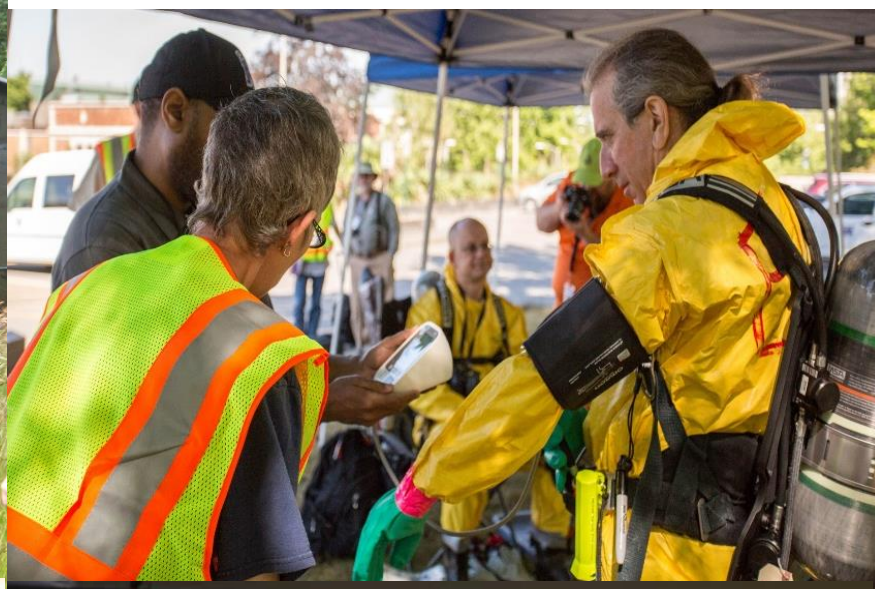


Washington State 2016 Cascadia Rising Exercise After-action Report

Catastrophic Earthquake and Tsunami Scenario

Published: January 5, 2017 | Revised: August 1, 2018

Thank You

The Washington Military Department would like to thank all those from across our state and region – local jurisdictions, tribal members, state government, federal and military – who dedicated time, expertise and resources to the design and conduct of the largest preparedness series of events in our state's history, the integrated Cascadia Rising/Vigilant Guard exercise. The Cascadia Rising Design Team sends a special thank you to all that collected and analyzed observations to develop the findings described in this after-action report. These valuable lessons are setting a foundation for improving our collective preparedness and resilience.

Front cover picture descriptions

Top Left: Medical resupply by WA National Guard 56th IO Group (GTF #1) in conjunction with 66th TAC Point Roberts, WA, June 2016

Top Right: Hazmat team at University of Washington, June 9, 2016

Bottom Left: State EOC general staff in action, June 8th, 2016. *[Photo Credit: Johanna Nielson, https://emscholar.wordpress.com/2016/06/20/the-people-of-cascadia-rising/]*

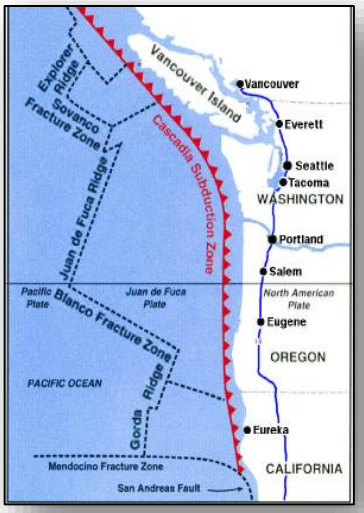
Bottom Right: Joint Operations Center Staff, Camp Murray June 9, 2016

Table of Contents

Key Terms

A Catastrophic Disaster

FEMA defines a catastrophic incident as "…any natural or manmade incident, including terrorism, that results in extraordinary levels of mass casualties, damage, or disruption severely affecting the population, infrastructure, environment, economy, national morale, and/or government functions." It differs from a major disaster in that it affects a significantly greater number of people, is regional rather than local in scope, significantly damages or destroys lifeline infrastructures and overwhelms local and state response and recovery capabilities. A catastrophic event will require an immediate national, and possibly an international, response effort.



The Cascadia Subduction Zone (CSZ)

The Cascadia Subduction Zone (CSZ) is a 700-mile long "megathrust" fault that stretches offshore from Northern Vancouver Island to Cape Mendocino, California. It is formed by the intersection of the Juan de Fuca and North America plates. The Juan de Fuca plate is moving eastward toward, and driving (subducting) beneath, the North American plate.

The world's largest earthquakes occur along subduction zones. Stress builds up along them and then suddenly releases, generating large earthquakes. Ranging from magnitude 8.0 to 9.0+, they produce prolonged ground shaking, large tsunamis, and significant aftershocks. The 2004 Indonesia earthquake and tsunami and the 2011 Japan earthquake and tsunami are recent examples of subduction zone earthquakes.

The CSZ fault is stuck, meaning that stress is building up along it until the fault suddenly breaks. The CSZ ruptures on average every 300-500 years. The most recent rupture occurred in 1700, generating an approximately magnitude 9.0 earthquake and resultant tsunami. Stresses have been building along the fault in the more than 300 years since, putting the Pacific Northwest at risk of another catastrophic seismic event.

The Cascadia Rising Exercise Scenario

CR16 simulated a complete rupture of the CSZ on June 7 at 8 a.m. It generated a magnitude 9.0 earthquake that rocked the Pacific Northwest, severely damaging buildings, roads, bridges, power lines, communications and other components of our lifeline infrastructure. Approximately 30 minutes after the earthquake, the first tsunami wave roared ashore, devastating the region's coastline. Life safety and life sustaining needs were urgent and overwhelming, generating an immediate national response.

Whole Community

In the National Preparedness Goal, *whole community* is defined as, “a focus on enabling the participation in national preparedness activities of a wider range of players from the private and nonprofit sectors, including nongovernmental organizations and the general public, in conjunction with the participation of all levels of government in order to foster better coordination and working relationships.”

Introduction

This report outlines the state level findings and lessons learned from the 2016 Cascadia Rising catastrophic response exercise, and recommendations to improve preparedness shortfalls.

Cascadia Rising was a national level, functional exercise that integrated several other exercises into a complex, multi-state, multi-agency, exercise event.

The four major components of the Cascadia Rising umbrella were:

- Cascadia Rising Exercise (June 7-10, 2016) – Emergency Operations/Coordination Centers
- Vigilant Guard Exercise (June 5-13, 2016) – National Guard support to civil authority
- Ardent Sentry Exercise (June 7-15, 2016) – National Defense support to civil authority
- Joint Logistics Over the Shore Exercise (June 10-15, 2016) – Disaster relief by sea

These exercises followed one common exercise scenario and timeline, developing into an integrated, full-scale exercise. The overarching purpose of the integrated Cascadia Rising Exercise was to test the government's ability - at the local, tribal, state and federal levels - to coordinate and respond cooperatively to a catastrophic disaster related to a Cascadia Subduction Zone (CSZ) 9.0 magnitude earthquake.

Key exercise objectives at the state level included:

- Validate the state multi-agency Comprehensive Emergency Management Plan (CEMP) and the Catastrophic Incident Annex to the CEMP
- Test the Washington National Guard's CSZ Concept Plan (CONPLAN)
- Test the state's CSZ Playbook
- Evaluate the whole community's ability to perform six key core capabilities: Operational Coordination, Operational Communication, Situational Assessment, Mass Care, Public Health and Medical Services, and Critical Transportation.

For these purposes, the State Emergency Operations Center (SEOC), as the multi-agency coordination center for the state of Washington, activated to the highest level on Tuesday, June 7, 2016 and remained activated until Friday, June 10, 2016. More than a dozen state agencies with either a primary, coordinating, or supporting role for an Emergency Support Function (ESF) in the state's CEMP participated.

The Washington National Guard, with the support of National Guard units from other states, activated and deployed six brigade-level task forces to support civil authorities from June 5, 2016 through June 13, 2016.

During the exercise, 26 counties and 12 tribal nations in Western and Eastern Washington participated with the state at varying levels. Emergency operations or coordination centers (EOC/ECC) in 16 counties were activated either partially or at full emergency operations.

During the exercise, the impacts of a catastrophic earthquake and tsunami were provided to the participating organizations through simulation, role players and damage reports based on the Cascadia Rising scenario document, which was compiled from scientific and engineering information.

Data taken from several reports and studies was compiled to develop the Cascadia Rising Exercise Scenario Document. A 2011 study commissioned by FEMA Region X and conducted by the National Infrastructure Simulation and Analysis Center Homeland Infrastructure Threat and Risk Analysis Center (HITRAC) within the DHS Office of Infrastructure Protection provides a primary foundation for estimating the impacts of a Cascadia Subduction Zone earthquake. The HITRAC study is based upon a 9.0 magnitude earthquake along the length of the Cascadia Subduction Zone fault as specified by the Cascadia Region Earthquake Workgroup (CREW). From this baseline, the Western Washington University Resilience Institute and the members of the exercise scenario sub-working group developed the exercise scenario document. Exercise designers with local jurisdictions and state agencies provided further refinement by developing a ground truth document and Master Scenario Event List (MSEL) to provide realistic simulation of the damages.

Following the exercise, each agency and jurisdiction that activated an emergency operations or coordination center (EOC/ECC) conducted an after-action review at their level to derive specific lessons learned and identify corrective actions specific to their operations. After reviewing more than three dozen jurisdictional and agency reports, along with inputs from individual leaders, evaluators and subject matter experts, the Washington Military Department derived the state level findings and produced this report. Our state findings were shared with FEMA Region X during the regional AAR process.

Executive Summary

Overarching Conclusions

A large magnitude Cascadia Subduction Zone fault earthquake and tsunami is perhaps one of the most complex disaster scenarios we face as emergency management and public safety officials in the Pacific Northwest. Due to this complexity, life-saving and life-sustaining response operations will hinge on the effective coordination and integration of governments at all levels – cities, counties, state agencies, federal departments, the military and tribal nations – as well as non-governmental organizations and the private sector. It is this joint-operational whole community approach that we worked to enhance and test during the Cascading Rising exercise.

In broad context, Cascadia Rising was not merely a week-long exercise but a two-year event with many building-block events that contributed to the whole community's (local-state-tribal-federal) analysis and planning assumptions regarding catastrophic preparedness.

Through the two-year ramp-up and the culminating functional and full-scale exercises, the following overarching conclusions can be drawn:

There is a need for Washington residents to prepare. A Cascadia Subduction Zone rupture would destroy transportation systems and isolate many Western Washington communities. Cascadia Rising confirmed that it could take several weeks for assistance to reach communities that have become isolated because of the earthquake impacts.

Despite ongoing public education efforts and community preparedness programs, our families, communities, schools, hospitals and businesses are not prepared for the catastrophic disaster that a worst-case CSZ earthquake would cause.

The exercise identified the need for state and local government – agencies, emergency management, and leadership – to complete comprehensive, coordinated plans and implement systems to respond to a catastrophic disaster.

The professional responders, to include fire services, law enforcement, public works, public health, and emergency management organizations among others, have not sufficiently planned and rehearsed for a catastrophic event where they themselves are in the impact zone.

Catastrophic response requirements are fundamentally different than any response we have seen before.

- In the CSZ scenario, the *response infrastructure is severely damaged*. The people, equipment, facilities, power, bulk fuels, and other material resources that would normally be called upon to respond to a seasonal disaster, such as a wildfire, winter storm, or flooding, will be in the impact-zone. A Cascadia Subduction Zone eruption will impact the western half of the geographies of Washington, Oregon and British Columbia.
- There is a need to treat catastrophic disasters differently than seasonal disasters. A 'push' response is required – one in which resources are 'pushed' out to local jurisdictions before a

request for assistance from the state/federal government is received. The typical response uses a 'pull' system – once the local level and mutual aid is overwhelmed, requests for support are elevated to the county, then state, and if required, to the federal level. Cascadia Rising proved this approach is inadequate in response to a CSZ earthquake due to the wide spread damage, sense of urgency, and barriers to normal communication and coordination. Prior to the exercise, state, federal and military logistical planners identified a 'pull' approach would likely be inadequate and adjusted procedures to coordinate a more proactive approach. The exercise reinforced the need for planners at the federal and state levels to develop procedures that facilitate effective 'push' operations under appropriate circumstances, manage aid deployment and establish related accountability standards.

- A *massive* response will be required. The scale of damage to critical infrastructure caused by a full rip of the entire fault line would be massive and affect millions of people from British Columbia to Northern California. Leaders in Washington state identified that the response should be a coordinated national-state, proactive response.
- While the principal goal of the initial response is to support the maximum number of survivors until our transportation system is usable again, the lack of ability to move supplies, response teams and critical resources will hamper the response and cause cascading effects to households and communities. Because of the severe damage to the power grid, transportation networks and drinking water facilities, the first order damage from intense shaking, liquefaction, landslides, and a large tsunami will lead to second and third order problems of food and water shortages, sanitation issues, heating issues, and other public health and healthcare related issues.

Way Ahead

- Publish and present the After-action Report to the Emergency Management Council.
- Provide the Governor with lessons-learned and recommendations moving forward.
- Implement a subcommittee of the Governor's Cabinet to carry out recommendations included in the State Emergency Management Council's Seismic Safety Committee report, Resilient Washington, published December 2011.
- Develop the state's catastrophic response concepts into an integrated plan with detailed operational analysis and appropriate emergency support function (ESF) engagement.
- Develop public education and messaging to increase the preparedness of households and communities to ensure they're prepared for up to two weeks on their own.

Strategic Findings

Strategic findings address policy, direction, prioritization and resourcing of critical state level planning, mitigation and disaster preparedness activities. Strategic areas for improvement fall into three areas: mitigation - long term vulnerability reduction; response - planning and coordination; and recovery - community and economic.

Mitigation - Long Term Vulnerability Reduction

- The state's transportation, communication and energy networks, which are essential during a catastrophic response and thus, the ability to save and sustain lives, must be evaluated for survivability.

  Current scientific and engineering modeling predicts catastrophic damage to the state's critical networks. The four-day exercise confirmed assumptions that the damage to these networks will prolong an organized and capable response.

- The State Emergency Management Council commissioned its Seismic Safety Committee to work with scientists, engineers and community planners to develop strategies to improve the state's resiliency to the devastating impacts of a catastrophic earthquake.

  A resilient state is one that maintains services and livelihoods after an earthquake. In the event that services and livelihoods are disrupted, recovery occurs rapidly, with minimal social disruption, and results in a new and better condition. Cascadia Rising demonstrated that Washington is currently not a resilient state.

  In 2011, the Seismic Safety Committee published its report, Resilient Washington. The Resilient Washington initiative provides a framework for long-term implementation of seismic risk reduction policies and activities across the state with the goal of making the state resilient within a 50-year timeframe. By 2016, no recommendations from the Resilient Washington report had been implemented.

John Ufford, Washington State CR16 Exercise Director, presenting a conceptual, state response at Gov. Jay Inslee's Senior Elected Officials CR16 Workshop, January, 2016

Response - Planning and Coordination

- The state's emergency planning meets the response requirements for a severe winter storm, flooding or wildfire. However, current planning is not adequate for catastrophic disasters at the state and local jurisdiction levels. The state lacks comprehensive catastrophic response plans. Cascadia Rising identified an extreme response environment demanding state interagency activities well beyond current operational practice.

  The exercise gave planners a first chance to test and observe the current plans developed through focused planning efforts since 2008. Testing and operating from these plans during Cascadia Rising allowed planners to identify several gaps and areas of improvement in our response plans and planning efforts.

  The exercise also tested mutual aid arrangements, agency emergency response plans, agency Continuity of Operations Plans (COOP), EOC/ECC Standard Operating Procedures (SOPs), and

jurisdictional CEMPs enabling planners across many sectors in the state to identify areas of improvement.

- The state's current planning framework and approach to disaster response is not suitable to a catastrophic-scale incident.

- The state will experience large humanitarian impacts shortly following a CSZ rupture unless response is timely and effective.

  By day four of the exercise, multiple and persistent problems regarding public health and public safety remained with no immediate fixes available due to damaged transportation networks.

- Communities in the state rely heavily on the American Red Cross, a volunteer organization, for the essential task of mass sheltering and feeding. These and many similar common disaster response capabilities will be overwhelmed and alternate standards of conducting response must be allowed to facilitate household and community response.

- The Governor's temporary emergency powers are not adequate or flexible enough to address the spectrum of emergency needs that may arise during a proclaimed state of emergency.

Recovery - Community and Economic

- Recovery planning exists, but there is not a long-term recovery strategy to respond to and recover from the catastrophic impacts of a CSZ earthquake to the economy, community, housing, schools and private business sector.

Recommendations

1) Government needs to make emergency preparedness a critical priority.

2) Resource state agencies to adequately conduct detailed catastrophic disaster planning and implement these plans in response.

3) Develop a state funding mechanism to support state, state agency and local jurisdiction preparedness activities.

4) Improve mitigation efforts by accelerating implementation of Resilient Washington, and establish a Resilient Washington subcabinet.

5) Encourage mitigation efforts to improve survivability of the public safety communications infrastructure, as well as communication systems that support both public information and warning (television, radio and internet).

6) Resource the development of interagency plans that support ESF 1 (transportation), ESF 2 (communications), ESF 6 (mass care, evacuation, sheltering and feeding), ESF 8 (public health), and ESF 12 (energy), including the establishment of supporting infrastructure.

7) Establish the legal authority for the Governor to temporarily waive or suspend state laws or regulations to allow an immediate response to preserve and maintain life, health, property or the public peace.

8) Review the direction of state government continuity of operations planning for a catastrophic event and improve the overall continuity of government plan for all three branches of state government. Provide support and assistance to tribes and local jurisdictions to do the same.

Operational Findings

Operational findings address the multi-agency coordination system, the state Comprehensive Emergency Management Plan, and incident command system practices at the state and local level. Cascadia Rising tested the response across the spectrum. To ensure an effective evaluation process, local and state evaluation teams focused on assessing areas within six overarching "core capabilities," as defined by the National Preparedness Goal, published by Department of Homeland Security. Findings are organized by these six core capabilities, which are all part of the Response Mission described by the National Preparedness System.

- Operational Coordination
- Situational Assessment
- Operational Communication
- Mass Care
- Critical Transportation
- Public Health and Medical Services

Significant findings were uncovered during Cascadia Rising in two additional core capabilities: Planning and Search & Rescue. These two areas of findings are included in this section.

Core Capability 1. Operational Coordination

Demonstrate the ability to establish operational control and coordination structures within the impacted region to include the mobilization, employment, and sustainment of critical internal and external response resources to meet basic survivor needs and stabilize the incident.

Observation 1.1: Area for Improvement: Roles/responsibilities of Unified Coordination Group (UCG)

Analysis: In response to this scenario, the state of Washington established both a UCG and a Policy Group at the State Emergency Operations Center (SEOC) at Camp Murray. The UCG is a small, joint (state, FEMA, military) group that provides direction and management over how federal assets can most effectively assist the state. The Policy Group is a larger group of state executives who are looking internal to the state in terms of situational assessment, policy issues and directing resource prioritization.

The UCG attends Policy Group discussions to maintain situational awareness. *Both groups work from the SEOC policy room, which has 19 seats.* There are many policy stakeholders across state government that also participate through teleconferences and/or special meetings off-site.

In the state of Washington, The Adjutant General (TAG) not only serves as the commander of the Washington National Guard, but also serves as the Governor's homeland security advisor, and the department head for the Military Department, which includes the Emergency Management Division (EMD). TAG and the director of EMD are often mobile during a response, travelling with or assisting the Governor with jurisdictional outreach, support and damage assessment.

In all activations, the EMD director appoints a disaster manager to manage the multi-agency response from the SEOC. The disaster manager is directly supported by an SEOC supervisor and the SEOC

command and general staff. In the event of a large disaster where federal assistance is provided, the Governor appoints a State Coordinating Officer (SCO).

This arrangement –TAG, director of EMD, a disaster manager, and an SCO with overlapping roles, responsibilities, and levels of authority created some issues for direction and control of the SEOC during the exercise.

Recommendation: Clarify the roles and responsibilities of the Unified Coordinating Group (UCG), the Policy Group and senior Washington Military Department and Emergency Management Division leadership.

Observation 1.2: Area for Improvement: Catastrophic mindset

Analysis: While SEOC staff are experienced and trained to handle pervasive hazards like floods, ice storms and wild fires, events have rarely overwhelmed the SEOC's ability to collect and process information, receive requests, assign resources, and generally communicate, coordinate and provide support to the local jurisdictions. The result is a level of training and experience suitable for medium to major incidents – but not to coordinate a response to a catastrophic disaster like a magnitude 8.5 or larger earthquake. The CSZ scenario overwhelmed the ability of the SEOC to communicate, coordinate and support local jurisdictions and tribes. Even seasoned SEOC staff may have been caught off-guard, as this situation has never been experienced or tested through exercise.

Recommendations:

a) The 'pull' method of deploying resources must change to a 'push' approach for catastrophic scenarios.

b) The statewide multi-agency coordination system must be proactive and initiate action to support the push approach.

Observation 1.3: Area for Improvement: Operational Framework

Analysis: In response to a magnitude 9.0 catastrophic CSZ earthquake, all local EOCs and ECCs in Western Washington will activate and seek assistance, with several more in Eastern Washington activating to help support the response. Additionally, more than a dozen state agencies with ESF responsibilities will report to and collaborate with the SEOC. Within the state alone, the span of coordination and control will be unprecedented. During the exercise, peak participation was reached on the second and third day with more than 15 counties communicating and coordinating with the SEOC and attempting to join the local jurisdictional conference call. The ability of the SEOC to collect data, analyze information and act on that information was overwhelming.

Recommendation: Develop and formalize a statewide, regional response structure to enable a suitable span of coordination for the SEOC and state agencies. This will enable a more rapid and effective response.

Observation 1.4: Area for Improvement: SEOC/JOC Coordination

Analysis: Barriers to effective civil-military coordination between the SEOC and the Washington National Guard Joint Operations Center (JOC) were identified in the areas of assigning resources, gathering and sharing assessments, controlling the movement of teams and units, and managing air operations.

