



Ocean Falls Emergency Response Plan

HAZARD ANNEX – TSUNAMI & STORM SURGE RESPONSE PLAN

Central Coast Regional District

*Updated by Frontier Resource Management Ltd
January, 2018*

Ocean Falls Tsunami Emergency Response Plan

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1 Tsunami Emergency Contact List

- See **Ocean Falls EOC call out list**
- Marine Emergency : 1-800-567-5111
- Coast Guard – Denny Island: 250-957-5706
- DFO - Bella Bella: 250- 957-2363
- Shearwater Marine: 250-957-2305
- Western Canada Marine Response: 1-855-294-9116
- Call out to residences and businesses in tsunami zone.

Tsunami Watch Bulletin Issued

Contact:

Local Emergency Team (LET) - Ocean Falls Deputy EPC

Emergency Executive Committee – Coordinator

- CCRD Rep

- Secretary

Emergency Response Core Team - Communication Officer

- Public Information Officer

- ESS Officer

Emergency Response Operations – Fire Hall

- Boralex

- Marine Harvest

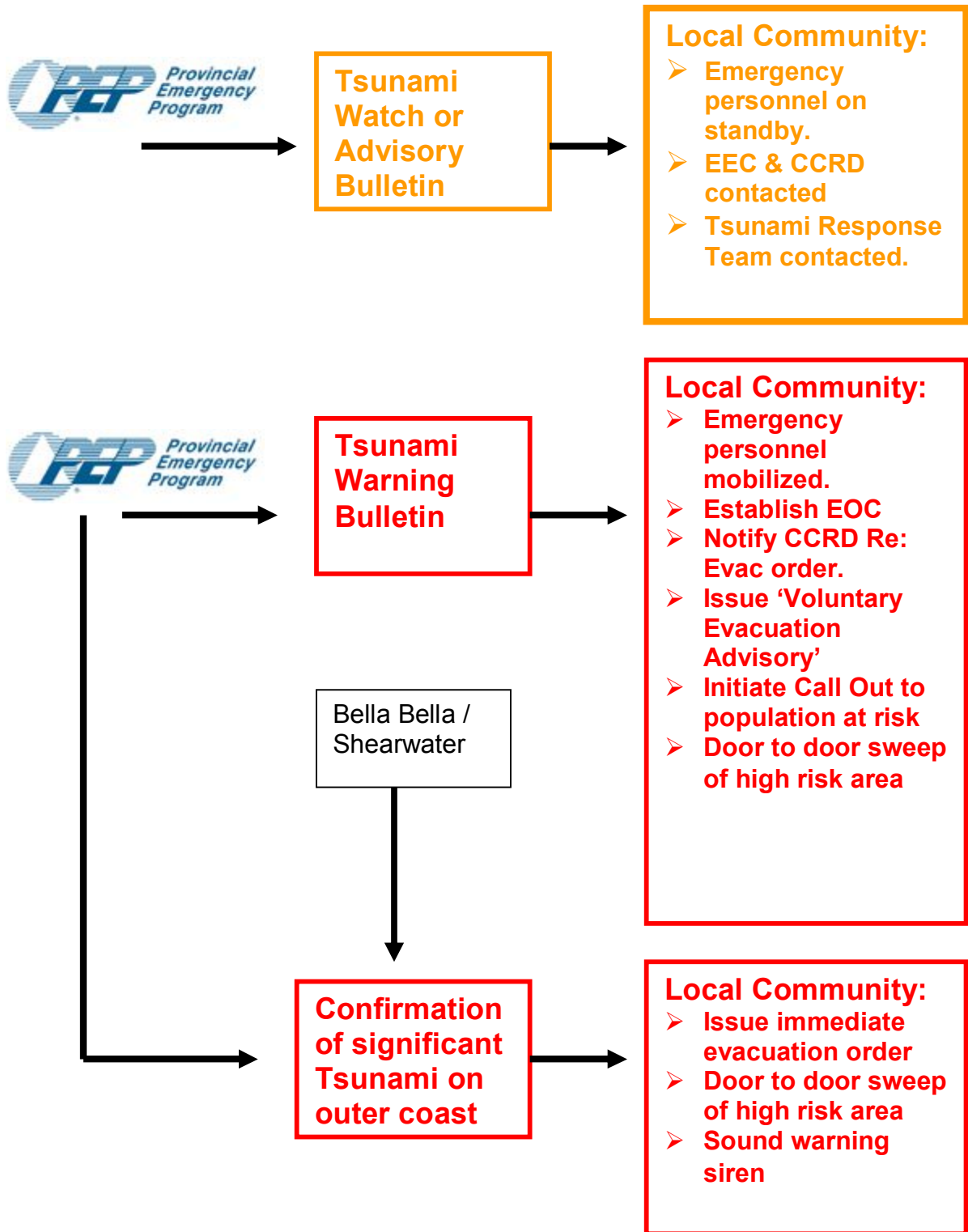
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Tsunami Warning Bulletin Issued:

