Initial Findings from

Exercise Coastal Response

BRITISH COLUMBIA

COASTAL RESPONSE


BRITISH COLUMBIA
Emergency ManagementBC

Contents


THE SALVATION ARMY
Giving Hope Today
ARING & CARING"
VANCOUVER RESCUE

Overview

Exercise Coastal Response was British Columbia's first, full-scale earthquake and tsunami response exercise. The $1.2 million exercise provided the Province with the first test of the *B.C. Earthquake Immediate Response Plan (IRP)*, a document produced in 2015 that outlines the steps the Province and its partners would undertake in the immediate aftermath of a significant earthquake and tsunami event.

The IRP details the roles, responsibilities and integration of all ministries and agencies of the provincial government, as well as emergency planning partners within the federal government, local authorities and First Nations. The role of critical infrastructure owners and operators, bordering jurisdictions in Canada and the United States, and non-governmental relief organizations (NGOs) are also represented in the plan.

Acting on recommendations made in earthquake readiness reports from 2014 by the Office of the Auditor General and Henry Renteria, Emergency Management BC (EMBC) embarked on a one-year planning process to deliver the Exercise Coastal Response from June 7-10, 2016. The exercise spanned communities from across the province – from the west coast of Vancouver Island to Chilliwack – and involved approximately 800 participants from 65 organizations, while coordinating with three other simultaneous exercises:

1. Exercise Staunch Maple 2016, conducted by Joint Task Force Pacific;
2. Exercise Pacific Quake 2016, conducted by Public Safety Canada; and
3. Exercise Cascadia Rising 2016, conducted by the states of Washington, Oregon and Idaho and the U.S. Federal Emergency Management Agency (FEMA).

The volume of interagency participation contributed to the robustness and authenticity of the exercise. For instance:

- The Canadian Armed Forces interfaced with Exercise Coastal Response through the use of aircraft, ships and personnel across southern Vancouver Island.
- The Heavy Urban Search and Rescue (HUSAR) unit from Vancouver deployed 100 members to the Port Alberni area where they conducted an extremely challenging 24/7 exercise of extraction and rescue training amongst highly realistic simulated building rubble and debris piles.

- Mid-Vancouver Island emergency coordinators and managers had more than 75 emergency practitioners engaged in the exercise in Port Alberni operating reception centres and group lodging.
- The Salvation Army set up deployable kitchen trailers in Port Alberni and delivered meals to more than 300 volunteer participants simulating displaced individuals.
- The Ministry of Health (MoH) deployed 50 personnel from the Mobile Medical Unit and BC Ambulance Service, as well as staff from the Public Health Agency of Canada into Port Alberni to work with the West Coast General Hospital over four days, conducting high-volume medical response training.

- The BC Coroners Service deployed 10 personnel to Port Alberni to conduct mass fatality response training.
- Thirty-five Provincial Emergency Radio Communications Service (PERCS) volunteers supported the Port Alberni Emergency Operations Centre (EOC) and mass care training.
- Air operations set up an air branch for the exercise of 25 personnel and completed more than a dozen flights on June 7 and 8.

- Three hundred local citizens of all ages, who volunteered as role players for the various training events taking place around town, added realism to the events in Port Alberni.
- Along the coast, Bamfield and Ucluelet each conducted large training events in conjunction with Joint Task Force Pacific, joining communities for a day to conduct local ground and marine searches and rescues, helicopter casualty evacuation training, rapid damage assessment training, wharf and critical infrastructure inspections, school evacuations and EOC training. More than 100 emergency management personnel were involved in these activities each day.

The overarching goal of Exercise Coastal Response was to enhance provincial emergency response capabilities to a catastrophic earthquake. Six functional areas were exercised: Emergency Operations, Mass Care, Medical, Strategic Communications, Operational Communications and Logistics. The exercise was a mix of real-time activities and simulated situations involving key stakeholder groups such as different levels of government, various jurisdictions in Canada and the United States, and a number of provincial ministries, First Nations, Crown corporations, NGOs and first responders.

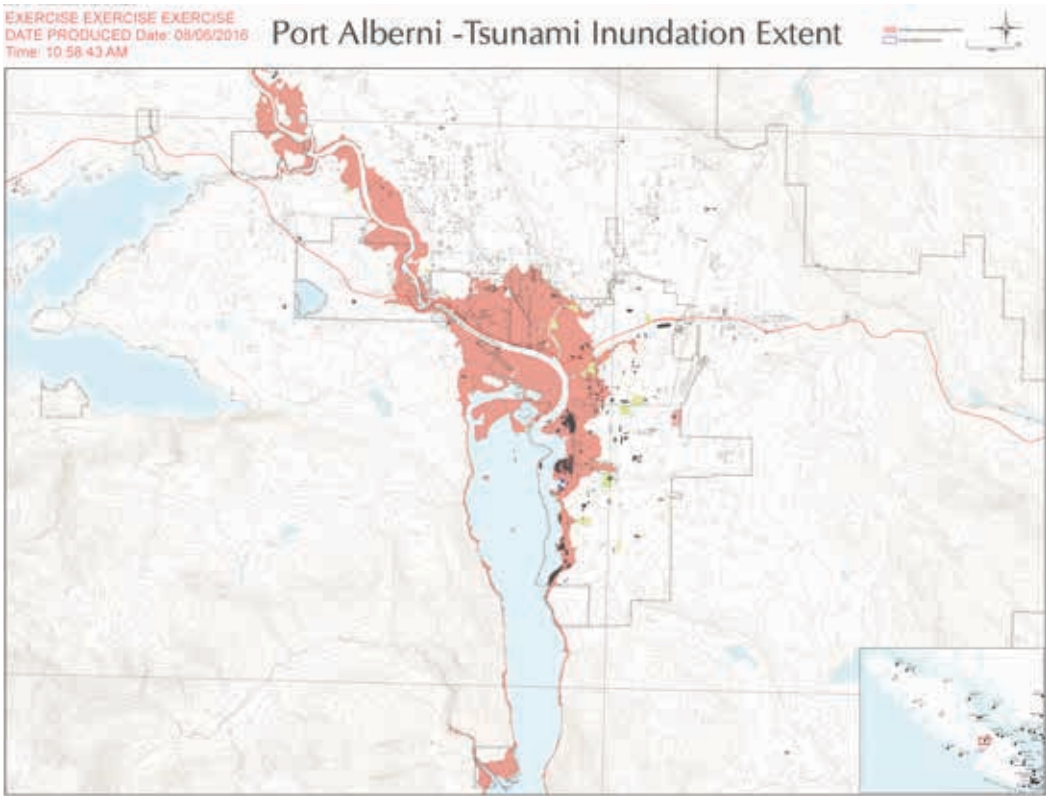
Specially trained volunteers from agencies such as the Canadian Red Cross and the Salvation Army were involved, in addition to Emergency Social Service volunteers and other Public Safety Lifeline Volunteers who are vital to the Province's emergency response and recovery. Additionally, B.C. hosted international delegates from the U.S., Australia, France and Japan who attended to share in the learning opportunity.

The Scenario

Exercise Coastal Response was based on a magnitude 9.0 earthquake from a rupture of the Cascadia Subduction Zone, approximately 150 km off the coast of southwestern B.C. In this exercise scenario, strong shaking lasting several minutes occurred in areas of Greater Vancouver, Greater Victoria and central Vancouver Island, causing some destruction in the major urban centres and widespread damage in the Alberni-Clayoquot Regional District (ACRD), including the west coast communities of Bamfield, Ucluelet and Tofino. The earthquake also generated a tsunami on the west coast of Vancouver Island, minutes after the initial shock was felt.

The storyboard for the exercise included extensive damage to utilities, roads and bridges in the Port Alberni region, including a blockage of Highway 4 that isolated Port Alberni and the coastal communities along Pacific Rim National Park. There were extensive communication and power failures across southwestern B.C., along with a significant number of casualties and displaced persons, and upwards of 10,000 tourists in the ACRD area displaced from waterfront hotels and accommodations affected by the tsunami.

Throughout the four-day exercise, subsequent challenges arose ranging from aftershocks to frequent power outages and communication disruptions. The Ministry of Health activated its mobile health unit to triage patients, and over 300 volunteers were recruited from the local communities to provide realism to the extensive mass care and first responder activities of treating live victims.



The Evaluation

Evaluators were placed throughout the exercise venues with specific instructions on how and what to look for from the training audience. The evaluation team was made up of subject matter experts in the field of emergency management and was led by Claude Denver, the Lead Response Manager from the State Emergency Operations Centre with the Alaska Department of Military and Veteran Affairs, Division of Homeland Security and Emergency Management. EMBC sought an independent Lead Evaluator to provide an arm's length review of the exercise results.

During the exercise, the evaluation team assessed the abilities of the training audience to perform critical tasks in accordance with the *British Columbia Emergency Management System* (BCEMS), the IRP, Provincial Emergency Coordination Centre (PECC) and Provincial Regional Emergency Operations Centre (PREOC) operational guidelines, selected local authority Emergency Operation Centre (EOC) operational guidelines, and other relevant federal, provincial and regional plans, protocols, procedures and mutual support arrangements.