Recommendations:

a) Staff ESF 20 (Defense Support to Civil Authorities) in the SEOC with experienced staff that are knowledgeable of National Guard and Department of Defense capabilities from all services.

b) Establish a routine operational reporting function from the National Guard to the SEOC allowing the SEOC to coordinate the overall integration of operations.

c) Evaluate the potential of placing Washington National Guard liaisons within applicable ESFs so that military support addresses specific mission areas under the oversight of primary ESFs.

d) Increase Guard presence in state resourcing planning.

e) Expand Washington National Guard knowledge of the Emergency Management Assistance Compact (EMAC) and their capacity to coordinate EMAC resources in concert with the SEOC. Supplement State EMAC processing teams with National Guard plans and logistics personnel.

f) Prepare military and National Guard personnel to engage with civilian government organizations during an emergency response.

g) Support FEMA logistics concept (introduced in Cascadia Rising) – the Movement Control Group – to link federal aid delivery to in-state movements and balance modes of travel with state priorities, and to integrate with state transportation task forces, control centers and priority planning processes.

Observation 1.5: Area for Improvement: Identification/Resolution of Energy Issues

Analysis: The SEOC ESF 12 (Energy) experienced delays in determining natural gas, electricity and fuel needs as fast as possible. There are 64 electrical energy providers, including commercial, Public Utility Districts, co-operatives and private entities. Only two power utilities are hooked up automatically to the state energy sector tracking system. All others required a phone call from Department of Commerce staff in Olympia. This took additional time and was not completely successful.

Recommendations:

a) During disaster and exercise SEOC activations, develop the practice of the lead ESF 12 (Energy) coordinators making contact with their counterparts in other affected states for situational awareness and resource recovery. Develop pre-disaster agreements with Oregon and Idaho in regards to ESF 12. Develop agreements and protocols to provide updates and collaborate on resources.

b) Commerce should continue to develop relationships with energy utilities and request utilities to allow the state to automatically access their websites to obtain situational awareness immediately as it becomes available. Develop staff and system resources to accomplish this recommendation.

Observation 1.6: Area for Improvement: Air Operations Direction, Control and Coordination

Analysis: Cascadia Rising required the coordination of helicopter and fixed-wing relief aircraft with both degraded air traffic control capability and limited open airfields. In addition to the problem of controlling air traffic for safety and flow, the management of air assets – prioritization, assignment, and coordination – was complicated by the dozens of jurisdictions and agencies requesting air support. These complications were compounded by those conducting assessments, airport managers attempting to assess and authorize the opening of airfields, and the range of agencies that provide rotary and fixed wing aircraft for a myriad of missions (search and rescue, aerial reconnaissance and assessments, transport of relief supplies, evacuation of survivors, transport of patients). These combined factors overwhelmed the state's established process and framework.

Recommendation: Formally establish an air operations coordination group, comprised of primary stakeholders, including the SEOC, the Washington National Guard, the Washington Department of Transportation (WSDOT), Search and Rescue (SAR), and the Federal Aviation Administration (FAA). This coordination group should develop a charter with responsibilities outlined based on designated and regulated authorities.

a) Review and clarify role, responsibilities, staffing and procedures for an Air Operations Branch as part of the SEOC Operations Section. Determine the planning factors for effective operations, including:
   - Location and office of primary responsibility
   - Staffing and equipment requirements
   - Qualifications and credentialing of staff
   - Aviation resource request procedures through State EOC
   - Reporting and information sharing requirements in the SEOC, Joint Operations Center (JOC) and with external partners

b) Define how State Air Operations will synchronize with FEMA Region X Air Operations Branch operations and goals.

c) Define coordination with FAA and Department of Defense.

Core Capability 2: Situational Assessment

Demonstrate the ability of EOCs at all levels to provide decision-makers and EOC officials with relevant information regarding the extent of disaster damages to critical infrastructures and other facilities, cascading effects, and the status of ongoing response operations and share this information with other EOCs and critical stakeholders.

Observation 2.1: Area for Improvement: Situational Assessment at SEOC

Analysis: During the exercise, participating organizations from the local to state level had limited capability to collect and report individual pieces of critical information and did not have processes for analysis of the data or for translation of observations into how the earthquake impacted specific areas of the state. In many cases, raw data of damages was reported but overarching regional impacts were not assessed. Therefore, critical information could not be shared in a timely manner with decision makers. Without processed information, decision makers found it difficult to identify appropriate response, prioritize resources, and direct future or regional strategies.

Recommendations: EMD should establish a situational assessment *workgroup* with a designated goal, stakeholders and chair. The purpose of the workgroup would be to examine all aspects of situational assessment (below) through the lens of a statewide framework where jurisdictions, tribes, state agencies, federal agencies, and all operations and coordination centers are working together.

a) Determine information *requirement* standards and *collection* procedures for a catastrophic disaster.

b) Identify analytical processes to determine critical impacts to the region.

c) Determine how to present information so that decision makers can identify appropriate response and prioritize resources in a catastrophic incident.

Observation 2.2: Area for Improvement: Coordination among Earthquake and Tsunami Assessment Agencies

Analysis: The absence of an established, organized body to facilitate the reconnaissance activities and integrate the observations of the individuals proved problematic during Cascadia Rising. Much of the information gathered during the immediate aftermath of a strong seismic event will not be compiled and shared, thereby minimizing the opportunity to enhance our collective understanding of seismic-related processes and impacts. Nor would the information be made available to the SEOC, which coordinates emergency response, damage assessment and early recovery operations following disastrous earthquakes in the state.

Along with DNR, federal agencies and assets will play key roles in earthquake and tsunami analysis and damage assessment. In Cascadia Rising, these included US Geological Survey (USGS), National Oceanic and Atmospheric Administration (NOAA), Pacific Northwest Seismic Network (PNSN), National Aeronautics and Space Administration (NASA), and FEMA through its reach back to National Geospatial Agency (NGA) satellite imagery. During the response to an earthquake,

Washington Department of Transportation (WSDOT) also supports the assessment effort through data collected by their on-scene work crews.

While there is currently a lot of cross-agency coordination occurring everyday between the state and federal agencies listed above, Cascadia Rising proved that during a disaster response, Washington state does not have a formal coordination plan or process among earthquake and tsunami assessment agencies. In a major disaster, such as the scenario presented by a Cascadia Subduction Zone earthquake, managing and coordinating damage assessments without a formal structure and process is problematic.

Recommendation: Develop a 'technical clearinghouse,' similar to what has already been developed in the state of California. Practice clearinghouse procedures during regularly scheduled exercises. Following a significant, damaging earthquake in Washington, a clearinghouse operation should possess the capability to provide a spectrum of scientific and technical services. Recommended key objectives for this clearinghouse include:

a) Provide a state location (real or virtual) where scientists, engineers and other professionals can become part of a larger, temporary organization (the clearinghouse) whose primary purpose is to collect and disseminate perishable field data.

b) Provide a daily forum where geologists, engineers, researchers, emergency managers and other practitioners can assemble to share and discuss the observations they have made during their field investigations.

c) Provide data collection forms to participants to facilitate systematic gathering, documentation and dissemination of perishable field data, observations and findings.

d) Track fieldwork progress of investigators to minimize duplication of efforts and maximize examination of the affected area.

e) Provide, using geographic information system technology, needed data, imagery, and maps to field investigators and digitally process for electronic dissemination, the data, maps, overlays and photographs generated by them.

f) Compile, synthesize and quickly pass along critical information collected by field investigators to EOCs, the State Geologist, the U.S. Geological Survey and other appropriate recipients.

g) Accommodate officials from other regions, states and countries.

h) Provide a designated person to handle media representatives who arrive at the clearinghouse.

Core Capability 3: Operational Communication

Demonstrate the ability of Emergency Operations Centers (EOCs) to establish and sustain voice and data communications with other EOCs and with the public to include basic restoration of communications infrastructure within the impacted area to support response operations and coordinated public messaging.

Observation 3.1: Area of Improvement: Operating with Degraded Communications

Analysis: The exercise placed a focus on operating in a severely degraded communications environment. Several local jurisdictions and the SEOC operated for a period of time without telephones or web-based communications (email, web pages, cloud services). The results were mixed. Some local emergency management agencies were equipped with back-up forms of communication and sufficiently trained staff, while others identified emergency communications as an area of improvement due to lack of equipment, procedures or training. For the SEOC, multiple forms of alternate communications were successfully used, but procedures for effective interaction between the radio room and operations floor had to be improvised on the first day of the exercise. At the state level, the successful employment of satellite phones, particularly among key leadership was inconsistent. Amateur radio was successfully employed by many jurisdictions and at the state level on a larger scale then previously experienced in recent exercises. The amateur radio teams are voluntary and their engagement and integration with emergency management offices vary, but the amateur radio networks showed successful employment.

Recommendations:

a) Continue training and exercising the professional and volunteer community on alternate communication systems, forms and procedures.

b) Amateur Radio: Emergency management agencies and their amateur radio support teams need to establish a habitual relationship and engage with each other on how amateur radio networks can support in both activations and drills. For a few jurisdictions, this engagement merely needs to be sustained. For most jurisdictions, this is an area of improvement. This engagement can be improved through several initiatives: communications training and drills should integrate EOC operational managers with technical performance by the ARES/RACES teams. Emergency managers should provide appropriate data, requests, spot reports and direction of response activities as material to be used for radio messages.

c) Support and collaboration on the use of formatted digital messages needs to be consistent across the state. In 2012, the Puget Sound Regional Catastrophic Grant project team developed an “incident snapshot” (ISNAP) reporting form. For this exercise, the ISNAP provided a model of consistent reporting that was proven to be effective in its usage via HF radio. The ISNAP report should be considered for statewide adaption. It is also necessary to assess and consider usage of equipment and radios to identify and implement effective systems, as required by the incident.

d) The state should develop a statewide operational communications plan as part of the overarching effort to improve catastrophic planning. EMD must develop an amateur radio SOP and sustain periodic training and exercises to foster amateur radio teamwork across

jurisdictions. Cascadia Rising demonstrated the need for jurisdictions in Western and Eastern Washington to strengthen their capability to communicate effectively via alternate forms of communication; i.e. not telephone, or web-based platforms and email.

e) Interoperability of radio-based systems: The state needs to continue development of communications interoperability between non-federal entities and federal entities.

f) Improve assignment, maintaining of Government Emergency Telephone Service/Wireless Priority Service access codes (cards) and satellite phones.

g) Examine the viability of cellular/smart phone network as alternate communication method in immediate aftermath of a catastrophic earthquake.

Observation 3.2: Area of Improvement: Support for TERT Teams

Analysis: Tele-communicator Emergency Response Taskforce (TERT) Teams is a concept of deployable teams that can be used by mutual aid systems between Public Safety Answering Points (PSAPs) for both intrastate & interstate mutual aid between PSAPs. A TERT provides trained PSAP personnel during emergency situations to impacted jurisdictions. TERT specifically involves providing qualified communications personnel to work in another PSAP and requires coordination among PSAPs, county emergency management, and the Washington Emergency Management Division during activations. Using EMAC to request a TERT team was successfully executed during the exercise between Washington and Montana, with Washington being the requesting agency.
This program has the potential as demonstrated during Cascade Rising to expand the capability of public safety dispatch, but the concept must be recognized and supported by state, local and tribal emergency management. A fully supported TERT program can become a key element of public safety response.

Recommendation: Develop a TERT response strategy to assist PSAPs and governing 9-1-1 authorities in the creation of deployment of standardized TERT teams. Build TERT capability at the local level and across the state.

Core Capability 4: Mass Care

Demonstrate the ability to coordinate and deliver life-sustaining services to disaster survivors with a focus on hydration, feeding, emergency sheltering, evacuations, and donations and volunteer management.

Observation 4.1: Area of Improvement: Mass Care Framework

Analysis: The fundamental problem facing responders in the wake of a M9 CSZ earthquake is, 'How do we take care of 3 million people within a day/week?' This is the number estimated to be in need of food and water within the first few days as their at-home supplies are exhausted, roads are blocked by either damage, debris, or fallen bridges, and power and clean water remain unrestored. In the exercise, the state relied on the traditional mass care providers – non-profit, non-government, volunteer organizations including the American Red Cross, Salvation Army and churches. These resources will be quickly exhausted.

Recommendation: Determine the appropriate state-level provider of mass care resources in wide-area, catastrophic disasters.

Observation 4.2: Area of Improvement: Mass Care Coordination

Analysis: Cascadia Rising demonstrated the need to both provide mass care services and just as importantly, manage and direct these services on a state-wide scale. For Cascadia Rising, the Department of Social and Health Services formed and led an ad-hoc mass care task force consisting of government and non-government agencies to enable close coordination with each other and State EOC ESF 6. The task force operated out of the Initial Operating Facility (expanded State EOC) at Camp Murray. The task force was successful, proving the concept as valuable.

Recommendation: Identify, resource and train cadre for ESF 6 and a Mass Care Task Force.

Observation 4.3: Area of Improvement: Interagency Planning

Analysis: The exercise revealed a number of major efforts will overlap, to include movement and delivery of food, water, resources and shelter support. These efforts were not coordinated with public health and patient movement measures. Lack of coordination and lack of integrated planning became evident in issues of evacuation (movement from areas of no services to areas of services), patient evacuation, and support to populations with access and functional needs.

Recommendation: Develop, train and exercise an integration plan for support to ESFs 6 (Mass Care), ESF 7 (Logistics), ESF 8 (Public Health), and ESF 1 (Transportation) in a catastrophic response that involves mass sheltering, evacuation, resupply of commodities, and patient movement over limited routes and across impacted air and seaports.

Core Capability 5: Critical Transportation

Demonstrate the ability of EOCs to coordinate the establishment of access into impacted areas via appropriate ground, air and maritime transportation corridors to deliver response teams, equipment, and disaster relief supplies to meet the basic needs of disaster survivors and stabilize the incident.

Cascadia Rising demonstrated that the transportation system is the lynchpin of response as this infrastructure enables access to impacted areas and delivery of supplies. The Cascadia Rising response highlighted the criticality of east-west and north-south routes, airport assessment and opening, restoration and augmentation of ports and maritime support, and restoration of rail.

Observation 5.1: Area of Improvement: Guidance from State Multi-Agency Center (MAC) Policy Group

Analysis: During the first two days of the incident, WSDOT focused on determining the extent of damage to its infrastructure due to the earthquake, tsunami, landslides, and liquefaction and determining rough timelines for being able to open routes for response operations. No clear direction on which routes were considered a priority for clearance were provided until the end of day two, when FEMA provided this

information. Due to a lack of direction and lack of prioritization from the State MAC Policy Group, the WSDOT Deputy Secretary independently directed the WSDOT Headquarters EOC Manager to make east to west (Ellensburg to Seattle) and south to north (Oregon border to Canadian border) routes available for emergency response operations.

Recommendation: During the initial stages of an incident of this magnitude, the State MAC Policy Group needs to collectively provide state agencies with clear and timely direction on statewide priorities for response operations. Transportation system priorities will significantly affect capability to support response operations.

Observation 5.2: Area of Improvement: Expectation Management

Analysis: Cascadia Rising highlighted the need to manage expectations of the public post-disaster, as well as expectations of emergency management stakeholders. During the exercise, timelines for repair were challenged for several of the collapsed or severely damaged bridges, which would take months to years to repair considering the magnitude of the event. In an M9 CSZ event, one route clearance will be compounded by several hundred repair requirements of multiple road, bridge, airport and ferry terminals. Our state will want to establish aggressive recovery timelines, but planners must ensure planning factors are reasonable.

Recommendation: Through planning, training and exercises, the state must establish, train and validate comprehensive, but reasonable planning factors for infrastructure restoration.

Observation 5.3: Area of Improvement: ESF 1 Clarification

Analysis: WSDOT was asked by various state and federal agencies to update the status of pipelines and vehicle assets providing ground evacuation support. These two specific resources do not fall under the responsibility of ESF 1 in the Washington State CEMP. In Washington, pipeline status is tracked as part of the energy sector by ESF 12. The state CEMP differs from the National Response Framework. At the federal level, pipelines are tracked by ESF 1. The status of vehicles and ground transport being employed for evacuation would be tracked by the Operations section and movement control branch. As the lead agency for ESF 1 in Washington, WSDOT coordinates assessments of transportation system components with other agencies and organizations who own or operate critical infrastructure in the state, including private and local airports and sea ports. The assessment and reporting requirements and relationships among the different primary, coordinating, and supporting organizations and agencies that comprise ESF 1 is not specified in the CEMP and was not clear going into the exercise.

Recommendations:

a) Update the ESF 1 annex to the CEMP.

b) Train SEOC Command and General Staff sections and the FEMA Region X IMAT on the nuance of pipeline assessments and coordination falling under ESF 12 vice ESF 1.

c) As the lead agency for ESF 1, WSDOT can leverage the opportunity to update the ESF 1 Annex to the CEMP to clarify reporting relationships and requirements among the stakeholders and supporting agencies within ESF 1, including local jurisdictions and

organizations that own private or local airports, sea ports, and rail infrastructure and key assets.

Core Capability 6: Public Health and Medical Services

Demonstrate the ability to organize, coordinate and deliver targeted public health and medical services to disaster survivors to include temporary medical facilities, medical surge operations, and patient evacuation and transport to save lives and reduce the suffering of disaster survivors.

Observation 6.1: Area for Improvement: Crisis Standards of Care

Analysis: Establishing "crisis standards of care" (CSC) by medical care organizations was adversely impacted by the governor's narrowed authority for waivers, exemptions and exceptions to statutory requirements during a state of emergency in regards to medical care and facilities. After a regional winter windstorm and flooding in 2007, the state Legislature specified statutory requirements that can be invoked or waived under the governor's emergency powers. Legal counsel for state agencies have interpreted this legislation to limit or narrow the governor's authority to only these specified elements. As a result, the Department of Health was challenged during the exercise to define acceptable levels of care in response of a disaster that also could be invoked under the governor's emergency powers.

Recommendation: Work to enact proposed legislation to restore responsive flexibility of the governor for establishing policies that meet emergency needs.

Observation 6.2: Area for Improvement: Large-Scale Patient Movement

Analysis: The patient movement process was difficult to plan and coordinate. More than 12,000 injuries were reported during the four-day exercise. Movement of patients had to be planned and coordinated within the context of other evacuations and critical movements of resources around the state, all with limited air assets and blocked routes. Initially, agencies were working independently, focused in their own areas but as planning progressed there was a more unified approach.

Recommendation: Form an interagency working group under Department of Health leadership to develop a catastrophic statewide patient movement plan. Closely coordinate with the Movement Control Group under the SEOC to control resource movement into the impact area.

Observation 6.3: Area for Improvement: Disaster Fatality Management.

Analysis: The Cascadia Rising exercise timeline covered the first four days immediately following the devastating earthquake and tsunami. In this timeframe, life safety was appropriately the priority effort. However, in the exercise scenario, more than 9,000 fatalities were reported. At times throughout the exercise, the response effort to address such a large number of fatalities became the operational focus over higher priority life-safety efforts. In the exercise, lack of roads, morgue facilities, and other medical resources put unique demands on medical services at both the state and local level to recover, transport and identify corpses. In the immediate aftermath of a disaster, fatality management is the responsibility of local jurisdictions, but many jurisdictions in the state do not have the capability to meet this need in a

catastrophic response. Medical involvement in mass casualty and fatality disasters requires expert planning and preparedness.

Recommendations:

a) The state must identify leadership for this planning effort. Department of Health recommends the engagement of local decision-makers through the Washington State Emergency Management Association (WSEMA), the Washington State Association of Counties, and the Association of Washington Cities.

b) The state must develop efforts that will increase knowledge, skills and capability in fatality management at the local level.

Mike Iyall, vice council chair, Cowlitz Indian Tribe, analyzing earthquake impacts and response strategies, Lewis County EOC, CR16, June 2016

Core Capability 7: Planning

Observation 7.1: Area for Improvement: Catastrophic disaster plans

Analysis: The state has a myriad of response plans at all levels, including a robust Comprehensive Emergency Management Plan (CEMP). However, the exercise demonstrated that a catastrophic disaster increases the complexity of a response significantly. The state's catastrophic plans were inadequate in many areas. Complete and sound state planning will be crucial to direct response coordination for a catastrophic event.

Recommendations:

a) Develop a comprehensive state catastrophic plan that addresses ESFs, operational areas and infrastructure restoration.

b) Develop CEMP annexes for response to a catastrophic magnitude disaster for each ESF.

c) Develop catastrophic planning for key operational and functional areas:
   - Damage assessments
   - Debris removal
   - Fuel allocation and distribution
   - Evacuation
   - Sheltering
   - Patient movement
   - Casualty collection points
   - Movement control
   - Logistics and staging areas
   - Community points of distribution
   - Air operations

d) Develop catastrophic annexes for repairing and restoring critical infrastructure sectors:
   - Transportation
   - Energy
   - Communications
   - Water, wastewater, sewage

Observation 7.2: Area for Improvement: Resource and Coordinate WANG CSZ Contingency Plan

Analysis: The Washington National Guard CSZ Contingency Plan was tested in Cascadia Rising and proved to be useful. Areas of improvement were identified, but the exercise confirmed the National Guard is an excellent avenue of access to many types of resources and teams required in a catastrophic response. The WANG Joint Forces Headquarters provided access to a large resource pool of National Guard assets nationwide available through Emergency Mutual Aid Compact (EMAC). In the ramp-up to the exercise and during the nine-day, combined Cascadia Rising and Vigilant Guard exercise, local communities and emergency management embraced the support provided by National Guard Geographic Task Forces, resource teams, units and liaisons.

Recommendations:

a) The Washington National Guard CSZ Contingency Plan should be developed and implemented to ensure its effectiveness.

b) For full access to Guard assets across the country, WANG must complete coordination of Emergency Management Assistance Compact planning, agreements, training and exercising.

Observation 7.3: Area for Improvement: State Agency Catastrophic Planning

Analysis: To support the development of a state-level base plan for a catastrophic incident, state agencies with primary roles in a response will have to develop concepts, and then draft comprehensive plans for their areas of responsibility to address a catastrophic level event. Although the goal will be ESF level plans *(addressed in Area of Improvement 1)*, the planning development effort should identify interdependencies, and agencies will have to work together due to the overlapping demand, significant response requirements and the constraint of limited resources.

