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BLUE CASCADES III: Managing Extreme Disasters

ACTION PLAN

Participants in the BLUE CASCADES III Exercise, held March 1-2, 2006 in Bellevue, WA, reconvened there on April 27 to develop an Action Plan of activities and projects to address lessons learned from this intensive event. The exercise, which focused on improving disaster resilience in the Puget Sound Region and the broader Pacific Northwest, involved more than 330 representatives from 150 organizations. The challenging scenario, which focused on a magnitude 9.0 subduction zone earthquake, resulted in a large number of findings and recommendations identified by participants in a dozen different priority areas. (*See Appendix A.*)

Action Plan Meeting Process

The same process as with two previous Blue Cascades exercises was used to facilitate discussion and to prioritize the many recommendations in the Exercise Report. The twelve shortfall categories were combined into six topical areas to frame deliberations in an interactive format using breakout groups: These categories were:

- I. Understanding of Interdependencies in an Extreme Disaster & Risk Assessment and Mitigation** (*Recommendations 1-9; 24-25*)
- II. Resilient, Reliable, Interoperable, Compatible Communications and Information Systems & Information Sharing and Alert and Warning** (*Recommendations 10-23; 31-32*)
- III. Public Information & Exercises, Training and Education** (*Recommendations 69-74*);
- IV. Response Challenges & Recovery and Restoration** (*Recommendations 37—57*);

V. Business Continuity and Continuity of Operations & Logistics and Supply Chain Management (*Recommendations 58--68*); and

VI. Cooperation and Coordination & Roles and Responsibilities/Incident Management (*Recommendations 26-30; 33-36*).

The six breakout groups were divided into three sessions, with two of them meeting concurrently. Each breakout group had two (public and private sector) facilitators. Breakout group participants were provided with the BLUE CASCADES III Exercise Report recommendations for those particular topical areas. They were also provided with a template for identifying activities for the Action Plan in terms of whether the timeframe for their completion was short (six months to a year), medium (two years), or longer-term; why the particular activity was important; and which organizations might participate in or lead the project.

The meeting concluded with a plenary session during which each of the breakout groups reported on the outcome of their discussions and the activities and projects they identified for inclusion in the Action Plan.

Highlights of Breakout Group Discussions

Some of the breakout groups had a more difficult task than others because of the number of recommendations in certain categories. Also, the recommendations throughout the Exercise Report were not of the same level of importance; some focused on simple and narrow policy or technical measures, while other were of a broader, complex, or strategic nature. Many of the first type were “doable” in a reasonably short period of time.

The depth and scope of discussion depended largely on the size and composition of the breakout groups. Participants decided which groups they wished to join. Some of the breakout groups were large, with thirty or more individuals. This, combined with the limited amount of time for deliberations so as to enable completion of the three sessions in a one-day meeting, tended to limit discussion to a handful of participants and a few topics in some of the breakout groups.

On **interdependencies**, discussion centered on the need to develop a common set of assumptions with common terminology on worst case scenarios to provide organizations with a common baseline for risk assessments and exercises. There was discussion about the necessity to make organizations aware of the importance of incorporating interdependencies into vulnerability and risk assessments. A major focus area was energy interdependencies and the need for conducting a natural gas and electricity interdependency study centered on the Pacific Northwest. It was agreed that this study would examine natural gas supplies in the states of Washington, Idaho, and Oregon, develop an energy profile of the Pacific Northwest, including cross-border dependencies, and determine “chokepoints” and other critical nodes. The study would also explore organizational roles and responsibilities in decision-making on natural gas and broader energy issues during significant emergencies.

Resilient communications was another major area of focus in the breakout discussions. Within the breakout group tasked with this topic, discussion centered on the question of how to determine risk and identify necessary mitigation activities. In this context, the group discussed

how to determine what emergency communications contingencies plans and capabilities needed to be developed and how to determine which organizations should be involved. It was noted that large entities are undertaking risk assessments on their own operations and systems but do not recognize they are dependent on the smaller organizations that supply them, and that these interdependencies are multitudinous. For this reason, risk assessment and mitigation need to be on a regional basis. Larger organizations need to share the resources to undertake these measures because smaller entities lack them. The group agreed that work on developing risk assessment approaches at the national level by the National Communications System, the IT Information Sharing and Analysis Center, and other similar mechanisms should be leveraged so as not to reinvent the wheel.

On the topic of **emergency communications**, it was noted that such systems are a priority for government at all levels, but not so much in the private sector. For this reason, initial analysis of emergency communications needs could begin with a smaller scope (i.e., on government systems). Regarding **regional information sharing and collaboration**, the group agreed that it is important to have anonymity and ensure inclusion of all key stakeholders, including private sector organizations, and the State Emergency Management Office.

In terms of implementing projects focused on **communications and critical IT infrastructure resiliency**, the group, in recognition of the range and breadth of the BLUE CASCADES III exercise lessons learned, agreed that the projects could be phased, with focus initially on those that could be done for low cost. There was discussion about which organizations/individuals could be considered “silver-back” stakeholders that would be willing to serve as hosts and sponsors. It was recognized that larger businesses could provide some of the resources necessary as part of their normal cost of business, but that there could be challenges with getting small businesses or local governments to recognize this as a priority. One avenue would be for larger entities to require as part of contracting that their service providers and suppliers be involved. An example was raised of having a check list of 20 questions that could help to educate customers and service providers on why, and how, to assess their risk.