In general, the test of the IRP was a success. Collaboration among the various agencies was effective, and the interoperability with emergency response partners well practiced. Most importantly, and fulfilling the intent of the exercise, lessons were learned in a collaborative training environment before a catastrophic emergency occurs. Exercise evaluators noted areas of work that require refinement, such as a need for more robust operational communications, increased interagency coordination and integrated partnerships in all phases of emergency management, and increased joint training and exercises with all partner agencies to work toward continuous improvement.

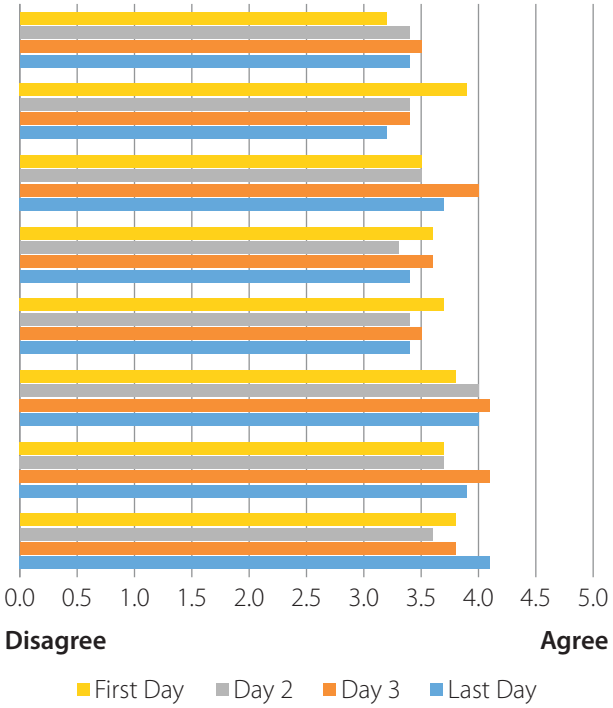
The initial analysis phase was conducted by the evaluators during and after the exercise. They addressed the following questions about the exercise:

- What happened?
- What was supposed to happen?
- If there is a difference, why?
- What is the effect of that difference?
- What should be learned from this?
- What improvement should be made or what exemplary practices should be adopted?

The key parts of this initial analysis process were gathered in the debrief discussion sessions immediately following the end of each exercise day in order to gather verbal feedback from participants. In addition, at the end of each day, participants were encouraged to complete a written feedback form, to capture their impression of the day's events. These results were discussed and analyzed daily by the evaluation team and confirmed by the Lead Evaluator.

Participants' written feedback forms are summarized below:

PECC Participant Feedback (107 forms)



A. The exercise was well structured and organized

B. The exercise scenario was plausible and realistic

C. The exercise allowed my agency to practice and improve capabilities

D. The controllers were knowledgeable about the scenario and kept the exercise on track

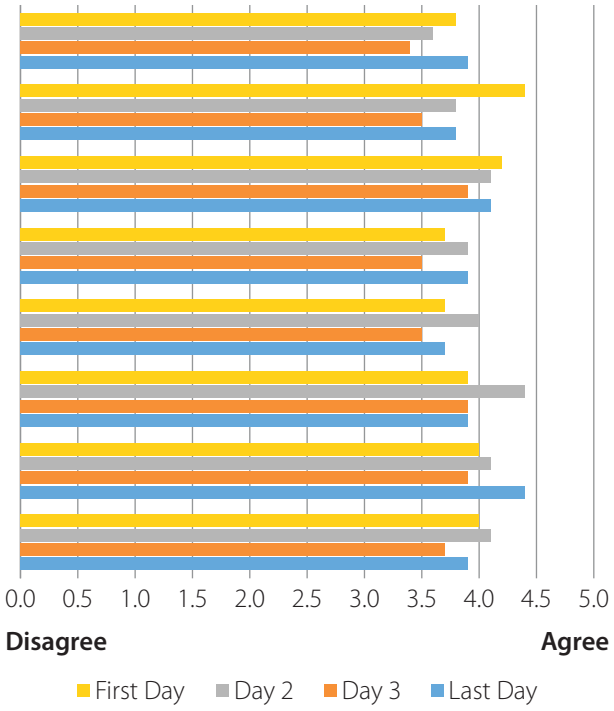
E. The exercise documentation was useful for my preparation and participation

F. Participation was appropriate for my position and experience

G. Participants included the right people in terms of level, experience, jurisdiction and mix

H. After this exercise, I believe my agency is better prepared to deal with the scenario

VIR PREOC Participant Feedback (80 forms)



A. The exercise was well structured and organized

B. The exercise scenario was plausible and realistic

C. The exercise allowed my agency to practice and improve capabilities

D. The controllers were knowledgeable about the scenario and kept the exercise on track

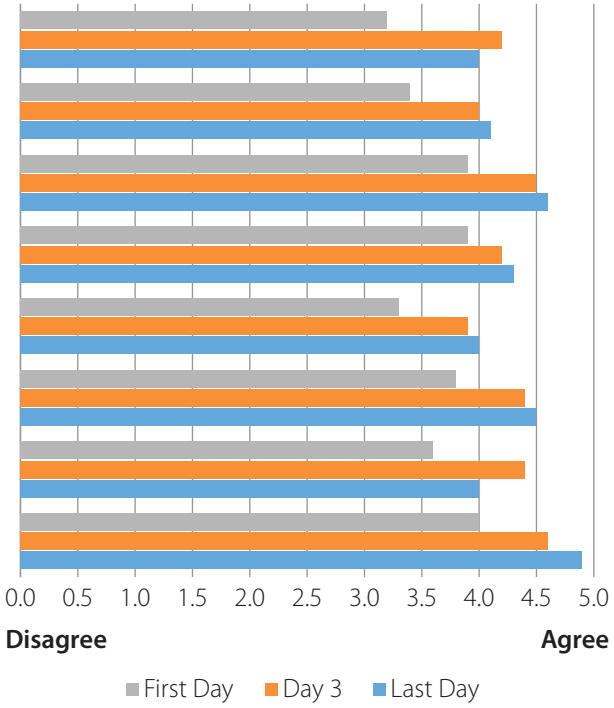
E. The exercise documentation was useful for my preparation and participation

F. Participation was appropriate for my position and experience

G. Participants included the right people in terms of level, experience, jurisdiction and mix

H. After this exercise, I believe my agency is better prepared to deal with the scenario that was exercised

ACRD Participant Feedback (48 forms)



A. The exercise was well structured and organized

B. The exercise scenario was plausible and realistic

C. The exercise allowed my agency to practice and improve capabilities

D. The controllers were knowledgeable about the scenario and kept the exercise on track

E. The exercise documentation was useful for my preparation and participation

F. Participation was appropriate for my position and experience

G. Participants included the right people in terms of level, experience, jurisdiction and mix

H. After this exercise, I believe my agency is better prepared to deal with the scenario

Evaluation Method

EMBC, through an open Request for Proposals bidding process, hired Calian Inc. for their specialized knowledge and experience in exercise planning and delivery to assist with Exercise Coastal Response. Their work included the development of a summary report and a review of the entire planning and conduct portions of the exercise. The following table highlights the evaluation teams' summary of the specific training objectives developed by the six functional committees during their pre-exercise meetings and deliberations.

Ratings

The ratings listed below are based on consensus deliberation among evaluators about the relative success achieved in these areas. The objectives noted as incurring some or major challenges are potential areas for further examination, refinement of procedures or for focused training in future exercises.

Ratings Definitions

- **Performed without Challenges (P):** The critical tasks associated with this capability or functional area were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations and laws.
- **Performed with Some Challenges (S):** The critical tasks associated with this capability or functional area were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations and laws. However, opportunities to enhance effectiveness and/or efficiency were identified.
- **Performed with Major Challenges (M):** The critical tasks associated with this capability or functional area were completed in a manner that achieved the objective(s), but some or all of the following were observed: demonstrated performance had a negative impact on the performance of other activities; contributed to additional health and/or safety risks for the public or for emergency workers; and/or was not conducted in accordance with applicable plans, policies, procedures, regulations, and laws.
- **Unable to be Performed (U):** The critical tasks associated with this capability or functional area were not able to be conducted in a manner that permitted critical analysis due to time constraints or personnel shortages.