Recommendation: State agencies conduct interagency catastrophic event planning in order to produce agency catastrophic plans.

Observation 7.4: Area for Improvement: ESF 15 Playbook

Analysis: During Cascadia Rising, ESF 15 delivered life safety information to the public, advising the public via social media, press releases and public media conferences. The messaging consisted of actions that the public should take to be safe, where to locate alternate sources of drinking water, how to ensure the safety of food preparation, and community information on sheltering and public safety. The exercise enabled ESF 15 to test or validate several products and concepts in a catastrophic context such as: pre-scripted, pre-approved press releases to distribute initial press releases quickly, using amateur

radio technology to distribute press releases, and use of social media to push information out. The exercise also provided an opportunity to learn about the military's public communication capability and integrate these resources into a comprehensive effort to keep the public informed in a degraded communications environment. The end result was proof of concept that will enable refinement of processes and products and development of a playbook which will further enhance an effective and quick response following a CSZ earthquake.

Recommendation: Develop a Public Information Officer playbook.

Core Capability 8: Search and Rescue

Observation 8.1: Area of Improvement: Recognition of CERT and Urban SAR

Analysis: When an earthquake erupts, most Search and Rescue (SAR) will originate not from typically recognized first responders, but by ordinary people in the immediate area and community at the time of occurrence.

Recommendations:

a) Emphasize Community Emergency Response Teams (CERT) importance to SAR for the first 72 hours of a disaster.

b) Develop a program to enhance skills of existing wilderness search and rescue units in the state by training them in light urban search and rescue.

Operational Strengths

The purpose of the exercise was to improve preparedness and evaluations focused on identification of inefficient practices so that players could improve. Along with identifying gaps in our plans, procedures and ability to deliver the core capabilities, key strengths that were demonstrated and need to be sustained moving forward are summarized below.

This section lists some of the state's actions that were appropriate for the magnitude of the disaster scenario. These key strengths must be sustained.

- This exercise provided a large platform to build networks. Because of the overwhelming number of participating organizations, the opportunity to forge critical working relationships was enormous. Maintain the habitual and working relationships within the whole community – interagency, public-private, local-state-tribal-federal and civil-military.

- Across all jurisdictions, teamwork and flexibility under crisis were evident among the whole community.

- Operational communications worked well during the exercise and especially demonstrated by private sector utilities and providers among the whole community.

- The state demonstrated an effective response coordination capability in its establishment of task forces at the state level with the right federal, state and private personnel – most notably, the Mass Care Task Force. Task forces were formed ad hoc as an operational necessity during the exercise because of insufficient plans. The task forces did enable an integrated approach to problem solving. However, a down side of ad hoc formation of multiple task forces was the drain on available personnel in other sections and ESF positions.

- Logistics synergy – interagency teamwork among the SEOC general staff and resource providers generated a resource management capability that showed improvement in each day of the activation.

- WebEOC, the web-based emergency management information sharing system, was of high value as an information management tool. Once power was restored, the use of WebEOC at the federal, state and several local jurisdictions, improved operational communication and our common understanding of the situation and response activities.

- The State MAC Policy Group was available and engaged in executive decision-making.

- SEOC Standard Operating Procedures (SOP), updated in 2014-2015 following the SEOC experiences in the SR 530 slide and the unprecedented 2014/2015 wildfires, were validated.

- The SEOC training program demonstrated its value to building the effectiveness and capability of the EOC Command and General Staff.

- The Limited English Proficiency (LEP) program developed following the 2015 wildfire activations showed the importance of considering all cultures within each of the state's diverse regions.

APPENDIX A:

IMPROVEMENT PLAN

This improvement plan has been developed specifically for Washington state as a result of Cascadia Rising Exercise.

REVISED August 1, 2018: Updated Improvement Plan to align with documented Areas of Improvement, analysis, and recommendations.

Core Capability	Issue/Area for Improvements	Recommended Corrective Actions
Core Capability 1: Operational Coordination	1.1: Roles and responsibilities of the Unified Coordination Group (UCG).	Clarify the roles and responsibilities of the UCG, the Policy Group, and senior Washington Military Department and Emergency Management Division leadership.
	1.2: Catastrophic mindset.	1.2.a: The 'pull' method of deploying resources must change to a 'push' approach for catastrophic scenarios.
		1.2.b: The statewide multi-agency coordination system must be proactive and initiate action to support the push approach.
	1.3: Operational framework.	Develop and formalize a statewide, regional response structure to enable a suitable span of coordination for the SEOC and state agencies.
	1.4: SEOC/Joint Operations Center (JOC) coordination.	1.4.a: Staff ESF 20 (Defense Support to Civil Authorities) in the SEOC with experienced staff that are knowledgeable of National Guard and Department of Defense capabilities from all services.
		1.4.b: Establish a routine operational reporting function from the National Guard to the SEOC allowing the SEOC to coordinate the overall integration of operations.
		1.4.c: Evaluate the potential of placing Washington National Guard liaisons within applicable ESFs so that military support addresses specific mission areas under the oversight of primary ESFs.
		1.4.d: Increase Guard presence in state resourcing planning.

Core Capability	Issue/Area for Improvements	Recommended Corrective Actions
Core Capability 1: Operational Coordination (Continued)	1.4: SEOC/Joint Operations Center (JOC) coordination. (Continued)	1.4.e: Expand Washington National Guard knowledge of the Emergency Management Assistance Compact (EMAC) and their capacity to coordinate EMAC resources in concert with the SEOC. Supplement State EMAC processing teams with National Guard plans and logistics personnel.
	1.4 (cont.): SEOC/Joint Operations Center (JOC) coordination.	1.4.f: Prepare military and National Guard personnel to engage with civilian government organizations during an emergency response.
		1.4.g: Support FEMA logistics concept (introduced in Cascadia Rising) – the Movement Control Group – to link federal aid delivery to in-state movements and balance modes of travel with state priorities, and to integrate with state transportation task forces, control centers and priority planning processes.
	1.5: Identification and resolution of energy issues.	1.5.a: Develop the practice of the lead ESF 12 (Energy) coordinators contacting their counterparts in other affected states for situational awareness and resource recovery. Develop pre-disaster agreements with Oregon and Idaho regarding ESF 12. Develop agreements and protocols to provide updates and collaborate on resources.
		1.5.b: WA Dept. of Commerce should continue to develop relationships with energy utilities and request utilities to allow the state to automatically access their websites to obtain situational awareness immediately as it becomes available. Develop staff and system resources to accomplish this recommendation.
	1.6: Air operations direction, control, and coordination – formerly establish an air operations coordination group.	1.6.a: Review and clarify role, responsibilities, staffing and procedures for an Air Operations Branch as part of the SEOC Operations Section. Determine the planning factors for effective operations, including: • Location and office of primary responsibility. • Staffing and equipment requirements. • Qualifications and credentialing of staff. • Aviation resource request procedures through State EOC. • Reporting and information sharing requirements in SEOC, JOC, and with external partners.

Core Capability	Issue/Area for Improvements	Recommended Corrective Actions
Core Capability 1: Operational Coordination (Continued)	1.6: Air operations direction, control, and coordination – formerly establish an air operations coordination group. (Cont.)	1.6.b: Define how State Air Operations will synchronize with FEMA Region X Air Operations Branch operations and goals.
		1.6.c: Define coordination with FAA and Department of Defense.
Core Capability 2: Situational Assessment	2.1: Situational assessment (SA) at the SEOC – establish SA workgroup.	2.1.a: Determine information *requirement* standards and *collection* procedures for a catastrophic disaster.
		2.1.b: Identify analytical processes to determine critical impacts to the region.
		2.1.c: Determine how to present information so that decision makers can identify appropriate response and prioritize resources in a catastrophic incident.
	2.2: Coordination among earthquake and tsunami assessment agencies – establish "technical clearinghouse" (like California's).	2.2.a: Provide a state location (real or virtual) where scientists, engineers and other professionals can become part of a larger, temporary organization (the clearinghouse) whose primary purpose is to collect and disseminate perishable field data.
		2.2.b: Provide a daily forum where geologists, engineers, researchers, emergency managers and other practitioners can assemble to share and discuss the observations they have made during their field investigations.
		2.2.c: Provide data collection forms to participants to facilitate systematic gathering, documentation and dissemination of perishable field data, observations and findings.
		2.2.d: Track fieldwork progress of investigators to minimize duplication of efforts and maximize analysis of the affected area.
		2.2.e: Provide, using geographic information system technology, needed data, imagery, and maps to field investigators and digitally process for electronic dissemination, the data, maps, overlays and photographs generated by them.
		2.2.f: Compile, synthesize and quickly pass along critical information collected by field investigators to EOCs, the State Geologist, the U.S. Geological Survey and other appropriate recipients.

Core Capability	Issue/Area for Improvements	Recommended Corrective Actions
Core Capability 2: Situational Assessment (Continued)	2.2: Coordination among earthquake and tsunami assessment agencies – establish "technical clearinghouse" (like California's). (Cont.)	2.2.g: Accommodate officials from other regions, states and countries.
		2.2.h: Provide a designated point of contact to handle media representatives who arrive at the clearinghouse.
Core Capability 3: Operational Communication	3.1: Operating with degraded communications.	3.1.a: Continue training and exercising the professional and volunteer community on alternate communication systems, forms and procedures.
		3.1.b: Amateur radio – Engage emergency management agencies with amateur radio networks. Provide training to "give and take" of information through EOCs and ARES/RACES.
		3.1.c: Support and collaboration on the use of formatted digital messages needs to be consistent across the state. For example, ISNAP provides effective communication via HF radio.
		3.1.d: Develop a statewide operational communications plan as part of the overarching effort to improve catastrophic planning. Develop an amateur radio SOP and sustain periodic training and exercises to foster amateur radio teamwork across jurisdictions.
		3.1.e: Interoperability of radio-based systems: The state needs to continue development of communications interoperability between non-federal entities and federal entities.
		3.1.f: Improve assignment, maintaining of Government Emergency Telephone Service/Wireless Priority Service access codes (cards) and satellite phones.
		3.1.g: Examine the viability of cellular/smart phone network as alternate communication method in immediate aftermath of a catastrophic earthquake.
	3.2: Support for Tele-Communicator Emergency Response Taskforce (TERT) Teams.	Develop a TERT response strategy to assist PSAPs and governing 9-1-1 authorities in the creation of deployment of standardized TERT teams. Build TERT capability at the local level and across the state.
Core Capability 4: Mass Care	4.1: Mass care framework.	Determine the appropriate state-level provider of mass care resources in wide-area, catastrophic disasters.

Core Capability	Issue/Area for Improvements	Recommended Corrective Actions
Core Capability 4: Mass Care (Continued)	4.2: Mass care coordination.	Identify, resource and train cadre for ESF 6 and a Mass Care Task Force.
	4.3: Interagency mass care planning.	Develop, train and exercise an integration plan for support to ESFs 6 (Mass Care), ESF 7 (Logistics), ESF 8 (Public Health),
	4.3 (cont.): Interagency mass care planning.	and ESF 1 (Transportation) in a catastrophic response that involves mass sheltering, evacuation, resupply of commodities, and patient movement over limited routes and across impacted air and seaports.
Core Capability 5: Critical Transportation	5.1: Priority guidance from state Multi-Agency Center (MAC) Group.	The State MAC Policy Group needs to collectively provide state agencies with clear and timely direction on statewide priorities for response operations. Transportation system priorities will significantly affect capability to support response operations.
	5.2: Expectation management.	Through planning, training and exercises, the state must establish, train and validate comprehensive, but reasonable planning factors for infrastructure restoration.
	5.3: ESF 1 clarification – the assessment and reporting requirements; and relationships among the different primary, coordinating, and supporting organizations and agencies that comprise ESF 1 is not specified in the CEMP	5.3.a: Update the ESF 1 annex to the CEMP.
		5.3.b: Train SEOC Command and General Staff sections and the FEMA Region X IMAT on the nuance of pipeline assessments and coordination falling under ESF 12 vice ESF 1.
		5.3.c: As the lead agency for ESF 1, WSDOT can leverage the opportunity to update the ESF 1 Annex to the CEMP to clarify reporting relationships and requirements among the stakeholders and supporting agencies within ESF 1, including local jurisdictions and organizations that own private or local airports, sea ports, and rail infrastructure and key assets.
Core Capability 6: Public Health and Medical Services	6.1: Crisis Standards of Care (CSC).	Work to enact proposed legislation to restore responsive flexibility of the governor for establishing policies that meet emergency needs.

Core Capability 6: Public Health and Medical Services (Continued)	6.2: Large-scale patient movement.	Form an interagency working group under Department of Health leadership to develop a catastrophic statewide patient movement plan. Closely coordinate with the Movement Control Group under the SEOC to control resource movement into the impact area.
	6.3: Disaster fatality management.	6.3.a: The state must identify leadership for this planning effort. Department of Health recommends the engagement of local decision-makers through the Washington State Emergency
	6.3 (cont.): Disaster fatality management.	Management Association (WSEMA), the Washington State Association of Counties, and Association of Washington Cities.
		6.3.b: The state must develop efforts that will increase knowledge, skills and capability in fatality management at the local level.
Core Capability 7: Planning	7.1: Catastrophic disaster plans.	7.1.a: Develop a comprehensive state catastrophic plan that addresses ESFs, operational areas and infrastructure restoration.
		7.1.b: Develop CEMP annexes for response to a catastrophic magnitude disaster for each ESF.
		7.1.c: Develop catastrophic planning for key operational and functional areas: • Damage assessments; debris removal. • Fuel allocation and distribution. • Evacuation and sheltering. • Patient movement and casualty collection points. • Movement control; logistics and staging areas. • Community points of distribution. • Air operations.
		7.1.d: Develop catastrophic annexes for repairing and restoring critical infrastructure sectors: • Transportation • Energy • Communications • Water, wastewater, sewage
	7.2: Resource and coordinate WANG CSZ Contingency Plan.	7.2.a: The Washington National Guard CSZ Contingency Plan should be developed and implemented to ensure its effectiveness.

Core Capability 7: Planning (Continued)	7.2: Resource and coordinate WANG CSZ Contingency Plan. (Cont.)	7.2.b: WANG must complete coordination of Emergency Management Assistance Compact planning, agreements, training and exercising.
	7.3: State agency catastrophic planning.	State agencies conduct interagency catastrophic event planning in order to produce agency catastrophic plans.
	7.4: ESF 15 “Playbook”.	Develop a Public Information Officer playbook – to include, pre-scripted, pre-approved press releases to distribute initial press releases quickly, using amateur technology to distribute press releases, and use of social media to push information out.
Core Capability 8: Search and Rescue	8.1: Recognition of CERT and Urban SAR.	8.1.a: Emphasize Community Emergency Response Teams (CERT) importance to SAR for the first 72hours of a disaster.
		8.1.b: Develop a program to enhance skills of existing wilderness search and rescue units in the state by training them in light urban search and rescue.

APPENDIX B: WASHINGTON STATE PARTICIPANTS

This list identifies the state and local jurisdictions, government agencies, and major private and/or non-profit organizations that participated in the integrated Cascadia Rising/ Vigilant Guard exercise within the window of June 5 – 13, 2016. The list also identifies the federally recognized Tribal Nations located in Washington state that participated in the exercise. For a list of federal participants and organizations from other states refer to the FEMA Region X Cascadia Rising AAR. For a complete list of all public-private participating organizations at the local level, refer to published individual county and city after-action reports.

Tribal Nations

The Confederated Tribes of the Chehalis Reservation
Indian Health System of the Confederated Tribes and Bands of the Yakama Nation
Jamestown S'Klallam Tribe
Lower Elwha Klallam Tribe
Lummi Nation
Makah Tribe
Quinault Indian Nation
Shoalwater Bay Tribe
Skokomish Indian Tribe
Suquamish Tribe
Swinomish Indian Tribal Community
The Tulalip Tribes

Local Jurisdictions

Benton County

- Chaplaincy Healthcare
- Kadlec Regional Medical Center
- Tri-Cities Community Health
- Trios Health
- HPMC Occupational Medical Services
- PMH Medical Center
- Tri-Cities Laboratory

Clallam County
Clark County

- Clark County and Region IV Public Health

Cowlitz County
Franklin County

- Amateur Radio Emergency Services
- Lourdes Medical Center
- Franklin County Fire District #3
- Tri-Cities Community Health

Grant County
Grays Harbor County

- Grays Harbor Hospital

Homeland Security Region (HSR) 3 Incident Management Team (IMT)
Island County
Jefferson County

Appendix B: Washington State Participants

King County

- Bloodworks Northwest
- City of Auburn
- City of Bellevue
- City of Issaquah
- City of Kirkland
- City of Mercer Island
- City of Redmond
- City of Renton
- City of Sammamish
- City of Seattle
- City of Shoreline
- City of Tukwila
- Evergreen Health Medical Center
- Harborview Medical Center
- Group Health Bellevue Ambulatory Surgery Center
- Highline Medical Center
- Group Health Capitol Hill Ambulatory Surgery Center
- MultiCare Auburn Medical Center
- MultiCare Auburn Medical Center
- MultiCare Covington Medical Center
- MultiCare Good Samaritan Hospital
- Northwest Hospital
- MultiCare Mary Bridge Children's Hospital and Health Center
- Northwest Kidney Center
- Northwest Kidney Center
- Overlake Hospital Medical Center
- Providence Health & Services
- Public Health Seattle & King County
- Rainier State School
- Sammamish Citizen Corps Council
- Sammamish Plateau Water & Sewer
- Seattle's Children Hospital
- St. Elizabeth Hospital
- St. Francis Hospital
- Swedish Medical Center, Ballard
- Swedish Medical Center, Cherry Hill
- Swedish Medical Center, First Hill
- Swedish Medical Center, Issaquah
- Swedish Medical Center, Redmond
- UW Medical Center
- VA Puget Sound Medical Center (Seattle)
- Valley Medical Center
- Vashon Island
- Swedish Edmonds Hospital
- Virginia Mason Medical Center

Kitsap County

- Bainbridge Island
- City of Poulsbo
- Harrison Medical Center – Bremerton
- Harrison Medical Center – Silverdale
- Kitsap County Transit
- West Sound Utility District

Klickitat County

- Amateur Radio Emergency Services
- Klickitat County Fire District #3
- Skyline Hospital

Lewis County

Mason County

Northwest Healthcare Response Network (NWHRN)

Pacific County

- Ocean Beach Hospital
- Willapa Harbor Hospital

Appendix B: Washington State Participants

Pierce County

- City of DuPont
- City of Fife
- City of Lakewood
- City of Orting
- City of Puyallup
- City of Roy
- City of Sumner
- City of Tacoma
- Group Health Tacoma Ambulatory Surgery Center
- Multi-Agency Coordination Center
- MultiCare Allenmore Hospital
- MultiCare Covington Medical Center
- MultiCare Good Samaritan Hospital
- MultiCare Mary Bridge Children's Hospital
- MultiCare Tacoma General Hospital
- Pierce Transit
- Pierce County Public Works Road Operations Division
- Pierce County Jail
- Port of Tacoma
- Rainier State School
- St. Anthony Hospital
- St. Clare Hospital
- St. Joseph Medical Center
- Tacoma Pierce County Health Department
- VA Puget Sound Medical Center, American Western State Hospital Lake
- Tacoma Public Utilities

Region 8 Public Health Region

- Benton-Franklin Health District
- Klickitat County Health Department

San Juan County

Skagit County

Skamania County

Snohomish County

- Cascade Valley Hospital
- Community Transit
- Evergreen Health Monroe
- Port of Everett
- Providence Regional Medical Center Everett
- Snohomish Health District
- Swedish Edmonds Hospital
- Swedish Medical Center, Mill Creek

Spokane County

Thurston County

- City of Lacey
- City of Olympia
- City of Tumwater
- St. Peter Hospital
- The Evergreen State College
- Thurston County Public Health
- Thurston County Public Works

Wahkiakum County

Walla Walla County

- Amateur Radio Emergency Services
- Emergency Medical Services
- Providence St. Mary Medical Center
- Walla Walla General Hospital

Whatcom County

- City of Bellingham

Yakima County

- Sunnyside Community Hospital
- Toppenish Community Hospital
- Yakima Neighborhood Health Services
- Yakima Regional Medical & Cardiac Center
- Yakima Valley Farm Workers Clinics
- Yakima Valley Memorial Hospital

Appendix B: Washington State Participants

State Government

Washington Emergency Management Division (EMD) – Washington State EOC
Washington Commission on Asian-Pacific American Affairs (CAPAA)
Washington State Department of Agriculture (WSDA)
Washington Department of Commerce
Washington Department of Ecology
Washington Department of Enterprise Services (DES)
Washington Department of Natural Resources (DNR)
Washington Military Department (MIL)
Washington National Guard (WANG)
Washington State Department of Health (DOH)
Washington State Department of Licensing (DOL)
Washington State Department of Social and Health Services (DSHS)
Washington State Gambling Commission
Washington State Guard (WSG)
Washington State Labor & Industries (LNI)
Washington State Patrol (WSP)
Washington State Department of Transportation (WSDOT)
Washington Technology Solutions Department
University of Washington (UW)
Washington State University (WSU)

Non-Profit

American Red Cross
Evangelical Lutheran Church of America, Benton County
Salvation Army

Private Sector

Amazon
Amtrak
AT&T
Avista
Comcast
Foss Maritime
Intel
Microsoft
Nintendo
Northwest Natural Gas
Puget Sound Energy
Sprint
T-Mobile
Tropical Shipping
United Natural Foods, Inc.
Verizon
Walgreens

APPENDIX C: REFERENCES

Cascadia Rising Exercise Documents

- Scenario Document, Cascadia Rising 2016, December 2014
- Exercise Plan, Cascadia Rising 2016, June 2016
- FEMA Region X After-action Report, Cascadia Rising 2016, September 2016
- WANG After-action Report, Vigilant Guard/Cascadia Rising 2016, October 2016 (Appendix E to this AAR)