All of above.

Initiate Call out to residents in Danger zone.

1.1 Tsunami Bulletin Action Plan



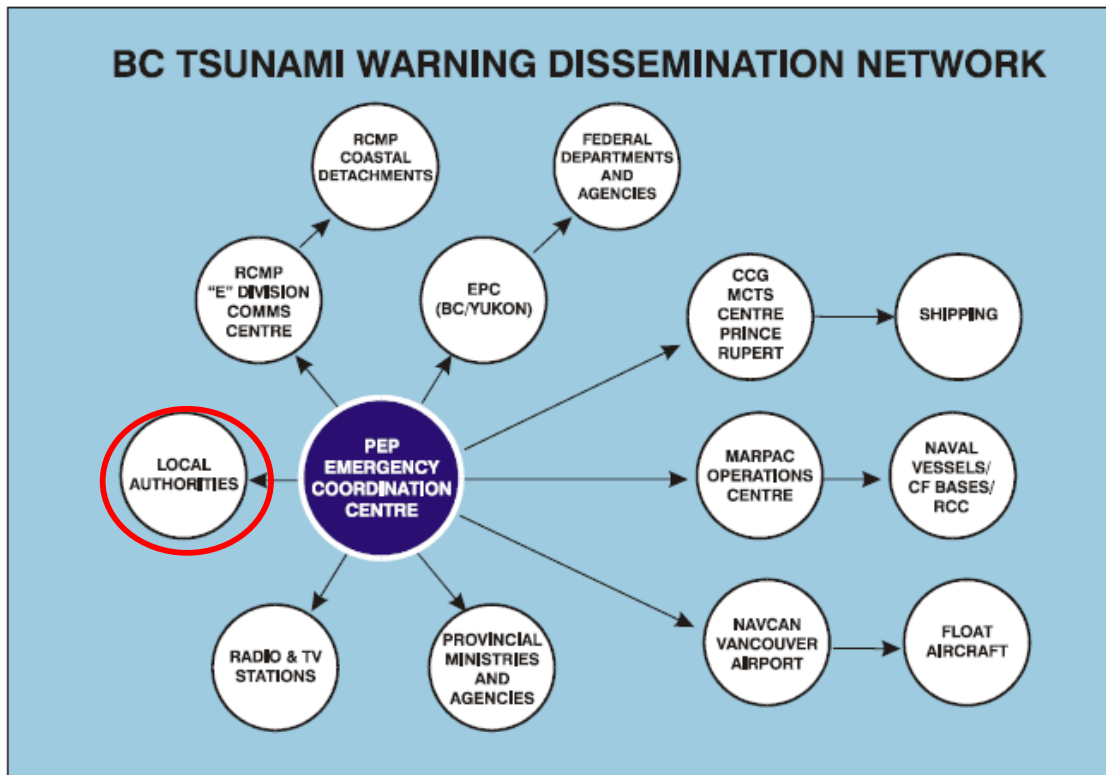
1.2 Tsunami Danger Area

See the Tsunami Zone Map in Appendix 1 for depiction of tsunami danger zones. The high danger area is based on the Provincial 20 m elevation guideline for coastal areas. High tide is used as the base to measure from.