Provincial Emergency Coordination Centre (PECC) Training Objectives		P	S	M	U
1	Establish communication with PREOCs and Government Operations Centre (GOC)	X			
2	Conduct initial impact assessments and gain situational understanding from PREOCs and all stakeholders	X			
3	Consolidate regional, provincial and federal assessments to develop and share a common operating picture (COP)		X		
4	Establish, operate and sustain operation centres following the BC Emergency Management System (BCEMS) structure	X			
5	Activate ministry Business Continuity Plans (BCP)/Ministry Operations Centres (MOC)/Emergency Operations Centres (EOC)		X		
6	Contact EMBC Assistant Deputy Minister, Minister or the Lieutenant Governor to declare a Provincial State of Emergency	X			
7	Manage requests for assistance		X		
8	Contact Canadian Red Cross Society to coordinate support		X		
9	Initiate Logistics Management System, confirm location and activation of Provincial Staging Areas and coordination of Regional Staging Areas		X		
10	Activate the EMBC Social Media Unit and provide provincial messaging in coordination with Government Communications and Public Engagement (GCPE)	X			
11	Identify Provincial Coordination Team (PCT) tasking and team composition. Brief, equip and deploy the PCT		X		
12	Identify Heavy Urban Search and Rescue (HUSAR) tasking based on area of greatest need. Deploy HUSAR		X		
13	Contact GOC to request federal assistance		X		
14	Contact Joint Task Force Pacific (JTFP) to request activation of CONPLAN PANORAMA		X		
15	Request activation of Alberta Emergency Response Plan Catastrophic Earthquake in B.C. *(Not tested due to real-world constraints)*				X
16	Activate Pacific Northwest Emergency Management Arrangement (PNEMA) *(Not tested due to concurrent Exercise Cascadia Rising)*				X
Southwest and Vancouver Island Provincial Regional Emergency Operations Centre (PREOC) Training Objectives		**P**	**S**	**M**	**U**
1	Establish contact with and support impacted local authorities and First Nations, regional ministry offices and agencies. Gather situational awareness on critical impacts		X		
2	Liaise with impacted jurisdictions and collect information requirements		X		
3	Coordinate resources to support evacuations with local authorities		X		
4	Confirm location and activation of Regional Staging Areas in coordination with the PECC and PREOCs		X		
5	Support local authority and First Nations provision of emergency social services and mass care			X	

	Local Emergency Operations Centre (EOC) Training Objectives	P	S	M	U
1	Issue local tsunami alerts and public information messaging	X			
2	Conduct initial damage assessment of their jurisdiction and provide Situational Awareness to PREOC	X			
3	Maintain public information flow and provide appropriate spokesperson(s)		X		
4	Establish local staging area and community distribution sites	X			
5	Activate mass care plan	X			
6	Activate mass casualty plan		X		
7	Submit resource requests to PREOC, including requests for personnel augmentation, transportation assets and material assets	X			
8	Develop plan to manage and coordinate convergent/affiliated volunteers		X		
	Strategic Communications Training Objectives	**P**	**S**	**M**	**U**
1	Send out pre-scripted BC Earthquake Immediate Response Plan media / public information safety and security messages	X			
2	Send out pre-scripted IRP public information messages and craft/ coordinate the dissemination of additional information bulletins, news releases and fact sheets to media		X		
3	Establish communications with key EOCs, including those of local, regional, provincial, national and key stakeholders and assess the current state of media relations		X		
4	Ensure the provincial call centre, managed by the Canadian Red Cross, is receiving accurate and timely information to share with the public		X		
5	Oversee information flow coming out of the PECC/PERRC (Provincial Earthquake Response and Recovery Centre) and ensure its widespread dissemination		X		
6	Provide direction on parameters and scope of media scans and monitor news sites and social media channels	X			
7	Provide timely, accurate messaging catered to each audience		X		
8	Collaborate with the Stakeholder Relations units to predict and manage potential issues. Formulate messaging and issues notes		X		
9	Advise Premier's Office on the timing of public addresses and tours of impact areas		X		

	Health Care Training Objectives	P	S	M	U
1	Establish and lead the health branch at the PECC	X			
2	Conduct assessment of health system and provide Situational Awareness to PECC		X		
3	Activate the Health Emergency Coordination Centre (HECC)	X			
4	Maintain coordinated information flow between health system partners, HECC and PECC		X		
5	Identify available capacity across the health sector and, as necessary, coordinate any transport requirements for the provision of personnel, equipment and supplies to the impact area		X		
6	Liaise with the PECC/PERRC to arrange medical evacuation out of impact area		X		
7	Coordinate the provision of additional medical teams to the impact area		X		
8	Coordinate the provision of mental health and disaster psychosocial services to both disaster responders and the general public		X		
9	Work with PECC Logistics to coordinate any international medical assets deployed to B.C.		X		
10	Establish contact with the HECC	X			
Health Authorities *(Island Health was the only health authority to test these objectives)*					
11	Manage patient care in affected area	X			
12	Establish appropriate alternative locations for the provision of care	X			
Public Health					
13	Provide necessary Public Health information to the public *(Not tested, Public Health did not participate)*				X
BC Ambulance Service					
14	Establish contact with HECC, PREOC and PECC/PERRC *(Insufficient data)*		X		
15	Respond in accordance with the provisions of the Mass Casualty Plan		X		
16	Determine and prioritize the number of patients requiring evacuation and co-ordinate with HECC, PREOC and the PECC/PERRC for transportation			X	

	Mass Care Training Objectives	P	S	M	U
1	Conduct rapid damage assessment for mass care sites with BC Housing protocols	X			
2	Coordinate sharing of information and facilitating mutual aid with regional human services response resources among communities		X		
3	Coordinate Requests for Federal Assistance to augment capacity gaps in the delivery of mass care services *(Not tested)*				X
4	Prioritize critical, life-sustaining resources		X		
5	Register evacuees from the affected area. Utilize the registration system as a tool for family reunification and locating next of kin	X			
6	Coordinate the movement of resources from provincial and regional staging areas to Community Points of Distribution identified by the local authority		X		
7	Coordinate consolidated resource requests to regional, provincial and national levels		X		
8	Coordinate the deployment of national and international aid *(Not tested)*				X
9	Coordinate the group lodging system and triage people to suitable accommodation	X			
10	Implement Emergency Social Services (ESS) mutual assistance arrangements/Medical Support Teams/Out of area ESS deployment	X			
11	Implement disaster childcare guidelines together with Ministry of Children and Family Development (MCFD) and other local/regional/ provincial stakeholders		X		
12	Examine long-term mass care sustainment (CRC, BC Housing, etc.)		X		
	Logistics Training Objectives	**P**	**S**	**M**	**U**
1	Establish and lead the Logistics Section in the PECC	X			
2	Establish communication with Public Safety and Alberta Emergency Management Agency (AEMA) to prepare for staging areas and critical resources "push" by the Government of Alberta via AEMA *(Not evaluated due to real-world constraints)*				X
3	Coordinate Requests for Federal Assistance to support IRP implementation with GOC (Public Safety Canada)	X			
4	Coordinate critical resources "push" from the Government of Alberta via AEMA in accordance with "Alberta Emergency Response Plan for a Catastrophic Earthquake in B.C." *(Not evaluated due to real-world constraints)*				X
5	In conjunction with Ministry of Transportation and Infrastructure (MoTI), Public Safety Canada and Transport Canada, confirm air, road and marine routes availability and designation of "DRRs" (Disaster Response Routes)		X		
6	In conjunction with Ops, confirm locations of Provincial and Regional Staging Areas		X		
7	Initiate Logistics Management System		X		

	Telecommunications Training Objectives	P	S	M	U
1	Establish and maintain voice and digital communication framework between local EOCs, PREOCs, PECC and PCT, as well as Public Safety Canada and cross border		X		
2	Test the ability of various government communications networks to work together and their capability, limitations and connectivity *(Not tested)*				X
3	Activate an amateur radio net and other systems to pass voice and data messages, thereby showing systems redundancy		X		

Summary of Feedback

Building on the ratings-data above, the chart that follows provides a summary of all findings from the exercise, as determined by the participants, staff, senior observers as well as the individual evaluators. The points are listed in the sequence they were identified and are not portrayed in priority.

These comments are not a record of shortcomings by function, organization or individual. These are observations captured by the exercise observers, evaluators or participants. They are intended for further discussion, to share as lessons learned or to determine areas for improvement.

This list will be expanded as further feedback is gathered from all stakeholders over the next few months. Once all comments have been received, the identified areas for improvement will be summarized and circulated to a broader audience of stakeholders in the provincial government who have a part in earthquake response efforts for further collaboration and the development of best practices and changes in procedures and processes. This will form the basis of the provincial Improvement Plan.

The provincial Improvement Plan will prioritize procedures needing improvement or further development by EMBC or other lead agencies. It will identify the resources required to make the changes, the timeline for improvement and include the progress-reporting schedule.