Key Washington State Preparedness Plans and Documents

- Washington State Comprehensive Emergency Management Plan, June 2016
- Washington State CSZ Playbook, June 2016
- Resilient Washington, November 2012
- Emergency Management Council 2015 Annual Report, March 2016

Cascadia Subduction Zone Information

- Study commissioned by FEMA Region X and conducted by the National Infrastructure Simulation and Analysis Center's Homeland Infrastructure Threat and Risk Analysis Center (HITRAC) within the DHS Office of Infrastructure Protection, 2011 (Commonly referred to as the "FEMA HITRAC Study"
- Cascadia Region Earthquake Working group (CREW) report describing the Cascadia Subduction Zone earthquake scenario, 2013

APPENDIX D: WASHINGTON NATIONAL GUARD

AFTER-ACTION REPORT FOR VIGILANT GUARD AS A LINKED EXERCISE TO CASCADIA RISING

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

Table of Contents

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

SECTION 1: EXECUTIVE SUMMARY

Exercise Name	Vigilant Guard/Cascadia Rising 2016 Exercise
Exercise Dates	7 June – 12 June 2016
Scope	Vigilant Guard – Washington (VG-WA) 2016 is Washington's full-scale component of the Cascadia Rising 2016 (CR16) exercise. VG-WA engaged the Washington National Guard (WANG) and its federal, state and local partners while conducting a rehearsal of the Cascadia Subduction Zone response contingency plan (CSZ CONPLAN) across the state of Washington. Employing elements of 10 subordinate brigade level command organizations under Joint Task Force - Washington (JTF-WA), the WANG utilized the Dual Status Command (DSC) concept. JTF-WA provides command and control of military forces, both United States Code (USC) Title 10, and Title 32 while supporting local jurisdictions and Incident Commanders (IC) in support of the Governor of the state of Washington. JTF-WA operates from Camp Murray while seven subordinate Geographic Task Forces (GTF) operate in dispersed, pre-identified Homeland Security (HLS) regions in the state. Two Functional Task Forces (FTF) provide aviation (at Gray Army Airfield) and Chemical Biological Radiological and Nuclear (CBRN) capability (at Fairchild Air Force Base) in the state. A Garrison Command operates on Camp Murray providing life support to the State Emergency Operations Center's Initial Operating Facility (IOF) and JTF-WA.
Mission Area(s)	Response and Recovery
Core Capabilities	1. Operational Coordination 2. Situational Assessment 3. Mass Search and Rescue Operations 4. Physical Protective Measures 5. Intelligence and Information Sharing 6. Operational Communication 7. Critical Transportation 8. Logistics and Supply Chain Management 9. Environmental Response/Health and Safety 10. Planning
Objectives	1. Rehearse CSZ CONPLAN 2. Rehearse and validate alert/mobilize/deploy concepts in CSZ CONPLAN 3. Rehearse and exercise command and control over GTF/FTF construct 4. Rehearse Joint Reception Staging Onward-movement Integration (JRSOI) 5. Coordinate with ICs and Emergency Managers (EM) 6. Rehearse the airspace coordination and aviation employment plan 7. Coordinate with state entities 8. Coordinate with national entities

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

Threat or Hazard	Full rupture of the Cascadia Subduction Zone seismic fault
Scenario	Cascadia Rising is a scenario-based exercise incorporating estimated impacts caused by a M9.0 earthquake and resulting tsunami. A rupture of the 800-mile CSZ fault line located 50 to 80 miles off the Pacific Northwest coast, stretching from British Columbia to Northern California, generates the earthquake. Damages affect three states and British Columbia with ground shaking up to five minutes, followed by numerous aftershocks, with several at M7.0+. Impact includes significant damage to critical infrastructure, 8 million citizens directly impacted in Washington and Oregon; 14,100 fatalities and 24,000 injured. The Homeland Infrastructure Threat and Risk Analysis Center's (HITRAC) 2011 CSZ study is foundational to the scenario, although modified to achieve targeted training objectives for all exercise participants. OPERATION CASCADIA RISING consists of three major nested exercises: CASCADIA RISING, VIGILANT GUARD, and ARDENT SENTRY. All exercises use the core dates of 7-10 JUN 2016; VIGILANT GUARD continues through 12 JUN 2016. ARDENT SENTRY part A paused during 11-12 JUN 2016, and resumed as part B from 13-16 JUN 2016
Sponsor	The Washington Military Department (WMD), in cooperation with the Federal Emergency Management Agency (FEMA)
Participating Organizations	The Washington Military Department, FEMA, United States Northern Command (USNORTHCOM), numerous Washington State agencies, counties, cities, tribal organizations and port authority jurisdictions.
Point of Contact	Lieutenant Colonel Clayton E. Braun Deputy Joint Operations Officer (Deputy J-3), WANG Joint Operations Center, BLDG 17, Camp Murray Tacoma, WA. 98430-5000 253-512-8366 (office) 253-606-7734 (cell) clayton.e.braun.mil@mail.mil

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

SECTION 2: INFORMATION COLLECTION AND AFTER-ACTION REPORT DEVELOPMENT

The development of this After-action Review (AAR) is a compilation of multiple deliberate efforts to gather actionable information to improve response planning for the CSZ rupture.

Gathered from multiple sources using multiple methods, the information compiled herein provides the most beneficial feedback possible. The following are primary sources:

1) The USNORTHCOM J7 (Vigilant Guard) staff observations

2) Internally solicited observations from all exercise participants in an Issue, Discussion, Recommendation (IDR) format

3) Homeland Security Exercise Evaluation Program (HSEEP) Exercise Evaluation Guides (EEG) completed by each subordinate element (staff and command) to JTF-WA on pre-determined exercise objectives

This AAR is not all inclusive of the lessons learned during the Vigilant Guard exercise. Many of the 'sustains' are not shown to save space. Lessons learned from exercise design will publish in a separate 'exercise design' AAR.

The format of this AAR document intends to follow the FEMA Homeland Security Exercise and Evaluation Program (HSEEP) guidelines in order to improve sharing of the information.
To assist in sharing and readability Appendix A: Acronyms, contains a list of every acronym and abbreviation used in this document.

This document specifically represents findings and recommendations from the VIGILANT GUARD-WA exercise, and although some of the data may overlap with findings from the ARDENT SENTRY or CASCADIA RISING exercises, this document does not, necessarily, represent the findings or opinions of the exercise directors for those exercises.

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

SECTION 3: STRATEGIC FINDINGS

The VIGILANT GUARD-WA exercise represents the first significant rehearsal of plans developed over three years and involving federal, state, tribal and local planning partners. The strategic findings are:

1. **The CSZ CONPLAN is a good start.** The planning effort is instrumental to a successful execution of a plan. The CSZ CONPLAN is NOT perfect, and leaves much to be improved. It is imperative that this planning effort continue.

2. **All State Emergency Support Functions (ESF) must conduct detailed planning for this disaster.** Planning partners must expend the capital and energy to pre-plan and synchronize their actions for this catastrophic event. State agencies, as organized by ESF, should develop linked plans under the Washington Emergency Management Catastrophic Incident Annex (CIA) and the Washington state CSZ Playbook, for the CSZ response.

3. **Partnerships are critical!** The partnerships and relationships developed in the planning and pre-execution of this exercise enabled the success of the exercise, and enable the success of the response. Continuing to foster and build these relationships is key to a successful response.

4. **We must adopt a 'push' mentality for this disaster!** The National Incident Management System (NIMS) and the National Response Framework (NRF) operate on a 'pull' system that requires Incident Commanders (IC) to place requests based on the specific needs of the response. In a catastrophic disaster, waiting for requests expends precious time in an environment where time is critical, communications are limited, and situational awareness is difficult to achieve. Preplanning the first wave of life saving resources and their movement and delivery all the way forward to the IC, absent any request, is key, but is foreign to the NIMS / NRF business model.

5. **The National Guard: The force of choice for domestic disaster response!** The response to a domestic disaster, particularly of the scale of a CSZ rupture, is a team effort and requires all of the nation's resources. When military forces are used, the Guard has a direct connection to the community, is available to conduct pre-planning, connects to the intent of the Governor, is an 'operational reserve' of the total force, and is less likely to impact national mission assurance requirements. Through Emergency Mutual Aid Compact (EMAC), Guard units and capabilities can be prepared to conduct rapid movement when needed. Although the Guard is the preferred resource for domestic military mission sets, we must always consider speed and capability. The resource that can arrive the quickest with the most capability is essential.

6. **Real time, national level coordination must improve.** This disaster requires a FEMA, USNORTHCOM, USTRANSCOM, NGB and state representative cell at the national level to rapidly coordinate and solve resourcing and transportation challenges. Newly emerging doctrinal solutions must address the challenges of a multi-state catastrophic event for resourcing and transportation solutions that are rapid enough to prevent additional suffering.

SECTION 4: ANALYSIS OF CORE CAPABILITIES

Aligning exercise objectives and core capabilities provides a method to evaluate and report preparedness while also conducting 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.

Core Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
OPERATIONAL COORDINATION		X		
SITUATIONAL ASSESSMENT			X	
MASS SEARCH AND RESCUE OPERATIONS			X	
PHYSICAL PROTECTIVE MEASURES				X
INTELLIGENCE AND INFORMATION SHARING		X		
OPERATIONAL COMMUNICATIONS			X	
CRITICAL TRANSPORTATION			X	
LOGISTICS AND SUPPLY CHAIN MANAGEMENT				X
ENVIRONMENTAL RESPONSE / HEALTH AND SAFETY		X		
PLANNING		X		

Table 1. Summary of Core Capability Performance

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

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

Core Capability 1. Operational Coordination

Observation 1.1: Sustain: CIV/MIL Cooperation

Analysis: The interaction between WANG personnel and their civilian counterparts proved to be highly effective during VG-WA16. Many of the cities and counties expressed a strong desire to continue their interactions and readiness training. GTFs continue to refine planning with civilian counterparts by assigning local service members to build enduring relationships.

Recommendation: Continue to engage our local partners in emergency preparedness planning, training and exercises. Issue annual training guidance to JTF-WA subordinate elements that directs continued planning and training efforts.

Washington Gov. Jay Inslee provides remarks at the kickoff press conference for Cascadia Rising / Ardent Sentry / Vigilant Guard exercise 2016

Observation 1.2: Area for Improvement: ICS/NIMS Understanding

Analysis: Few soldiers and airmen that provide response during emergencies have a solid understanding of the National Response Framework (NRF) or the Incident Command System (ICS) prior to execution. Although the JTF-WA staff and many of the staff of the GTF/FTF complete basic ICS training, few personnel below the staff level conduct this training. This lack of knowledge can hinder and delay the ability of the Washington National Guard to respond effectively.

Recommendation: JTF-WA publishes guidance directing specific ICS/NIMS training by position assignment and recommends ICS/NIMS training based on grade for members of the Washington National Guard. Provides recommended ICS/NIMS training levels to EMAC partners.

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

Observation 1.3: Area for Improvement: 'Push' Asset Request

Analysis: The post CSZ rupture environment will contain severely degraded communications, significantly hampered transportation capability, and be generally chaotic. In this environment, any delay in requesting resources translates into more lives lost following a disaster. Pre-planning can minimize the time lost in this chaotic environment by scheduling those resources that will most certainly be needed, and pre-coordinating their movement forward, without any requirement for additional requests after the CSZ rupture. This 'push' concept does not comply with the principles of the NRF or NIMS, and is foreign to most emergency managers and incident commanders. The traditional and universally accepted 'pull' methodology will cost lives in this scenario. A mindset shift is required in order to achieve the least time lost for life saving capabilities.

Recommendation: JTF-WA planning continues the effort of pre-identifying first wave of response assets, gaining approval of these recommendations by local emergency managers, pre-coordinates necessary EMAC, and develops Time Phased Force Deployment Listing (TPFDL). This effort encompasses the pre-coordination of all first wave EMAC and includes transportation via EMAC air bridge assets to designated Air Points of Debarkation (APOD) within each HLS region. JTF-WA works with WA-EMD and local emergency managers to coordinate arrival actions (JRSOI) for arriving response assets.

Observation 1.4: Area for Improvement: Air Operations Branch (AOB)/Air Operations Task Force (AOTF)

Analysis: The AOB/AOTF mission set is not a typical military mission, and exists at the request of the aviation community in the state of Washington. The intent is to build an ICS-like Air Operations Branch capability and down trace that is responsive to the SEOC AOB across the multiple HLS regions. This is a joint venture with the aviation community and the Washington State Department of Transportation – Aviation Division (WSDOT-AVN), and primarily adds military staff to a civilian mission requirement. The AOB/AOTF concept, as exercised in VG-WA16, is still experiencing significant challenges in the definition of the mission requirements. One aspect that hinders the installation of regional AOTFs is the lack of a civilian entity in each region that an AOTF can augment (no regional IMTs). The aviation missioning, prioritization, and airfield situational awareness are all valid requirements that lead to the development of an AOB/AOTF within each region, but further analysis and coordination is required.

Recommendation: JTF-WA should continue efforts with WSDOT-AVN and the civil aviation community to further define and coordinate this capability. The development of a specific task list for these entities will significantly assist the effort.

Observation 1.5: Area for Improvement: Liaison Capabilities

Analysis: JTF-WA liaison capability with the multitude of civil entities is critical. Rapidly identifying, prioritizing and resourcing the liaison requirements is more difficult than initially forecast. The liaison officers (LNOs) that JTF-WA provides must be very technically and tactically capable, fully aware of the resources that are available and the employment criteria for those assets. These individuals must be completely informed and understand the commander's intent for each echelon of command to include the Adjutant General (TAG), the Director of Joint Forces (Dual Status Commander), and the regionally

assigned Geographic Task Force Commanders (GTF). Additionally, these LNOs are significantly more capable when they have an existing relationship with the civil entities with which they will coordinate.

Recommendations:

a) Each GTF/FTF should identify and train (Domestic Liaison Operations Course – DLOC) LNOs for all of the significant jurisdictions within their assigned geographic regions. These LNOs should immediately begin to develop connectivity to their assigned civil entity by attending quarterly, semi-annual or annual meetings and/or training events with them.

b) JTF-WA should build a competent corps of LNOs that connect directly to the Emergency Support Functions (ESF) and specified state agencies in the SEOC. These LNOs should report directly to the J3 and represent the interests of the specific staff element their ESF or state agency requires. Liaisons should establish connectivity now, and maintain connectivity through periodic training events organized by the Emergency Management Division (WA-EMD).

Observation 1.6: Area for Improvement: Request for Assistance (RFA) Process

Analysis: The standard resource request process, based on the National Incident Management System (NIMS), requires an Incident Commander (IC) to identify shortfalls or gaps in their required resources, and then input a request. This request normally goes to their local Emergency Coordination or Operations Center (ECC/EOC) at the county, city, port or tribal level. That ECC/EOC then seeks out the requested resource. If the resource is not available directly to that ECC/EOC via all of the avenues to seek resources that are available to them, then the issue is elevated to the higher ECC/EOC, typically the State Emergency Operations Center (SEOC). The SEOC seeks out the requested resource using the state level resources. If the state level resources cannot fill the identified gap, the SEOC submits a Request for Assistance (RFA) to the Lead Federal Agency (LFA), typically the Federal Emergency Management Agency (FEMA). FEMA then seeks out the requested resource using the 15 identified federal Emergency Support Functions that are comprised of the majority of the Federal Agencies. Upon identification of the fastest, most efficient, or best-suited resource, FEMA issues a Mission Assignment (MA) to the providing agency. That federal agency then provides the resource to the Incident Commander that initiated the request for employment.

In Washington state, WebEOC (See Observation 2.1) is the system that manages that process. Unfortunately, not all of the jurisdictions, state agencies and even FEMA systems are compatible with the WA-SEOC system. In a 'normal' disaster, we have some difficulty aligning RFAs for rapid and successful management. In a CSZ environment, delays and confusion in the resource request process could cost human lives.

During CR16 we experienced numerous time delays in RFA and resource request processing.

Recommendations: See Observation 1.3.

a) Contrary to the principles of NIMS, this response requires a shift in mindset from a 'pull' to a 'push' mentality by numerous emergency managers. JTF-WA should coordinate with local

emergency managers, WA-EMD and state ESFs to socialize the 'push' concept. Universal acceptance of the 'push' concept is required in order to execute without creating time delaying confusion.

b) The initial push of resources following the rupture of the CSZ MUST occur without any requests from local jurisdictions for initiation. Pre-identification and planning based on damage forecasts and assumptions allow pre-coordination to take place. Immediately after the CSZ rupture these 'push' packages mobilize across the country and are delivered to the appropriate, pre-planned destination.

c) The adoption of a single synchronized resource request system that every user accesses is critical. Resource ordering systems at each echelon of response from local to federal should align, communicate, and clearly transmit resource requests, their status of fill, and their current mission status.

Observation 1.7: Area for Improvement: SEOC/ESF integration

Analysis: JTF-WA integration with multiple state ESFs suffered due to a lack of assigned, technically competent personnel. The ESF 20 desk in the SEOC is the focal point of ESF coordination actions, typically manned by members of the Washington State Guard (WSG). During CR16, the personnel staffing the ESF 20 desk were not capable of identifying military solutions to identified needs. Two factors caused this issue:

There were not enough ESF 20 personnel available to assist the multiple ESF representatives simultaneously; and

The personnel manning the ESF 20 desk were not adequately prepared to speak on behalf of the JTF-WA Commander, were not senior enough to interface with senior SEOC and state agency representatives, or did not have a depth of knowledge on DOD resources in general and National Guard resources specifically.

The Washington State Emergency Operations Center (SEOC) main floor during CR 16.

Recommendations:

a) Staffing for the ESF 20 desk in the SEOC must include a senior member of the JTF-WA J3 staff. This individual must command excellent knowledge of resources in the National Guard and good knowledge of assets across the DOD inventory. As JTF-WA provides additional LNOs to the individual ESFs, they shall report to the senior JTF-WA J3 representative at the ESF 20 desk in order to verify and vet resource requests for JTF-WA.

b) JTF-WA must provide adequately trained and educated personnel to each ESF to provide educated and competent staffing to solution sets for the ESF specific issues. For example, ESF 8 (public health and mass care) requires a JTF-WA liaison that is familiar with medical planning and capabilities across the DOD enterprise. JTF-WA must consider technical qualifications when assigning LNOs.

Observation 1.8: Area for Improvement: Operationalization of HLS regions

Analysis: In order to reduce span of control for military forces assigned to JTF-WA, planning created seven Geographic Task Forces (GTF) arrayed geographically across the state of Washington. Their assigned geographic areas of responsibility correlate to the pre-existing Homeland Security regions (HLS regions). The HLS regions are administrative groupings of jurisdictions at the county level and below that provide mutual aid and assistance. Aligning the GTFs with the HLSs capitalized on the numerous pre-existing relationships in the emergency management community and serves to strengthen those relationships by creating training opportunities, furthering planning efforts and adding resource availability in an 'all-hazards' environment. Incorporation of the GTFs allows the HLS regions to move toward becoming operational. However, in the absence of a civil authority at the regional level, the remaining appearance is that the military headquarters is responsible for allocation of response resources. The GTF headquarters **are not** empowered to prioritize response assets within their assigned regions; that is a civil emergency management function. A lead civil entity at the regional level is required in order to provide regional prioritization of resources and to reduce the span of coordination for the SEOC and response elements in the state of Washington.

Recommendation: JTF-WA envisions the need for, and strongly desires the creation of, a civil regional response coordination capability. Response elements operating in the state of Washington cannot adequately respond to 39 counties, 24 federally recognized tribes, and numerous cities and ports simultaneously. Reduction of the span of coordination across the state in a major disaster is necessary for an efficient response.

a) The operationalization of the existing HLS regions appears to be the preferred course of action. Although not necessarily a perfect construct, the HLS regions do exist and represent a 12-year effort in relationship building. To change that system or create a new one will likely delay the ability to move toward operationalization by a significant timeline.

b) The method used to operationalize regionally could be one of several courses of action. The creation of regional Unified Area Commands (UAC) using IMT constructs, regional Unified Coordinating Groups (UCG), or regional Emergency Operations Centers are all potential solutions, each bearing its own cost, training and resource requirements. Key to this effort is ensuring that any regional coordinating construct fairly represents all necessary jurisdictions

within that region. Ultimately, response efforts achieve more efficiency when standardized regional coordination elements exist. Either way, the Washington Emergency Management Division must champion this effort, as it is a civil emergency management function. JTF-WA should monitor and support this effort.

Observation 1.9: Sustain: Title 10/32 Command and Control Structure / JTF-X / JTF-32

Analysis: USNORTHCOM established an intermediate headquarters with responsibility of oversight of Title 10 resources employed in support of the response. This responsibility includes the reception and staging of forces not yet called into action, and the oversight of those assets assigned to the DSC. This headquarters, called JTF-X, formed around the nucleus of an existing staff but required augmentation to sustain the high level of operations required in the CR16 exercise. The JTF-X headquarters formed at the Two-Star level, allowing parity with the Adjutant General in each state.

Recommendation: The establishment of JTF-X, although not perfect, was a huge success. Allowing the Dual Status Commander to report to a Title 10 Commander that is equal in rank to the Adjutant General prevents any significant rank disparity problems. Additionally, and more importantly, JTF-X relieved the DSC of USNORTHCOM direct reporting requirements. The DSC staff is already near (or exceeding) task saturation; any relief of requirements associated with responding to the staff of a four star command is helpful. The JTF-X liaisons integrated well and provided useful input. Sustain the JTF-X concept, but provide staff augmentation to allow JTF-X to train with the appropriately sized staff for the mission.

An additional observation, as we increase understanding of the magnitude of a response to the CSZ rupture, is a potential need for a Title 32 structure similar to JTF-X in concept, but directly representing NGB. This concept provides a command/coordination cell to assume responsibility for coordination, scheduling, and JRSOI of Title 32 rotational forces after the initial push. This cell would represent the NGB requirements across the entire affected area and could stage resources for more responsive employment.

Core Capability 2. Situational Assessment

Observation 2.1: Area for Improvement: Synchronization and Knowledge Management (KM) Systems.

Analysis: JTF-WA, SEOC, FEMA and our many partners at the national, state and local levels used different systems during CR16 to synchronize Situational Awareness (SA), capture KM and request resources. In general, participants reported frustration over the number and variety of these systems, and their lack of integration.

