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King County Cascadia Rising 2016 Exercise

Regional After-Action Report/Improvement Plan

August 2016

.

Contents

SECTION 1: INCIDENT OVERVIEW

Exercise Name	King County Cascadia Rising 2016
Exercise Dates	June 7 – 10, 2016
Scope	This exercise was predominately a Functional Exercise, involving emergency operations centers from multiple jurisdictions within King County, with limited field play in some communities.
Mission Area(s)	**Response**
Core Capabilities	• Mass Care Services • Situational Assessment • Operational Coordination • Planning
Objectives	1. Operational Coordination 2. Mass Care Services
Threat or Hazard	Cascadia Subduction Zone Earthquake (catastrophic earthquake)
Scenario	A 9.0 magnitude full-rip earthquake along the 700-mile Cascadia Subduction Zone (CSZ) fault with resulting seiche (along shore of Lake Washington) and subsequent aftershock with direct, immediate, and significant impacts to critical infrastructure throughout King County.
Sponsor	King County Office of Emergency Management, in coordination with Washington State Emergency Management Division, the Washington National Guard, and FEMA Region 10.
Participating Organizations	See Appendix B
Point of Contact	Marcus Deyerin, CEM, MEP Cascadia Rising Exercise Coordinator King County Office of Emergency Management 3511 NE 2nd Street Renton, WA 98056 206-296-3830 / Marcus.Deyerin@kingcounty.gov

SECTION 2: INFORMATION COLLECTION AND AFTER-ACTION REPORT DEVELOPMENT

The King County Regional After-Action Report for the Cascadia Rising 2016 Exercise is informed by multiple sources: feedback and input from exercise evaluators, exercise participants, discussion during the King County After-Action Conference, and information contained in individual jurisdictional after-action reports. This information was then analyzed and summarized in "Section 5: Major Findings and Recommendations" of this document.

Evaluator Data

All participant King County CR16 Exercise Planning Workgroup representatives were provided exercise evaluation guide (EEGs) templates developed by the Cascadia Rising Evaluation Sub-working Group for each of the six overarching objectives identified for this exercise. Local participant jurisdictions were free to modify or adapt these EEGs to meet their local exercise needs and objectives. Evaluators were then provided these EEGs to complete and submit to the local jurisdiction's exercise coordinator at the end of the exercise, which were used to inform each jurisdiction's respective after-action report.

Exercise Participant Data

All exercise participants (including players, controllers, evaluators, and observers) were provided a link to an online exercise feedback survey. In total, 52 participants completed the King County Participant Survey.

Individual Interviews

The King County CR16 Exercise Coordinator conducted individual post-exercise interviews with approximately six local jurisdictional exercise coordinators, and one King County ECC evaluator.

King County Exercise Planning Workgroup

Initial findings from the above sources of input were compiled and shared with and discussed by the King County CR16 Exercise Planning Workgroup. Additional feedback from this session was used to inform this report.

King County After-Action Conference

The King County Office of Emergency Management hosted a regional After-Action Conference on August 23, 2016 to share the Major Findings from the DRAFT After-Action Report, and solicit additional input and feedback from all conference attendees, which included both participants as well as non-participant stakeholders.

SECTION 3: EXECUTIVE SUMMARY

The King County Cascadia Rising 2016 Exercise (CR16) occurred June 7 – June 10, 2016, and included hundreds of participants representing over a dozen King County jurisdictions, along with numerous additional special purpose districts, non-governmental organizations, and private sector entities.[1] According to the FEMA CR16 Exercise Plan, "Cascadia Rising 2016 is [intended] to establish a learning environment for players to exercise their plans and procedures for responding to a catastrophic earthquake and tsunami." The general premise of the exercise scenario is a "full-rip" of the Cascadia Subduction Zone fault-line that is situated approximately 200 miles off the coast of the Pacific Northwest, stretching over 700 miles from Vancouver Island, British Columbia down to Mendocino, California. A full rupture of this fault is anticipated by scientists to produce an earthquake measuring in the neighborhood of 9.0 on the earthquake Moment Magnitude Scale, causing intense shaking for up to 5 minutes in duration, and resulting in a major tsunami along the coasts of California, Oregon, Washington, British Columbia, and Alaska, with potentially significant impacts as far away as Hawaii, Japan, and Southeast Asia.

The significant and prolonged shaking caused by this earthquake would have enormous short and long-term impacts on our community, damaging or destroying hundreds if not thousands of buildings, roadways, bridges, pipelines, water and wastewater treatment facilities, energy systems, and telecommunications systems. Many hundreds will likely die within the first few hours as a result of collapsed buildings or elevated road structures, with several more thousands being injured. Limited access to critical medical care, medicines, food and water, exposure to the elements (depending on the time of year), and subsequent aftershocks could result in additional deaths and injuries in the days or even weeks following the initial earthquake.