	Exercise Organization	Finding/Observation	Follow-up Lead
1	PECC/Ops	Immediately following the earthquake, Provincial Emergency Coordination Centre Internal Rapid Damage Assessment and reporting procedures worked well, allowing operations to proceed safely. Share these procedures and protocols as a best practice.	EMBC
2	PECC/Ops	Excellent collaborative teamwork was demonstrated as staff turned to each other for support to help with completion of tasks, workload distribution, etc.	N/A
3	PECC/IRP	The Declaration of State of Emergency (IRP Section 5) occurred; however, there was a lack of awareness by key stakeholders and decision-makers of the status of the Declaration of Provincial Emergency and the authorities that come with declaration/activation. The status of a Provincial Declaration should be regularly updated with all stakeholders to ensure actions are not taken without the legal authority in place. Local authorities need to be kept up to date, as they may be concurrently implementing their own State of Local Emergency.	EMBC
4	PECC/IRP	IRP (Appendix B-1) has an excellent table laying out the delegated powers under a Declaration. However, other than on Day 1, there did not appear to be active participation by General Counsel to provide advice regarding what powers resided which whom and when, as well as the legal and other risks associated with the exercise/non exercise of these powers. This could lead to unlawful and/or unintended consequences.	EMBC and JAG
5	PECC/PSC LO	The Federal Emergency Response Plan (FERP) p.C-1 refers to the National Earthquake Support Plan for British Columbia (1996). This has been superseded by the Government of Canada Earthquake Response Protocol (2013). The FERP and associated plans and procedures should be updated to reflect changes.	PSC Liaison Officer (LO)
6	PECC/IRP	There was some confusion about the actual purpose of the IRP (is it a plan, a manual or a conceptual framework?). The IRP as written appears to be more of a conceptual framework, which forms the basis from which EMBC thinks about and shapes itself for a catastrophic event. Currently there is no detailed supplementary plan or concept of operations (either as an annex to the IRP or as a separate document) which can be activated to manage and control the response effort by decision-makers. The IRP update should spell out the expectations for related plans, such as the development of the PERRC.	EMBC

	Exercise Organization	Finding/Observation	Follow-up Lead
7	PECC/IRP	Inconsistencies were noted between sections of the IRP and the Comprehensive Emergency Management Plan (CEMP) of which the BC All Hazards Plan is the base plan. For example, the BC All Hazards Plan does not reflect planning considerations related to the new BC Emergency Management System phases of mitigation, preparedness, response and EMBC recovery. Additionally, there have been changes to the titles and roles of individual departments, agencies and other stakeholders since the last amendment to the BC All Hazards Plan. While not a critical finding, inconsistencies between plans could lead to crossed-communication, poor prioritization, inconsistent lines of communication and misunderstandings of authorities, mandates and jurisdictions between EMBC and external stakeholders and partners.	EMBC
8	PECC/IRP	IRP (Sections 1 and 3) Assumptions/Key Facts and Scenario/ Impacts could be strengthened by including a list of "key deductions" drawn from these assumptions and impacts. Operational research and scientific methods could be applied to test and validate these assumptions to reduce planning uncertainty.	EMBC
9	PECC/IRP	The IRP (Section 5) Response Actions provide a good checklist of response actions to be taken by local, provincial, federal and other stakeholders including First Nations; however, the IRP as well as supporting PECC and PREOC Operational Guidelines should be strengthened by identifying pre-planned responses which describe the "inputs, processes and outputs" for each of these response actions to prioritize effort and sequencing of actions to achieve the greatest effect. More detail in the IRP as well as the PECC and PREOC Operational Guidelines to answer the question: "how will the IRP be executed" would reduce the workload of the PECC/PREOC/Local EOCs, particularly in the early stages of response.	EMBC
10	PECC/CI	The IRP (Section 8) lacks important detail describing "how" critical infrastructure (CI) restoration would be coordinated, although that is being addressed in the updates to the IRP. The IRP "recognizes the requirement to interface operationally" with CI owners and operators; however, it does not "enable" or "prescribe" how this should be done. CI interaction was not a key focus for this Exercise as coordination between the ten CI sectors was beyond the Exercise scope. Due to the very limited CI staffing, there was a lack of awareness of the true status of major infrastructure and utilities and the impacts of damage. Without a clear understanding of the present (and future state) of infrastructure and utilities, it was difficult for PECC staff to draw deductions and planning factors on which to develop plans and contingency plans to support the response.	EMBC

	Exercise Organization	Finding/Observation	Follow-up Lead
11	PECC/IRP	IRP (Annex G) provides a good PREOC-level list of Critical Information Requirements (CIR). Further development of higher-level CIRs should continue to be developed for the PECC. The higher-level CIRs should be focused on inter-provincial, federal, multinational and non-governmental critical information. PECC CIR should also include critical information required to support assessment and measure progress toward achieving desired outcome(s) such as the transition conditions to the Sustained Response Phase.	EMBC
12	PECC/RFA	IRP (Annex C and Appendix C-2) Federal Request for Assistance (RFA) should be a standing request upon IRP activation. Critical Resources (Annex I) should be auto-launched, but have a process to off-ramp/sequence resources. Valuable time and effort would be lost seeking ministerial signature during a major disaster. Rather than focusing on the ministerial signature, the Request process could be further streamlined so the appropriate delegation and ability could take any form, such as email or phone call.	EMBC/PSC
13	PECC/RFA	Initial RFA called for Annex I in the IRP with clarification to be provided later. However, the federal Government Operations Centre was requesting clarification early on to assist in planning. The ability to provide that was limited until a clearer picture emerges. This is a potential conflict area that will likely continue, particularly in a real event. The RFA process should be reviewed and updated based on lessons from this Exercise. Once it is completed, training/discussions about RFA procedures between EMBC and PSC are needed.	EMBC/PSC LO
14	PECC/RFA	Once submitted, some RFAs were not closed/tracked to completion. This improved as the exercise progressed. To build on this knowledge, regular training, such as tabletop exercises or workshops on RFA process would be helpful. Also, a review of the RFA section of the IRP to ensure the process is current and whether additional standing RFA procedures, such as Operational Framework for Mutual Aid Request could be added for thoroughness and correction of process.	EMBC/PSC LO
15	PECC/M-DEC	Although the Exercise was of short duration (only four days) it appeared the IRP and PECC Operational Guidelines lack a framework for measuring and assessing progress toward a longer-term end state (e.g. transition conditions). At a high level, the lack of a measurement and assessment framework could hamper the ability of the PECC, Ministers-Deputies Emergency Committee (M-DEC) and Central Coordination Group (CCG) to make course corrections and determine if or how well the entire response effort is achieving the desired outcome(s). While everyone was working extremely hard, there was no way to evaluate the questions "are we doing the right things" and "are we doing the right things right?"	EMBC

	Exercise Organization	Finding/Observation	Follow-up Lead
16	PECC/Plans/APU	The PECC Operational Guidelines describe a pure planning model for the Plans section, but was not rigorously followed and is likely inadequate to meet the needs of large-scale disasters. PECC lacked focus on the big picture as guided by BCEMS, CEMP, the IRP, Government of Canada Earthquake Response Protocol and PECC Operational Guidelines. The Plans Section was often drawn into current operations. Plans Section should be looking ahead 48-96 hours as their primary task. As a plan draws closer to implementation, it moves into the current operational cycle and it should be handed off from Plans staff to Ops staff for conduct. This process ensures the PECC always has focused staff anticipating and looking ahead to develop contingency plans and courses of action to address "confirmed" or "anticipated future" impacts. The Government of Canada's Earthquake Response Protocol and the Federal Emergency Response Plan both focus on long-range planning (24-96 hours), however, the PECC was overly focused on the management by objectives within the current operational period, rather than analyzing "high level" assumptions and factors, making logical deductions, drawing conclusions, and sequencing and synchronizing provincial/national/multinational capabilities and capacities.	EMBC
17	PECC/Plans/APU	The PECC Daily Rhythm and Operational Briefings started off poorly, too focused on lower level detail and not broad, provincial wide understanding but improved as the exercise progressed. The PECC Operational Guidelines as well as the supporting "toolkit" of procedures, organization and training appeared to be overly focused on looking down into the details and at the "current situation" rather being high level, forward looking and aimed at providing strategic direction and policy advice to the PREOCs as well as resource support and mobilization. The PECC must quickly draw in situational understanding of the unfolding crisis. However, it must also ensure that it has an element always looking ahead, beyond the current operational cycle to anticipate and build contingencies. This is difficult to do in the first few hours while a situation unfolds, as everyone is struggling for information to better understand the unfolding situation. This can be improved through practice and through clear SOPs that define roles of the Plans staff and provide the discipline for them to look beyond the immediate situation.	EMBC
18	PECC	The PECC struggled with staffing for this exercise and could only deploy one shift daily. This has implications for 24/7 sustainment in the event of an actual emergency.	EMBC
19	PECC	It was noted that only certain PECC TEAMS members have access to PENS and there is no other short notice call-out systems in use. This observation is also applicable to PECC and PREOC members and LOs.	EMBC