The Washington Information Sharing Environment (WISE) is the WANG's and EMD's primary system for SA. The WISE is a Washington owned and operated system, developed locally, with internal resources. When used properly, this system provides geospatial data and user created overlays as a Common Operating Picture (COP) tool. Generally, military and civilian personnel at the GTF/HLS levels and below

were unfamiliar with the tools and functionality the WISE provides. Adding business rules (i.e. access controls, date/name stamp) to the WISE will assist in the hygiene and utilization of the system. The use of the WISE at the local EM level was minimal. Many of the EMs appreciated the capability the WISE provides, but are unfamiliar with electronic systems for SA and operational tracking; EMs are typically a resource consumer and seldom track resources. Most of these EMs use legacy systems for mission tracking (i.e. analog maps, white boards, Excel spreadsheets).

The JTF-WA J2 used DOMOPS Awareness and Assessment Response Tool (DAART) extensively to capture, manipulate and disseminate Incident Awareness and Assessment (IAA) products. The DAART system worked very well to share and display the IAA products. Unfortunately, these DAART products/feeds were not loaded into the WISE.

WebEOC is a web-based tool commonly used by EMs at the federal to local levels to manage resource requests and tracking. Use of WebEOC across the multiple echelons of government is not standard, and is not capable of sharing data between state and federal entities. The SEOC uses WebEOC extensively, as do most state agencies and county level EMs. JTF-WA is a WebEOC user, but units at the GTF level and below are not required to make entries into this system. Understanding WebEOC and its functionality can aid in the development of SA, and may allow coaching of partner civilian counterparts when necessary.

Recommendations:

a) For better operational success, conduct a thorough review of WebEOC training requirements across JTF-WA subordinate units.

b) Further evaluation is required for SA, KM and tracking systems in order to identify the current 'best option' for movement forward. Standardization across all echelons of response requires heavy weighting in the decision criteria for that selection. A nationally maintained system that allows access to national, state and local EMs for SA development, sharing of information, and knowledge management, should receive strong consideration. A current potential solution is the DAART system offered by National Guard Bureau (NGB).

c) Quality training conducted well in advance of need makes use of the many systems more efficient and less frustrating. Although time consuming and sometimes costly, training is necessary and will save lives. JTF-WA and GTF/FTF staff should plan and conduct training on WebEOC, WISE/DAART and JIEE annually.

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

96th Troop Command Commander, COL Dan Dent, provides guidance to the Geographic Task Force #3 Operations Center during CR16.

Core Capability 3. Mass Search and Rescue Operations

Observation 3.1: Area for Improvement: Search and Rescue (SAR) Coordination

Analysis: Although significant pre-planning with all involved entities provided a detailed plan, the plan did not execute as published. Incorporation of new personnel and last minute modification of the existing SAR authority hierarchy created confusion and reduced unity of effort.

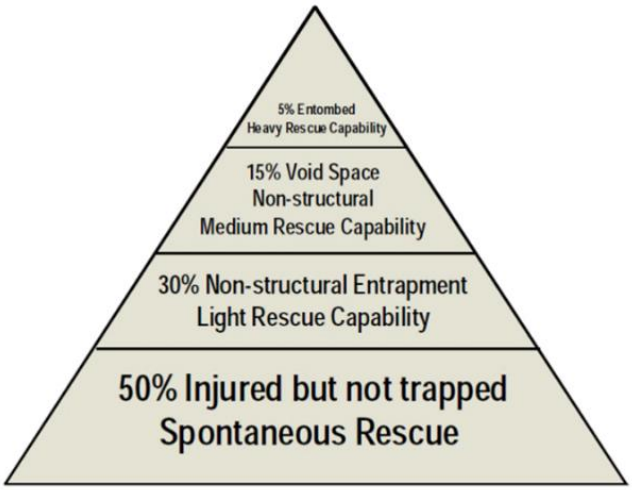
Joint Task Force SAR (JTF-SAR) is a newly created entity that is subordinate to the Title 10 military structure at either the USNORTHCOM or JTF-X level. JTF-SAR does not have a dedicated staff that is available to train together on the assigned mission set, and does not exist in day-to-day operations for pre-coordination of SAR effort. This created a 'new' SAR player that is not integral to existing plans. As such, JTF-SAR is not included in state level SAR planning efforts. JTF-SAR is a rapidly deployable SAR coordination effort that exists to enable the SAR mission across the affected area, most likely multiple states. This role created some confusion as to the actual responsibilities of JTF-SAR in employment because SAR authority within the boundaries of each state is the responsibility of the state assigned SAR coordinator.

Recommendation: The task and purpose of JTF SAR requires reevaluation. If this requirement is valid, its resourcing model must change to provide a viable entity that can train and coordinate for this mission.

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

Observation 3.2: Area for Improvement: Non-Technical Rescue

Analysis: In accordance with the Los Angeles Fire Department "Pyramid of Life", the vast majority of life saving SAR occurs without the need for technical rescue. JTF-WA, to date, does not issue guidance to subordinate elements that directs maximum effort toward non-technical rescue.



"Pyramid of Life"
Los Angeles Fire Department
Urban Search and Rescue

Recommendation: The WANG CSZ CONPLAN should direct a significant amount of Applied Technology Council - 20 (ATC-20, Post Earthquake Safety Evaluation of Buildings) ATC - 21 (Rapid Visual Screening of Buildings for Potential Seismic Hazards) training across the unit formations in order to provide a large-scale understanding of hazardous versus safe structural damage. Additionally, the WANG should emphasize the role of soldiers and airmen in immediate lifesaving (SAR) efforts, using non-technical rescue capabilities. Maximum use of Civilian Emergency Response Team (CERT) training across our organizational structures will help achieve this goal.

Observation 3.3: Area for Improvement: SAR Aviation Coordination

Analysis: Once the response begins to stabilize, the direction of SAR aviation assets to new requirements must be de-conflicted with requests for medevac, logistics movement, personnel movements, etc. The SEOC Air operations Branch (AOB) and subsequent Air Operations Task Force (AOTF) down trace structures do not have a well-defined, coordinated and rehearsed method for accomplishing this task.

Recommendation: The AOB/AOTF concept appears to have merit and ability to provide significant benefit to the response effort. This planning effort should continue to evaluate and define the roles of the AOB and the AOTFs.

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

Core Capability 4. Physical Protective Measures

Observation 4.1: Area for Improvement: WANG Family Members

Analysis: WANG service members may be physically capable of providing response and assistance after the CSZ rupture, but due to concern for family members in the affected area, may elect not to report for assignment. Currently the CSZ CONPLAN does not provide specific guidance to WANG members with respect to securing their families.

Recommendation: Many of the Active Component planners in the affected area suggest that DOD will likely provide evacuation capability for the families of the Active Component military members in the affected area. This assumes the majority of the military family members have a support structure available at their Home of Record (HOR), and that their HOR is not in the affected area. For members of the WANG, we cannot make the same assumptions. In order to care for the family members of the WANG soldiers and airmen we must:

a) Encourage every soldier and airman to create a Family Care Plan for the CSZ scenario. If support structures exist outside of the affected area, soldiers and airmen should plan to evacuate family members to those areas.

b) Strongly encourage every soldier and airman in the WANG to plan to be resilient after the CSZ rupture. Clear guidance on survival methods, emergency medical capability, house, office and car preparations, etc., will go a long way to ensure the survival and resiliency of our workforce.

c) Encourage soldiers and airmen to provide response capability as soon as possible after the response, but inform them that failure to respond due to family care requirements is not a punishable offense.

Observation 4.2: Area for Improvement: CSZ Facility Instructions

Analysis: In a CSZ event, WANG service members will assemble at their nearest WANG armory/facility. These personnel may be junior in grade or unfamiliar with the CSZ CONPLAN.

Recommendation: Recommend that each WANG facility have a mounted Emergency CSZ instructions box external to each facility. This box contains a checklist of what to do in a CSZ event and provides directions on how to communicate/report to the JOC/JTF-WA.

Observation 4.3: Area for Improvement: Garrison C2

Analysis: FTF Garrison (Life support on Camp Murray for the Initial Operating Facility/SEOC and JTF-WA) added another layer of responsibility for C2 under JTF-WA. This element, although critically important, is a role that is dis-similar to the maneuver role of the other JTF-WA subordinate elements, and serves to extend the span of control for the JTF-WA Commander.

Recommendation: Assign operational control of FTF Garrison as a separate command under HQ - WANG, while JTF-WA provides assets and resources in support. FTF Garrison should coordinate closely with the 194th Wing (GTF #5 Commander) to align appropriate resources for life support and security on Camp Murray. Together these entities should conduct detailed planning to refine Garrison capabilities and authorities to manage Camp Murray.

Disaster Relief Beddown System (DRBS) established on North Fort Lewis, simulates a Mass Care shelter facility for approximately 700 pax during CR16

Observation 4.4: Area for Improvement: Facility Assessment

Analysis: Currently the CSZ CONPLAN does not provide guidance on WANG facility assessment, reporting criteria or priorities of work to re-establish capabilities. The CSZ CONPLAN does give priority to securing the facilities, particularly securing the Armaments, Ammunition, and Explosives (AA&E) that might be contained therein.

Recommendations:

a) Build into plan assessment criteria for usability of facilities and report mechanisms (priorities of work).

b) Emphasize ATC-20 and ATC - 21 training to members of every unit. Typically, these are 1 to 2 day exportable courses.

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

Observation 4.5: Area for Improvement: Ammunition

Analysis: Although the topic of arming Guard soldiers and airmen is unsavory, it requires preparations. Current stock levels of ammunition and explosives (Class V) is extremely limited. In fact, other than small amounts of security ammunition, the Guard does not have access to a standing stockpile of Class V. In the post CSZ environment, the Guard will likely conduct security missions, may conduct law enforcement missions in support of local law enforcement agencies, and may provide engineering demolitions support to state agencies.

Recommendation: Identify local storage locations for Class V; enter into MOA/MOU with owners of local Ammunition Supply Points (ASP) and Ammunition Holding Areas (AHA) to gain access to Class V after the CSZ rupture. Develop logistical Class V draw, handling and distribution plan for the post-CSZ environment. Develop priorities for distribution.

Observation 4.6: Area for Improvement: Legal Policy for the CSZ Environment

Analysis: The extreme emergency nature of the post CSZ environment will require exceptions to several existing policies, and development of several new ones. A dedicated planning effort focused on all the legal impacts of the CSZ to the WANG and JTF-WA is required.

Recommendation: Develop a legal planning team to conduct policy review, creation and modification in support of the CSZ CONPLAN. This team must identify all of the legal planning requirements, but some of the initial requirements are:

a) Review the standing Rules for Use of Force (RUF) established in the JTF-WA All Hazards Plan (Evergreen Guardian).

b) Review the policy governing civilian use of WANG facilities.

c) Create any required policy affecting WANG Soldiers and Airmen engaging in law enforcement activities.

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

Core Capability 5. Intelligence and Information Sharing

Observation 5.1: Area for Improvement: Gathering, Handling and Disseminating Incident Awareness and Assessment (IAA)

Analysis: JTF-WA does not have the appropriate level of staffing to perform the IAA mission. The gathering of IAA data by military systems is a critical task that affects the entire response. Although in Cascadia Rising the J2 performed very well in this role, augmentation from several sources allowed the success. With the large amount of military resource that is capable of conducting IAA, JTF-WA may assume the IAA coordination mission for the state. This assumption makes sense due to interoperability requirements for most military systems capable of gathering IAA. Once gathered, this data must be accessible by all echelons of the response.

Recommendations:

a) Resource and train an enduring IAA cell. This requires external augmentation and will incur significant turnover. To combat the turnover, we must identify a standardized Program of Instruction (POI) and standard Tactics, Techniques and Procedures (TTPs).

b) Develop preferred tasking methodology and capability assignment. This effort will make resource selection after the CSZ rupture easier and faster. For example, this effort would discern the preferred asset to receive tasking between rotary wing and fixed wing assets.

c) Conduct more detailed pre-planning for IAA requirements. The creation of specific Named Areas of Interest (NAIs) on behalf of local EMs and state agencies will allow faster tasking and gathering of data. To allow regional prioritization of missions, the IAA cell should arrange NAIs by HLS region.

d) JTF-WA must add an Operations and Information (O&I) synchronization meeting to its operational rhythm due to the large number of assets that are likely to become available to the IAA cell. At a minimum the J2 and J3 should attend the O&I Sync, others as required.

Core Capability 6. Operational Communication

Observation 6.1: Sustain: Army Battle Command Systems (ABCS) and Joint Incident Site Communications Capability (JISCC)

Analysis: Unit equipped with ABCS systems attempted to employ them in CR16. For those units, the ABCS worked well. Unfortunately, not all units are equipped with the ABCS suite of systems. With the myriad of resources that are required to respond to the CSZ rupture, it is unlikely that ABCS connectivity across all of the disparate units will occur. This reality makes our ability to operate on civilian frequencies and in the civilian domain more important in domestic operations. Currently the Joint Incident Site Communications Capability (JISCC) allows this connectivity to occur. CR16 employed 14

JISCCs; making CR16 the largest JISCC exercise on record. JTF-WA experienced unprecedented success while employing JISCC operators and equipment across the exercise area.

Recommendation: Satellite bandwidth for the JISCC systems should increase. An individual system only provides a fraction of the bandwidth required to establish a functional Emergency Operations Center. The normal mode bandwidth of a block III JISCC is approximately 1.5Mb up/down. When compared to the normal bandwidth of a Cell on Light Truck (COLT) for a cellular provider that is approximately 25 Mb up/down, and is capable of increasing to 40 Mb up/down, the JISCC is a temporary fix at best. The JISCC ability to transport via rotary wing make it an early entry capability that is critical to the initiation of communications across the affected area, but satellite bandwidth when multiple JISCCs are employed becomes an issue and should therefore also be increased.

Observation 6.2: Area for Improvement: Communications Equipment Operational Readiness

Analysis: Some units found their communications equipment operational readiness lower than forecast. Additionally, operators lacked appropriate training in more technical equipment like the PRC-150 and the PRC-117.

Recommendation: Unit Commanders should place greater command emphasis on the operational readiness of unit communication packages and training to ensure appropriate levels of preparedness for the CSZ rupture. Emphasis is on satellite and HF radio capabilities, although line of sight resources are also critically required.

Observation 6.3: Area for Improvement: Primary, Alternate, Contingency, and Emergency (P.A.C.E.) Communications Planning

Analysis: Cascadia Rising provided significant opportunity to exercise alternate and contingency communications plans. Unfortunately, we did not take advantage of every opportunity. The JTF-WA initial net call experienced less success than desired, due to the severely degraded communications networks and unfamiliarity with the post CSZ environment. Heavy reliance on high frequency communications capability did not initially consider relative proximity and the need for systems to relay communications.

Recommendation: Relook communication PACE plan by HLS and disseminate to all regions. Conduct annual training and rehearsal of a full net call simulating the variety of systems available in early stages of CSZ event.

Observation 6.4: Area for Improvement: JTF-WA JOC Devolution

Analysis: JTF-WA JOC did not conduct full devolution in CR16 due to previous exercise efforts in Evergreen Tremor. Still, it is clear that further coordination, training and rehearsals are required to ensure minimal loss of continuity and time after the CSZ rupture.

Recommendation: We must ensure GTF-East has the ability to replicate all functions of JTF-WA, including C2, communications, Common Operational Picture (COP), and KM until recovery from devolution is complete. This requires JTF-East to be technically proficient in all SA systems (i.e. WISE, WebEOC, etc.). JTF-WA should conduct a robust exercise program semi-annually to rehearse the transition to devolution.

Observation 6.5: Area for Improvement: Long Haul Emergency Communications (HAM and Satellite Based Radio Systems and Techniques)

Analysis: Currently the emergency management community places a high level of requirements and confidence in the civilian HAM radio networks due to the forecast that other systems are non-functional post CSZ. This assumption permeates the JTF-WA planning as well. Although some discussion, training, and exercise efforts focused on the use of non-terrestrial based communications (satellite), this was limited. When analyzing the surviving communications infrastructure, using a PACE oriented architecture by communications echelon is required.

Recommendation: Communications are critical in the response, which is no surprise. Effectively using the few surviving systems as efficiently as possible is clearly a critical desire at every echelon, and enables much of the response. To operate effectively and efficiently, the following are recommendations:

a) Clearly assigning roles of communication capability by response echelon assists in frequency/spectrum management, allows greater bandwidth and increased use of digital communications at the appropriate echelons. Specifically, use HF and HAM radio assets at echelons below the county emergency managers. From the county EMs, and through higher echelons, the primary method of communications should be via satellite based systems and digital whenever possible. These systems are costly, and take time to procure. Until the civilian community achieves this goal, the military should allocate these systems to each county EOC. Prepositioning equipment is the optimal solution, although unlikely due to logistical constraints. JTF-WA, SEOC and county EMs should rehearse this communications construct annually.

b) To save bandwidth on limited radio frequencies JTF-WA must create brevity line reports for the GTF/FTF as SOP items. This requires a complete relook of the required reporting within JTF-WA. All reporting must be capable of transmission via the least capable source, or levels of reporting developed based on which method of communication is available.

c) JTF-WA must increase training and utilization of HF and HAM networks for WANG operators.

a) JTF-WA and subordinate GTF/FTF HQs must develop TTPs for procedures required when passing information over HAM radio nets to inform digital COP(s).

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

Core Capability 7. Critical Transportation

Observation 7.1: Area for Improvement: Movement Control Group (MCG) Integration

Analysis: The state and national CSZ response planning efforts resulted in the creation of a movement control plan. Cascadia Rising saw the first attempt at exercising this new plan. Contained within this plan are requirements for movement control entities at the national level and in each affected state. At the national level, FEMA forms the Movement Control Cell (MCC) with representatives from multiple agencies. In the state, the MCG forms within the Initial Operating Facility (IOF), and has representatives from all required players within the state. In tandem, these entities determine movement priorities, methods and routes. Due to the recent creation of the MCG, it is not yet well developed, and not represented in many planning efforts.

Recommendation: Continue to develop familiarity with MCG requirements and add into the CSZ CONPLAN its roles and responsibilities. Detail how JTF-WA interfaces with the MCG, to include providing transportation support and responding to priorities established by the MCG.

US Army Reserve and Washington National Guard Soldiers establish Tiered Base on Vashon Island, conduct beach landing with JLOTS resources during CR16.

Observation 7.2: Area for Improvement: Reception and In-processing Planning (RIP), and Joint Reception, Staging, Onward movement, and Integration (JRSOI)

Analysis: CR16 did not significantly exercise RIP/JRSOI despite the significant pre-planning effort. RIP/JRSOI exercises were limited to GTF/FTF rehearsals of their assigned tasks, and did not include wholesale reception of out-of-state entities, either civilian (RIP), Title 10 or Title 32 (EMAC) military forces (JRSOI). The CSZ CONPLAN directs implementation by GTF East of the "Team RSOI" mission. Team

RSOI is a very small portion of the larger RIP/JRSOI mission and only accounts for reception of lead elements at key locations across the state of Washington. Successful RIP/JRSOI of inbound resources is critical to efficient and effective employment of those resources by the Incident Commanders.

Recommendations: Due to the criticality of RIP/JRSOI, and the complexity of the mission set, we recommend the following actions:

a) Assign a specific RIP/JRSOI planning team to identify all resources available to conduct this mission set, its availability, and its deployable status. Resources are required at the FEMA Incident Staging Base (ISB), the Title 10 Base Support Installation (BSI), and multiple National Guard Logistics Staging Bases (NGLSB). Additional resources are required at each forward response base (Tiered Base) that is operating as an APOD.

b) Clearly define which agency/entity is responsible for RIP/JRSOI at each location; i.e. Title 10 at the BSI, FEMA at the ISB, State at the APODs. Standardize RIP/JRSOI products and key tasks across all agencies to ensure each inbound resource receives the same data.

c) Exercise RIP/JRSOI deliberately and as a separate function until planning is complete. This exercise effort should receive a very high priority in overall CSZ planning. This planning should culminate with a RIP/JRSOI validation exercise.
d) Conduct detailed analysis for use of GTF-East's RSOI teams; what are their needs, training requirements, resourcing and sustainment.

Observation 7.3: Area for Improvement: Lines of Communication Analysis (LOC)

Analysis: Transportation across the affected area is the single largest hindrance to the response. Gaining SA on the traffic-ability of the LOCs is a stated high priority for the SEOC. Up-to-date information on usability of different LOCs will greatly enhance the JTF-WA ability to provide relief to the residents of the state of Washington. Washington's ESF-1 (Washington State Department of Transportation (WSDOT)), is the designated manager for transportation in the response. WSDOT did not link directly to the IAA resources provided by JTF-WA for updates on the LOCs.

Recommendation: Develop direct linkage to WSDOT LOC assessment capability in order to provide constant updates to WSDOT from JTF-WA tasked IAA assets.

Observation 7.4: Area for Improvement: C2 of Aviation Resources at the GTF Level

Analysis: FTF Aviation is responsible for receiving, sustaining and missioning all assigned (OPCON/TACON) military intra-theater aviation assets. The FTF Commander is empowered to create the aviation support plan for resources operating in the state of Washington. Due, assumedly, to OPTEMPO and span of control, some of the GTF headquarters experienced delays in receiving requested aviation support even though that support was available.

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

UH60 from the WANG 66th Theater Aviation Command conducts sling load operations during CR16

Recommendation: FTF Aviation should plan to create aviation task forces and assign them under tactical control (TACON) to each HLS regions GTF. This relieves the FTF Commander and staff of the specific mission assignment and tracking responsibility, places that responsibility on a Battalion level Commander and staff, and provides a more rapid reaction to each request. Ultimately, this allows the FTF Aviation Commander to focus on force structure across the affected area and the re-allocation of low density, high priority assets as required. FTF Aviation must ensure the effectiveness of the array of aviation and maintenance resources across the affected area.

Observation 7.5: Area for Improvement: Aviation Operations Standardization

Analysis: The CSZ response will rely heavily, at least initially, on rotary-wing sling load operations. Units tend to develop specific tactics, techniques and procedures (TTPs). FTF Aviation Commander must accept risk for all aviation operations conducted in support of JTF-WA, regardless of where the resources came from or which TTPs they are practicing.