Although the full scope of Cascadia Rising 2016 involved the participation of entities across three states (Washington, Oregon, and Idaho) and British Columbia, the focus of the King County portion of CR16 (and this after-action report) was how local jurisdictions and entities would coordinate and perform information and resource management during the early response phase of this type of incident. The specific overarching objectives King County participants focused on regionally were Operational Coordination and Mass Care, with a number of core capabilities being exercised over the course of the four days. Exercise activities included:

- the activation and staffing of emergency or department operations centers (EOCs/DOCs);
- the use of back-up / alternate communications platforms;
- the submission and routing of resource requests and local jurisdiction situation reports;
- the deployment and coordination of volunteers in the field; and
- the establishment of a community point of distribution.

Additionally, the Washington Army National Guard was a major participating organization within King County, demonstrating a host of capabilities, including deploying vehicles and

[1] The full list of participants from within King County can be found in Appendix B.

resources ship-to-shore utilizing “over the beach” bridges; establishing a mobile field medical station; establishing multiple field communication stations to support local stakeholders; simulating the loading and transport of critical medical patients and supplies; conducting situational awareness aerial flyovers with local incident managers; and supporting regional operational coordination by positioning liaisons in various local EOCs as well as the King County Emergency Coordination Center (KCECC).

The outcome of these activities, as well as the tremendous exercise design and planning efforts leading up to the exercise itself, revealed ***that the principal and major strength of our region are the extensive relationships that exist between and among the individuals and the organizations and agencies they represent***. From the volunteers and first responders in the field, to the dispatchers, community organizers, or incident managers and staff in an EOC, the recognition that “we’re all in this together” resonated throughout the exercise, just as it would during a real-world incident. Challenges, obstacles, and problems were consistently confronted with fortitude, creativity, and ad hoc solutions, developed and driven by individuals working collaboratively. And while this observation is to be celebrated, the primary purpose of an exercise is to identify those areas in which we need to improve.

Section 5 of this document (Major Recommendations and Findings) identifies and provides analyses on six elements that exercise participants identified as either the most significant or most common challenges or deficiencies they experienced or observed during the exercise

The six major findings regarding opportunities for improvement were:

1. The establishment of regional situational awareness / common operating picture (SA/COP) was not achieved due to inconsistent protocols and incomplete processes, as well as the lack of an effective and established common mechanism for sharing SA/COP information.
2. The lack of a regional resource request, tracking and management system.
3. The insufficiency of the “life-safety” standard to prioritize the allocation of scarce resources.
4. Insufficient knowledge, training or experience among personnel assigned to staff EOCs.
5. A lack of clarity on the process for rendering policy-level decisions with regional impacts in a large-scale disaster.
6. Current plans do not identify how decisions regarding strategic or tactical coordination of resources will occur at a regional level.

Many of these findings are not surprising, largely because this type of catastrophic scenario requiring the performance of these functions or tasks is unprecedented in King County. But even in disasters of much smaller scope and scale, the tasks and requirements associated with incident management are extraordinarily challenging.

Therefore, this report has identified head-on those areas in which we need to improve, and offered specific recommendations towards developing achievable solutions. Our region will move forward resolutely and quickly in making those necessary improvements. We will update our plans, procedures and protocols to fill the current gaps. We will develop and deliver training on these updated materials. And we will incorporate the challenges we experienced in CR16 as well as other exercises into our future exercise program so we can quantify improvements and achievements.

This effort will not be simple or easy, and it will require contributions of time and personnel from all participant stakeholders. But the outcome of that effort will benefit our collective communities in profound and immeasurable ways.

SECTION 4: EXERCISE BACKGROUND

Cascadia Subduction Zone Info

The Cascadia Subduction Zone (CSZ) is an approximately 700-mile long fault line along the Pacific Ocean floor and situated some 200 miles off the coasts of British Columbia, Canada, and the states of Washington, Oregon and California. The most current research indicates this fault has ruptured a possible 41 times over the past 10,000 years, with the most recent rupture having occurred on January 26, 1700. A "full-rupture" of the entire fault line (believed to represent at least 19 of the 41 suspected ruptures) is anticipated to produce a major earthquake, measuring at least 8.0 or higher on the Moment Magnitude Scale.

Our understanding of the CSZ fault is considered relatively young (having only been generally accepted among the scientific community as an earthquake producing fault as recently as the early 1980s), and continues to evolve with each passing year. The most current research suggests there is a 37% likelihood of a CSZ rupture within the next 50 years. Given the fairly recent recognition of the threat posed by earthquakes to the Pacific Northwest Region, the local geology (large areas of liquefiable soils, and areas prone to landslides), the built environment (high number of seismically vulnerable buildings, elevated transportation structures, and low-lying communities susceptible to tsunami or seiche), and topographic constraints (narrow and limited transportation corridors to the north, south and east), the next CSZ event is predicted to cause catastrophic and widespread damage.

Exercise Design and Planning Approach

The Cascadia Rising 2016 Exercise was designed to simulate the challenges and issues of a catastrophic earthquake originating from the Cascadia Subduction Zone fault line. This was pursued through the participation of EOCs at all levels – city, county, state, tribal, federal government, military, and select private sector and non-governmental organizations. Each participating jurisdiction or agency within King County chose to participate in varying levels and ways, with a majority activating and staffing their respective facilities (e.g. Emergency Operations Center) to a level that supporting meeting their individual exercise objectives.