	Exercise Organization	Finding/Observation	Follow-up Lead
20	PECC/Ops and IM	The PECC Operational Guidelines appeared to be more of a checklist rather than procedural guidelines for Information Management/Knowledge Management (IM/KM). Important information was missed or delayed in transmission and receipt affecting situational awareness, collaborative planning and decision-making. A clear and articulate Information Management/Knowledge Management plan, policies, protocols and technologies as well as a repeatable "Information Exchange and Triage" process to transform data into information and knowledge using a common lexicon and data exchange standards should be developed. This should include a format for shift handover briefings.	EMBC
21	PECC/Plans	The development of a PECC Advance Planning Unit Status Board and Operations Briefings showed good initiative; however, these tools and products should be further refined and practiced as part of an Information Management/ Knowledge Management (IM/KM) renewal project.	EMBC
22	PECC/Ops	During activation, the status of other Regional PREOCs was not accurately displayed on whiteboards. Erasable whiteboards are horribly outdated. Electronic decision-support and visualization tools should be developed as part of an Information Management/Knowledge Management (IM/KM) renewal project with the retention of low tech options in case of power loss.	EMBC
23	PECC/Log	Due to scope and complexity, transportation challenges were not among the six critical functions assigned for practice on this event. However, during the exercise general observations were made relating to this function. The confirmation process to determine Designated Response Routes and general state of the road, rail and air networks needs to be prioritized and set out to avoid duplication and numerous sections all requesting the same information at different times. The DRTWG is working on the identification and marking of all DRR/CRR. However, under MoTI's leadership, in collaboration and consultation with EMBC Logistics and Ops Sections, the DRTWG needs to establish a comprehensive list of prioritized routes to be examined automatically after an event to speed up the decision process in establishing suitable locations for the PSAs/RSAs.	MoTI
24	PECC	E-Team software skills were lacking among many members of the PECC augmentees. In a real emergency, this will cause problems when a number of new users are drawn into the structure. More regular E-Teams training is required, or procedures developed for E-Team training upon reporting into the PECC or a replacement system developed.	EMBC
25	PECC	As noted in the observations above, a visual COP would enhance the awareness of augmentees as they report into the PECC. A more visual COP than what E-Teams provide, one that permits multiple users to contribute and verify information on a map would enhance staff awareness and planning within the PECC and PREOCs.	EMBC/IT

	Exercise Organization	Finding/Observation	Follow-up Lead
26	PECC	Situation Report (SITREP) formats are not easily digested, made meaningful and synthesized into an easily understood COP. Consider an IM/IT review of all systems in current use what new systems may be available to explore the range of possibilities to meet requirements of such a broad range of users in the PECC as was experienced in this exercise.	EMBC
27	PECC	Information flow was difficult to assess in terms of translation into action due to the difficulty in simulating the multiple inputs to the PECC/PREOC that will take place in a real event. This was particularly apparent in this exercise given the limited exercise injects flowing up from local and regional authorities. Exercise scope and staffing did not allow for the level of robust, two-way information flow to take place as would be seen in a real event. Information flow is the foundation of the PECC and therefore needs to be continually practiced and procedures refined. More regular training, particularly TTXs or short EOCXs would help address this requirement.	EMBC
28	PECC/Ops	The PECC Standard Operating Procedures do not contain matrices to assist in preparing authority of delegation for section or branch leads. These should be developed. When used, such as with the Air Branch, these delegations worked well.	EMBC/Ops
29	PECC/Ops	The exercise scenario and events list did not allow for detailed and ongoing earthquake/tsunami decision support, nor was a visualization toolkit used to model and predict immediate-, second- and third-order impacts. Current limitations of computational models for risk assessment, infrastructure criticality and cross-sector inter-dependencies were not assessed, nor were current approaches to risk calculation. These are all areas for examination that should be considered for future exercises.	EMBC
30	PECC/IM	As situational awareness improved, there was good use of conference calls between PECC/PREOC to outline impacts and needs. Conference call procedures for a catastrophic event should be further refined and practiced to create a clear, concise and disciplined collaboration process as part of an IM/KM renewal project.	EMBC
31	PCT	The Provincial Coordination Team (PCT) concept shows promise as a deployable capability to provide situational awareness to the PECC and PREOCs and on-scene coordination of provincial resources; however, many staff within the PECC/PREOCs were not aware of terms of reference and standard operating procedures to guide the deployment of the PCT and their actual employment. In addition, having a designated PCT liaison in the supported PREOC would enhance integration.	EMBC/PCT
32	PECC/Ops	There was a lack of E-Team software administrators to provide urgent technical support and create new accounts, thus preventing or delaying key partners from accessing mission-critical information systems.	EMBC

	Exercise Organization	Finding/Observation	Follow-up Lead
33	PECC/Air Branch	This exercise demonstrated how quickly the Air Branch could be overwhelmed in a real catastrophic emergency with hundreds of daily task requests. A technology enabled business practice for resource requesting/prioritizing/mission tasking is needed. This comment could also be applied to other sections in the PECC and PREOC, where the volume of high-priority requests for support could be overwhelming.	EMBC/Ops
34	PECC/Air Branch	Air taskings would be enhanced if there was an aviation expert in the PECC, tasked to review and prioritize all air requests before submitting to the Air Branch for action. This would not be necessary if the Air Branch was established in closer proximity to the PECC.	EMBC/Ops
35	PECC/Air Branch	The widespread communications outages built into the first hours of the exercise showed the difficulty in gathering situational awareness and in passing along critical taskings. Consider developing pre-planned missions for PEP Air, and other affiliated air resources, to conduct automatically critical CI and route reconnaissance into the affected areas during the first operational period. Modern data collection and dissemination technologies could make this prior planning invaluable. This requirement could be built into PEP/EMBC regular training.	EMBC/Ops
36	VIR PREOC	The Logistics Section developed a paper Resource Request (RR) Tracking System to help keep track of outstanding RR status. However, this would be difficult to maintain in a longer-term operation. An electronic tool such as E-Team may provide better tracking for complex operations.	EMBC/Org. Learning
37	VIR PREOC	The Planning Section developed a status board to display current working communications with specific communities. This led to more efficient communications (e.g. email notifications were sent to communities suffering from a network outage, or staff not wasting time trying to reach communities via phone while phone service was disrupted). This practice could be shared with other PREOCs.	EMBC/Org. Learning
38	VIR PREOC	Having an experienced staff person (PREOC Mentor) on hand to provide mentorship, answer exercise-related questions, define/clarify process, etc. was very helpful to keep the PREOC activities moving along and to provide guidance and advice. This could be implemented in future exercises.	Info
39	VIR PREOC	Staff were not familiar with the facility, location of resources (stationary, resource binders, etc.), causing individuals to spend time asking similar questions of various staff, and searching for supplies rather than focusing on response activities. This occurs during regular activations as well and could be reduced through regular training sessions.	PREOC Director
40	PECC/PREOCs	During the periods of internet outages, printers would not function without network connectivity. Acquiring redundant printer and other information technologies should be considered as part of an IM/KM renewal project and should be dealt with urgently as a contract amendment.	EMBC/IT

	Exercise Organization	Finding/Observation	Follow-up Lead
41	VIR PREOC	There was a lack of situational awareness within the PREOC as not all staff were briefed at the same time. Sometimes those working in the breakout rooms were omitted from key updates/briefings. The daily rhythm needs to be made widely known early and attendance should be taken to ensure that key stakeholders are involved in meetings and briefings. This may have been related to the fact that the PREOC requires more space and options should be urgently investigated. However, during high-intensity operations it may not be possible to pull staff away for collective briefings. Alternative methods for information passage should be investigated when it isn't practical or possible to brief the full active shift at once.	PREOC Director/ EMBC Ops
42	VIR PREOC	Access control was not well managed between PECC and PREOC with visitors and agency representatives passing through both facilities without being properly accounted for.	PREOC Director
43	VIR PREOC	In order to remain effective over time, staff should detach from their tasks and take short breaks (when possible).	Info
44	VIR PREOC	Operational briefings became drawn out when conversations became specific to a section or an individual. Briefings and meetings must be brief, concise and relevant to all participants.	Info
45	VIR PREOC	Response tasks were delayed due to lack of clarity, staff interrupting others to try to define meaning of acronyms or merely guessing. A consistent lexicon, reference, acronym and National Information Exchange Model (NIEM) compliant data exchange standards (maps, geographic information system (GIS) overlays, First Nations community naming conventions, etc.) should be developed as part of an IM/KM renewal project.	EMBC/Ops
46	VIR PREOC	PECC/PREOC conference calls were difficult to hear in the PREOC due to speaker audio limitations.	EMBC IT
47	VIR PREOC	PECC/PREOC conference call content was regional in nature and should have focused on the bigger picture. The timing was also poor in that it affected the daily shift change. The daily meeting and products schedule needs to be understood and key events properly sequenced and managed.	EMBC/Ops
48	VIR PREOC	Decision support and collaboration tools (projectors, smart boards, etc.) were not used to their full capacity. Overhead projector was only used once and the smart board was never used. Some of the equipment when turned on was not in working order or screeched and could not be left on.	PREOC Director
49	VIR/SWE PREOC	There was a lack of clarity concerning what information to include in the PREOC SITREP. An IM/KM renewal project should determine appropriate reporting requirements, acknowledging that reporting requirements for a catastrophic earthquake will be significantly different from those of a minor emergency. Inconsistency of information requirements and debate over content led to delays in SITREP completion and wasted staff effort. This requires urgent action.	EMBC/Ops