Recommendation: In order to standardize aviation operations, specifically sling load operations, and potentially other hazardous aviation operations like 'Hot Refuel', FTF Aviation should create a simple Standard Operating Procedures (SOP) guide for incoming units. This SOP should focus on tasks that are required in the CSZ response, and should be pre-printed and ready for distribution. These SOPs should undergo a bi-annual review for accuracy. Any local Airspace Control Plans (ACP) should include this SOP as an annex and be issued to incoming forces during disasters in Washington State.

Observation 7.6: Area for Improvement: Airborne Operations

Analysis: In the post-CSZ environment, whole communities are isolated due to infrastructure damage. Heavy reliance on rotary wing assets for commodity delivery creates a large demand for aviation fuel. Moving fuel is difficult and hazardous. For large-scale commodities airdrop appears to be a significant solution that saves time, fuel, and very limited functioning airport ramp space.

Recommendation: The inclusion of airborne operations in outlying areas may be a viable option for delivering personnel and supplies into areas otherwise cut off from all other lines of communication or

serviceable airfields. JTF-WA planning team should investigate the airdrop options for inclusion in RFA/MA planning.

Core Capability 8. Logistics and Supply Chain Management

Observation 8.1: Area for Improvement: Preplanning for HLS Community Points of Distribution (CPOD)

Analysis: During Cascadia Rising there was significant confusion concerning the location of CPODs within each HLS region. This confusion caused some delays in directing relief supplies to their final points for distribution. Identifying and selecting the location for a given CPOD is the responsibility of the owning Emergency Manager.

56th IO Group (GTF #1) conducts medical supply distribution in conjunction with 66th TAC and civilian agencies during CR16

Recommendation: JTF-WA subordinate GTFs should conduct preplanning with each county and city emergency manager to pre-identify CPOD locations based on population density. GTFs must conduct detailed planning with civilian counterparts to analyze CPODs planned within their locations to confirm / deny usability based on basic criteria like HLZ potential, etc. JTF-WA should collate this data and provide it to the SEOC for reference in the response. This level of detail greatly enhances the ability to initiate relief efforts.

Observation 8.2: Area for Improvement: Tiered Base Tasks, Purposes, and Footprints

Analysis: JTF-WA will create a multitude of Tiered Bases across the state of Washington. These bases have varying levels of requirements, and differing tasks they must accomplish. These Tiered Bases are

all dual tasked as either a State Staging Area (SSA), a Federal Staging Area (FSA), a National Guard Logistics Staging Base (NGLSB), or even an Incident Staging Base (ISB) or Base Support Installation (BSI).

Recommendation: Conduct a thorough assessment of tiered bases to identify operational footprint requirements. Identify specific tasks that each base must complete. Although this level of planning is well underway, Tiered Base expectations must synchronize at the local, state and federal levels.

Core Capability 9. Environmental Response

Observation 9.1: Area for Improvement: HLS Needs

Analysis: FTF CBRN (Chemical, Biological, Radiological, and Nuclear) will possess significant resource due to analysis of HAZMAT requirements across the affected area as forecast by the HITRAC study. A detailed analysis to allow development of a time phased force deployment list (TPFDL) for the resources provided to FTF CBRN is not complete. Prioritization of resources to preselected response areas is not determined.

Airmen from the 194th Wing conduct casualty triage, treatment and evacuation during CR16

Recommendation: Conduct analysis of predicted needs, by HLS, to pre-plan and direct CBRN response elements. This planning effort will validate initial planning efforts based on the HITRAC study.

a) FTF CBRN should conduct detailed planning with each HLS region to determine optimal use for their assigned response capabilities, with consideration to regional priorities and resource distribution. This planning team must include representation from WA EMD and ESF 10 (Hazardous Materials Response), and may include ESF 11 (Agriculture and Natural Resources).

b) The culmination of this planning effort may also inform the stationing of existing JTF-WA resources in the state of Washington.

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

Core Capability 10. Planning and Coordination

Observation 10.1: Sustain: TAG Guidance

Analysis: Clear guidance from TAG-WA directing the CSZ planning effort and exercise preparations allowed the Joint and Service Components to establish priorities for success.

Recommendation: Publish updated TAG guidance for continued CSZ planning and exercise expectations.

Observation 10.2: Area for Improvement: Title 32, 502f (2) Request Process

Analysis: A national disaster of the scope and scale of the CSZ rupture will certainly warrant approval of Title 32, 502f (2) mobilizations across the nation. There is currently no clearly published request process for this type of mobilization, nor are clear thresholds described that would authorize these types of mobilizations.

Recommendation: Continue to work with our Federal partners to refine the 502f (2) process.

Observation 10.3: Area for Improvement: Definition of GTF Requirements

Analysis: Response to the CSZ rupture is non-standard and uses non-standard organizational structures to accomplish many required missions. The key to success is defining requirements in pre-planning in order to seek adequate resources to fulfill these requirements. The GTF headquarters each have responsibility for elements that are equal or greater in size than a standard Army Brigade. Damages incurred by the CSZ rupture will significantly inhibit the ability of the WANG to mobilize units. Clearly defining each GTF HQs specific mission requirements, and seeking appropriate resources to enable success, is critical.

Recommendation: JTF-WA should initiate a planning effort to define the operational requirements for each GTF headquarters. Once defined, the planning team should identify the likely percentage of available staff and the amount of augmentation required by each GTF headquarters. This planning effort allows identification of EMAC available assets to fill mission requirements.

Observation 10.4: Area for Improvement: EMAC Process

Analysis: Most of the JTF-WA staff are unfamiliar with the EMAC process. This contributed to slow outcomes and confusion while attempting to coordinate resources.

Recommendation: Conduct value stream mapping for this process to streamline it further. Publish the refined method in the WANG All Hazards response plan (Evergreen Guardian) in order to inform the staff during any emergency.

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

Observation 10.5: Area for Improvement: CSZ CONPLAN Annexes and Appendices

Analysis: The current published version of the CSZ CONPLAN is a 'Final Draft'. The document requires significant effort to allow it to be executable. Several of the areas that require significant additional work include EMAC coordination, Protection Annex, Engineering Annex, Alert/Assemble/Report procedures, Medical Annex, etc.

Recommendation: Reorganize and reenergize the CSZ planning team to create an executable "Final" product that can publish in the near future. This document does not need to be 100 percent complete and correct, but must be executable. The CSZ planning effort must continue to refine the plan and improve the planning until it is either a perfect product or the earthquake begins.

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

SECTION 1: EXECUTIVE SUMMARY

The Cascadia Rising/Vigilant Guard 2016 Exercise (CR/VG16) was a highly successful rehearsal of the WA CSZ CONPLAN. Its primary success was in solidifying concepts and identifying gaps in the WA CSZ CONPLAN. This AAR is supplementary to the primary VIGILANT GUARD AAR, and focuses on the design of the exercise and mechanics employed in its execution. Key takeaways are as follows:

1. **Relationships are key.** In large part, the success of this exercise is due to the continuous professional collaboration with our mission partners at every level of government, both military and civilian. The relationships forged for this exercise will enable a successful response when needed. We simply could not have done it alone.

2. **Not everything fits into the exercise.** Even though very successful, this exercise still had its challenges. With the myriad of linked exercises, management of the scenario timeline became difficult. It is important to determine which objectives remain in the core exercise and target others for 'ramp up' events prior to the exercise. Maximizing 'ramp up' events allows exercise designers to tailor the core exercise for specific training objectives, while still ensuring key objectives are well rehearsed and understood.

3. **Exercise a Plan!** As simple as this takeaway seems, all too often we exercise a response without a basic plan that incorporates all elements of the response. Rehearsing a CONPLAN provides the simultaneous situational awareness necessary for good player action, while also ultimately validating a product. Because of this exercise, whole segments of the response now understand the basic concepts of their requirements.

4. **Never wish away communications!** In every exercise, communications is a significant part of the After-action Review. Realize that up front and plan for it in every step of the exercise. In this scenario, communications allow communities to connect to the response. Significant pre-planning, rehearsals and stand-alone Communications Exercises (COMMEX) enabled success.

5. **Design the exercise infrastructure.** All too often, we hold an exercise to test a plan or concept, but the design of the exercise is an afterthought. A successful exercise includes a High Control Cell (HICON) to replicate higher echelons, and a Low Control Cell (LOCON) to provide that bottom up stimulation. These control cells rely on systems to make them work. Care must be given to resource, train and educate these systems operators on their roles. Blue players must identify their key training objectives and assist in developing injects to ensure their accurate targeting. Plan for the After-action Review, it is the most important part of the exercise!

6. **Plan for the visitors.** Conduct planning to receive the myriad of visitors, visiting dignitaries and elected officials. Providing visibility into the planning and validation of your contingency planning may be as important as the planning itself. Sharing ideas, concepts, and procedures and gaining support that garner resources make the response effective and efficient. Attempt to reduce the impact non-players have on the exercise, but provide the opportunity to gain visibility and understanding.

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

SECTION 2: INFORMATION COLLECTION AND AFTER-ACTION REPORT DEVELOPMENT

The development of this After-action Report (AAR) is a compilation of multiple deliberate efforts to gather actionable information for improvement of future exercise planning and design.

This AAR focuses on the design of the Cascadia Rising 2016 Exercise Vigilant Guard Washington state, and is an ANNEX to the AAR for that exercise.

Gathered from multiple sources using multiple methods, the information compiled herein provides the most beneficial feedback possible. The following are primary sources:

1) The USNORTHCOM J7 (Vigilant Guard) staff observations

2) Internally solicited observations from all exercise participants in an Issue, Discussion, Recommendation (IDR) format

3) Homeland Security Exercise Evaluation Program (HSEEP) Exercise Evaluation Guides (EEG) completed by each subordinate element (staff and Command) to JTF-WA on pre-determined exercise objectives

To assist in sharing and readability Appendix A: Acronyms, contains a listing of every acronym and abbreviation used in this document.

This document specifically represents findings and recommendations from the VIGILANT GUARD-WA exercise, and although some of the data may overlap with findings from the ARDENT SENTRY or CASCADIA RISING exercises, this document does not, necessarily, represent the findings or opinions of the exercise director's for those exercises.

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

SECTION 3: EXERCISE FUNCTIONS

Function 1. Designing and Planning the Exercise

Observation 1.1: Sustain: Collaboration

Analysis: The success achieved in creating and executing the largest earthquake emergency response exercise ever attempted in the Western United States credits the collaboration and partnerships achieved across multiple levels of government. Nesting multiple exercises within one scenario while connecting timelines and actions required significant coordination, and ultimately resulted in unparalleled success. Partners worked closely with each other to meet training objectives at the local, tribal, port, city, county, state, state agency and federal levels of government.

Recommendation: Continue to collaborate with all mission partners through smaller, perhaps regionally dispersed exercises in order to maintain relationships. Enter into a significant planning effort with these same partners to prepare for the actual response or the next major exercise.

Observation 1.2: Improve: Exercise Timeline

Analysis: Perhaps the most challenging element of the exercise to synchronize, the timeline, proved critical to the scenario. Each response entity or agency possessed a preferred timeline to enable specific training objectives. Few of these timelines synchronized easily. The core entities timeline desires were:

a) FEMA Region X desired a 5-day functional exercise, scheduled during normal work hours Monday through Friday, in order to provide maximum participation from Federal partners (not including the Department of Defense). The timeline must be sequential and should not include time jumps due to assumed complications.

b) Washington Emergency Management Division desired a 4-day functional exercise, scheduled during normal work hours, Tuesday through Friday, in order to minimize 'overtime' utilization, and to provide maximum assumed participation from local level emergency managers. The timeline must be sequential and should not include time jumps due to assumed complications.

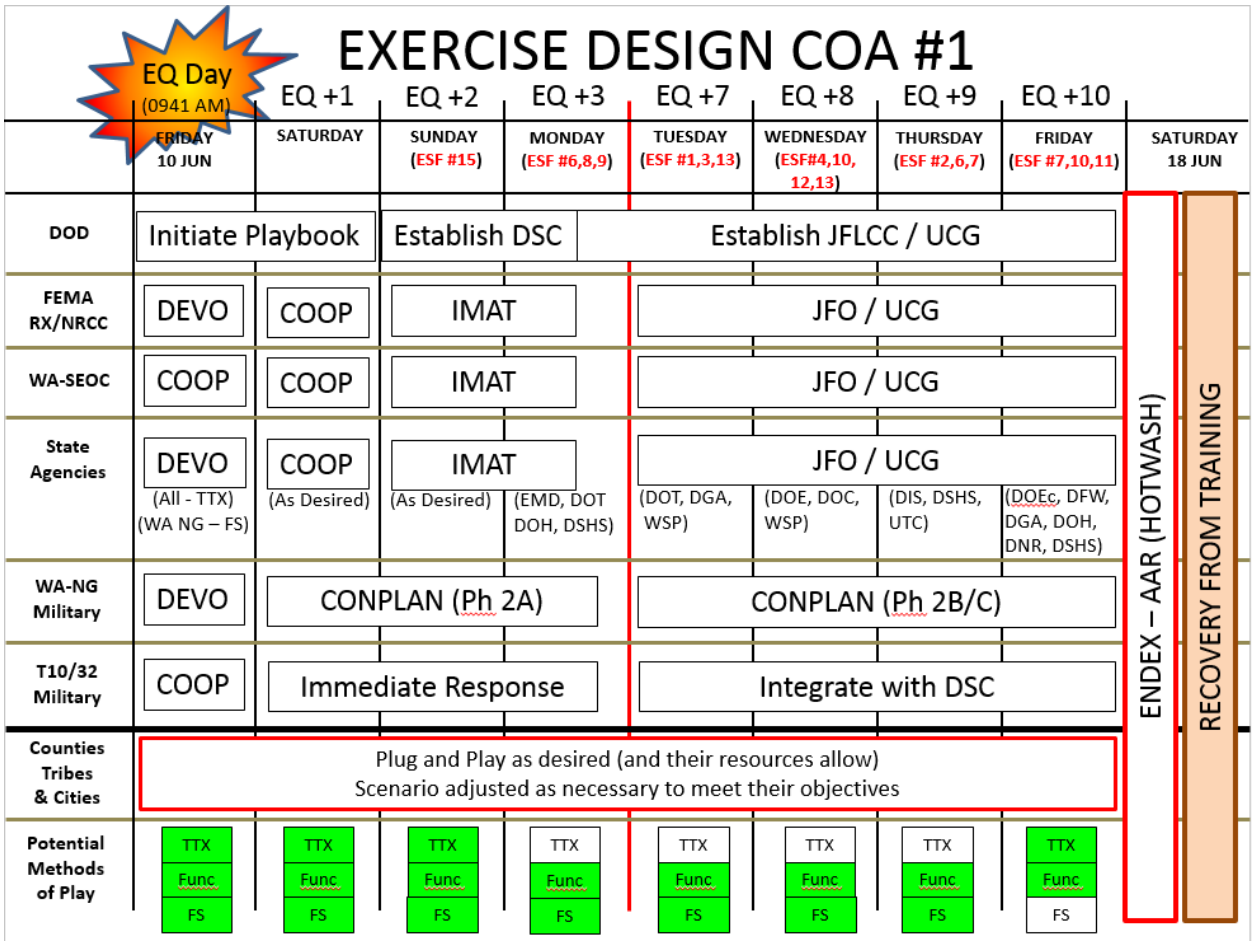
c) Washington National Guard desired a 7-8 day full-scale exercise, scheduled during a single 12-hour shift daily, in order to maximize mission rehearsal of assumed tasks. The timeline should be sequential with one time jump from Phase 2A to Phase 2B.

d) Department of Defense elements (USNORTHCOM, et al) desired a 10-12 day functional exercise, scheduled during a 12 or 24-hour shift with efforts made to rehearse playbook actions initially, followed by a time jump that allowed exercise of large-scale logistical coordination and Title 10 command and control.

Abbreviated exercises limit the rehearsal of initial response actions due to time constraints. Specifically, this affects the ability to rehearse the initial mobilization of forces and the initiation of response actions, and causes forces to pre-position in support of the exercise. Unfortunately, this transmits an irresponsible message that may lead people to believe the response initiates faster than reality.

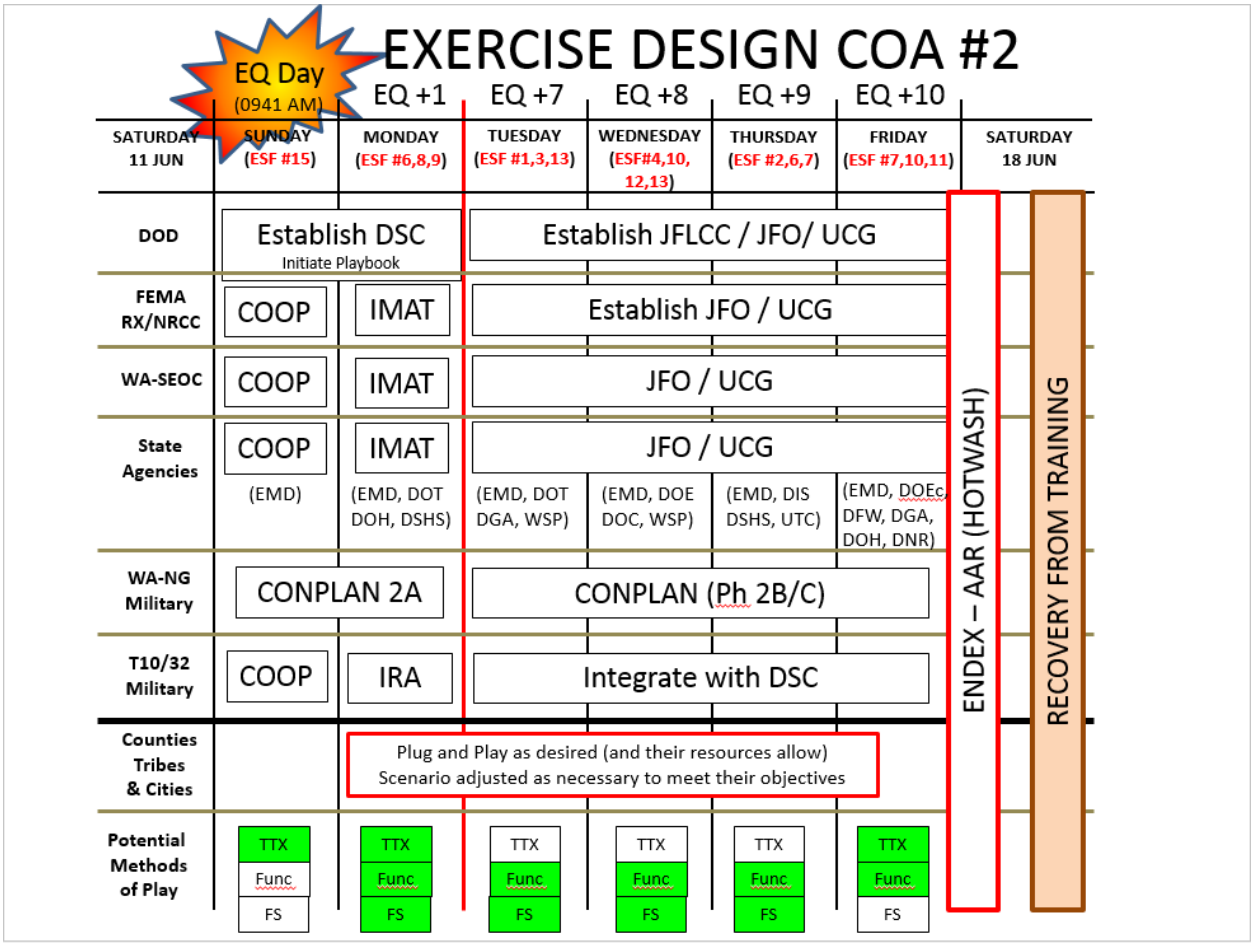
Recommendation: Resources available, time, training objectives and training priorities differ for each player. In order to allow and encourage maximum participation, flexibility in the exercise design and

timeline are critical. Flexibility in the design of the exercise construct must allow players to maximize their benefit. Creating an exercise that allows the different players to plug in and unplug as needed is desirable. This construct may require a large 'white cell' capability to add fidelity when information and message traffic is lost as specific players stop participating. Core players must obligate to a single timeline and agree to participate for the entire exercise. This effort establishes the exercise baseline, from which all other players gain benefit. Ultimately, the design of the exercise must satisfy the training objectives for all players to guarantee their participation. In order to achieve training objectives for all players the use of 'ramp up' events is very helpful. The following figures show multiple course of action for possible design of exercise core time.



(Figure #1 – Exercise Design COA #1)

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)



(Figure #2 – Exercise Design COA #2)

Observation 1.3: Improve: STARTEX State

Analysis: At STARTEX of the CR/VG16 exercise, the WANG Geographic Task Forces (GTF) were either already set for the response, or were assembled and ready to respond on notice. Once the exercise began, response activity began immediately for the WANG effort. This is contrary to an actual no-notice CSZ event, but was necessary to achieve the agreed training value for all partner agencies within four days.

Per the WANG CSZ CONPLAN, in the actual CSZ event, service members who are able to respond must mobilize and report to the nearest armory. This may not be their normal unit of assignment. The WANG GTFs must plan for, and prepare to assimilate these soldiers and airmen and integrate them into their response operations. Although extremely complicated, the benefits gained from employing soldiers and airmen in their personally local areas is significant. Unfortunately, these actions received minimal rehearsal opportunity.

Recommendation: WANG GTFs should conduct detailed rehearsals to identify all the challenges associated with initiation of the response, to include assimilation of Guard members within their local area of operations, equipping them, provision of immediate life support, establishing communications, reporting, etc. This training effort should clearly define the requirements to establish a GTF, and will enable training events to prevent confusion and ensure success.