Beginning in 2014, interested stakeholders from within King County assembled an exercise planning group that met on a monthly basis to identify individual and collective exercise objectives. Based on guidance and direction from FEMA exercise planners, the King County Exercise Planning Group (KCEPG) began to pre-identify those elements of infrastructure within their respective jurisdictions that the earthquake would "break." This list of pre-identified damage impacts was known as the "ground truth" document, the intent of which was to provide a single, coordinated planning reference from which to generate exercise injects that would drive exercise play.

Work continued on the development of the ground truth document throughout 2015 and was ultimately finalized in April 2016. The development of individual jurisdictional and agency

injects began in earnest in fall of 2015, and were finally assembled into the comprehensive King County Master Scenario Event List (MSEL) in May 2016.

Although some jurisdictions opted to deliver their injects locally, the King County SimCell was responsible for delivering nearly 1000 unique injects over a 4-day period (June 7 – 10), the bulk of which occurred on the second and third day of the exercise.

Individual Jurisdictional / Agency and Regional Objectives

During the initial phase of the exercise development process, FEMA identified multiple objectives tied to six core capabilities that they intended to pursue as part of CR16. Within King County, two of these six core capabilities, Operational Coordination and Mass Care, were identified by the KCEPG as an appropriate common focus for King County play, with all jurisdictions maintaining the right and option to develop objectives tied to additional core capabilities for their respective portion of play as they saw fit.

That said, the five general objectives pursued by the majority of stakeholders within King County include:

- Activation of the agency / jurisdictional EOC or DOC;
- Assignment of staff to EOC/DOC roles;
- Testing of primary and alternate communications systems;
- Testing the process for requesting and tracking resources (both at the local and regional levels); and
- Assessing processes for prioritizing and allocating resources to specific operational assignments.

SECTION 5: MAJOR FINDINGS AND RECOMMENDATIONS

The purpose of any disaster scenario exercise is to identify those elements of plans, procedures, protocols, and intended outcomes that perform as expected, and more importantly, those that do not. A well-designed exercise will challenge planning assumptions and oversights, push systems up to and possibly beyond their capability limits, and require individuals to develop innovative and ad hoc solutions for both anticipated and unexpected challenges. With these goals in mind, Cascadia Rising 2016 was a very successful exercise for King County stakeholders, as the participant feedback demonstrated a set of clear and consistent issues and challenges experienced by most if not all entities; but ones for which solutions and improvements are entirely achievable. The purpose of this section is to define and describe these issues and challenges, and to provide recommendations on how to pursue and develop solutions as a regional effort.

Regional Relationships - Strength

> Inter-agency and inter-personal relationships consistently demonstrated their value and importance in adapting to challenges and developing ad hoc solutions.

Analysis: Emergency management professionals in the Pacific Northwest, and particularly those within King County, have a well-established and consistent history of collaboration and regional problem solving. This was certainly evidenced during the exercise design and planning phase for the Cascadia Rising 2016 Exercise itself, and more importantly, is demonstrated broadly through various inter-jurisdictional collaboration efforts and mechanisms (e.g. Emergency Management Advisory Committee, the Regional Coordination Framework, Business Emergency Operations Center, etc.). Many participants involved in the exercise design and planning phase of CR16 expressed they felt the collaborative preparatory work for the exercise was as valuable to them personally as the exercise itself.

Recommendation: All King County stakeholders with a disaster incident management role or responsibility should continue to pursue and participate in opportunities to engage with each other at the individual and agency level. Although typical engagement includes attendance at regional meetings or workgroups, the findings within this report indicate additional opportunities to work collaboratively in the development of plans, protocols, operational guides, training materials, etc. These types of extended collaborative work experiences help to broaden the perspectives of the participants, increase cultural understanding across agencies, and better inform any final products rendered as a result of the recommendations in this report.

Situational Awareness / Common Operating Picture – Area for Improvement

Issue / Challenge 1: The establishment of regional situational awareness / common operating picture (SA/COP) was not achieved due to inconsistent protocols and incomplete processes, as well as the lack of an effective and established common mechanism for sharing SA/COP information.

Issue / Challenge: Lack of an effective regional SA/COP development process and platform.

Context: The effective and efficient allocation of limited resources in response to a large scale incident depends upon the early establishment and maintenance of situational awareness / [and a] common operating picture (SA/COP), and is therefore the single most important function of an emergency operations center (EOC) in the early stage of any incident response. However, there are multiple and significant challenges towards developing SA/COP, as the infrastructures needed to observe, collect, analyze, synthesize and share it, such as the telecommunications, transportation, and power / energy networks, are the very ones most likely to be impacted by a large scale disaster incident. Even in situations where infrastructure damage is less of an issue, every phase of the SA/COP development cycle presents questions or issues such as:

- The credibility and accuracy of information sources;
- Determinations about who should receive or is responsible for different types of information;
- On which channels or pathways should any given piece of information be transmitted, either inter- or intra facility;
- Commonly accepted and understood “essential elements of information”;
- How to prioritize a high volume of raw information for analysis;
- Deconflicting contradictory information;
- How and who to task with the targeted collection of specific information; and
- How to effectively display and share SA/COP products (SitReps, maps, etc.).