	Exercise Organization	Finding/Observation	Follow-up Lead
50	VIR PREOC	The PREOC satellite (SAT) phone was not routinely monitored, including during sporadic communication outages; therefore, some communities were not able to contact the PREOC other than through high frequency radio. Furthermore, it became apparent that at least two SAT phones were required – one for incoming and the other for outgoing calls. Addressing this shortcoming should be addressed as part of the telecommunications plan.	PECC & PREOC Directors
51	VIR PREOC	Although there was a lack of clarity around the authorities and delegation regarding control of resources within Regional Staging Areas (PECC versus PREOC control), the IRP clearly articulates that the PECC determines the locations of both the PSA(s) and RSAs. Control of the resources held in an RSA should be directed by the PECC Logistics Chief in consultation with the respective PREOC. For the overall provincial resources allocation, PECC Logistics has this responsibility, not a PREOC.	EMBC/Logistics
52	VIR PREOC	The delegation of authorities related to works/tasks within sections was not consistently followed, which led to confusion over assignment of tasks, conflicting priorities, duplication of work and ineffective follow-through on some tasks.	PREOC Director
53	VIR PREOC	The PREOC facility and layout were not supportive of a large-scale activation. Staff were overly crowded with little room to work and the location and configuration of breakout rooms hampered communication and collaborative planning.	EMBC/Ops
54	Strat Comms/ PECC	Public Information Officers (PIO) and Social Media (SoMe) units were skilled with problem solving and quick on their feet to respond to rumours, misinformation and negative chatter coming across social and traditional media channels.	Info
55	Strat Comms/ PECC	The fact that the SoMe team works together regularly as digital communicators in emergency response was clear in their performance. This is a strength for EMBC in the event of a major emergency.	Info
56	Strat Comms/ PECC	SoMe found creative work-arounds during the power failure and internet outages, reaching out to the BC Wildfire Service via SMS text ensuring that critical information was disseminated. Seeking alternative communications pathways should continue to be practiced in future exercises.	Info
57	Strat Comms/ PECC	The Media/VIP tour was handled very professionally. However, due to the inexperience of the PIOs assigned to the live play in Port Alberni, many key real-life media cues were missed. This could have been mitigated with a more robust planning effort with the EMBC planning team ahead of the exercise.	EMBC/GCPE
58	Strat Comms/ PECC	A Joint Information Centre (JIC) and Stakeholder Relations Unit was not formed, thus creating inconsistent messages, which could undermine public confidence in the response.	EMBC Ops/GCPE
59	Strat Comms/ PECC	Information sharing within the Public Information Section (between PIO and SoMe) as with other PECC sections could have been more efficient and effective. Sections were not aware of the urgency, context or priority of information requested by PIO/SoMe.	EMBC Ops

	Exercise Organization	Finding/Observation	Follow-up Lead
60	Strat Comms/ PECC	Significant fatigue was reported; therefore, an up-to-date back-up roster with other Government Communications and Public Engagement (GCPE) members should be maintained to provide relief. A lack of understanding of the Incident Command Structure resulted in minimal engagement with other units within the PECC in the first three days of the exercise. The PIO/SoMe did not always know who to go to for information they needed to obtain or verify and this hindered their operational efficiency. They were also reluctant to approach other PECC units as a result.	GCPE
61	Strat Comms/ PECC	The PIO unit was short-staffed for the task at hand and no one member had the time or capacity to lead the team or perform other important tasks, such as information gathering from the PECC at large.	EMBC/Ops
62	Strat Comms/ PECC	Media inquiries were injected on a regular basis; however, the response was inconsistent. Some media messages were prepared in advance, and on some occasions the simulated media's aggressive drive for information proved challenging. Information that was relayed was at times unspecific or not up to date, and may not have to been fully confirmed with PECC Operations staff before release.	EMBC/ Ops/ GCPE
63	Strat Comms/ PECC	The IRP (Annex K) Strategic and Public Messages provided a sound foundation for the immediate response and should be continuously evaluated and updated as the situation unfolds.	EMBC/Ops/GCPE
64	Strat Comms/ PECC	PIOs stationed on the ground were unreachable for portions of the exercise, thus making it difficult for the PECC PIO/ Social Media to collect accurate, verified information from trusted sources on the ground. Reliable, redundant deployable communications and situational awareness tools need to be made available to PIOs as well as other key deployed personnel such as the Provincial Coordination Team (PCT).	EMBC/Ops/GCPE
65	Strat Comms/ PECC/IRP	The IRP did not include any information on how the PIO and SoMe teams would transition to a sustained response, and there was no discussion during the exercise around this beyond the assumption that the team would just keep working until the response operation was complete. Annex K could be further reviewed and procedures developed for regular updates addressing the PIO needs evaluation, forecasted requirements and methods to address changes in resources.	EMBC
66	PECC/Mass Care	Relief agencies were able to gather numbers and resources at their national level. Considerable discussion took place on the process of requesting national and international aid from different agencies, including discussion on requesting AB and SK for support.	EMBC

	Exercise Organization	Finding/Observation	Follow-up Lead
67	HECC	Following the earthquake notification, the HECC activation plan was well implemented, set up and staffing was smooth. Initial communication checks to health partners were conducted, and the HECC began to develop situational awareness. Health and Emergency Management partners were notified of the activation and aware of the contact information for the single window health operations centre.	Info
68	HECC	The participants from BCEHS, PHAC, MoH, BCCS and FNHA demonstrated excellent teamwork. The combination of agency representation helped facilitate the resource request process and participants worked through decision-making processes together.	MoH
69	HECC/PECC	The right agencies were present in the health branch and able to coordinate requests for transport to impact areas. As situational awareness developed on days 1-2, status boards were created for the health branch to document actions taken, status of requests, facility status and fatality numbers. The boards were frequently checked and updated to reflect current known status.	MoH
70	HECC/PECC	The health system was able to coordinate the request and deployment of medical teams and assets from a variety of provincial and federal sources, suggesting the soundness of existing processes, including through the Operational Framework for Mutual Aid Requests (OFMAR).	MoH
71	HECC/PECC	Air and ground evacuation requests for injured patients were addressed and handled as a priority by Air Ops and PECC Logistics.	MoH
72	HECC	There were not enough MoH EMU staff present to lead the HECC staff and accomplish all necessary tasks in the HECC. Additional trained staff are required to staff the HECC. The current HECC staff capacity could not sustain operations for a large event requiring the response/coordination of the HECC over an extended period of time.	MoH/EMBC
73	HECC	There was confusion between the roles of the HECC and PECC health branch when both are activated. The HECC Concept of Operations guides the operation in the HECC, and the IRP defines the role of health under the PECC health branch, but there are no references for how the two operate at the same time, as would be the case in a catastrophic event.	MoH/EMBC
74	HECC	HECC and the PECC health branch had difficulty connecting to each other and to health partners via SAT phone during the communication outage. It was challenging to be outside attempting SAT phone connection when there were other priority tasks to be completed.	MoH/EMBC
75	HECC/PECC	The lack of consistency in guidelines for coordinating communication via radio for the province resulted in gaps in communication. HECC was able to connect with Royal Jubilee Hospital via amateur radio and with the PECC via commercial radio, but not able to connect with any other health partners via radio or SAT phone.	MoH/EMBC

	Exercise Organization	Finding/Observation	Follow-up Lead
76	HECC/PECC	Information exchange could be improved between the PECC and the health branch – specifically regarding current operations and shared situational awareness. The health branch was fully tasked with the processing of resource requests and the time spent reviewing E-Team for situational awareness and for resource requests. An IM/KM renewal project should include an architecture study to examine how the various data is exchanged across partner agencies with a view to improving information exchange pathways and reducing duplication of effort.	MoH/EMBC
77	HECC/PECC	There was limited exercise participation from Health Authorities (HAs) and other health partners. It was difficult to work through exercise scenarios without HA, Patient Transfer Network (PTN) and Health Shared Services BC (HSSBC). Health Authorities that were involved were not familiar with PECC processes and there was confusion around PREOC planning for health-related issues.	MoH/EMBC
78	HECC/PECC	Resource requests consumed the majority of staff time in the health branch. Once resource requests were submitted to Logistics, responses from Logistics were not timely; at times the loop was not closed, leaving the health branch in the dark as to what the request status was. Submitting resource requests using E-Team was time consuming, and clarifying the timelines for the acquisition of certain resources proved difficult.	MoH/EMBC
79	HECC	The HECC processed requests for assistance to local health authorities, including deploying the Federal National Emergency Stockpile System (NESS) Mini-clinic and the Provincial Mobile Medical Unit to Port Alberni.	MoH/PSC LO
80	HECC/PECC	Mental health and disaster psychosocial services (DPS) were provided in Port Alberni and to the affected areas during the exercise; however, following the deployment of DPS staff, the volunteer locations and status were not tracked by Logistics (health or PECC). In addition, when DPS arrived into a community their presence and purpose may not have been clear.	MoH/EMBC
81	HECC/PECC/Air Ops	An Air Operations Protocol for health care management was not observed in the PECC. Air operations requests were completed without verification of need and prioritization.	MoH/EMBC
82	HECC	The BC Coroners Service representative in the health branch had too many roles to fulfill; consequently, the Provincial Mass Fatality Plan was unable to be fully implemented given limited BCCS human resources.	MoH/BCCS
83	PECC/Mass Care	E-Team functionality and efficiency issues were noted during the 23 June After Action Review by a number of PECC staff, not just ESS. The utility of E-Team should be evaluated in the context of an overall IM/KM review.	EMBC
84	PECC/Mass Care	Justice Institute of BC training created a common baseline for applying ESS procedures across participating organizations.	Info