On the topic of the ensuring **situational awareness**, the group discussed how people communicate with others in emergencies to find out what is down and how to respond. It was observed that the Tri-County Voice interoperability project is proceeding and that the Puget Sound Alliance for Cyber Security is considering examining the technology that is currently being developed and its uses. At the same time, it was necessary to look at other technologies that could be put in place to entirely reconstitute communications if necessary. It was noted that Internet Service Providers have plans in place to reconstitute, but there might be some policy issues that need to be dealt with to allow that to be done, especially in an emergency situation. Along these lines, it was noted that public and private sector organizations need to collectively decide on reservation of frequencies so needs are met, and procedures need to be developed to allow organizations and individuals to use these systems during an emergency. It was also necessary to get the right organizations to decide on key command communications issues and on priorities. The group looked at different organizations and mechanisms for this role, such as the Society of Broadcast Engineers, as well as the HAM Radio operators. It was agreed that ways should be explored to incorporate the private sector and to include inter-state and international organizations in communications resiliency planning and implementation.

Another major topic area was the need for a **credentialing system**. The breakout group focusing on response and recovery issues heard a description of the credentialing system and highway marking system used in British Columbia. Washington State Emergency Management Office staff said they were in process of developing a state-wide credentialing system, but added that it would take a few more years to put this in place. A U.S. Department of Homeland Security representative noted that the federal government is putting a system in place, but it too was a year or two from launch. Other participants noted that a credentialing system, even if not optimal, could be implemented while these other systems were being developed. Participants agreed that both the state and federal credentialing processes needed to be shared with all interested stakeholders and those organizations needed to work with local law enforcement to determine what could be done now to devise an acceptable system that enabled individuals from outside the region to be credentialed in a rapid and efficient manner.

Media participation in preparedness planning (including exercises) and disaster management was a topic in more than one breakout group. BLUE CASCADES III appeared to have given a level of comfort to many that they could, in fact, work with certain types of media representatives in exercises and planning. It was agreed that a Media Work Group should be created to continue the dialog between regional stakeholders and the media on the role of media as a critical infrastructure and player in emergency management.

Staging areas and emergency evacuation routes were discussed in the response, recovery and restoration breakout group. The WA State Emergency Management Office and FEMA staff said that they are working on identification of staging areas both within and outside of an impact area in the Eastern part of the state. It was pointed out that the Growth Management Act (GMA) required county transportation departments to identify significant transportation corridors in the GMA plans. Although there was no action item recommended on the issue, it was marked for a priority need for further discussion.

Regarding the exercise recommendations on recovery/restoration issues, there was limited discussion because of lack of time. **Mutual aid** was addressed by the Group. It was noted that traditionally mutual aid pacts have been organized among entities within a sector, and that in an event such as the one in the BLUE CASCADES III scenario, these organizations will most likely be unable to render assistance. Most resources (people, materials, and equipment) will be outside the impacted area. With transportation and power problems, obtaining and moving such aid into the impact area may be difficult at best and not feasible in the immediate term.

Regarding **debris removal**, it was noted that King County has identified staging areas for debris to be deposited to allow sorting out of hazardous materials and other items that cannot go to landfills before removal to disposal sites. It was observed that this plan would make a heavy demand on materials handling equipment and operators. Participants also discussed the need to address OSHA and WISHA rules and other **temporary worker labor issues** that would need to be taken into account in utilizing volunteer and temporary workers to assist in restoration activities.

There was discussion on **port and marine/naval service disaster support** in at least two breakout groups. It was observed that the Port of Seattle is currently organizing a workgroup to

look at the issue of response assistance. Captain Steve Metruck, Coast Guard Captain of the Port has dedicated the Area Maritime Security Committee to work with PNWER stakeholders to put together a series of meetings examining the use of waterways for the transport of goods and people after a major disaster crippling the region's roadways and bridges. This seminar will focus on engaging all critical infrastructure owners and managers dependent upon north/south transportation for service delivery. The Seminar will also work out protocols for establishing contingency plans with private sector, public ferries, and DOD shipping/transport assets.

Contingency planning models and mitigation measures were also addressed in more than one breakout group. It was noted that the City of Seattle is about to release a business continuity template developed through Project Impact. The template, which is different from the traditional continuity-of-operations plan, will be available online and is intended for small and medium-sized organizations. It was observed that participation in these programs could encourage insurance companies to provide discounts or rebates. There was concern expressed that no centralized point currently exists to collect information and **share best practices**, and that there are likely many good ideas and resources that exist that could provide the region substantial benefits if there was awareness of what these are and points-of-contact that can provide information on how to leverage these capabilities. It was suggested that an online portal could evolve to have other functions and link projects and collaborative mechanisms, including PSACS, the Puget Sound Partnership, The Infrastructure Security Partnership (TISP), NWWARN, etc. This portal could also be used to provide access to information on **US and Canada cooperation and cross-border interdependencies** and collaboration. It was recognized that it would be difficult to determine what data to collect and how it would be collected, stored, and assessed, given security and legal concerns.

On **tribal issues**, it was pointed out that these were not well represented in the exercise and the tribes should be involved in future exercises and overall preparedness planning.