Even smaller incidents can present many or all of these challenges, as a rapidly evolving and dynamic situation can quickly eclipse the information management capabilities or resources of the affected jurisdictions or agencies, which can and will adversely impact the decision-making process.

Analysis: Among the specific exercise related SA/COP challenges identified by regional stakeholders and exercise participants:

- Call-takers in some venues reported feeling unprepared or under-trained for the role, which as the "point of entry" for many elements of information into an EOC, resulted in messages being incomplete, mis-routed, or unprioritized and assessed.
- Requests for specific elements of information were unreasonable given the context of the scenario timeline. Even had the telecommunications infrastructure not been impacted (either via simulated outages or real world system issues experienced during the exercise), some elements of information being requested to and by various entities was considered improbable to ascertain during the early stages of an incident of this type. Although a portion of this challenge was no doubt a natural and expected constraint of exercise artificialities, a real-world incident will require clearly delineating which types of information requests / responses can be generalized (e.g. number of uninhabitable residential structures), vs. those requiring more specific detail (e.g. which streets or bridges are impassable), in addition to being assessed for the criticality of the information towards informing time-sensitive decisions.
- The decision-making process and timeline was incongruous across jurisdictions within King County. There was no clearly defined alignment of "planning cycles" among or between entities, which meant certain decisions may have been made without the benefit of prior consultation or coordination with other regional stakeholders.
- There was general lack of knowledge regarding how existing plans have pre-designated or allocated certain resources for particular uses during disaster incidents.
- These is a notable lack of a common, robust, and reliable process and/or platform(s) for sharing SA/COP throughout the region with all King County stakeholders.

Recommendation 1A: Develop and codify regional SA/COP standards and processes.

Recommendation 1A: The King County Office of Emergency Management should establish regional SA/COP standards and processes, and submit these as a proposed annex to the Regional Coordination Framework for Disasters and Planned Events for Public and Private Organizations in King County, Washington (hereafter "Regional Coordination Framework," or RCF).

Although a prior regional effort had established a "standard" form for use by regional partners to provide information to the King County Emergency Coordination Center during incidents, the use of this form was not accepted or recognized by all King County jurisdictions, and subsequently not actively promoted or trained upon. Additionally, alternative or preferred pathways for submitting information were not always clear to

stakeholders on the front-end (local agencies / EOCs), and on the back-end (within the KCECC), processes for assessing, routing, analyzing, compiling and distributing SA/COP were inconsistent, unclear, or non-existent.

Recommendation 1B: Identify and select (or develop) a regional SA/COP platform.

Recommendation 1B: Identify and select (or develop) a common information sharing (i.e. SA/COP) platform where regional partners can access and view relevant disaster incident information. This platform should offer both text-based, as well as graphics-based data display (e.g. maps, graphs / charts).

An effort is already underway by the King County Office of Emergency Management to bring together regional stakeholders to assess currently existing and available platforms that may address the needs identified in Recommendation 1B. Although this initial review and assessment session (currently scheduled for February 2017) may not identify all possible options, it will serve as an important first step towards supporting this recommendation.

Recommendation 1C: Conduct regular SA/COP exercise (drills).

Recommendation 1C: Conduct periodic (no less than quarterly) regional SA/COP drills, using both the primary designated process and platform (i.e. website / digital dashboard), as well as the alternative / back-up mechanism(s) (e.g. paper-based SitReps, scheduled teleconference, radio broadcast, etc.).

Any processes and platforms selected or developed by the SA/COP working group must be practiced regularly to ensure all stakeholders are thoroughly knowledgeable and competent

with the system(s) for sharing and receiving critical incident information. These drills should not require more than 15 - 30 minutes of effort from each participating local jurisdiction or agency, or more than 2 - 4 hours from the King County Office of Emergency Management. This strategy would address the issue raised by a number of exercise participants that CR16 was "simply too big to allow us to focus on any one function and do it well." This minor investment of time will help support and ensure the effective implementation of the most important aspect of incident management – the sharing and management of information necessary to make timely, efficient, and effective decisions regarding critical and likely scarce resources.

Resource Tracking and Management – Area for Improvement

Issue / Challenge 2: Lack of a regional resource request, tracking and management system.

Issue / Challenge: The region currently lacks a sufficient common mechanism for effectively requesting, tracking and managing resources in a disaster incident scenario with regional impacts.

Context: On a day-to-day basis, local agencies and jurisdictions utilize well-established mechanisms for managing their individual resources. Even in some smaller or localized crisis incident situations, there are established protocols between fire and law enforcement agencies that provide for the rapid allocation and assignment of mutual aid and assistance resources. However, in a large scale incident, local resources, to include those that might otherwise be available through mutual aid, are quickly consumed and overwhelmed by the demands of the incident. In these situations, requests for additional resources are submitted to the King County Emergency Coordination Center (KCECC), which is then responsible for identifying from where this request might be fulfilled or acquired (e.g. the private sector, a neighboring jurisdiction at the local or county level, or from a state or federal partner.)