2 Provincial Tsunami Warning & Emergency Procedures

The Provincial tsunami emergency procedures are detailed in the British Columbia "Tsunami Notification Process Plan" (2013) a copy of which is contained in Appendix 2. EMBBC is responsible for warning and alerting all of the Province, including ships and float planes in accordance with following schematic. The Ocean Falls Emergency Response Plan is designed to address the Local Authorities warning dissemination responsibilities for the Ocean Falls area.

Figure 1 BC Tsunami Warning Dissemination Network.



EMBC may issue any one or a combination of the following tsunami advisory bulletins. The bulletins have been designed to provide warning

of possible tsunami conditions based on scientific observation of previous earthquake effects.

- **Tsunami Warning** status means that a tsunami was or may have been generated which could cause damage. Travel time is less than three hours away. Purpose is to activate local plans and low lying locations in the areas warned are strongly advised to evacuate.
- **Tsunami Watch** status means that a tsunami was or may have been generated but is more than three hours travel time away from warned area. Purpose is to put emergency personnel on standby and local officials should prepare for possible evacuation if their area is upgraded to Warning.
- **Advisory** bulletins are issued when an earthquake greater than 7.5 magnitude has occurred in the Pacific Basin which might generate a tsunami. The tsunami is over six hours travel time to nearest point on the West Coast.
- **Tsunami Information** bulletin may be issued to advise public about an earthquake event that is not expected to generate a tsunami along the BC coast.
- **Cancellation Message** will be sent to indicate if any Warning or Watch bulletins have been cancelled or the threat has ended.
- **Tsunami All Clear** bulletins are issued when the threat is over and no more waves are expected. Local authorities may issue their own 'all clear' in accordance with instructions on the bulletin.

Tsunami warnings are issued by different regions and ones affecting Ocean Falls are:

- **Entire BC Coastline-** This area will be described as “Haida Gwai and the entire coastline from Port Renfrew on Vancouver Island north to Stewart on the Alaska border.
- **Zone B – Central Coast and North East Vancouver Island:** Including Kitimat, Bella Coola, Port Hardy, Bella Bella, Ocean Falls.

2.1 **Local Notification and Warning**

Once a **Tsunami Watch or Advisory** bulletin has been issued for the Mid Coast area, local emergency personnel will be contacted in accordance with the Communication Plan. This will put emergency personnel on

stand-by alert. CCRD directors are advised to prepare to issue Emergency Declaration.

2.1.1 Remote camps and residences

It is generally assumed that marine-based commercial operations and residences that are situated in remote areas monitor marine radio and will receive notification through emergency radio broadcasts. The response plans for these must be individually managed and are not known to the CCRD emergency program. Any individual or organization that requires direct notification may arrange this through the Emergency Program Coordinator or ENBC.

2.2 Tsunami Emergency Evacuation Plan

- Once a **Tsunami Warning** has been issued, the Emergency Evacuation Plan will be initiated. School buses and ambulances put on standby.
- **Evacuation Alert:** People in the specified tsunami risk area will be notified of potential evacuation and people should prepare for likelihood of quick evacuation.
 - Fuel Agencies advised to secure fuel depots.
 - Boat owners advised to move powerboats to high ground if possible. However, do not promote this if it will cause a traffic jam at the boat launch.
- **Evacuation Order:** Based on reports of actual tsunami occurrence from more coastal areas, an evacuation order may be issued and immediate evacuation of risk area would commence.
 - CCRD advised to issue Emergency Declaration.
 - Phone callout initiated for evacuation.
 - Manual door to door sweep initiated of high risk areas: lower Marten valley residences, lower Ocean Falls residences,
 - Sound fire alarm sirens.
- **All Clear:** Given when danger has passed.