Observation 1.4: Improve: Requests for Assistance

Analysis: During CR/VG16 numerous requests for assistance processed through staff entities for action. These requests encompassed mostly Title 32 military capability via EMAC from across the nation. Unfortunately, exercise pre-planning did not program large-scale requests for Title 10 resources. Although certainly needed, and even called for in CSZ planning efforts, planners did not pre-identify or create Title 10 requests for assistance. The resultant issue, Title 10 participants received less than nominal requests for assistance, and therefore experienced less ability to participate in exercise play. This ultimately resulted in a less effective rehearsal than desired for the CSZ response.

Recommendation: Planners must evaluate all anticipated exercise actions during the design phase in order to identify shortfalls and repair them. In an exercise of this magnitude, that is an enormous task. Unfortunately, missed tasks have cascading effects that ripple through the exercise.

Observation 1.5: Improve: Reportable Data lacked fidelity

Analysis: Subordinate units lacked information on the number of service members that 'notionally' activated in support of the exercise. Additionally, LOGSTAT/PERSTAT data was drastically lower than expected in a real world CSZ event. Injects did not reflect operational tempo expected for this type of scenario. This lack of fidelity created unrealistic confusion and generated discussion focused on exercise design. It is undesirable for exercise participants to become engaged troubleshooting exercise design during the exercise.

Recommendation: Although a very complicated series of exercise injects, planners should create great fidelity when programming information that completes primary staff reporting requirements. Training objectives for staff sections depends upon their ability to manage information within their specialty. Planners must preplan that information for detail and accuracy. White cell should clearly communicate STARTEX personnel numbers and provide personnel rosters.

Observation 1.6: Sustain: Joint Exercise Life Cycle

Analysis: Initially conceived more than three years prior to the STARTEX of the exercise, CR/VG16 involved planning efforts by FEMA, DOD, most state agencies, the majority of counties, and a multitude of Tribal, city and port entities in the state of Washington. It is an understatement to call the Cascadia Rising exercise planning a "massive effort." Extensive pre-planning for an exercise of this magnitude is critically important to the exercise's success. Detailed collaboration (see paragraph 1.1) is mandatory with all player/partner entities. Joint identification of an Exercise Life Cycle (JELC) enables all participants to share in the planning timeline and aim for specified planning and ramp up objectives.

Recommendation: Identify large training events as far in advance as possible. Multi-year efforts allow creation of a JELC that enables appropriate quantity and type of ramp up events to achieve training goals. Manage the JELC in as collaborative an environment as possible in order to keep all partners on the same track toward exercise completion. Additions and subtractions to the JELC must involve all collaborative players in order to limit unstable additions and subtractions that distract from primary training objectives.

Observation 1.7: Sustain: Exercise Foundations

Analysis: The Cascadia Rising/Vigilant Guard exercise specifically focused on the rehearsal of the Washington National Guard CSZ CONPLAN. The importance of basing a response exercise on a written plan is significant. A written plan allows participants to follow a guide when their actions are uncertain or unknown. This action provides the exercise foundation, keeps the exercise moving forward and prevents stagnation. AAR respondents reported that the CSZ CONPLAN was comprehensive and useful throughout the exercise.

Recommendation: Exercises validate existing plans and identify areas that require more planning. Use plans as the foundation of an exercise, and a way to test specific planned events or functions. Anticipate the requirement to capture shortfalls and improvement ideas in the after-action process. Ultimately, the successful exercise is a tool that improves planning efforts.

Observation 1.8: Improve: Ramp up Events

Analysis: Exercises are, by definition, limited opportunities to rehearse or exercise plans and concepts. There is always difficulty encompassing all training objectives into a single exercise. For this reason, the use of ramp up events is extremely helpful. This exercise comprised several ramp up events: Evergreen Tremor, Vista Caravan, Vital Connection – Cascadia, PNW SAR Workshop, Vista Quake, etc. The CR/VG16 communications ramp up event Vital Connection-Cascadia identified significant issues with high frequency long haul communications. This action allowed exercise planners to create alternate, contingency and emergency methods of contact to other players, within scenario restrictions, prior to STARTEX.

Recommendation: Conduct necessary ramp up events prior to the core exercise as desired. Be sure to gain support of all required attendees in order to maintain momentum for the core exercise. Specifically consider a communications ramp up exercise prior to any significant exercise.

Observation 1.9: Improve: Creation of Injects

Analysis: Often exercises focus on main objectives and fail to address all the ancillary tasks that must accompany any operation. For this reason, special staff functions are regularly overlooked and do not receive the same training value in major exercises. These special staff may include the religious support teams, legal, inspector general, etc. In the absence of a deliberate exercise design to incorporate these entities, the exercise may engage them sporadically, and is unlikely to fulfill their training objectives that way. Additionally, exercise designers may not have the subject matter expertise to create injects required to drive the correct training objectives.

Recommendation: Include representation from each exercising entity, especially the special staff sections, in the exercise design, particularly in the creation of the Master Scenario Events List (MSEL). Empower each exercise entity with the creation of their own major injects in order to ensure meeting their training objectives. When this method is used, if an entity does not meet its training objectives due to lack of injects, they have no one to blame but themselves.

Function 2. Conducting Training

Observation 2.1: Sustain: Combined Civil/Military Domestic Operations Training

Analysis: In this exercise the WANG maximized participation of its soldiers and airmen across all subordinate MSCs. Ultimately, including Guard soldiers and airmen that participated from other states, approximately 2,700 National Guard soldiers and airmen deployed in support of vignettes around the state. GTFs experienced resounding success while integrating with their civilian partners. Additionally, our soldiers and airmen reported great satisfaction working with local emergency management professionals in support of a domestic operations mission. Of note, service members became familiar with Community Points of Distribution (CPOD) establishment and operations. This task enabled both the military and the civilian partners to understand the requirements for establishing, operating and maintaining a CPOD.

Recommendation: Identify specific training vignettes that provide benefit to both civil and military organizations and use the exercise to rehearse those training objectives. Successful rehearsal of specific response actions allows the creation of checklists, Standard Operating Procedures (SOP), and military Tactics, Techniques and Procedures (TTPs). Use the scenario design process to plan for the capture of data that leads to these products.

Observation 2.2: Sustain: Joint Military Training and Integration

Analysis: In order to complete Domestic Operations missions in the post-CSZ environment, military units must pair the best capability with the best opportunity. This action forces joint and interagency operations, and this exercise successfully rehearsed some of them. Pairing units to achieve necessary operational capability, like Air Guard Joint Tactical Air Controllers (JTAC) paired with Army Guard ground maneuver units, provides tailor made and resourced capability to affect Domestic Response missions. These actions allow units to fill a larger response role, and become suitable for more and varied mission sets. Unfortunately, working together across service component lines is not the normal training environment for many units.

Recommendation: Continue to build and train on the joint capacity down to the Company/Battery/Troop levels within National Guard formations. Once identified, these organizations must rehearse and train these skill sets on a regular basis, and large full-scale exercises are a great platform for that. Provide specific ramp up training opportunities to allow these organizations to work out integration ‘bugs’ in order to achieve maximum performance.

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

Function 3. Supporting the Exercise

Observation 3.1: Improve: White Cell Participants and Rolls

Analysis: Communication methods between blue player elements and the HICON/LOCON were unclear. This was most likely caused by a lack of dissemination of the HICON/LOCON phonebook to units in the field. National Guard units seldom participate in exercises of this magnitude and are generally unfamiliar with some exercise constructs. Unfamiliarity likely caused a gap in communications, and provided confusion on the flow of injects. Some units experienced communication challenges with HICON/LOCON and receiving answers on RFIs. Additionally, the LOCON lacked adequate depth of understanding for injects to each GTF, even though each GTF supplied their own LOCON personnel.

Recommendation: Develop clear rolls and definitions for various positions represented in the white cell, HICON and LOCON. Ensure service members assigned to these rolls understand their requirements, and brief the training audience on these functions. Major Subordinate Commands (MSC) must adequately resource their LOCON team to ensure appropriate level of understanding and depth to provide injects. MSCs should consider placing LOCON members on the design team to ensure maximum understanding of the scenario and injects.

Observation 3.2: Improve: Unit Tailored Injects

Analysis: Multiple units at the GTF level and below expressed frustration over a lack of tailored injects. However, planning guidance provided by J3, JFHQ-WA instructed MSCs to develop vignettes and injects that met their internal training objectives. There exists a strong desire for injects that may be controlled by the unit commander to directly influence dead spots in the exercise.

Recommendation: Strongly encourage exercise entities to develop injects that are released in the exercise at the desire, discretion and timing of the unit commander in order to allow units to achieve their specified training objectives. This action is extremely complex. In order to allow this to happen, all injects require synchronization with the MSEL in order to prevent accidental conflict and confusion. This action provides an effective method to manage lulls or slow times in a major exercise, but must be pre-coordinated in order to minimize damage to training objectives of other exercise partners. MSC planners must become in-depth knowledgeable on the exercise MSEL and their own unit training objectives.

Function 4. Joint Visitors Bureau/Public Affairs

Observation 4.1: Improve: Management of VIPs and media

Analysis: The size and scenario of the exercise attracted media, VIPs, and military observers from across the state and nation, as well as international dignitaries and partners**.** Over the course of the exercise, 287 guests came through the JVB. Given the sheer number of those interested in observing **the exercise,** GTFs and subordinate units reported that at times, visitors did not stay in designated areas and they lacked enough personnel available to provide adequate escort and information.

Recommendation: GTFs and subordinate units should assign Unit Public Affairs Representatives (UPAR) down to the company level, for the exercise, to work in coordination with the Joint Visitors Bureau in order to help manage media, VIPs and other observers within their AO. The state should develop and implement a standardized Unit Public Affairs Representative (UPAR) program.

Observation 4.2: Improve: GO/VIP Visitors during Dual Status Commander (DSC) briefs

Analysis: During CUBs and other briefing periods, the DSC was regularly distracted in conversation with senior VIP visitors who sat next to him. This prevents the DSC from applying focus and making well-informed decisions critical to operational success.

Recommendation: Ensure the PA team assigned to the DSC understands their responsibility to help shuffle guests and provide them with briefing materials/information. This would take some of the pressure off the DSC to interact with guests/observers. Designate senior VIP viewing areas during briefs that are behind and separate from the DSC's briefing seat. This prevents distraction of the DSC by senior VIPs during critical decision-making moments.

Observation 4.3: Sustain: External Media coverage

Analysis: During the lead-up to the exercise, the PA team conducted extensive outreach with media representatives across the state and nation, including a well-attended media round table and several one-on-one interviews. This built incredible excitement that resulted in significant media interest throughout the exercise with stories appearing internationally. To ensure strong, positive coverage during the exercise, media events included a kick-off press conference with the Governor, as well as several military demonstrations that provided compelling visuals.

Recommendation: Continue to develop a strong media strategy that includes pre-exercise outreach, standardized talking points and compelling events/demonstrations during the exercise to maximize media exposure.

Observation 4.4: Sustain: Internal Public Affairs coverage

Analysis: The 122nd Public Affairs Operation Center was very active throughout the exercise, sending PA personnel to exercise locations across the state. This ensured that we adequately captured and documented the great work of our soldiers and airmen, and helped us develop products to market and promote the work of the organization.

Recommendation: Continue to incorporate Public Affairs into pre-planning for significant exercises.

Observation 4.5: Sustain: Pre-planned itineraries for tours/demonstrations

Analysis: Prior to the exercise, significant work and collaboration with GTFs/MSCs developed minute-by-minute tour/demonstration itineraries for media, VIPs, military observers and international guests based on available transportation and events occurring each day. This ensured that JVB personnel, as well as Military Department leadership, knew where our guests were at all times. It also prevented too many people from showing up at the same location at once, overwhelming personnel on site. Additionally, it helped us keep track of the dozens of military observers and prevented surprise 'drop-ins' at exercise locations. The visitor programs ran on time, maintained 100 percent accountability of all guests, sustained no injuries and provided an excellent exercise experience. When collected, guest feedback contained no negative comments.

Recommendation: Continue to work with exercise planners and GTFs/MSCs to develop detailed itineraries for expected media, VIPs, observers and international guests. Pre-planning the entire media, VIP handling plan, as well as the PA data capture plan greatly enhanced our ability to be successful.

Observation 4.6: Improve: Visitor impact on training

Analysis: During the exercise, tours and demonstrations conducted daily for VIPs, media, military leaders/observers and international partners displayed our abilities and preparation for a real-world event. Although these visits were relatively short in duration, they occurred over the course of several days in a row, were distracting, and at times took away from the overall mission accomplishment and training of our units.

Recommendation: Spread out events to minimize impact to each participating sub-element. If possible, focus events to one location per day – and spread out daily events across the exercise locations.

Observation 4.7: Sustain: Visitor Information Guide

Analysis: The Washington Military Department Communications/PAO team developed and printed visitor information guides to assist CR/VG16 VIPs and observers. These spiral bound 8"x5" full color products provided the location and overview of each vignette, plus the leadership, exercise components and training objectives organized by GTF. It provided a general overview and roadmap to navigate the exercise. This product proved to be highly valuable in educating and directing VIPs and observers.

Recommendation: For follow-on large scale exercises, continue to develop and make available visitor information guides.

Observation 4.8: Improve: JVB location

Analysis: The location of the JVB was not always easy for our VIPs, media and observers to locate. Getting our guests from the main gate to the JVB required numerous signs and at least three JVB staff standing at points along the route.

Recommendation: Identify a location close to the installation's main gate as the reception point for media/visitors. It would cost less time and staff hours to ensure guests arrive where desired.

Observation 4.9: Improve: JVB visibility

Analysis: While established to handle and coordinate all VIPs, media and observers, there were still several instances where personnel invited friends, colleagues and observers without providing any visibility to the JVB. Due to this action, guest tracking and JVB logistics management, i.e. transportation, escort scheduling, etc..., became extremely difficult and occasionally nearly impossible. Additionally, errant guidance tasked the JVB with the responsibility to track all guests, including civilians participating in the exercise, the day prior to exercise STAREX.

Recommendation: Provide clear guidance as to which population the JVB must track, handle and provide logistical preparations for, early in the planning process. Early transmission of these responsibilities allows the JVB adequate time to identify guest and observer lists, and prepare invitations, transportation plans, badging or identification plans, informational documents, etc.

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

Acronym	Term
AA&E	Arms Ammunition and Explosives
AAR	After-action Report
ABCS	Army Battle Command System
ACP	Air Control Plan
AHA	Ammunition Holding Area
AN/PRC	Army Navy / Portable Radio Communications
AO	Area of Operations
AOB	Air Operations Branch
AOTF	Air Operations Task Force
APOD	Air Port of Debarkation
ASP	Ammunition Supply Point
ATC-20	Applied Technology Council – 20 (Post-EQ Safety Eval of Bldgs)
ATC-21	Applied Technology Council – 21 (Rapid Vis Screen for Seismic Haz)
AVN	Aviation
BN	Battalion
BSI	Base Support Installation
C2	Command and Control
CBRN	Chemical Biological Radiological Nuclear
CERT	Community Emergency Response Team
CIA	Catastrophic Incident Annex
CIV	Civilian
Class V	Fifth military classification of supply (Ammunition)
COA	Course of Action
COLT	Cell On Light Truck
CONPLAN	Contingency Plan
COP	Common Operating Picture
CPOD	Community Point Of Distribution
CR16	Cascadia Rising 2016
CSZ	Cascadia Subduction Zone
DAART	Domestic Awareness and Assessment Response Tool
DLOC	Domestic Liaison Officer Course
DOD	Department of Defense
DOMOPS	Domestic Operations
DSC	Dual Status Commander
DOH	Department of Health
EEG	Exercise Evaluation Guide
EMAC	Emergency Mutual Assistance Compact
EOC	Emergency Operations Center
ECC	Emergency Coordination Center

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

EM	Emergency Manager
EMD	Emergency Management Division
ESF	Emergency Support Function
FEMA	Federal Emergency Management Agency
FSA	Federal Staging Area
FTF	Functional Task Force
GTD	Ground Truth Document
GTF	Geographic Task Force
HAM	Amateur Radio Network
HAZMAT	Hazardous Materials
HITRAC	Homeland Infrastructure Threat and Risk Analysis Center
HLS	Homeland Security Region
HOR	Home of Record
HQ	Headquarters
HSEEP	Homeland Security Exercise Evaluation Program
IAA	Incident Awareness and Assessment
IC	Incident Commander
ICS	Incident Command System
IMT	Incident Management Team
IOF	Initial Operating Facility
ISB	Incident Staging Base
J2	Intelligence Section of Joint Staff
J3	Operations Section of Joint Staff
JIEE	Joint Information Exchange Environment
JISCC	Joint Incident Site Communications Capability
JOC	Joint Operations Center
JRSOI	Joint Reception, Staging, Onward movement, and Integration
JRMPO	Joint Regional Medical Plans Officer
JTF-32	Joint Task Force - Title 32 USC
JTF-SAR	Joint Task Force - Search and Rescue
JTF-WA	Joint Task Force – Washington
JTF-X	Joint Task Force – X (Title 10 USC)
KM	Knowledge Management
LFA	Lead Federal Agency
LNO	Liaison Officer
LOC	Line Of Communication
MA	Mission Assignment
Mb	Megabyte
MCC	Movement Control Cell
MCG	Movement Control Group
MIL	Military
MOA/MOU	Memorandum of Agreement / Memorandum of Understanding
N-NC	NORAD & US Northern Command

Appendix D: Washington National Guard Exercise AAR for Vigilant Guard – WA 2016 (VG-WA16)

NAI	Named Area of Interest
NGB	National Guard Bureau
NGLSB	National Guard Logistics Staging Base
NIMS	National Incident Management System
NRF	National Response Framework
O&I	Operations and Information
OPCON	Operational Control
OPTEMPO	Operational Tempo
PACE	Primary, Alternate, Contingency, Emergency
POI	Program of Instruction
RIP	Reception and In-Processing
RFA	Request For Assistance
RUF	Rules for Use of Force
SA	Situational Awareness
SAR	Search and Rescue
SEOC	State Emergency Operations Center
SOP	Standard Operating Procedures
SSA	State Staging Area
TACON	Tactical Control
TAG	The Adjutant General
TF	Task Force
TPFDL	Time Phased Force Deployment List
TTP	Tactics, Techniques, and Procedures
UAC	Unified Area Command
UCG	Unified Coordinating Group
USC	United States Code
USNORTHCOM	United States Northern Command
USTRANSCOM	United States Transportation Command
VGWA-16	Vigilant Guard Washington 2016
WA-EMD	Washington Emergency Management Division
WANG	Washington National Guard
WA-DOH	Washington Department of Health
WebEOC	Web based Emergency Operations Center software
WISE	Washington Information Sharing Environment
WMD	Washington Military Department
WSDOT	Washington State Department of Transportation
WSG	Washington State Guard

APPENDIX D-3: VG-WA16 CORRECTIVE ACTION PLAN

This Corrective Action Plan (CAP) directs the Washington National Guard Joint Staff to conduct action to improve the CSZ response planning effort. Table E-3-1 provides an overview of the annotated recommendations in this report, the responsible element, and the required completion date.

For more detail on each action listed, see the 'capability/observation' paragraph referenced in Section 4 (Analysis of Core Capabilities) of the CR/VG-WA16 AAR.

Table E-3-1 Corrective Action Plan Matrix

Capability / Observation	Recommendation	Action	Responsible Element	Completion Date
Operational Coordination				
1.1.a	Sustain CIV / MIL Cooperation	Continue to engage our local partners in emergency preparedness planning, training and exercises.		
1.1.b	Sustain CIV / MIL Cooperation	Issue annual training guidance to JTF-WA subordinate elements that directs continued planning and training efforts.		
1.2.a	ICS / NIMS Understanding	Publish guidance directing specific ICS/NIMS training by position assignment and recommend ICS/NIMS training based on grade for members of the Washington National Guard.		
1.2.b	ICS / NIMS Understanding	Provide recommended ICS/NIMS training levels to EMAC partners.		
1.3	Improve "Push" Asset Request	JTF-WA planning continues the effort of pre-identifying first wave of response assets, gaining approval of these recommendations by local emergency managers, pre-coordinates necessary EMAC, and develops Time Phased Force Deployment Listing (TPFDL).		
1.4	AOB/AOTF improvement	JTF-WA continues efforts with WSDOT-AVN and the civil aviation community to further define and coordinate this capability. The development of a specific task list these entities will action, will significantly assist the effort.		
1.5.a	Improve Liaison Capabilities	Identify and train (Domestic Liaison Operations Course – DLOC) LNOs for all of the significant jurisdictions within assigned geographic regions.		
1.5.b	Improve Liaison Capabilities	Build a competent corps of LNOs that connect directly to the Emergency Support Functions (ESF) and specified state agencies in the SEOC.		

Appendix D-3: VG-WA16 Corrective Action Plan

1.6	Request for Assistance Process	Pre-identification and planning based on damage forecasts and assumptions allow pre-coordination to take place. Coordinate with local emergency managers. Reference observations 1.3 and 1.6.		
1.7.a	SEOC/ESF Integration	Identify staffing for the ESF 20 desk in the SEOC, to include a senior member of the JTF-WA J3 staff.		
1.7.b	SEOC/ESF Integration	Identify staffing for the ESF 20 desk in the SEOC. Consisting of adequately trained and educated personnel for each ESF, to provide competent support of solution sets for ESF specific issues.		
1.8	Operationalize HLS Regions	Coordinate with WA EMD to assist in development of a civil regional response coordination capability.		
1.9.a	T10/32 C2 JTF-X / JTF-32	Coordinate with USNORTHCOM to sustain the JTF-X concept, and provide staff augmentation to allow JTF-X to train with the appropriately sized staff for the mission.		
1.9.b	T10/32 C2 JTF-X / JTF-32	Coordinate with NGB to develop a Title 32 version of JTF-X, designed to provide coordination, scheduling, and JRSOI of Title 32 rotational forces after the initial push.		
Situational Assessment				
2.1.a	Sync and KM Systems	Conduct a thorough review of WebEOC training requirements across JTF-WA subordinate units.		
2.1.b	Sync and KM Systems	Evaluate SA, KM and tracking systems in order to identify the current 'best option' for movement forward.		
2.1.c	Sync and KM Systems	Plan and conduct training on WebEOC, WISE/DAART, and JIEE annually.		
Mass Search And Rescue Operations				
3.1	Search and Rescue (SAR) Coordination	Reevaluate the task and purpose of JTF SAR to confirm validity of requirement and adjust resourcing of current model.		
3.2	Non-Technical Rescue	Update WANG CSZ CONPLAN to direct a significant amount of ATC 20 and ATC 21 (immediate structural assessment) training across the unit formations in order to provide a large-scale understanding of hazardous versus safe structural damage.		
3.3	SAR Aviation Coordination	Continue to evaluate the AOB/AOTF concept and define the roles of the AOB and AOTFs.		
Physical Protective Measures				
4.1.a	WANG Family Members	Encourage every soldier and Airman to create a family care plan for the CSZ scenario.		