Analysis: King County has not previously been faced with the challenge of an incident of such magnitude that would generate the level of resource request and management requirements as presented by the Cascadia Rising 2016 exercise scenario, and thus lack a historical contextual reference. Yet, even an incident much smaller in scale, but requiring a multi-agency, multi-jurisdictional response, would require a robust resource request and tracking process and system. And whether it is the process or the system (or both) that are currently lacking, the end result was that the volume of resource requests during the CR16

exercise overwhelmed the ability of KCECC staff to adequately track resource requests, much less track the resources themselves once received.

Recommendation 2A: Develop a regional resource tracking / management process for region-wide use in a large scale disaster incident.

Recommendation 2A: The King County Office of Emergency Management should convene a group of *resource management specialists* to establish or determine the process to be used for a large scale disaster incident with regional impacts. The emphasis of this recommendation is the process developed by the work group should not be dependent on any particular digital or technical platform in order to function. Only after the process is established should a digital platform (e.g. web-based resource management tool) be pursued to support or automate elements of the agreed upon process.

Recommendation 2B: Identify (or develop) a web-based resource management tool that supports the King County regional resource tracking / management system.

Recommendation 2B: Establish a working group of *resource management specialists and technologists* to identify and assess existing web-based resource management tools that could enhance or automate elements of the process established as a result of Recommendation 2A; and if no such tool currently exists, determine the criteria for and feasibility of developing a tool / platform that purpose.

Issue / Challenge 3: Insufficiency of the "life-safety" standard to prioritize the allocation of scarce resources.

Issue / Challenge: In a large-scale disaster incident, the "life safety" standard is not sufficiently nuanced enough to support the prioritization of critical resource allocation decisions.

Context: In a crisis scenario, the allocation and assignment of resources are prioritized using the basic categories (in order) of 1) Life Safety, 2) Protection of Property, 3) Protection of the Economy, and 4) Protection of the Environment. This generic prioritization standard can assist decision makers in determining where, when and how to allocate or assign limited resources based on these factors.

Analysis: For emergencies or even disasters that are smaller in scope, limited in geographic impact, or for which additional external resources are soon to be available, the four categories listed above may be sufficient to adequately prioritize the allocation and assignment of currently existing resources. However, in a large scale disaster, where current resources and capabilities are likely to be significantly and immediately overwhelmed by the demands of the incident, and additional external resources may not be available for hours, days or even weeks, the generic "life-safety" standard must be expanded to consider a number of additional factors for the prioritization of resource allocation. Although it is not the intent of this report to make the determination regarding what those factors should be, examples might include:

- What is the level of life-safety risk (i.e. a lack of the requested resource will lead to significant disease or illness, moderate to major bodily harm, probable death, etc.)?
- What is the temporal measure of life-safety risk in regards to a requested resource (i.e. imminent threat, 12-24 hours, 24+, etc.)?
- Is the requested resource a durable or expendable item?
- How quickly can the resource be deployed? Redeployed to a different assignment?
- How many individuals are impacted or would benefit from the requested resource?
- Can the life-safety risk be mitigated or relieved through a partial allocation of the requested resource?

Recommendation 3A: Establish a set of guidelines to support resource allocation decisions with "life-safety" implications.

Recommendation 3A: Convene either a workgroup (with limited duration mandate), or a single or multi-session workshop, with the specific intent of developing a set of guidelines that may be used by incident commanders, EOC managers, elected officials, or other individuals within King County possessing the authority to make critical resource allocation decisions in the context of a localized or regional disaster.

The composition of the workgroup or workshop series attendees should include *experienced first responders, incident commanders, EOC managers, elected officials, and professional ethicists*. The purpose of this set of guidelines would not be to establish a rigid decision matrix for resource prioritization, but rather a standardized mechanism that a decision-maker can utilize to inform the resource allocation decision process.

Intra-EOC Communications – Area for Improvement

Issue / Challenge 4: Insufficient knowledge, training or experience among personnel assigned to staff EOCs.

Issue / Challenge: There is insufficient knowledge, training or experience among personnel currently assigned to staff EOCs regarding intra-EOC communication, or when and how to collaborate between and among sections throughout the course of the operational period.

Context: The National Incident Management System and Incident Command System has established a specific organizational structure and 14 guiding principles that a delegated incident commander, working from an incident command post, is to use for the direct control and management of operational elements. However, the NIMS guidance has since its inception offered more flexible if somewhat ambiguous guidance on the organization of an EOC.

Analysis: While the ambiguity within NIMS allows local jurisdictions / agencies to structure their EOC to best reflect organizational culture, staffing capacity, functional requirements, etc., there are multiple hazards that result from this approach.

Firstly, each jurisdiction or agency is responsible for developing unique or tailored processes, protocols, job aides, etc. to support their individual organizational approach. Developing these materials is a time and resource intensive effort, and further requires a robust education, training and exercise program for designated EOC personnel on a regular basis. Few local jurisdictions have the capacity to develop both the unique operational materials, as well as conduct the training or regular exercises necessary to render them useful in a crisis environment.