BLUE CASCADES III Prioritized Action Plan and Integrated BLUE CASCADES Series Action Plan *(Revised per the June 29, 2006 Puget Sound Partnership Meeting)*

Short-Term (6 months-1 year)

1. Create a **Work Group to work with the State of Washington on Staging for Disaster Response and Recovery** to determine what is being planned in other jurisdictions and make recommendations on possible improvements. Construction trade representatives should be included. Also establish a **Disaster Restoration Work Group to work with the State of Washington** to determine roles and responsibilities and a process to prioritize restoration of infrastructure, how resources would be identified, and how they would be brought to bear on the rebuilding of the region. **(Priority 1)**

2. Leverage existing or emerging processes of other states and regions for a cost-effective **Credentialing System** for essential personnel necessary for response and recovery/restoration activities. **(Priority 3)**
3. Work with the U.S. Coast Guard to develop and conduct a targeted conference-style **Workshop on Roles and Responsibilities** focused on incident management issues. Create an **Incident Management Issues Workgroup** as a follow-up to the Workshop to begin to delineate roles and missions, thereby leveraging existing federal, state, and local response plans and knowledge of response, recovery, and restoration needs from lessons learned. **(Priority 4)**
4. Development of **Common Assumptions on Worst Case Scenarios**. **(Priority 5)**
5. Develop and conduct an **Emergency Communications and IT Risk Assessment/Mitigation Workshop** to enable participants to go back to their enterprises and apply the lessons learned. Workshop will focus on gaps and possible mitigations and how they might be used, as well as how to develop situational awareness. Workshop in addition will raise awareness and reinforce need for all organizations to include within their contingency plans provisions for backup systems to assure redundancy to deal with outages of phone, cell phone, and internet access. Workshop would result in a **Website for Risk Assessment and Emergency Communications Information** that could be widely distributed via media, public forums, etc. **(Priority 6)**
6. Develop a **Key Stakeholder “Orange Pages”** of point-of-contact information that leverages NWWarn, e.g., phone numbers, radio frequencies, and other contact alternatives, within sectors and cross-sector with critical customers, service providers, contractors, and others deemed necessary to meet contingency planning requirements. Develop procedures for keeping this resource up-to-date.
7. Hold additional **SCADA Security Workshops** for interested stakeholder organizations.
8. Develop and conduct a **Seminar on Use of Waterways for Disaster Response and Recovery** focused on the transport of goods and people after a major disaster.
9. Create and undertake a **Regional Media Disaster Resilience Strategy** to involve broadcast and other appropriate media in emergency communications and overall role of media in disaster preparedness and management.
10. Complete an **Interdependencies Identification Template with Information Sharing Procedures**
 - a. Provide for users to share some portion of results to help synchronize plans
 - b. Use the template to improve supply chain management and to analyze supply chain and identify important interdependencies that could impact logistics.
11. Hold a **Seminar/Workshop on Just in Time Delivery** starting with one or a few sectors, e.g., food distribution and developing contingency plans for possible disasters to help assure understanding of interdependencies and their role during a disaster.

Medium-Term (2 years)

12. **Create a Work Group to work with the State of Washington to examine Interdependencies Impacts of Evacuations and Sheltering in Place Plans** under certain scenarios.
13. Complete a **Pacific Northwest Natural Gas Electricity Interdependency Study** that examines natural gas supplies in Washington, Idaho and Oregon, including cross-border, and assesses vulnerabilities, as well as impacts to electrical power sector under certain scenarios.
14. Undertake a **Critical IT Resilience Assessment that includes Emergency Communications Contingency Plans** to address warning and information sharing needs. Assessment should focus on upgrading of NW WARN and development of alternate communications and IT systems, service and restoration prioritization, and sources of necessary emergency equipment and supplies.
15. Build on King County and City of Seattle efforts to develop a **Public-Private Business Continuity Outreach and Assistance Program** to provide public education outreach, help small and medium businesses understand the process.
16. Undertake a **Waterway Contingency Planning Initiative**. This joint initiative with the Coast Guard and the Puget Sound Partnership and broader PNWER member stakeholders will entail series of meetings on use of waterways for the transport of goods and people after a major disaster crippling the region's roadways and bridges and include a seminar focusing on engaging all critical infrastructure owners and managers dependent upon north/south transportation for service delivery. Goal is to work out protocols for establishing contingency plans with private sector, public ferries, and DOD shipping/transport assets.
17. Undertake a **Virtual EOC Project** that can link first responders and local and private sector Emergency Operations Centers to local radio stations to provide notification of outages, threat information, and general information when phone lines, common networks, and email are not available.
18. Develop and implement a **Regional Exercise Program with a Single Clearinghouse/Schedule** for such exercises (will include smaller, targeted exercises that look at specific areas of risk as well as Canadian exercises cross-border in scope).

Longer-Term (multi-year)

19. Work with the State of Washington to develop a **Regional Risk Assessment System and Regional Plan for Telecommunications/Critical IT Infrastructure Resiliency** along with criticality criteria to prioritize telecom and IT infrastructure assets. Should include a vulnerability assessment of regional telecommunications from a disaster resilience

perspective and should take into account probability of certain scenarios to ascertain shortfalls. The regional strategy would assure interoperability and compatibility among stakeholder communications and information systems. **(Priority 2)**

- 20. Pursue grants/undertake a Subduction Zone Earthquake Infrastructure Interdependencies/Tsunami Impacts Study.**
- 21. Work with State of Washington to develop a Resource Staging Needs Inventory and Resource Database** of critical goods that may be needed during and after a disaster, e.g., medical supplies, food, water, tires; create a “wish list” of resources that organizations may need.
- 22. Work with the State of Washington and the U.S. Army Corps of Engineers to develop a Regional Transportation Resilience Assessment** that assesses the extent of limitations and economic impacts in a major disaster associated with interstate dependencies (e.g. Alaska’s need for food or Oregon’s for oil), addressing logistic choke points and co-located critical infrastructures, including alternative transportation modes and paths that could be reconfigured or laced together to support recovery of a region.