2.3 Safe Evacuation Zone

- The general, EMBC recommended, evacuation instruction for coastal BC is to move to areas 20 m in elevation above sea level.
- In Ocean Falls the safe zone is up above the town flats close to the top of the dam. This is well outside of the danger area and suitable for large populations.

- At the Marten Valley settlement, the safe zone is along the top roads.
- **Action Item: Evacuation routes and refuge areas should be identified with signage.**

Forewarned Tsunami Alert:

- In the case of an ocean generated Tsunami, there will be a few hours time to evacuate people to safe areas.

No Official Pre-Warning of Tsunami (local landslide in inlets):

- In case of massive landslide in local inlets, there will not be time for issuance of warning and survival will depend on people heading to higher ground on their own accord.
- People in lower area experiencing a hard shaking earthquake for more than 15-20 seconds, should immediately head for high ground at least 20 m. elevation above sea level.
- Fire alarm siren triggered.
- A land slide caused tsunami may be extremely high and fast and people near shoreline areas should head to areas as high as 50 m or more in elevation above sea level.

2.4 **Establishment of Road Block**

Location

- Upon issuance of evacuation order, road blocks may be set up preventing unauthorized access to shoreline areas.

Procedures

- Usually the RCMP will oversee the establishment and staffing of the road block, however in Ocean Falls this will have to be done by volunteers.

2.5 **Special Evacuation Requirements**

Out of necessity, most people living in Ocean Falls are capable of evacuation without special help or assistance. Those that need help will have to rely on friends and neighbours.

3 **Pre-Event Response and Preparedness**

Pre-event preparedness is to ensure Tsunami Watch and Warning bulletins are communicated to emergency personnel and preparations are made for rapid evacuation, if necessary.

- Set up 'door to door' notification of critical areas by notifying and assigning emergency personnel to areas.
- Prepare to establish EOC once Tsunami Warning is issued.
- Recommended EOC location is local Emergency Coordinator home in Marten Valley settlement area.
- Promote the Prepared BC "Earthquake and Tsunami Smart Manual" (Appendix 3) to help residents prepare for emergency.

3.1 **High Risk Areas**

A tsunami wave can cause dire consequences to people and damage infrastructure along low level areas close to the ocean. The following areas are at high risk and people in these areas need to be notified to be prepared to leave immediately.

Human Populations at Risk

- People at harbour and marinas.
- People living along shorelines.
- People in lower Ocean Falls townsite.
- People working at Boralex power station and at Marine Harvest's operations.

Marine Based Installations at Risk

- Boat harbours and marinas
- Boralex Power Station.
- Land based Marine Harvest fish farm facility, potential escape of juvenile salmon
- Small fuel tanks
- Ocean Falls Library and Post Office

Access and Transport Structures at Risk

- Docks and ferry terminal.
- Bridge over Link River

Power and Utilities at Risk

- Boralex Hydro power and Telus transmission lines in low areas.

4 Immediate Response Following Event

Tsunamis may be a single wave or a series of waves 10 – 15 minutes apart that can last up to an hour after the first wave arrived. Therefore, people should not rush back in after the first tsunami wave arrives. Emergency Coordinator will direct emergency personnel when to enter the flood risk zone. Once it is safe to enter, search and rescue shall begin immediately along with damage assessment.

4.1 Search & Rescue

- As directed by the Emergency Coordinator, search and rescue shall be initiated immediately and conducted by Coast Guard, DFO, RCMP, Firemen, S&R team, competent volunteers.
- Boat and air search initiated to look for people swept out to sea.

4.2 Damage Assessment

- In order to coordinate search & rescue and repair of lifeline services, the affected area should be quickly assessed to determine priorities for response with limited resources.
- High priority areas:
 - Boralex power and Marine Harvest facilities
 - Coast Lodge
 - Low lying residences in Marten Valley and Ocean Falls

5 Extended Response Following Event

After immediate search and rescue is well underway and critical lifeline infrastructure has been checked and priority repairs initiated, Extended Response initiated.