"Operations / coordination centers are locations from which staff provide centralized and coordinated support to Incident Command, on-scene personnel, and/or other operations / coordination centers beyond what can be provided at the scene, and in many cases, on-scene coordination and/or policy direction. Primary functions of staff in operations / coordination centers include (1) sharing, collecting, and disseminating information; (2) supporting resource needs and requests, including allocation and tracking; and (3) coordinating plans and determining the current and future needs of the various jurisdictions and organizations involved in an incident. Additionally, operations/coordination center personnel support public and incident-specific communications, liaise with partners as needed, and support the policy and legal needs of the IC and other decision makers."

"Working Draft National Incident Management System Refresh Review Package," FEMA, April 2016

This reality confronted many of the CR16 participants in various jurisdictions, as designated EOC staff endeavored to "learn while doing" – often in an unfamiliar location, utilizing unfamiliar equipment, and serving in a role in which they may have never or rarely worked in before. ***Beyond the challenges of training any given individual for a particular function or role, the most pronounced and consistently identified issue among CR16 participants was a lack of clarity and understanding about how the various sections within their EOC [regardless of how they were organized] were supposed to interact, route information, or otherwise collaborate with each other over the course of an operational period to achieve the collective objectives established by the EOC Manager (or equivalent leadership).***

The second hazard of the flexible approach to EOC organizational structure and/or operational implementation is the disconnect this creates from one EOC to another within a region. This situation can generate a certain degree of confusion during the inter-EOC exchange of information, as it may not be clear to less experienced EOC staff which organizational elements share equivalent responsibilities. Additionally, individuals who have only learned or experienced one type of organizational structure may struggle to adapt to a

different EOC's structure should they find themselves supporting another jurisdiction or agency.

Recommendation 4A: Identify and promote EOC organizational and operational "best practices" throughout King County through a regional training strategy.

Recommendation 4A: The King County Operations Workgroup should solicit input and conduct research on EOC organizational and operational best practices throughout King County (and beyond), and work with the Training and Exercise Workgroup to develop an orientation training session or series that promotes these best practices.

While the establishment of a of single commonly agreed upon organizational structure for all EOCs throughout King County is unlikely, participant feedback indicates a widespread interest in improving the overall education and training of personnel assigned to an EOC. At a minimum, this education and training should address the purpose and function of an EOC; how various EOCs/DOCs might be organized; the rationale and pros / cons of various organizational structures; and how organizational elements within an EOC relate to those external entities with which they may interact.

Ideally, a training curriculum for EOC / DOC management and operations should be developed locally as a regional consortium effort among King County stakeholders [vs. relying on the FEMA EOC Management and Operations course which does not adequately address or reflect local needs].

Policy-Level Decision Making – Area for Improvement

Issue / Challenge 5: A lack of clarity on the process for rendering policy-level decisions with regional impacts in a large-scale disaster.

Issue / Challenge: Although the King County Regional Coordination Framework calls for a "policy call" to be held periodically among elected officials with King County, there remains a lack of detail regarding the process for rendering policy-level decisions that will likely have significant impacts to multiple jurisdictions.

Context: In a disaster situation, many if not most decisions during the operational response or "life-safety" phase of the incident will be delegated to local first-responders, incident commanders, EOC managers, and department or agency directors. However, certain actions, even during the initial response phase, will likely require the support or guidance of a "policy" decision rendered by elected leadership at the local and/or county level.

Examples of questions or issues that might need to be addressed at this level include:

- Inter-jurisdictional travel or road-use restrictions;
- Curfews;
- Resource rationing (food, water, fuel, etc.);
- Utility restoration and use prioritization;
- Mass care strategies (shelter, feeding, medical, etc.); and
- Fatality management strategies.

Analysis: The King County Regional Coordination Framework (Feb. 2014), Section IV – Direction and Coordination provides a general concept, outline, and criteria for informing the policy decision process. It also states that "the King County Executive or designee will facilitate the meetings whether virtual or conducted at the RCECC." But notably lacking from the RCF are a number of key elements:

- a proposed agenda for regional policy meetings;
- a description, definition, or list of example issues or decisions that require a policy-level coordination meeting;
- a description of the process for local officials to utilize in raising or submitting new or unanticipated issues or questions to the policy-level group; and
- a description of the process for how decisions will be rendered when consensus is not achieved.

Although a policy-level coordination conference call / meeting was not conducted as part of the CR16 exercise, participant feedback indicates a strong desire to include this activity in future exercises, largely due to the lack of clarity among local officials and their delegates (typically emergency management directors) about how these policy coordination calls /

Recommendation 5A: Further develop and codify the detailed process for rendering policy-level decisions with regional impacts in a large-scale disaster.

meetings would ultimately manifest decisions or guidance.

Recommendation 5A: A more detailed process for rendering policy-level decisions with regional impacts in a large-scale disaster situation is needed. This objective can be achieved by determining if a regional policy-level decision-making model currently exists for a region of similar characteristics, which might be adopted / adapted by King County, followed by convening a group of representative elected officials (or their delegates) to assess the proposed model.

Recommendation 5B: Future exercises should include a policy-level call / meeting.

Recommendation 5B: Subsequent to the completion of Recommendation 5A, a regional policy-level coordination call / meeting can be included as a specific objective in a future exercise; OR a specific exercise focused on the execution of a policy-level call / meeting should be developed.