BLUE CASCADES III Action Plan Implementation Challenges

The challenges of moving towards implementation of the BLUE CASCADES III Action Plan are obvious in looking at the status of the Action Plans that evolved from the two previous Blue Cascades Exercises (in 2002 and 2004). A study of these previous Plans shows that progress towards implementation has been meaningful but relatively slow. There have been some significant accomplishments. These include creation of Northwest Warn, the Puget Sound Partnership, the Puget Sound Alliance for Cyber Security, development and conduct of additional regional interdependencies exercises and SCADA Security Workshops. There is work either beginning or underway on several other activities—an Interdependencies Identification Template and discussion of developing a cyber security “toolkit.”

Status Report of Previous Plans. Despite this progress, 24 of the 42 recommendations in the October, 2002 BLUE CASCADES I Action Plan and in the November 2004 BLUE CASCADES II Action Plan remain to be addressed. (*See Appendix B.*) Some of these projects need to be reassessed in light of new priorities, but most remain important gaps. Not unexpectedly, some of these needs and activities crop up in all three Action Plans. Others are newly discovered preparedness shortfalls, as regional stakeholders learn more about physical and cyber vulnerabilities and associated interdependencies, particularly in looking at extreme disasters—natural and manmade.

The reasons for this slow progress are varied. Limited resources—funding and personnel—pose major impediments. Other obstacles include lack of “champions” among public and private organizations that have other priorities, as well as the natural tendency of organizations to look inside their “fence lines” instead of externally to collaborate with other regional stakeholders. Also, there is the normal tendency of people and institutions to defer taking action when there is no perceived imminent threat, especially when the tasks that need to be

undertaken appear daunting, complex, and information on threats and vulnerabilities is not apparent—or in the case of interdependencies, well understood.

Nonetheless, the BLUE CASCADES stakeholders on both sides of the border have made measurable headway in improving preparedness and can legitimately claim to be in the forefront of regions in North America in efforts to enhance disaster resilience. With the third BLUE CASCADES Action Plan and increasing focus and commitment on the part of the regional stakeholders, particularly the state of Washington, significant progress should be made before the next BLUE CASCADES Interdependencies Exercise. The pace of such progress, however, will be determined by whether key stakeholders can develop the regional organizational structure necessary to implement expeditiously the combined Action Plans from the BLUE CASCADES Exercise Series.

Continued Need for an Organizational Structure for the Puget Sound Partnership. The second BLUE CASCADES Action—two years ago—clearly stated the need for an organizational structure to institutionalize the Partnership. This has not evolved. After the first BLUE CASCADES exercise in 2002, regional stakeholders, including the PNWER Canadian jurisdictions, took this under consideration for the broader Pacific Northwest Partnership for Regional Infrastructure security encompassing the eight PNWER member states and provinces. A draft structure was developed, but interest in moving ahead was limited to chiefly private sector participants. Four years later, with strong cooperation and coordination now existing among regional key stakeholders, the time is right to investigate establishing a non-profit Puget Sound Partnership with a formal organization that can facilitate information sharing, attract and pool funds from different sources, and manage and oversee appropriate regional projects on behalf of key stakeholders.

Maintaining momentum will remain the biggest challenge. The two previous Action Plans both focused on this as the most important hurdle for comprehensive regional preparedness. The situation has not changed. Without sustainability and active involvement by Partnership members in regional preparedness planning and implementation, the Puget Sound Region, Washington State and ultimately the greater Pacific Northwest will not achieve the level of resiliency to deal with major disasters. As noted in previous Action Plans, this involvement in turn will depend on the strength and influence of enlightened leadership at all levels of government and within the private sector, academe and other key stakeholder organizations. It is only through this leadership that communities can move forward and be inspired to work towards the goal of disaster resilience.

APPENDIX A

BLUE CASCADES III RECOMENDATIONS

I. Understanding of Interdependencies in an Extreme Disaster

1. Develop a means to identify and assess the importance of regional interdependencies.
2. Seek federal support for detailed research along the lines of the Project Impact Partnership with King and Pierce Counties sponsored by FEMA in the late 1990s to assess the effects of a major subduction zone earthquake on interdependent infrastructures (*Lifelines* study) and identify cost-effective mitigation measures.
3. Encourage the further development of analytic tools to assess the health and human safety and economic impacts of a major subduction zone earthquake. Explore what assessment tools might be available that address interdependencies with particular focus on those that utilize Geographic Information Systems (GIS) that could be used for regional preparedness and disaster response.
4. Revise and improve existing federal, state/provincial, and local preparedness and disaster management plans to address interdependencies in a major earthquake scenario.
5. Incorporate interdependencies into vulnerability and emergency response/reconstitution and business contingency plans to take into account interdependencies-related restoration needs, including mitigation strategies, priorities, and service restoration sequencing.
6. Encourage critical infrastructure owners and essential service providers to, where possible, establish alternative sources for essential products and services—e.g., for water systems, alternative sources of drinking water and alternative methods of water distribution. State environmental regulators appear unprepared to allow water utilities to access emergency water sources without a timely permitting process.
7. Develop a regional agreement of service restoration priorities for all lifeline services e.g., electrical, water, oil and gas, and address the issue of who makes that decision and which organization or organizations can re-prioritize service restoration during the course of response, recovery, and restoration.
8. Develop and conduct additional workshops and exercises, both sector-specific and regional, including field exercises, involving public-private organizations to examine interdependencies at deeper levels, assess assumptions, and identify gaps and solutions.
9. Examine evacuation and sheltering or shelter-in-place plans to make them realistic, taking regional interdependencies into account as well as sheltering facility limitations, and vulnerabilities, using the extreme earthquake disaster scenario as a baseline.