5.1 Critical Infrastructure Repair

- Wharves/ramps
- Power lines
- Roadways
- Communications
- Fuel Tanks
- Fish tanks

5.2 **Water and Sewage System**

Water systems may become disrupted or contaminated along with sewage disposal systems and this can lead to longer term health effects and impede disaster recovery.

Qualified personnel to check that water and sewage systems are functioning as a priority.

5.3 **Volunteer Management**

It is anticipated that those not affected by the tsunami will be volunteering to help those in need. Given Ocean Falls small population it is not expected that this will require any special coordination by the EOC.

5.4 **Security of Property**

For areas with forced evacuations or areas suffering major damage, security of property needs to be addressed. Typically, the RCMP is responsible for ensuring security, but the EOC will likely need to dispatch volunteers to aid with security.

6 **Storm Surge**

Extremely high water levels can be associated with large storm activity. Typically, not as immediate or as potentially large as tsunamis, storm surges can cause damage to low lying shoreline areas. Warnings of storm surges should accompany severe weather notices. Associated with large storms, the surges will also come with heavy pounding wave action that can cause damage to shoreline installations and boat vessels.

Preparation and response is similar to actions taken to safeguard against tsunamis.

7 **Records and Accounting**

A tsunami can be expected to cause significant deployment of emergency response resources and damage can be severe at a localized level, therefore a person will be designated to initiate accounting and record keeping as the EOC is established.

8 Recovery

Recovery from tsunami may take a few days to a number of months.

8.1 *Debris Clearing*

Debris resulting from tsunami damage is not expected to significantly impede recovery beyond localized site clean up.

8.2 *Essential Services Repair*

The priority essential service at risk from tsunami is Boralex Power station. Boralex staff are able to make small routine repairs but major damage will require mobilization of non-local resources and supplies.

The Post Office and Ocean Falls Improvement District office are located in the tsunami zone. New locations for these services will need to be found if the 'Library' building is damaged.

The marina and ferry dock would likely be damaged making them potentially unusable. In order to address other repairs, these facilities would need priority restoration so that supplies and repair materials can be brought in.

8.3 *Private and Business Repair*

Marine Harvest fish farm is one of very few businesses in Ocean Falls. Located at the shoreline level, it is at high risk for damage. With thousands of juvenile salmon in the land based tanks, these could be released into the ocean if the tanks are inundated and damaged.

8.4 *Reporting and Follow-Up*

Subsequent to the event, an assessment of emergency response performance and debriefing of emergency personnel should be carried out in order to identify areas of emergency response performance.