Issue / Challenge 6: Current plans do not identify how decisions regarding strategic or tactical coordination of resources will occur at a regional level.

Issue / Challenge: Current plans do not offer the necessary level of detail regarding how strategic or tactical decisions for resource allocation or assignments will be rendered.

Context: In a disaster incident, issues and questions will arise that exceed the scope of tactical or operational response activities for which local incident managers have been delegated authority. In some cases, an incident manager may possess the appropriate

delegated authority for many or most decisions; however, given the long-term implications of certain decisions, they may either seek informal guidance, or in some cases a more formal policy decision from their agency administrator (e.g. elected official or governing body) prior to pursuing or implementing certain actions.

Furthermore, when a disaster incident occurs within a single jurisdiction, or in which the agency or jurisdictional authorities are limited to a handful of entities, the Unified Incident Command structure can facilitate the process of identifying, assessing and routing policy-level questions to the appropriate agency administrator(s) for guidance or declarative decisions. However, in a large scale incident spanning many jurisdictions and agencies, under the respective authorities of perhaps dozens or even hundreds of elected representatives, the Unified Incident Command structure is by itself no longer adequate to facilitate these decisions. Under the principles of the National Incident Management System and Incident Command System, an Area Command is identified as the "next-level" structure that can and should be established to support and coordinate multiple local incident commanders (or unified incident command structures). Yet, neither this nor any alternative structure is explicitly identified within any existing regional King County plan (e.g. the Regional Coordination Framework), instead leaving all resource management decisions at the local level.

Analysis: Despite the clear framework and organizational structures established by the National Incident Management System and Incident Command System for managing, coordinating, and supporting incident management activities over a large geographic area, or one encompassing multiple jurisdictional authorities, the existing RCF appears to explicitly avoid the mention or use of the Area Command structure or concept. Instead, the RCF places its emphasis on the "coordination" role of the King County Regional Communications and Emergency Coordination Center (aka King County Emergency Coordination Center), and the use of the Emergency Support Function (ESF) organizational paradigm within the RCECC in order to facilitate the "operational response at the regional level and [support] operational response activities that are managed at the local level." The RCF goes on to state that "the RCECC does not make operational decisions for local jurisdictions or partners unless specifically requested. Rather, the RCECC facilitates regional support activities that have been developed collaboratively amongst the appropriate stakeholders, represented through the ESFs and Zone Coordinators." However, nowhere in the RCF is the concept of "facilitation" defined or described in terms that personnel staffing the RCECC would find operationally useful, nor does the RCF reference specific local operational plans that RCECC personnel might rely upon to gain greater clarity in what it is they are there to facilitate and support.

By specifically avoiding this level of detail, current plans do not adequately answer the following questions (which represent only a small fraction of those that need to be addressed):

- How will unassigned resources arriving from outside of the county or state be assigned, by whom, and under whose authority?
- What if a resource originally requested by one entity (agency, local jurisdiction, etc.) is identified as being of far greater positive impact to another community (either before or after actually being assigned to the original requestor)?
- What is the delineation of responsibility for tracking resources? Presumably each jurisdiction / agency to which a resource is assigned will track it while under its operational direction and control; but what about prior to being assigned or after being released from a given assignment?
- What agency / entity is responsible for establishing and managing a staging area or lodging for unassigned or out of service resources/personnel?
- How is the cost of a resource tracked, by whom, and assigned responsibility for over the course of its presence within the region? [E.g. if an urban search and rescue (USAR) team is utilized by multiple jurisdictions over the course of a week, when does the responsibility for the cost and/or ancillary support (i.e. feeding / lodging) of that team transfer from one jurisdiction to the next? What about when the team is unassigned or in rehab?]

It is generally recognized and accepted that no single entity within King County has the capacity or number of in-house resources or personnel to independently perform many or all of the functions listed above in the context of a disaster with a regional impact, if not for their own jurisdiction / agency, then especially not for the region as a whole. That understanding was perhaps a driving factor in the initial development of the RCF to begin with. But the current document does not adequately address the specifics of how this goal will be achieved.

Recommendation 6A: Continue to develop and refine the Regional Coordination Framework to include operational annexes that address existing planning gaps regarding direction and management of resources at the regional level.

Recommendation 6A: The King County Operations Workgroup should develop the specific operational structures, policies and procedures that identify how the direction and management of resources will occur at the regional level.

APPENDIX A: IMPROVEMENT PLAN

This IP has been developed by and for the King County Office of Emergency Management in consultation and coordination with regional stakeholders as a result of the Major Findings of the King County Cascadia Rising 2016 Exercise After-Action Report. Although KCOEM staff are identified as lead Points of Contact for specific corrective actions, in instances requiring significant stakeholder participation, the POC's primary responsibility is to assemble the group of relevant stakeholders and coordinate the group's activities towards completion of the identified task.