	Exercise Organization	Finding/Observation	Follow-up Lead
85	PECC/Log	IRP (Annex I) Critical Resource List was found to be comprehensive and justified based on agreement reached between various interagency stakeholders who confirmed their roles. The role of the PECC Logistics is to determine resources allocation to needed areas (functional, geographical, etc.) based on situational awareness and direction from the PECC Director but in consultation with the affected PREOC when required. Beyond the Province's "Blue Book" of suppliers, EMBC Logistics Section must build the capability to track and maintain an updated list of suppliers as well as contract vehicles to procure these capabilities. This supplier list should be available in hard copy as well as electronic copy. E-Team should be explored (Vendor Management module) to open up this capability for the EMBC Logistics Section to start populating the required information and data for all in the PECC to have access.	EMBC
86	PECC/Log	IRP lacks important detail describing delineation of responsibilities between PECC and PREOC for the oversight and management of the Logistics Management System (LMS); specifically, which organization exercises authority at the provincial levels (presumably the PECC) and which organization manages/controls staging areas, transportation routes and movement of resources (presumably the PREOC based on prioritization of requirements articulated by the PECC). The lines of authority for a multi-region or whole-of-province response should be clarified in the IRP as well as the PECC and PREOC Operational Guidelines. The lack of awareness and control of the LMS caused inefficiencies, potential delays in delivery of key services/resources, and loss of management oversight.	EMBC
87	PECC/Log	IRP (Section 6) Multimodal Supply and Transportation priority rankings should be revisited and place infrastructure assessment and repair services near the top, particularly if these capabilities are enablers/force multipliers. With a catastrophic event, the PECC needs to consider what is required to achieve the best outcome for the many rather than the few. The PECC needs to keep a strategic focus for the overall provincial requirements. This can be reinforced in the PECC guidelines by ensuring the APU staff have appropriate logistic representation and that the section has a long-range focus, well beyond the current operational period. This improved as the exercise progressed and staff adjusted to their roles and responsibilities. In the immediate period after the EQ, all staff were aggressively searching for status updates and SA. The APU section and the Logistics staff SOPs should detail specific individuals to be constantly looking at horizon events to best anticipate developing needs. Staff focus and clear assignment of duties is key to prevent needless overlap of resources.	EMBC

	Exercise Organization	Finding/Observation	Follow-up Lead
88	PECC/Log	Operations Section personnel dealing with incoming emails had a tendency to be reactive rather than critically analyzing information and making urgent assessments on the task or requirement before forwarding to the appropriate Section in the PECC. This caused significant delay in generating planning activity for the PECC Logistics Section regarding the location, status and movement of critical resources through RSAs.	EMBC/Ops
89	PECC/Log/Plans	The IRP and PECC Operational Guidelines are not clear regarding who the lead is for logistics planning efforts during a response (APU or Logistics Section). Many PECC staff were unsure of the Logistics Section's role(s) and capability, outside of the ICS roles defined in ICS doctrine and the PECC Operational Guidelines. Moreover, the IRP does not clearly describe the roles, responsibilities, reporting channels and integration of the APU within the PECC organization during the Immediate Response Phase.	EMBC
90	PECC/Log/Plans	IRP pp.54-55 outlines the concept of PSAs/RSAs but fails to identify who is the lead for planning, implementation, prioritization, sequencing of material flow, etc. Lack of integration, coordination and communication between PECC Logistics Section and the affected PREOC impacted coordinated planning for anticipated requirements and risked duplication of effort.	EMBC
91	PECC/Log	A process or tool was lacking to manage and account for material assets and inventory during a large-scale/catastrophic earthquake event. A lack of comprehensive tracking and the failure to consolidate all material assets and inventory throughout the supply chain cycle (forecast, deliver, return) will have a cascading and significant effect on operations, sustainment requirements, reassignment of resources in the area of operations, and demobilization. Other second-order effects included the significant workload this would create on the Finance Section during and post-event for cost capturing for financial reporting and cost recovery functions.	EMBC Log
92	PECC/Log	IRP Section 5 (Response Actions) lacks detail regarding who or what Section or position in the PECC structure makes the ultimate decision (after consultation) on where the operational focus should be and what are the priorities over the next "x" number of hours/days in the operational period.	EMBC
93	PECC/Log	IRP Annex I (Critical Resource List) lacks a reference guide to create load lists by commodity type and by various transportation means (road, rail, air, marine). Consideration should be given to integrating these logistics load tables into E-Team.	EMBC Log
94	PECC/Mass Care	Some clarification was required on E-Team and resource requests when submitted, which caused some delay. However, mass care agencies were able to source and coordinate resources leaving Logistics to coordinate pick-up and transportation to local authorities. It was challenging to close the loop from the top downward on resource movement.	EMBC

	Exercise Organization	Finding/Observation	Follow-up Lead
95	PREOC & LA/ Mass Care	There were a number of items dealt with during the live exercise play in Port Alberni that have provincial impact. These included successful coordination of the group lodging system and triage people to suitable accommodation, implementation of ESS mutual assistance arrangements/ Mobile Support Team (MST)/Out of area ESS deployment, deployment of Disaster Psychosocial (DPS) to multiple locations, implemention of disaster childcare guidelines together with MCFD and Nuu-chah-nulth child and family services, and examination of long-term mass care sustainment (CRC, BC Housing, etc.). These successes should be further examined to determine what lessons can be drawn and further circulated.	EMBC
96	PECC/Mass Care	A process that has a faster turnaround on resource requests being signed off is needed. It would be helpful to have mass care/ESS-focused checklists built into E-Team. It would also be helpful to have functional- instead of individual-related E-Team accounts that allow limited access. The Mass Care Branch SOPs in the PECC need to be revised and brought in line with the new draft of Mass Care Con Ops.	EMBC
97	PECC/IRP	The lessons learned from this exercise will significantly influence the Mass Care Concepts Project, as well as the IRP, which currently provides a high-level view of Mass Care.	EMBC
98	PECC/Ops	The Provincial Emergency Notification System (PENS) used to notify and activate the Provincial Coordination Team (PCT) appeared to work well.	Info
99	PECC/PREOC	The exercise only lasted four days. However, it was noted by all evaluators that the high level of intense activity was draining on the principal staff involved in the exercise. If this were a real disaster response event with higher consequences, staff fatigue and high stress levels would diminish productivity and problem resolution. Augmentation plans to maintain 24/7 operations would quickly need to be set up. Development of an augmentation plan should be emphasized in future exercises in order to make that critical requirement a routine action.	PECC & PREOC Directors
100	PECC/APU	By Day 3 the APU was establishing a more robust presence. Generally composed of members of PECC Plans, Operations, MoTI, Mass Care and Logistics, the APU was developing long-range plans to deal with the large number of tourists and citizens stranded in the Long Beach/Tofino area.	Info
101	PECC/Log	Amateur high frequency (HF) radio communications from local EOCs successfully passed situational awareness, SITREPs and resource requests to the supporting PREOCs and the PECC during periods when traditional communications would have been impacted or cut-off. Although voice and digital messages were sent and received, it was apparent that processes and procedures for message handling need to be updated, formalized and standardized. The Provincial Radio Advisory Committee (PRAC) would be a good mechanism to re-establish and provide governance over the various amateur radio emergency responders to examine these various functions.	EMBC

	Exercise Organization	Finding/Observation	Follow-up Lead
102	PECC/Ops	Amateur radio communications were successfully integrated with EOCs at all levels during this exercise. However, there were wide variances in understanding of procedures and capabilities between the EOC staff, radio room staff and the wider amateur network. The EMBC HF net is activated weekly for training, although the number of participant stations is low. This weekly training venue provides an excellent opportunity for practicing key procedures such as message passage, template development, use of relay stations and passing net control. This ongoing training cycle would be enhanced with greater participation, an area where PRAC could also assist.	EMBC
103	SWE/VIR PREOCs	As the exercise progressed, PREOC staff applied their local knowledge to the scenario to develop viable work-arounds to problems. Their solutions may not have fully aligned with the exercise scenario but they did show the inherent capability of staff at all levels to develop creative solutions to problems. This is strength within the PECC and PREOCs.	
104	PECC/Log	HF radio link was established for the first time between an amateur HF call sign and a CAF aircraft loitering over the exercise site. This has great potential for improving communications with disaster sites cut off from regular communications systems and for enhancing the SA of relief agencies.	EMBC/Log
105	VIR PREOC	Despite shortcomings of HF radio, there was good use of HF email to receive the Initial Impact Assessment from Port Alberni.	Info
106	PECC/Log	The PECC, PREOCs and Local EOCs lack robust, fixed and deployable interoperable alternative voice/fax and high-speed data connectivity to support command, control and communication functions with higher, lower and lateral agencies. IRP Annex E Table 2 lists telecommunication priorities, however, the reality is that the least useful, lowest bandwidth, most cumbersome, and least routinely used systems (e.g. Amateur radio and SAT Phone) provided the only reliable (but still inadequate) communication pathways until communications could be restored. Plans, procedures, processes and training to use these cumbersome tools must be incredibly robust in order to overcome the limitations these tools present until investments are made in a more modern, reliable and robust communication architecture. Information Technology (IT) renewal should include fixed/deployable Local Area Network (LAN) workstations with E-Team and Geospatial Information Systems (GIS) applications connected to printers capable of operating for extended periods until networked internet/email, mobile and landline telephone/data services have been restored and are stabilized. This capability should be able to operate using emergency power generation sources (e.g. standalone generator, vehicle and vessel power sources).	EMBC
107	PECC/PSC LO	The Public Safety Canada (PSC) satellite dish at the PECC is antiquated and unable to support voice or data exchange.	PECC/PSC LO