9 Appendices

9.1 *Ocean Falls Tsunami Zone Map*

9.2 ***Tsunami Notification Process Plan***

2013

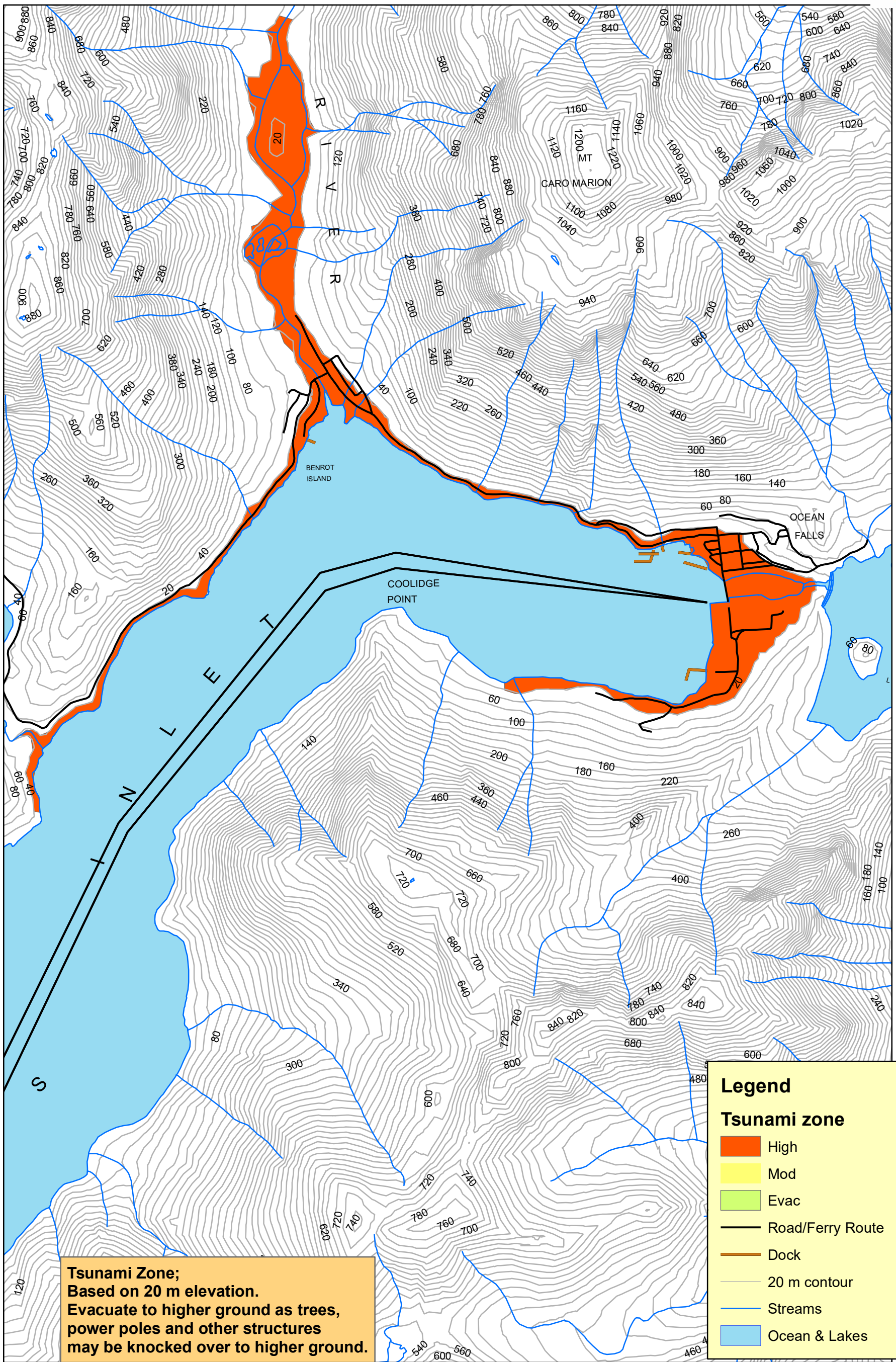
Located in CCRD EMP Annex D – EMBC Supporting Emergency Manuals

9.3 ***Earthquake and Tsunami Smart Manual***

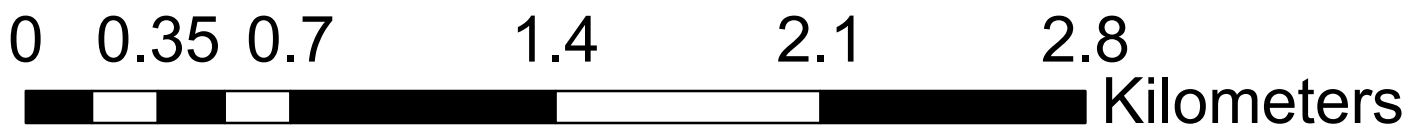
Prepared BC, 2015

Located in CCRD EMP Annex D – EMBC Supporting Emergency Manuals

Ocean Falls Tsunami Hazard



1:20,000



Base map: 103A-020

January, 2018