Core Capability	Issue/Area for Improvement	Corrective Action	Capability Element[2]	Primary Responsible Organization	Organization POC	Start Date	Completion Date
Situational Assessment	1. Achieving regional situational awareness / common operating picture (SA/COP)	Develop and codify regional SA/COP standards and processes.	Planning	KCOEM	Amy Gillespie	4th Qtr 2016	3rd Qtr 2017
		Develop or select a common SA/COP platform.	Equipment	KCOEM	Jody Miller	4th Qtr 2016	3rd Qtr 2017
		Integrate quarterly SA/COP drills into regional exercise plan.	Exercise	KCOEM	Amy Gillespie	1st Qtr 2017	ongoing
Logistics and Supply Chain Management	1. Lack of a regional resource request, tracking and management system.	Develop a regional resource tracking / management process for region-wide use in a large scale disaster incident.	Planning	KCOEM	Janice Rahman	4th Qtr 2016	2nd Qtr 2017

[2] Capability Elements are: Planning, Organization, Equipment, Training, or Exercise.

		Identify (or develop) a web-based resource management tool that supports the King County regional resource tracking / management process.	Equipment	KCOEM	Tony Cebollero	4th Qtr 2016	2nd Qtr 2017
Operational Coordination	1. Insufficient knowledge, training or experience among personnel assigned to staff EOCs.	Identify EOC organizational and operational "best practices"	Planning	KCOEM	Amy Gillespie	2nd Qtr 2017	3rd Qtr 2017
		Develop and provide training to regional stakeholders on EOC best practices.	Training	KCOEM	Alisha Griswold	1st Qtr 2017	ongoing
	2. Lack of clarity on the process for rendering policy-level decisions with regional impacts in a large-scale disaster.	Update and expand the process and protocol with the Regional Coordination Framework for making policy-making level decisions in the context of a large-scale disaster.	Planning	KCOEM	Stephanie Supko	March 1, 2017	Oct. 1, 2017
		Include the regional policy-level decision making process in a regionally focused / multi-jurisdictional exercise.	Exercise	KCOEM	Marcus Deyerin	4th Qtr 2017	NLT 3rd Qtr 2018
	3. Current plans do not identify how decisions regarding strategic or tactical coordination of resources will occur at a regional level.	Further develop and refine the Regional Coordination Framework regarding direction and management of resources at the regional level.	Planning	KCOEM	Amy Gillespie	1st Qtr 2017	4th Qtr 2017

Mass Care	1. Insufficiency of the "life-safety" standard to prioritize the allocation of scarce resources.	Establish a set of guidelines to support resource allocation decisions with "life-safety" implications.	Planning	KCOEM	Amy Gillespie	1st Qtr 2017	3rd Qtr 2017
		Develop desktop training and exercise materials for decision makers to practice utilizing guidelines.	Training & Exercise	KCOEM	Alisha Griswold, Marcus Deyerin	1st QTr 2017	2nd Qtr 2017

APPENDIX B: EXERCISE PARTICIPANTS

Participating or Supporting Organizations
King County Jurisdictions
City of Auburn
City of Bellevue
City of Issaquah
City of Renton
City of Kenmore (via Northshore Emergency Management Council)
City of Kent
City of Lake Forest Park (via Northshore Emergency Management Council)
City of Mercer Island
City of Newcastle
City of Pacific
City of Redmond
City of Renton
City of Seattle
City of Shoreline
City of Tukwila
The community of Vashon Island
King County Government Departments
Office of Emergency Management
Dept. of Community and Health Services
Dept. of Executive Services
Dept. of Natural Resources
Dept. of Transportation
Seattle – King County Public Health
Special Purpose Districts
Northshore Utility District
Sammamish Plateau Water and Sewer District
Private Sector
Puget Sound Energy
Other
Northwest Healthcare Response Network
Port of Seattle
Sammamish Citizen Corps Council
Washington State National Guard

APPENDIX C: ACRONYMS

AAR	After-Action Report
CSZ	Cascadia Subduction Zone
DOC	Department Operations Center
EMAC	Emergency Management Advisory Council
ECC	Emergency Coordination Center
EEG	Exercise Evaluation Guide
EMS	Emergency Medical System (or Services)
EOC	Emergency Operations Center
ESF	Emergency Support Function
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
HF	High Frequency
ICS	Incident Command System
KCECC	King County Emergency Coordination Center
KCEPG	King County Exercise Planning Group
MSEL	Master Scenario Event List
NIMS	National Incident Management System
RCF	Regional Coordination Framework
SA/COP	Situational Awareness / Common Operating Picture
USAR	Urban Search and Rescue

APPENDIX D: REVIEW AND APPROVAL

This AAR/IP was drafted by the King County Office of Emergency Management, reviewed by exercise participants and stakeholders from through King County, and approved by Director and Deputy Director of KCOEM.

Every effort was made to develop this report so as generally but accurately reflect the experiences and observations common to many or most of the Cascadia Rising 2016 Exercise participants within King County. However, KCOEM recognizes not every viewpoint or perspective expressed in this review will be perfectly representative of either the experience or opinion of all participant entities. All participants and stakeholders were afforded an opportunity to register any significant objections or exceptions to a given finding, analysis, or recommendation in this document, and none were received as of the final approval date in this appendix.

Reviewed and Approved on October 19, 2016.

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Walt Hubbard	Jody Miller
Director	Deputy Director
King County Office of Emergency Mngt.	King County Office of Emergency Mngt