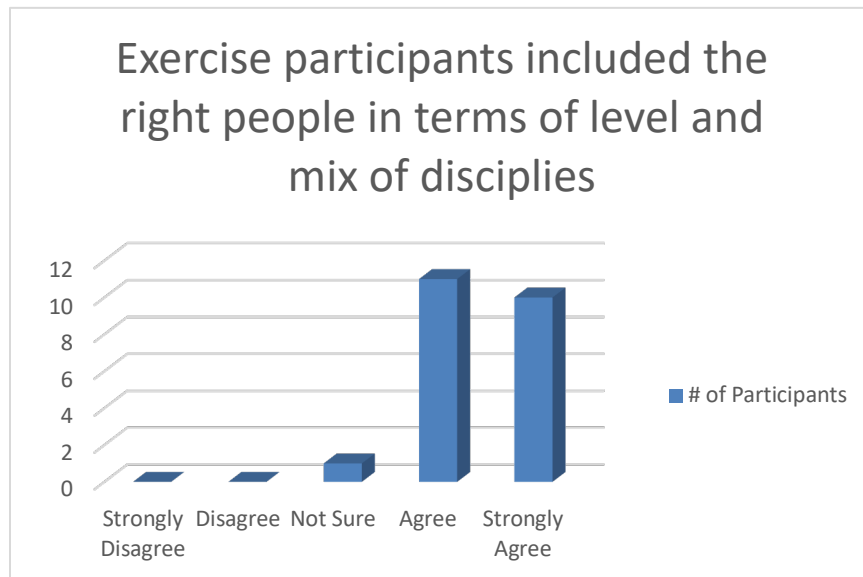
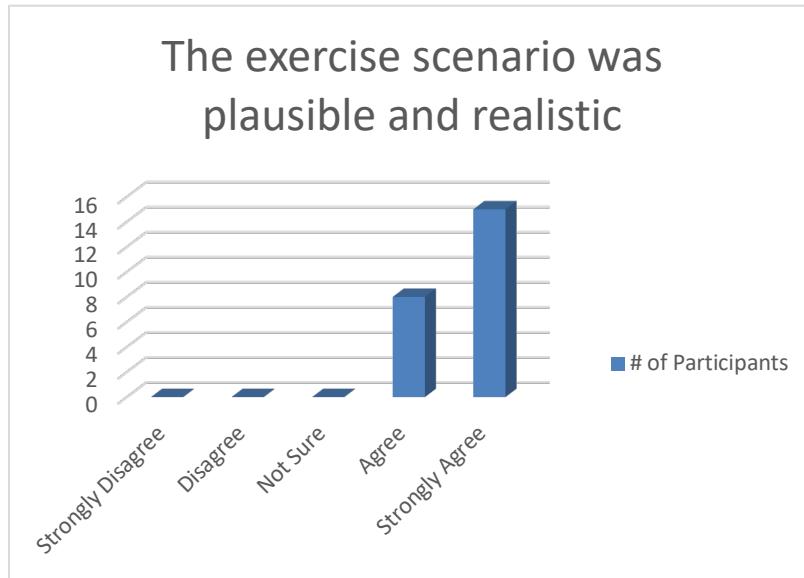
Participants		
Ali Bahrami-Bayeh, NMFS/NWFSC	Lucy Hick, NOS/OCS	Peter Murphy, NOS/ORR/MDD (<i>Genwest</i>)
Seema Balwani, NESDIS/COS	Michele Jacobi, NOS/ORR/ARD	Adam Pfundt, NMFS/OHC/HRD
Brent Bower, NWS, WFO Seattle, WA	Andrianna Jutt, NMFS/NWFSC	*Matt Rooney, OCAC/FOD
*Joshua Brown, OAR/Sea Grant	Richard Koster, NMFS/AKFSC	Paul Rudell, NANOOS
Russell Calender, WA Sea Grant	*Katie Krushinski, NOS/ORR/DPP (<i>Genwest</i>)	Eric Staiger, NMFS/OIASI/NW
Scott Carpenter, NWS Western Regional HQ	Dave Lott, NOS/ONMS	Thanh Minh Trinh, NMFS/NWFSC
*April Cooper, NWS, WFO Auburn, WA	Andre McClain, Security Specialist	*Timi Vann, Regional Coord. NOAA West
Mark Dix, NOS/ORR/ERD	John McGowan, CIO/HSPO	Andrew Weinstock, NMFS/WCED
*Carrie Garrison-Laney, WA Sea Grant	Amy Merten, NOS/ORR/ARD	Kate Wheelock, NOS/DPP
Dave Garton, OCAO/WRC	*Crescent Moegling, NOS/OCS	Zach Winters-Staszak, NOS/ORR/ARD
Jim Guyton, OAR/PMEL	Leah Moore, NOS/ORR	
Olivia Hauser, NOS/OCS	Tony Morea, OCAO/FOD	