II. Resilient, Reliable, Interoperable, Compatible Communications and Information Systems

10. Develop a regional risk assessment system/methodology for telecommunications/ critical IT infrastructure resiliency, along with criticality criteria to prioritize telecom and IT

infrastructure assets. This methodology should include a vulnerability assessment of regional telecommunications from a disaster resilience perspective (probability of certain scenarios) to ascertain shortfalls. Project should entail a baseline inventory of government, private sector, and other essential primary communication systems, including those used for emergencies and include mitigation alternatives to address identified vulnerabilities and alternate communications links if disrupted.

- 11.** Develop a public-private sector plan for a Resilient Regional Telecommunications/ Critical IT Infrastructure System that assures interoperability and compatibility among stakeholder communications and information systems. Incorporate this plan into an updated state NRP Emergency Support Function 2 (telecommunications/IT systems). Include key private sector and other stakeholders in ESF-2 discussions.
- 12.** Develop capabilities to ensure situational awareness through resilient regional telecom and critical IT capabilities during a disaster.
- 13.** Encourage all organizations to include within their contingency plans provisions for backup systems to assure redundancy to deal with outages of phone, cell phone, and internet access.
- 14.** Where appropriate, key stakeholder representatives should share phone numbers, radio frequencies, and other contact alternatives, within sectors, and cross sector with critical customers, service providers, contractors, and others deemed necessary to meet contingency planning requirements for their organization.
- 15.** Investigate greater use of high speed Internet voice and data, customer contact, hotline numbers, satellite phones, text messaging for disaster response.
- 16.** Develop collaborative public-private sector procedures for flexible prioritization of telecom and critical IT infrastructure service restoration.
- 17.** Identify sources of necessary emergency equipment, such as power generators, extended life batteries and batteries that are standardized and can be easily changed, as well as standardized charger connections. Investigate feasibility of stockpiling in certain cases. Consider how to enlarge emergency fuel supplies for generators and emergency vehicles. Also, encourage telecommunications companies to explore with co-located companies sharing stockpiled resources not allowed by current contracts. Secure means to provide low or no-cost technical expertise for telecom/critical IT infrastructure assessment and disaster preparedness/management.
- 18.** Provide access for interested public and private sector organizations to the:
 - a. GETS (Government Emergency Telephone System) priority communication system and any other government emergency network;
 - b. Wireless Priority Service (WPS);
 - c. Telecommunications Service Priority Program (TSP);

19. Puget Sound Regional Portal within the DHS/US-CERT Portal for information sharing, tools, and expertise in a regional disaster.
20. Link regional Emergency Operations Centers and command centers, including utility EOC's through a regional communications network based on resilient, reliable interoperable systems such as radio, satellite phone, and IT capabilities.
21. Investigate ways to link first responders and local and private sector Emergency Operations Centers to local radio stations to provide to the public notification of outages, threat information, and general information when phone lines, common networks, and email are not available.
22. Encourage organizations to establish a schedule to ensure routine testing of existing communications systems and incorporate into regional and in-house organization exercises.
23. Develop a telecom/critical IT infrastructure response/restoration resource management system (possible joint project with DHS to leverage their envisioned NET Guard) that links free expertise and donated equipment with organizations in need.

III. Risk Assessment and Mitigation

24. Develop a common set of assumptions on worst case scenarios to enable organizations to have a common foundation on which to base their risk assessment plans and exercises.
25. Develop requirements for and implement a regional risk-assessment methodology focused on interdependencies and associated physical and cyber vulnerabilities and all-hazards threats, and which takes into account economic impacts. The model for this methodology could be developed by DHS in concert with regional stakeholders, the State of Washington, province of British Columbia, and Public Safety and Emergency Preparedness Canada (PSEPC), and would focus initially on developing criteria to identify and rank critical infrastructure assets and key resources (CI/KR). (The concept for this project is currently under development.) Some participants note they have concerns about a standard risk assessment methodology across sectors, proving as an example RAMCAP (Risk Analysis & Management for Critical Asset Protection), developed for DHS by the American Society of Mechanical Engineers. These participants believe it is better to develop a regional standard that requires sectors to perform risk assessment, using a recognized and acceptable methodology.

IV. Cooperation and Coordination

26. More concerted effort needs to be undertaken by federal, state, and local governments to improve cooperation and coordination from the grass roots to the national level, including integrating EOCs and command centers to facilitate public-private coordination vertically and cross-sector regionally.
27. Where possible, response and business contingency plans should be shared, coordinated, upgraded, and tested with regional exercises.

28. An up-to-date list of key stakeholder POCs responsible for disaster preparedness and management should be maintained at state/provincial and local EOCs and be made accessible to all key stakeholders.
29. There should be a list of federal, state, and local agency names to assist in providing points-of-contact for government resources.
30. Key stakeholder POCs responsible for disaster preparedness and management should incorporate into their PDAs the numbers and emails of their counterparts.