	Exercise Organization	Finding/Observation	Follow-up Lead
108	PECC/VIR PREOC/Log	New tools and procedures (such as RMS Express/Pactor modem) developed to interface between PREOC/PECC and Radio Room had incorrect addresses loaded. These new tools were not fully briefed to the PREOC/PECC staff prior to the exercise and caused confusion in the early part of the exercise. These systems have the capability to send email over HF to a server outside the impacted area, allowing access to an email account. These tools should be further examined and procedures developed for wider use.	VIR PREOC Director
109	PECC Ops/Log	There were significant shortcomings with SAT phone procedures, conference calls, SAT phone contact lists, incoming/outgoing communication priorities as well as the number and types of SAT phones. SAT phones either sat idle or were in continuous use during most of the power and communication outage. An IM/KM renewal project should determine appropriate SAT phone types, SAT phone monitoring and operating procedures.	EMBC
110	PECC Ops/Log	The Ministries of Forests, Lands and Natural Resource Operations (FLNRO) and Transportation and Infrastructure (MOTI) each have robust, province-wide mobile communications systems. Although these systems were not engaged during Exercise Coastal Response 2016, they have the potential to enhance response coordination and should be used in future exercises.	EMBC/FLNRO/ MOTI
111	PECC Log	Cell phone reception within the PECC was extremely limited, which further reduced available lines of communication and collaboration. Steps should be taken to improve cellular reception within the facility on an urgent basis.	EMBC
112	PECC Ops/Log	Radio Room computers are outdated (some are over 20 years old) and should be replaced and life-cycled with other facility information technologies.	EMBC/IT
113	PECC Log	There were no guidelines or procedures (low-grade encryption) in place to protect the transmission of sensitive information over unsecure communications.	EMBC
114	PECC Log	During the periods of disrupted communications in the first 24 hours of the exercise, the available alternative means of SAT phone and HF radio were challenged to handle the high traffic demands. EMBC should examine alternative service providers, technologies and systems that could be used in response efforts to provide additional capacity and greater redundancy.	EMBC
115	PECC Log	There was no current, accurate and comprehensive list of official amateur radio stations/call signs available.	EMBC
116	PECC/VIR PREOC	The Radio Room supports both PECC and VIR PREOC; however, there does not appear to be an authoritative reference to determine whom the Radio Room reports to for taskings.	PECC & VIR PREOC Directors
117	PECC/VIR PREOC	During power and primary communication outages, it is essential that the Radio Room be involved in key PECC and PREOC briefings/activities in order to maintain situational awareness and contribute to the discussion.	PECC & VIR PREOC Directors

	Exercise Organization	Finding/Observation	Follow-up Lead
118	VIR PREOC	When the Ops1 phone (main line into VIR PREOC) could not be picked up, it would automatically forward to the PECC. This created confusion from communities when calling PREOC, and confusion from PECC as to why communities were calling them directly.	VIR PREOC Director
119	HUSAR Task Force 1	HUSAR TF 1 had a robust and independent evaluation team drawn from other HUSAR TFs across Canada. They will produce an internal lessons learned and follow-up plan. Some of their key observations are listed below.	Info
120	HUSAR Task Force 1	HUSAR TF 1 successfully deployed out of Vancouver to a remote location for the first time and validated their activation, deployment, administration, and tactical employment plan.	Info
121	HUSAR Task Force 1	Due to the requirement for HUSAR TF1 to deploy early from Vancouver to Port Alberni to optimize their training in Port Alberni, the PECC was not able to sequentially deploy HUSAR TF 1 through the warning phase, deployment phase and then a hand-off from PECC to PREOC to Local EOC. Due to the early support planning for transport, ferry space, local contacting, land clearance, etc., PECC Logistics was unable to support HUSAR TF1 during their deployment, employment and redeployment phases.	Info
122	HUSAR Task Force 1	The ACRD and City of Port Alberni did not have the first responder resources available to establish a Unified Command structure for this exercise, so HUSAR TF 1 was not able to integrate in that structure, nor were they able to respond directly to tasks from the ACRD EOC.	Info
123	HUSAR Task Force 1	HUSAR TF 1 conduct of training was excellent. Their internal training staff did a superb job setting up the training schedule and building a robust series of realistic, challenging scenarios throughout the City of Port Alberni for both deployed shifts of HUSAR TF 1 to cycle through. The evaluators from elsewhere in Canada described the training scenario as the best ever set-up in Canada. The HUSAR TF 1 participants echoed those comments; the assessment guides were very positive.	Info
124	ACRD/Local Authorities	Planning coordination was well done between the exercise planning team and representative of the local authorities, particularly with ACRD and the City of Port Alberni. However, as with any complex and rapidly evolving event, some of the live activities did not unfold exactly as planned. Detailed local coordination would have been enhanced with a more direct contact to the local community, such as an embedded local representative in EXCON to assist with the day-to-day events during the exercise.	EMBC

Conclusion

The feedback received is currently being analyzed by the participating ministries and agencies. This process will be led by EMBC and will compare actual performance against expected outcomes to determine what changes should be made to the procedures, plans, staffing, equipment, communications, organizations and interagency coordination defined in the IRP.

This process should not viewed as a "report card" that grades weakness, but rather as an opportunity to identify ways to build on strengths and improve capacity. Because the participating agencies were testing existing as well as new and emerging plans, skills, resources and relationships in response to a changing emergency management environment, this process is expected to result in multiple findings and recommendations for improvement.

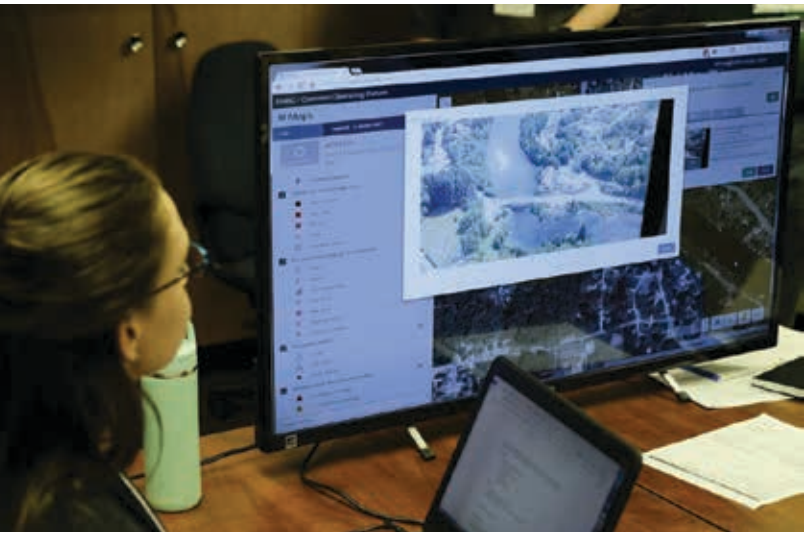
The overall evaluation of Exercise Coastal Response focuses on assessing the adequacy of, and familiarity with, the IRP as well as other existing plans, policies, procedures, agreements and relationships, and resources that are needed for an effective response to a catastrophic earthquake. This detailed, final analysis of the exercise process is now underway and will result in the provincial Improvement Plan, to be released in 2017. It will address the following questions:

- What changes should be made to legislation, policy, the IRP and supporting plans, procedures and protocols?
- What changes should be made to organizational structures during response?
- What training is required to improve performance?
- What changes to facilities, material and resources are required to improve performance?
- What changes should be made to coordination processes?
- What interoperability practices should be shared with other communities?
- What are lessons learned for approaching a similar problem in the future?

Questions

For more information on the exercise, please visit http://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery/emergency-management-bc/emergency-management-training-and-exercises/exercise-program or email Carol McClintock, Executive Director of Organizational Learning and Public Education, at carol.mcclintock@gov.bc.ca.


FIRE DEPARTMENT

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