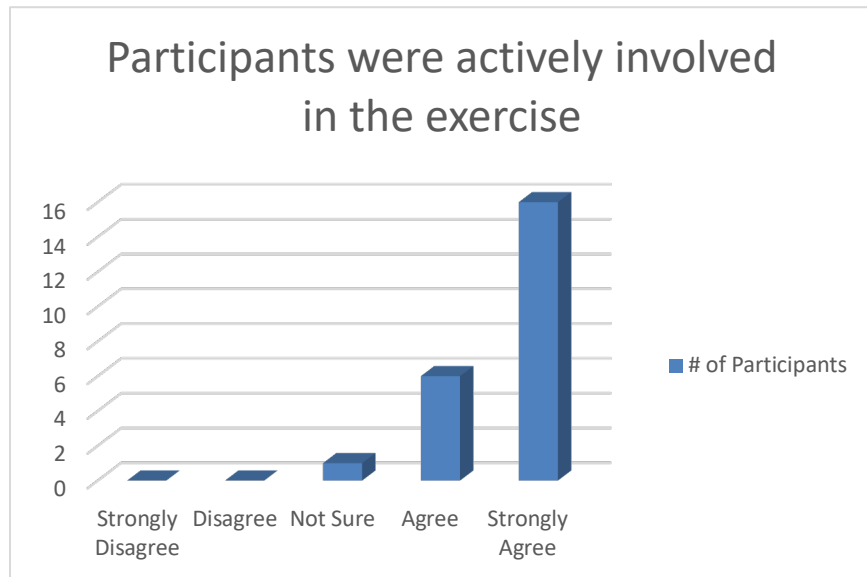
**Denotes Exercise Design Team members.*