V. Information Sharing and Alert and Warning

31. Create an Information Sharing Breakout group within the Puget Sound Partnership to work on approaches and mechanisms to improve information sharing. Along these lines, investigate creating a non-profit organization to serve as the secretariat for the Partnership to enable the secure sharing of information and to keep it from public disclosure under state and local “sunshine laws”.
32. Explore expanding the capabilities of NWWARN and making it more resilient to disruption from power or telecommunications outages.

VI. Roles and Responsibilities/Incident Management

33. The Puget Sound Partnership should hold an interactive workshop focused on the “Who’s-in-Charge” issue to explore roles and responsibilities, and mission challenges.
34. As follow-on to this workshop, and with the appropriate state leadership, create a Breakout group to begin to delineate roles and missions, thereby leveraging existing federal, state, and local response plans and knowledge of response, response, and restoration needs from lessons learned.
35. Conduct a targeted exercise to explore roles and missions challenges (can utilize a scenario in a previous regional exercise such as the Blue Cascades series).
36. Once regional incident management procedures are established, conduct education of not just key stakeholders but the general public and hold regional and targeted exercises to work through chain of command issues.

VII. Response Challenges

37. The federal government is currently Breakout on a credentialing system for potential national application. In the meantime, a simple credentialing process needs to be developed by the state in concert with DHS and with input from county and municipal officials, private sector and other key stakeholder organizations. This process also must be coordinated with neighboring states and Canada to allow critical resources (people and materials) to access restricted areas.

38. State/provincial and local governments should work with private sector and other organizations to develop a process and capabilities to insure what a representative from the insurance industry described as “a well-defined situational analysis” to increase the success of response efforts.
39. The regional key stakeholders should include the local media in exercises and work with them to define their role and how to utilize their resources for disaster response.
40. Localities should consider including the U.S. Postal Service in response planning and the use of the USPS fleet as an emergency transportation resource.
41. Localities should work with local businesses to see what resources they have available to sustain first responders (food, bathroom facilities, equipment such as blankets, tools, and flashlights.)
42. There should be further study on how the ports and marine/naval services could be used to assist in response efforts.
43. Staging areas and transportation routes to get to the disaster area should be identified and assessed for potential interdependencies-related vulnerabilities.
44. Community Emergency Response Teams (CERT) should be factored into local emergency planning so they can provide needed depth to first responder activities.
45. Getting schools back into operation as quickly as possible should be made a high recovery priority in local disaster plans. Also, certain schools should be designated in advance as potential shelters and provided with stockpiled supplies.
46. Local law enforcement, the Federal Bureau of Investigation, and the National Guard need to work in concert with key stakeholders to develop a contingency plan to deal with civil unrest.

VIII. Recovery and Restoration

47. Develop a cooperative long term regional post-recovery restoration strategy that takes into account all key stakeholder interests and which recognizes that the post-disaster status of the impacted communities will be different than pre-event.
48. Procedures should be developed to encourage and assist small businesses as part of restoration plans.
49. Develop a model Resources Management Clearinghouse to enable providers and requestors to register their respective supplies, products, services, and their needs.
50. Establish criteria and a plan for conducting system and structural certification inspections as part of disaster preparedness.
51. Develop a debris management plan.

52. Organizations should work together to determine the need for out-of-region workers and develop a plan for accessing, certifying, and bringing in personnel resources from outside the area if required.
53. Procedures should be developed to enable businesses to contribute resources without fear of liability.
54. Good Samaritan laws need to be adopted or improved to facilitate volunteer assistance.
55. The Puget Sound Partnership, or the broader Pacific Northwest Partnership, should hold a workshop for key stakeholders that focuses on what both civilian and defense federal authorities can “bring to the table” in terms of services and resources for recovery and restoration. The workshop would also examine issues associated with access to these services and resources and their effectiveness, including impediments, and recommend ways for improvement.
56. State, local government and regional military facilities should develop guidelines to use military vessels to transport basic necessities and essential components and equipment to areas that are impassable to land transportation.
57. Sectors reliant on obtaining materials from manufacturers and distributors in other parts of the country to reconstitute their systems need to plan with their local suppliers as to how those resources are to be located and transported to the place they are needed and how the movement of these items is to be tracked and accounted for.

IX. Business Continuity and Continuity of Operations

58. All organizations should be encouraged to examine and reassess their contingency plans based on the findings and recommendation in this Exercise Final Report and other lessons learned.
59. All organizations should be expected to create an internal incident management structure and guidelines for their staff to follow in a major disaster.
60. Organizations should put in place procedures to ensure that they have identified all essential personnel that would be required to support the business or government agency in a major disaster.
61. Organizations should investigate designating a single location (alternate site) with sufficient resilience; they should locate an area or facility outside the region from which to conduct business in a major disaster.
62. Water and wastewater utilities impacted by Katrina lost their as-built drawings and system plans/maps. All utilities should investigate digitizing and backing up important system information outside the geographic area to a site or sites that would not be impacted by earthquake or other disasters striking their facilities.