Appendix D-3: VG-WA16 Corrective Action Plan

4.1.b	WANG Family Members	Publish clear guidance on survival methods, emergency medical capability, house, office, and car preparations, etc., to ensure the survival and resiliency of our workforce.		
4.2	CSZ Facility Instructions	Each WANG facility to have a mounted Emergency CSZ instructions box external to each facility. This box contains a checklist of what to do in a CSZ event and provides directions on how to communicate/report to the JOC/JTF-WA.		
4.3	Garrison C2	Assign operational control of FTF Garrison as a separate command under HQ - WANG, while JTF-WA provides assets and resources in support		
4.4.a	Facility Assessment	Build into WANG CONPLAN assessment criteria for usability of facilities and report mechanisms (priorities of work).		
4.4.b	Facility Assessment	Emphasize Applied Technology Council – 20 (ATC-20) (Post Earthquake Safety Evaluation of Buildings) and ATC – 21 (Rapid Visual Screening of Buildings for Potential Seismic Hazards) training to members of every unit.		
4.5	Ammunition	Identify local storage locations for Class V; enter into MOA/MOU with owners of local Ammunition Supply Points (ASP) and Ammunition Holding Areas (AHA) to gain access to Class V after the CSZ rupture. Develop logistical Class V draw, handling, and distribution plan for the post-CSZ environment. Develop priorities for distribution.		
4.6	Legal Policy	Develop a legal planning team to conduct policy review, creation and modification in support of the CSZ CONPLAN. This team must identify all of the legal planning requirements.		
Intelligence and Information Sharing				
5.1.a	IAA	Resource and train an enduring IAA cell.		
5.1.b	IAA	Develop preferred tasking methodology and capability assignment.		
5.1.c	IAA	Conduct more detailed pre-planning for IAA requirements.		
5.1.c	IAA	Add an O&I synchronization meeting to JTF-WA operational rhythm.		
Operational Communications				
6.1	ABCS/JISCC	Satellite bandwidth for the JISCC systems should increase to account for when multiple JISCCs are employed.		

Appendix D-3: VG-WA16 Corrective Action Plan

6.2	Communications equipment Operational Readiness	Unit Commanders should place greater command emphasis on the operational readiness of unit communication packages and training to ensure appropriate levels of preparedness for the CSZ rupture.		
6.3	PACE Comms Planning	Relook communication PACE plan by HLS and disseminate to all regions. Conduct annual training and rehearsal of a full net call simulating the variety of systems available in early stages of CSZ event.		
6.4	JTF-WA JOC Devolution	Ensure GTF-East has the ability to replicate all functions of JTF-WA, including C2, communications, Common Operational Picture (COP), and KM until recovery from devolution is complete.		
6.5.a	Long haul communications	Clearly assigning roles of communication capability by response echelon.		
6.5.b	Long haul communications	Create brevity line reports for the GTF/FTF as SOP items.		
6.5.c	Long haul communications	Increase training and utilization of HF and HAM networks for WANG operators.		
6.5.d	Long haul communications	Develop TTPs for procedures required when passing information over HAM radio nets to inform digital COP(s).		
Critical Transportation				
7.1	MCG Integration	Continue to develop familiarity with movement control group (MCG) requirements and add into the CSZ CONPLAN their roles and responsibilities.		
7.2.a	RIP/JRSOI	Assign a specific RIP/JRSOI planning team to identify all resources available to conduct this mission set, their availability, and their deployable status.		
7.2.b	RIP/JRSOI	Clearly define which agency/entity is responsible for RIP/JRSOI at each location; standardize RIP/JRSOI products and key tasks across all agencies.		
7.2.c	RIP/JRSOI	Exercise RIP/JRSOI deliberately and as a separate function until planning is complete.		
7.2.d	RIP/JRSOI	Conduct detailed analysis for use of GTF-East's RSOI teams; what are their needs, training requirements, resourcing, and sustainment.		
7.3	Lines of Communication Analysis	Develop direct linkage to WSDOT LOC assessment capability in order to provide constant updates to WSDOT from JTF-WA tasked IAA assets.		

Appendix D-3: VG-WA16 Corrective Action Plan

7.4	C2 of Aviation Resources	Create aviation task forces and assign them (TACON) by HLS region.		
7.5	Aviation Operations Standardization	In order to standardize aviation operations, develop a simple Standard Operating Procedures (SOP) guide for incoming units.		
7.6	Airborne Operations	Research and analyze viability of airdrop options, for inclusion in RFA/MA planning.		
		Logistics and Supply Chain Management		
8.1	CPOD Planning	Conduct preplanning with each county and city emergency manager to pre-identify CPOD locations based on population density		
8.2	Tiered Base Tasks, Purposes, and Footprints	Conduct a thorough assessment of tiered bases to identify operational footprint requirements. Identify specific tasks that each base must complete.		
		Environmental Response / Health and Safety		
9.1	HLS Needs	Conduct detailed analysis and planning with each HLS region, to predict needs and determine optimal use for their assigned response capabilities, with consideration to regional priorities and resource distribution.		
		Planning		
10.1	TAG Guidance	Publish updated TAG guidance for continued CSZ planning and exercise expectations.		
10.2	Title 32, 502f (2) Request Process	Continue to work with our Federal partners to refine the 502f (2) process.		
10.3	Definition of Geographic Task Force Requirements	Initiate a planning effort to define the operational requirements for each GTF headquarters. Once defined, identify the likely percentage of available staff and the amount of augmentation required by each GTF headquarters		
10.4	EMAC Process	Conduct value stream mapping for the EMAC process to streamline it further. Publish the refined method in the WANG All Hazards response plan (Evergreen Guardian) in order to inform the staff during any emergency.		
10.5	CSZ CONPLAN Annexes and Appendices	Develop/finalize WA CSZ CONPLAN annexes/appendices; EMAC coordination, Protection Annex, Engineering Annex, Alert/Assemble/Report procedures, Medical Annex, etc.		

APPENDIX E: UNDERSTANDING THE EXERCISE THROUGH MEDIA COVERAGE

Cascadia Rising and Vigilant Guard was a large exercise with thousands of participants. Organizations conducted activities appropriate for their geographic locations and level of response. While the state after-action report provides the reader with the lessons learned to drive improvements in preparedness, it does not provide a sense of the depth and breadth of the exercise experience. This annex provides a snapshot of media stories on exercise preparations, conduct and impressions from a variety of perspectives – local, state and national.

Within a week after the exercise conclusion, a Google search presented hundreds of articles on Cascadia Rising. These include both the danger presented by the Cascadia Subduction Fault itself, and the full-scale exercise conducted in the Pacific Northwest to test preparedness.

Pre-exercise

The majority of media information was either pre-exercise or coverage during the actual event itself. The days prior to the start of the exercise showed worldwide interest in Cascadia Rising. Not only was the attraction for the sheer size of the operations, but also for the relevance to so many other locations around the world. Catastrophe knows no bounds.

1. At the forefront of a media blitz was an article in the New Yorker magazine in 2015. Labeled as "the worst natural disaster in the history of the continent," it painted a very bleak picture of the aftermath. This article sparked worldwide interest and conversation about the hazard and the upcoming exercise.
   http://www.newyorker.com/magazine/2015/07/20/the-really-big-one

The next full-margin rupture of the Cascadia subduction zone will spell the worst natural disaster in the history of the continent. Credit Illustration by Christoph Niemann; Map by Ziggymaj / Getty

Appendix E: Understanding the Exercise Through Media Coverage

2. In April of 2016, FEMA posted a website that highlighted several facets of Cascadia Rising. It covered exercise partners, resources, public and media resources, FAQs, and social media shareables and timelines. It was a valuable one-stop tool to get a feel for the upcoming exercise. https://www.fema.gov/cascadia-rising-2016

3. At the local and state level, many media outlets covered how their local jurisdictions were going to participate in Cascadia Rising. Stories were in print media, on radio, and televised. They covered basic governmental responses and how the community could be involved. A consistent theme throughout the coverage was how the exercise would test emergency response and preparedness of both government agencies and the civilian population. Below are some examples:
    a. DailyWorld.com Grays Harbor http://thedailyworld.com/news/local/cascadia-rising-get-ready-rumbling
    b. Bellingham Herald - Whatcom County - Highlights 7 things to know about Cascadia Rising http://www.bellinghamherald.com/news/local/news-columns-blogs/dean-kahn/article81696002.html
    c. Spokane Inlander Weekly gave a good overview of the exercise and threat http://www.inlander.com/Bloglander/archives/2016/06/06/responders-prep-this-week-for-the-big-one-during-cascadia-rising-2016
    d. KING 5 Television did a story on the upcoming exercise describing it as "the most complex disaster this area has ever seen." http://www.king5.com/news/local/cascadia-rising-disaster-drill-this-week/233979316
    e. KPLU radio aired a story about Northwest readiness for "The Big One." http://www.kplu.org/post/cascadia-rising-earthquake-drill-will-test-northwest-readiness-big-one

Lt. Col. Clayton Braun, of the Washington State Army National Guard, at Camp Murray in Washington State in front of a slide showing areas that would be vulnerable to tsunamis after a massive earthquake. *Ted S. Warren / AP Photo*

Appendix E: Understanding the Exercise Through Media Coverage

4. Across the nation several media outlets either wrote their own story or picked up on a widely circulated AP Wire story on Cascadia Rising.
    a. ABC/FOX in Missoula MT ran a story about eastern Washington leaders planning their response. http://www.abcfoxmontana.com/story/32178435/cascadia-rising-local-leaders-take-part-in-round-table-to-discuss-eastern-wa-response-to-big-earthquake

    b. The Denver Post http://www.denverpost.com/2016/06/04/massive-rehearsal-planned-for-northwest-mega-quake-tsunami/; New Jersey Herald http://www.njherald.com/article/20160607/AP/306079934#; Detroit News.com http://www.detroitnews.com/story/news/nation/2016/06/03/doomsday-drill/85348692/; and the Hastings Tribune in Hastings, NE http://www.hastingstribune.com/rehearsal-for-mega-quake-catastrophe-starts-in-northwest/article_00d4247c-a30c-5ab9-bebb-802f7dabd9df.html, all published the AP story to their readers.
    c. Although not shared in this annex, the other states participating, Oregon and Idaho, ran numerous media stories within their jurisdictions as well.

5. International media that ran stories on Cascadia Rising.
    a. Himalayan Times https://thehimalayantimes.com/science-technology/massive-rehearsal-planned-northwest-mega-quake-tsunami/
    b. Japan Times http://www.japantimes.co.jp/news/2016/06/06/world/ready-to-rumble-massive-rehearsal-planned-for-u-s-northwest-mega-quake-tsunami/#.V3v2q01TG70

c. As a co-player, British Columbia saw its press run stories as well. http://www.cbc.ca/news/canada/british-columbia/cascadia-rising-earthquake-drill-1.3616078

Exercise Conduct

During the actual exercise, stories focused on the amount of effort put into the exercise activities. Following is a sampling of media stories published during the exercise.

1. KPLU radio aired a story focusing on Vashon Island and how citizens would be sustained during a CSZ event. As there is no bridge to the island, bringing in supplies by water was a high visibility part of the exercise. http://www.kplu.org/post/vashon-island-prepares-big-one-cascadia-rising-earthquake-drill

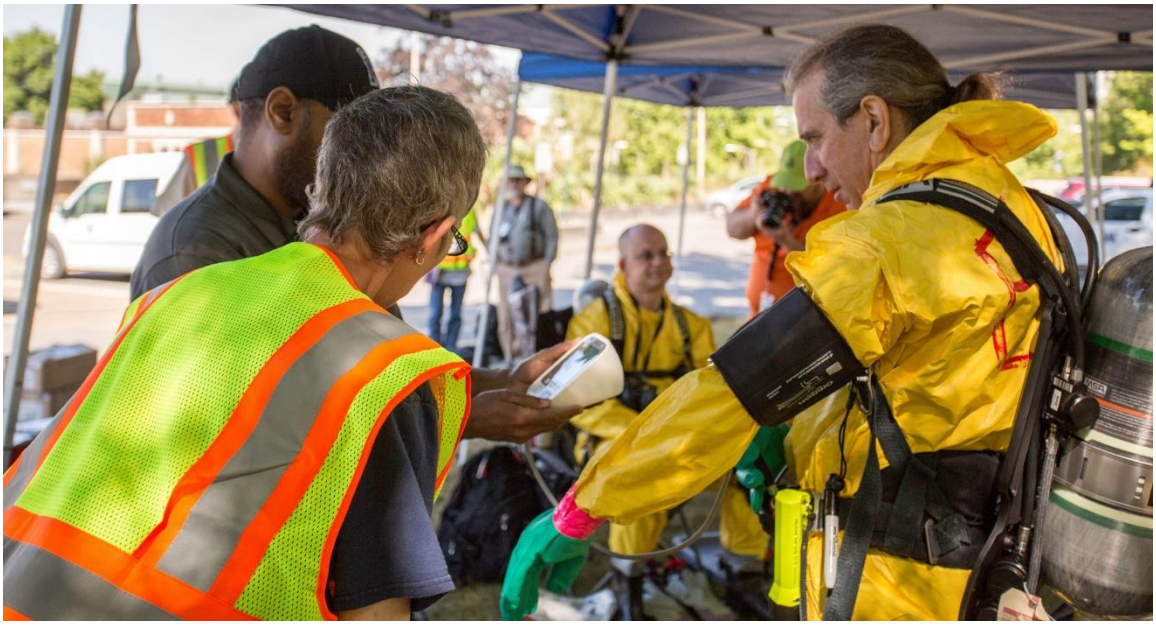
Landing at Jensen Point

Appendix E: Understanding the Exercise Through Media Coverage

Disembarking the barge onto Jensen Point

Voice of Vashon, the low powered FM station broadcast earthquake emergency safety advisories during the exercise.

2. Smithsonian Magazine published an article during the exercise, calling it, "The mother of all disaster drills for what could be the worst disaster in American History." http://www.smithsonianmag.com/smart-news/heres-how-pacific-nw-preparing-big-one-180959354/?no-ist
3. In an ever-expanding list of participants, the University of Washington was an active player, both at their level and in assisting the Washington State EOC with exercise evaluation. https://facilities.uw.edu/blog/posts/2016/06/08/cascadia-rising-uw



Emergency response teams at the University of Washington gear up in hazmat suits and other personal protective equipment for the Cascadia Rising earthquake drill.

Campus engineers **Tom Pittsford** and **Jim Morin**, both members of the University's ATC-20 team, fill out paperwork after inspecting the RR wing of the University of Washington Medical Center/Magnuson Health Sciences Building.

Appendix E: Understanding the Exercise Through Media Coverage

4. One of the strengths of the Cascadia Rising exercise was its reach to as many locales and agencies as possible. The community newspaper in Point Roberts kept their citizens apprised of exercise events. http://www.allpointbulletin.com/2016/06/10/cascadia-rising-drill-brings-blackhawk-to-point-roberts/

Simulation of medical supplies being dropped at Port Roberts.

Appendix E: Understanding the Exercise Through Media Coverage

5. A very important event directly related to the CSZ tsunami threat that occurred simultaneously with Cascadia Rising was the opening of the Ocosta School in Westport on June 11, 2016. This is the first tsunami resistant school built in the United States. Its design and function have drawn world-wide attention.
   http://www.seattletimes.com/seattle-news/it-will-happen-here-westport-school-builds-nations-first-tsunami-refuge/

Paula Akerlund, superintendent of the Ocosta School District on the Washington Coast, was instrumental in turning the dream of a safe-from-tsunami Ocosta Elementary School building into reality. She is standing on the gym rooftop, which can be a haven for at least 2,000 people. (Ellen M. Banner/The Seattle Times)

Appendix E: Understanding the Exercise Through Media Coverage

A military helicopter participates in a rescue demonstration during the June 11 dedication ceremony of the Ocosta Elementary School gym and rooftop tsunami shelter in Westport. (Ellen M. Banner/The Seattle Times)

Appendix E: Understanding the Exercise Through Media Coverage

Post Exercise

One of the goals of Cascadia Rising was to identify areas of improvement in response and to identify lessons learned. Post exercise stories focused on how the exercise results will help agencies going forward. Additionally, there were stories about smaller communities' participation, and of specialized support tasks such as amateur radio operators.

1. Prior to, and during the exercise, Washington State Department of Transportation spent considerable time identifying, assessing, prioritizing and responding to bridges and highways that were believed to be damaged by a Cascadia earthquake. They worked closely with multiple jurisdictions and agencies to help identify trouble spots and coordinate exercise ground truth. http://wsdotblog.blogspot.com/2016/06/cascadia-rising-were-working-hard-to.html

WSDOT activated Emergency Operation Centers in Olympia as well as all our regions and several divisions during the Cascadia Rising drill. Here, the Headquarters EOC staff marshalled staff from across the agency to respond to damage reports, lining up resources and mapping the damage and closures.

2. As one of the areas expected to be hardest hit and affected by a Cascadia Subduction earthquake, Grays Harbor County jumped in with both feet. They looked long and hard at the impact of the exercise on their community. http://thedailyworld.com/opinion/columnist/what-cascadia-rising-results-mean-our-communities

3. Specialty skills such as Ham Radio operators gained significant exposure during the exercise. It is widely accepted that communication systems will suffer significant degradation during the early

phases of a catastrophe. San Juan County, knowing that it will be cut off beyond just communications, recognized its Ham operators for all they do.
http://www.islandssounder.com/news/383915101.html#

4. In a twist from most other jurisdictions, Mercer Island used the Cascadia Rising exercise to discuss civility and helping each other on their island community in the case of disaster.
http://www.mi-reporter.com/opinion/383998611.html#

5. Port Townsend viewed the exercise as an opportunity to see first-hand how relief supplies could reach their community with DOD and Navy assistance.
http://www.ptleader.com/news/cascadia-rising-sharpens-military-for-relief-effort/article_489a067c-3285-11e6-b7b5-075dc1b13fd5.html

The 951-ft USNS Bob Hope is kept in reserve in San Diego, ready to be loaded with cargo needed to set up a camp and bring material directly from ship to shore, without needed a pier or docks. Photo by Patrick J. Sullivan

6. Mega-weather network AccuWeather did a story on the CSZ dangers and how the Pacific Northwest is preparing for such a disaster. Contrasting CSZ with the 2011 Japan subduction quake and tsunami, they laid out a good overview.
http://www.accuweather.com/en/weather-news/cascadia-rising-fema-pacific-northwest-prepare-for-megathrust-earthquake-tsunami-catastrophic-damage/58601881

Appendix E: Understanding the Exercise Through Media Coverage

In 2011, an earthquake generated a devastating tsunami that was observed across the Pacific and caused tremendous local devastation in Japan. (Photo/Shunichi Koshimura)

7. For an inside view of the workings of the Washington State Emergency Operations Center, the blog by Johanna Nielson gives great insight and photos.
   https://emscholar.wordpress.com/2016/06/20/the-people-of-cascadia-rising/

Additional Media Resources:

https://www.dvidshub.net/feature/cascadiarising16
Washington National Guard internal coverage of DOD Cascadia Rising activities and efforts.

http://www.peninsuladailynews.com/article/20160702/NEWS/307029995
Jefferson County newspaper story

http://www.svherald.com/opinion/update-on-amateur-radio/article_6035f5f0-3e5d-11e6-8111-1b718eecb9e8.html
Amateur radio story from Sierra Vista Herald

http://www.keypennews.com/index.php/component/k2/item/505-countywide-earthquake-drill-stresses-self-reliance
Key Peninsula follow up story

http://www.konp.com/local/11674
Radio story on lessons learned by Clallam County

http://www.kplu.org/post/authorities-tallying-lessons-learned-cascadia-rising-exercises
Lessons Learned (Features GH County)

http://www.kxro.com/cascadia-rising-proves-great-teaching-platform/
Aberdeen radio story

Appendix E: Understanding the Exercise Through Media Coverage

http://www.spokesman.com/stories/2016/jun/07/cascadia-rising-practicing-for-the-big-one/
Spokesman Review article

http://www.eham.net/articles/36840
Online article for ham radio participants

http://www.spokesman.com/stories/2016/jun/08/cascadia-rising-a-massive-response-by-sea-for-a-ca/
Spokane story about Naval Magazine Indian Island

http://q13fox.com/2016/06/06/preparing-for-the-big-one-cascadia-rising-2016-getting-underway/
Q13 TV story as the exercise started

http://komonews.com/news/videos/cascadia-rising-earthquake-emergency-preparedness
KOMO story during the exercise

http://www.thenewstribune.com/news/local/article82240452.html
Tacoma News Tribune story during the exercise

http://www.statesmanjournal.com/story/news/2016/06/10/responders-hone-parachuting-other-skills-cascadia-rising/85689662/
Spokane newspaper article

http://www.bothell-reporter.com/news/382301081.html
Bothell Newspaper article

http://www.chronline.com/crime/cascadia-rising-days-after-quake-military-aid-would-arrive-by/article_75ecdb52-2f80-11e6-a6ec-57a42e91b125.html
Centralia online newspaper article about CSZ

http://komonews.com/news/local/emergency-crews-practice-life-saving-techniques-for-when-disaster-strikes
KOMO story on Seattle participants

http://edmdigest.com/opinion/why-cascadia-rising-matters/
Editorial piece on Cascadia Rising

http://www.ifiberonenewsradio.com/news/local_news/governor-visits-cascadia-rising-drill-in-shelton/youtube_8321661c-2dd2-11e6-b073-f7a13358c31b.html
Radio story on Governor visit during exercise