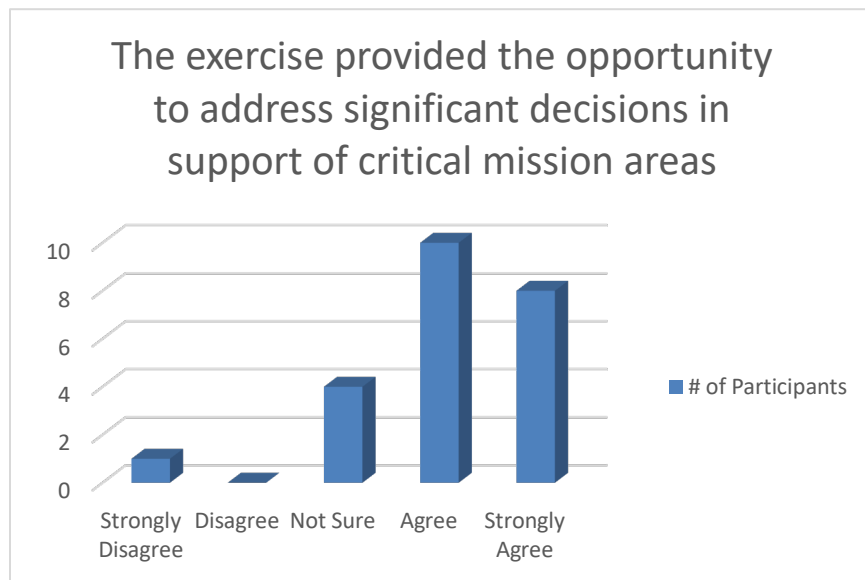
APPENDIX C: PARTICIPANT FEEDBACK

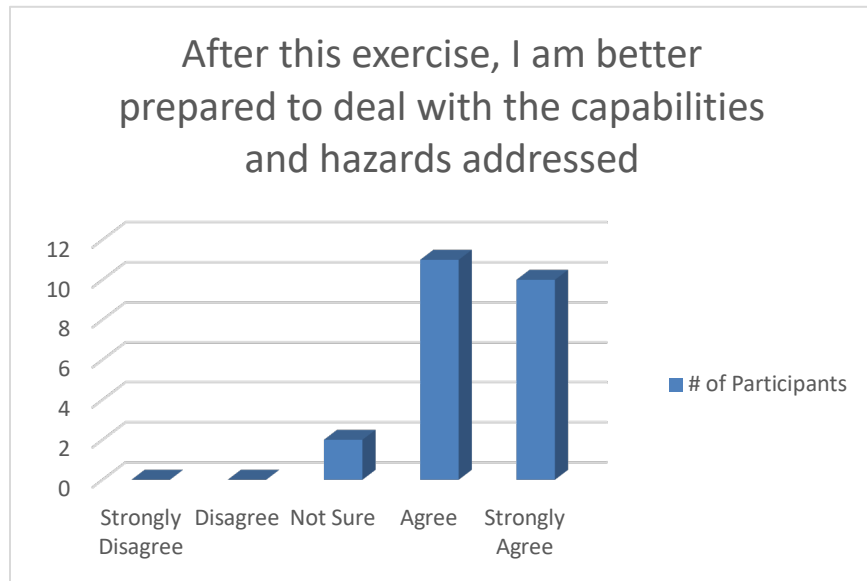
This information provided in Appendix C: Participant Feedback was collected through the participant feedback form and hotwash discussions. The open-ended questions allowed participants to provide their personalized feedback. Responses are captured in this section verbatim, with the exception of acronyms which are defined and referenced in Appendix E.











Participants provided individual feedback and these are consolidated into common themes below:

I observed the following strengths during this exercise:

Facilitation and Meeting Organization

- The exercise was well facilitated in the main meeting and in breakout sessions.
- Facilitators were experienced, well-prepared, useful and helpful.
- Participants felt the exercise was a safe space for sharing. Discussions about challenges and possible solutions were open, frank, and non-judgmental in manner.
- The scenarios well organized, realistic and well thought out.
- The instructions to participants were clear with a good use of ground rules to create a positive environment.
- The facilitators kept on schedule and the time was well managed

Participation:

- There was a good representation of different offices and everyone participated actively.
- There was a desire to learn, collaborate, and share information across line offices.
- There was a sense of cooperation and concern for the safety and welfare of colleagues and a willingness to acknowledge gaps and take steps to address them
- With years of experience and subject matter experts in the room, we were able to brainstorm and come up with idea and scenarios that made sense during this training exercise
- Participants had a diverse, but appropriate background and engaged with each other in constructive ways.

Other:

- Identification of sharable resources
- Ability to respond to initial event is okay
- Realizing our gaps and vulnerabilities
- Realizing that we are so unprepared
- Distributed nature of NOAA workforce aids devolution and COOP efforts

I observed the following areas for improvement during this exercise:

- This exercise could be further expanded to reach some level of structure where realistic and plausible solutions could be made. Would need buy in at all levels.
- Need to establish a real COOP plan for the Seattle-metro area.
- Perhaps more feedback/input from leadership or other partner agencies to help provide guidance or answers to questions that arose
- I think the first morning's double introductions were redundant
- With a few exceptions, I didn't learn as much as expected about the unique skills our different line offices bring to the table
- More info about the actual conditions in the Seattle area would be helpful – not scenario-specific details (weather conditions, time of day/month/year, etc.), but actual details about what the region would look like in terms of actual damage, and what plans/resources exist in the region (but non-NOAA) already.
- Groups 1 and 2 are too close together - it was hard to follow our own conversation with another conversation going on in the adjacent group
- The three modules and related questions felt a little repetitive – some of the responses remained relatively the same throughout all three
- NOAA IT is extremely stove-piped – limited, if not single, points of failure
- Some NOAA missions are truly unique and/or require specialized equipment that is not easily replaced
- It's clear NOAA as a whole under funds preparedness/resilience initiatives
- Might be improved by discussion of each L/O's primary MEF through the scenario – it was good to share during the introduction, but harder to process all that info from the participant's all at once
- Extensive note taking did not enhance discussion that followed the exercise
- Forming a joint or corporate “to do” list – each of us will go back and maybe make some changes – but there are things we need to work on jointly (line an inventory of survival gear on campus).
- The types of questions or topics covered should be clearly communicated so most appropriate person from each office could be tapped to come
- Report out persons should be instructed to report their group's conclusions/points rather than their own thoughts
- I thought the scenario was well thought out and the planners did a great job facilitating – the main area of improvement I saw as a need for follow-up discussions at a high level and a need for further training NOAA-wide
- I need better plans and procedures for communication and staff accountability within my organization (Sea Grant) – I need a fail-safe for communications and interim
- NOAA could benefit by having a dedicated and organized cross-L/O (and staff office) planning and disaster preparedness for the Seattle region
- There were some personalities that would have been controllers
- Intros were repetitive and took too long

What specific training opportunities helped you (or could have helped you) prepare for this exercise?

- NIMS for NOAA
- GIS for emergency managers
- Hazwoper
- ICS (NOAA related)
- Emergency management
- CERT
- Maybe going over the COOP plan for WRC – I’m familiar with the OEP for WRC from conducting the Facility Security Assessment every 3 years.
- HAM radio operator
- A NOAA 101 course (if it existed) would be helpful to give personnel a high level overview of what other organizational units do
- May want to consider pre-requisite training via CLC
- Re-ordering through ORR COOP, FEMA MOU, Cascadia Rising AAR

Which exercise materials were most helpful?

Breakout Groups and Discussion

- Discussion
- Breakout group questions
- Questions for discussion
- The most useful resource was the knowledge, experience, and ideas of the variety of participants
- Great to see so many line offices represented

Printed Materials

- Situation manual – early distribution was helpful
- COOP/OEP for the exercise location
- Assessing questions in a team/table environment was effective
- Flip charts and the ability to work in teams
- Group discussions were good
- Nice to hear everyone’s through process in these situations

Presentations and Visuals

- The scenarios were well planned/drafted
- Discussions that developed from the given scenario questions were very insightful and informative – lots of creative concept ideas
- ERMA was a useful tool in visualizing how widespread the scenario was and the varying degrees of impact

- Would like to have seen NANOOS

Other:

- Carrie Garrison-Laney and John McGowan were great resources – I hope to have the opportunity to hear their presentations in the future
- I really appreciated the acronym definitions and the clear schedule
- It would be good to look at fault and liquefaction maps for the region
- Inundation Maps
- USCG Incident Management Handbook (IMH), but most people won't have one

Please provide any recommendations on how this exercise or future exercises could be improved or enhanced.

- Broaden the exercise to be more realistic and test the local assets and have local staff responsible for emergency management (facilitate at their centers).
- More focused on ICS application
- Require more senior leaders from Line Offices to be present
- Examine existing plans or lack of plans and what is needed at a minimum
- Understand why this was a NOAA exclusive exercise, but also feel a future exercise with broader participation will be useful
- May want to consider revising the existing COOP/OEP plan(s) as a source material for future exercises
- Use ERMA/GIS more to show damage/hazards (power outage estimates, etc.)
- The 1st day, combine individual introductions with expectations
- Maybe switch up the teams so you get a chance to work with other folks
- Case studies of how other NOAA regions have responded to emergencies would be great
- Bring in a FEMA person to answer questions about their potential role – same for a NOAA HQ person
- Maybe should have pushed tsunami impacts/models more proactively – turns out we really didn't get that many questions
- I'm a broken record, but we need L/O IT participation to really get an accurate sense of mission impacts
- Module timeline could be a bit better defined to ensure each conversation didn't overlap so much – better delineation of the period covered by each module would help
- Improve use of visual aids to convey impacts in each exercise
- Could have been longer to capture more, but taking more time out of work schedule would be difficult
- The two days was perfect – it was the right amount of time
- Have the facilities leadership observe the drill/exercise
- I felt like facilities had no plan, and no training, they need to develop a response planning team to help
- Mixing groups up and have different people report out