X. Logistics and Supply Chain Management

- 63.** Organizations should identify critical suppliers, products, and material. (The previously cited interdependencies template, once completed, can be used for this purpose.)
- 64.** Organizations should work with their suppliers to identify and assess supply chain vulnerabilities/interdependencies and disruption impacts.
- 65.** Develop and share cooperative arrangements for use with key suppliers and customers that enable assessment of cost-effective security and resiliency needs for supply chains.
- 66.** Develop a management strategy to assure availability of and access to critical equipment, materials, components and products, including from off-shore sources.
- 67.** Develop contingency plans for commercial and other organizations addressing supply chain disruption.
- 68.** Educate key suppliers on interdependencies and to conduct on-site assessments that focus on critical services, e.g., energy, water systems, etc, and establish high-order priorities for risk reduction.

XI. Public Information/Risk Communications

- 69.** Publicize the need for at least a seven-day “Ready-Kit”. Provide multilingual emergency announcements and preparedness information to insure access to all population.
- 70.** Provide the public general information on “non-structure hazard mitigation”.
- 71.** Provide targeted information to special needs groups (people needing certain medications, on respirators or handicapped, or financially disadvantaged without access to transportation).

XII. Exercises, Training and Education

- 72.** Provide education and training opportunities in disaster preparedness and management to government and non-government senior managers, political leaders, the media, and general public.
- 73.** Include the above groups in regional and sector-specific exercises.
- 74.** Federal agencies should conduct training and exercises on all-hazards disaster, including terrorist attacks, with all key stakeholder groups--private sector organizations, including commercial businesses, non-profits, community institutions and academic institutions.

APPENDIX B

BLUE CASCADES Series Integrated Action Plan

Action Plan Activities Completed

BLUE CASCADES I:

- 1. Increase understanding of regional and cross-border interdependencies**
- 2. Hold an additional interdependencies exercise** focused on a port scenario; encourage broad participation in, local, regional, national and international exercises
- 3. Work with state, provincial and local government and private sector organizations to develop, and include interdependencies injects in exercises**
- 4. Develop a comprehensive list of commercial port and maritime transportation key facilities and assets** by pooling knowledge of government and commercial stakeholders

BLUE CASCADES II:

- 5. Creation of a Puget Sound Regional Partnership for Infrastructure Security**
- 6. Establishment of a Regional Cyber Security “Council.”**
- 7. “Securing SCADA and Process Controls” Workshop.”**

Activities Initiated or Underway

BLUE CASCADES I:

- 1. Infrastructure Interdependencies template** for stakeholders to use for risk assessments.

BLUE CASCADES II:

- 2. “Partnering for Regional Preparedness” Web-based Resource (will have different elements tailored to stakeholder needs, e.g., a dedicated cyber security link for the Cyber Security Council; will be for information on best practices, regional capabilities, calendar of upcoming workshops, exercises, and other events)**
- 3. Inclusion of media in NW-WARN, workshops, seminars and training events.**
- 4. Information Sharing Protocols** (needed to support several of the Action Plan projects).

5. **NIMS Awareness Workshop** (training underway for both public and private regional stakeholders-WA Homeland Security Institute)
6. Develop a **Cyber Security and First Aid Handbook**
7. Develop a **BLUE CASCADES Exercise Program**
8. **Cyber Security and Incident Response Awareness Workshop** (develop formats customized for stakeholder personnel, media and general public)
9. **Interoperable regional communications system** leveraging existing systems that would enable the dissemination of accurate and timely information for security and emergency management purposes
10. **Identify existing mutual aid agreements and other shared arrangements;** explore improving them and creating new arrangements, if necessary.

BLUE CASCADES III:

11. Hold additional **SCADA Security Workshops** for interested stakeholder organizations.
12. Develop and conduct a **Seminar on Use of Waterways for Disaster Response and Recovery** focused on the transport of goods and people after a major disaster.
13. Create and undertake a **Regional Media Disaster Resilience Strategy** to involve broadcast and other appropriate media in emergency communications and overall role of media in disaster preparedness and management.
14. Leverage existing or emerging processes of other states and regions for a cost-effective **Credentialing System** for essential personnel necessary for response and recovery/restoration activities.
15. Complete a **Pacific Northwest Natural Gas Electricity Interdependency Study** that examines natural gas supplies in Washington, Idaho and Oregon, including cross-border, and assesses vulnerabilities, as well as impacts to electrical power sector under certain scenarios.
16. Build on King County and City of Seattle efforts to develop a **Public-Private Business Continuity Outreach and Assistance Program** to provide public education outreach, help small and medium businesses understand the process.
17. Pursue grants/undertake a **Subduction Zone Earthquake Infrastructure Interdependencies/Tsunami Impacts Study.**

Action Plan Activities Not Yet Addressed

BLUE CASCADES I:

- 1. Convene a meeting of public and private sector organizations to brief/coordinate on respective emergency response plans**
- 2. Canvas stakeholders to identify existing mechanisms (e.g., for threat and law enforcement information exchange, mutual aid pacts, common alert and warning systems)**
- 3. Create a regional, cross-border, multi-sector **Information Sharing and Analysis Center (ISAC)****
- 4. Identify potential resource shortfalls (manpower and equipment) in regional, cross-border emergencies and develop plans for resource sharing and other contingency plans, including coordinated stockpiling of equipment**
- 5. List and provide an inventory of federal agency services that could be provided in major emergency situations**
- 6. Undertake a pilot project to identify legal and policy barriers, as well as requirements for effective cross border, cross-jurisdictional command and control.**
- 7. Working with state and local government, build upon exiting radiological response guidelines to develop a public education initiative. Create a central clearing house for radiological preparedness, response, recovery information for the general public, media, and government and business/infrastructure organizations. Explore needs for additional study on radiological contamination issues (e.g., of water sources and water treatment plants)**
- 8. Technology Consortium to assist in defining requirements and providing solutions**

BLUE CASCADES II:

9. Expedited Clearance Process

10. Puget Sound Region “Infrastructure Security Yellow Pages” for stakeholders to use to provide information on stakeholder emergency and security points-of-contacts. (See #26 below that calls for an **Orange Pages**).

11. Infrastructure Security Handbook

12. Puget Sound Regional Information Sharing and Analysis Center (will include an enhanced NW WARN and link to other existing information exchange and analysis

capabilities in the region, including INFRAGARD; would track information on threats and cyber/physical attacks and assess trends, as well as other functions determined by stakeholders)

13. Cyber Incident Threshold Criteria for Emergency Operation Center Stand up

14. Integrated Incident Management System with Private Sector and other key organizations incorporated into NIMS

15. Prolonged Power Emergencies Workshop (develop formats customized for stakeholder personnel, media and general public)

16. Region-wide Inventory and Assessment of Existing Physical and Cyber Disaster/Attack Preparedness Capabilities (e.g., mechanisms, plans, procedures, methodologies, approaches, communications systems, sensors, and tools. Will provide a baseline of what has been done to avoid “recreating the wheel.”)

17. Emergency Backup Communications Systems Inventory and Assessment

BLUE CASCADES III:

- 18.** Develop a set of **Common Assumptions on Worst Case Scenarios** to enable organizations to have a common foundation in which to base their risk assessments plans and exercises.
- 19.** Develop and conduct an **Emergency Communications and IT Risk Assessment and Mitigation Workshop** to enable participants to go back to their enterprises and apply the lessons learned.
- 20.** Develop a **Key Stakeholder “Orange Pages”** of point-of-contact information that leverages NWWarn, e.g., phone numbers, radio frequencies, and other contact alternatives, within sectors and cross-sector with critical customers, service providers, contractors, and others deemed necessary to meet contingency planning requirements. Develop procedures for keeping this resource up-to-date.
- 21.** Work with the U.S. Coast Guard to develop and conduct a targeted conference-style **Workshop on Roles and Responsibilities** focused on incident management issues related to maritime security. Create an **Incident Management Issues Workgroup** as a follow-up to the Workshop on Roles and Responsibilities to begin to delineate roles and missions, thereby leveraging existing federal, state, and local response plans and knowledge of response, recovery, and restoration needs from lessons learned.
- 22.** Create a **Work Group to work with the State of Washington on Staging for Disaster Response and Recovery** to determine what is being planned in other jurisdictions and make recommendations on possible improvements. Construction trade representatives should be included. Establish a **Disaster Restoration Work Group to work with the State of Washington** to determine roles and responsibilities and a process to prioritize

restoration of infrastructure, how resources would be identified, and how they would be brought to bear on the rebuilding of the region.

23. Hold a **Seminar/Workshop on Just in Time Delivery** starting with one or a few sectors, e.g., food distribution and developing contingency plans for possible disasters to help assure understanding of interdependencies and their role during a disaster.
24. **Create a Work Group to work with the State of Washington to examine Interdependencies Impacts of Evacuations and Sheltering in Place Plans** under certain scenarios.
25. Undertake a Critical IT Resilience Assessment that includes Emergency Communications Contingency Plans to address warning and information sharing needs.
26. Build on King County and City of Seattle efforts to develop a **Public-Private Business Continuity Outreach and Assistance Program** to provide public education outreach, help small and medium businesses understand the process.
27. Undertake a **Waterway Contingency Planning Initiative**. This joint with the Coast Guard and the Puget Sound Partnership and broader PNWER member stakeholders will entail series of meetings on use of waterways for the transport of goods and people after a major disaster crippling the region's roadways and bridges and include a seminar focusing on engaging all critical infrastructure owners and managers dependent upon north/south transportation for service delivery.
28. Undertake a **Virtual EOC Project** that can link first responders and local and private sector Emergency Operations Centers to local radio stations to provide notification of outages, threat information, and general information when phone lines, common networks, and email are not available.
29. Develop and implement a **Regional Exercise Program with a Single-Point Clearinghouse/Schedule** for such exercises (will include smaller, targeted exercises that look at specific areas of risk as well as Canadian exercises cross-border in scope).
30. Work with the State of Washington to develop a **Regional Risk Assessment System and Regional Plan for Telecommunications/Critical IT Infrastructure Resiliency** along with criticality criteria to prioritize telecom and IT infrastructure assets. Should include a vulnerability assessment of regional telecommunications from a disaster resilience perspective and should take into account probability of certain scenarios to ascertain shortfalls.
31. Pursue grants/undertake a **Subduction Zone Earthquake Infrastructure Interdependencies/Tsunami Impacts Study**.
32. Work with State of Washington to develop a **Resource Staging Needs Inventory and Resource Database** of critical goods that may be needed during and after a disaster, e.g.,

medical supplies, food, water, tires; create a “wish list” of resources that organizations may need.

33. Work with the State of Washington and the U.S. Army Corps of Engineers to develop a **Regional Transportation Resilience Assessment** that assesses the extent of limitations and economic impacts in a major disaster associated with interstate dependencies (e.g. Alaska’s need for food or Oregon’s for oil), addressing logistic choke points and co-located critical infrastructures, including alternative transportation modes and paths that could be reconfigured or laced together to support recovery of a region.