APPENDIX D: ANALYSIS OF CORE CAPABILITIES AND OBJECTIVES

Aligning exercise objectives with core capabilities provides a consistent taxonomy for evaluation that transcends individual exercises to support preparedness reporting and trend analysis. The table provided in Appendix D: Analysis of Core Capabilities and Objectives includes the exercise objectives, aligned core capabilities, and performance ratings for each as observed during the exercise and determined by the evaluation team. Additionally, the performance rating definitions can be found on the following page and used for further clarification.

Core Capability	Objective	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
Situational Assessment	Demonstrate and explain the capability of each represented NOAA office to increase agency-wide collaboration during a hazardous situation.			✓	
Communication	Discuss the capability to deliver coordinated, prompt, reliable, and actionable information between regionally-based NOAA Line and Staff Offices, “NOAA Adjacent” partners, and upper management (both regionally and at the HQ level), as well as identify the best tools to accomplish this.		✓		
Finance, Legal, and Administration	Evaluate NOAA’s capacity to maintain a coordinated response in a hazardous situation through discussion of Line and Staff Office management of staff, resources, and communications.			✓	

Table 1. Summary of Core Capability Performance

Ratings Definitions:

- Performed without Challenges: 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: 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: 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 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: The targets and critical tasks associated with the core capability were not performed in a manner that achieved the objective(s).

APPENDIX E: ACRONYMS

Acronym	Term
AAR	After Action Report
AKFSC	Alaska Fisheries Science Center
ARD	Assessment & Restoration Division
CERT	Community Emergency Response Team
CIO	Chief Information Officer
CLC	Commerce Learning Center
COOP	Continuity of Operations
COS	Chief of Staff
CPR	Cardiopulmonary Resuscitation
CWSU	Center Weather Service Units
DPP	Disaster Preparedness Program
ERD	Emergency Response Division
ERMA	Environmental Response Management Application
FEMA	Federal Emergency Management Agency
FOD	Facilities Operations Division
GETS	Government Emergency Telecommunications Service
GIS	Geographic Information System
HAM	Amateur Radio
Hazwoper	Hazardous Waste Operator
HQ	Headquarters
HRD	Habitat Restoration Division
HSPO	Homeland Security Program Office
ICS	Incident Command System
IMH	Incident Management Handbook
IP	Improvement Plan
IRC	Inouye Regional Center
IT	Information Technology
L/O	Line Office
MDD	Marine Debris Division
MEF	Mission Essential Function
MOU	Memorandum of Understanding
NANOOS	Northwest Association of Networked Ocean Observing Systems
NE	Northeast
NESDIS	National Environmental Satellite, Data, and Information Service
NIMS	National Incident Management System
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration

Acronym	Term
NOS	National Ocean Service
NRAD	NOAA Response Asset Directory
NW	Northwest
NWFSC	Northwest Fisheries Science Center
OAR	Oceanic and Atmospheric Research
OCAO	Office of the Chief Administrative Officer
OCS	Office for Coast Survey
OEP	Occupant Emergency Plan
OHC	Office of Habitat Conservation
OIASI	Office of International Affairs and Seafood Inspection
ONMS	Office of National Marine Sanctuaries
ORR	Office of Response & Restoration
PMEL	Pacific Marine Environmental Laboratory
S/O	Staff Office
SMT	Senior Management Team
SSMC	Silver Spring Metro Center
USCG	United States Coast Guard
WA	Washington
WCED	West Coast Enforcement Division
WPS	Wireless Priority Service
WRC	Western Regional Center