

Coastal Flood Planning

FREQUENTLY ASKED QUESTIONS

Capital Regional District | July 2020

1. What is flooding and storm surges?

Storms in our region bring high water and waves. When combined with high tides (especially King Tides), these conditions can create storm surges, which can cause temporary flooding and coastal erosion. As sea level is expected to rise over the next century, coastal communities may be susceptible and need to prepare for potential flooding and associated impacts.

2. What is a tsunami?

A tsunami is a natural hazard consisting of a series of unusually large waves formed by a large-scale disturbance of water bodies. One of the primary causes of tsunamis is an earthquake, but tsunamis may also be triggered by landslides, volcanoes or explosions.

3. What is coastal inundation?

Coastal inundation is when sea water rises and land becomes wet or submerged.

4. What is sea level rise planning?

Sea level rise planning helps coastal communities identify and prepare for potential impacts resulting from rising seas. Impacts may include coastal inundation, increased erosion and more intense after-effects of storm events. Coastal communities across BC, Canada and the globe are at various stages of sea level rise planning.

5. What is a flood construction level?

Flood construction levels are designated elevations for habitable (living) space that must be followed for construction within an area exposed to flood hazard. As per Provincial Guidelines, flood construction level elevations describe the underside elevation of a wooden floor system, or the top elevation of a concrete slab. Local governments have authority to set flood construction levels in a flood prone area.

6. What is the authority for coastal flood (sea level rise and tsunami) planning in the capital region?

The Province of BC, local governments, First Nations and the Capital Regional District (CRD) have different levels of authority for coastal flood planning in the capital region.

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Province of BC:

- The provincial government owns the *British Columbia Local Government Act*, and develops guidelines and regulatory tools (i.e., [Flood Hazard Area Land Use Management Guidelines](#) (2004), Dike Maintenance Act).
- The Province is responsible for the *Emergency Program Act* (1996), which provides the legislative framework for the management of disasters and emergencies in British Columbia. The Province may be involved in public engagement and education, training, offering financial support, liaising with other levels of government concerning emergencies, and declaring and cancelling states of emergency. The provincial government provides guidance to local governments on emergency planning through Emergency Management BC (EMBC). The Province, through EMBC, is the current notifying agency for local authorities and First Nation governments for tsunami alerts.

Local Government:

- Under the *British Columbia Local Government Act*, local governments are responsible for understanding and managing flood risk through land use planning, regulations and policy decisions.
- Under the *Emergency Program Act* (1996), Local Authorities are responsible for assessing risk and planning for potential emergencies and disasters. Local emergency plans set out procedures, and other mitigation, preparedness, response and recovery measures to reduce possible impacts on people and property during emergencies and disasters. Through their emergency operations centres (EOC), they coordinate and lead the response and recovery of emergency events.

Regional Collaboration:

- The **Regional Emergency Management Partnership (REMP)** is an inter-governmental entity working to improve emergency management at all levels of government in the capital region. The REMP Steering Committee is responsible for overseeing the development and delivery of a coordinated seamless regional emergency management strategy supported by an integrated concept of emergency operations, strategic priorities and supporting plans.
- The **Local Government Emergency Program Advisory Commission (LGEPAC)** provides advisory recommendations on the direction of REMP and initiatives that may be undertaken to provide consistency and coordination among local government emergency programs, and will advise the Regional Emergency Coordinators Advisory Commission on any local government program developments/initiatives that may benefit or otherwise affect other emergency programs in the region.
- The **CRD Climate Action Inter-Municipal Working Group and Task Force** supports the identification of regional studies, supports implementation of regional projects and collaborative policy endeavors and facilitates regional dialogue on climate action among communities.

CRD:

- The CRD has local government authority for the land use in the Juan de Fuca Electoral Area. The CRD also manages infrastructure and assets for the regional and sub-regional services it provides (e.g., water and wastewater infrastructure). The CRD's Climate Action Program's role is to support regional and municipal efforts for climate action

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through the management of regional-scale studies and initiatives and administering the inter-municipal committees described above.

- The CRD also has a number of specific responsibilities for Emergency Management in the region, including:
 - Acting as the Local Authority under the *Emergency Program Act* (1996) for the three electoral areas: Juan de Fuca, Salt Spring Island and the Southern Gulf Islands
 - Working in conjunction with other CRD divisions to support emergency planning for key service such as water and solid waste
 - Maintaining a comprehensive Corporate Emergency Plan and EOC
 - Supporting regional collaboration networks (as above)

First Nations:

- First Nations determine their own policy and regulations in their communities according to their own emergency management and flood-control plans.
- First Nations develop their own emergency evacuation plans and warning systems in cooperation and coordination with neighbouring local governments.

Public:

- Coastal property owners should understand and plan for current and future coastal flood risk (wave, wind, sea level rise) and associated impacts. See local emergency preparation resource: Prepareyourself.ca – [Flooding and Storm Surges](#).
- Coastal property owners and users need to be aware of their risks, know what to do in the event of a tsunami, and be prepared to respond. Refer to local emergency preparation resource: Prepareyourself.ca – [Tsunamis](#).

7. What is the CRD going to do about coastal flooding?

The CRD has various roles and authority related to coastal flooding impacts. The CRD will consider these results in their land use, asset management and emergency planning activities. The CRD will also share this information directly with inter-municipal, provincial and other emergency coordination bodies to support further collaborative efforts.

8. What hazard notification systems does the CRD have in place?

The CRD maintains state-of-the-art Tsunami Mass Notification Systems in Jordan River, Port Renfrew, and Pacheedaht First Nation. This system includes a network of sirens to alert residents of earthquake and tsunami events and permit them time to take protective actions. The siren network is automatically triggered by an Earthquake Early Warning detection system capable of detecting seismic events up to 40 seconds before arrival of ground shaking. In the event of distant earthquakes that trigger a tsunami, sirens are activated by satellite or manually on-site.

The tone sounded by the Sirens depends on the hazard.

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Tsunami Tone: Similar to air raid siren tones, it plays for 20 seconds and is followed by the voice message "Tsunami warning, evacuate to high ground immediately". This tone and voice message loops until the hazard has passed. This tone automatically activates at a ground acceleration equivalent of a 7.0 magnitude earthquake or greater.

Earthquake Tone: Similar to an electronic alarm clock's beep, beep, beep, this tone plays for a few seconds and is followed by the voice message "Earthquake warning, drop, cover, and hold on." This will activate between a ground acceleration equivalent between magnitude 4 and 5, the level at which most people will feel the event and damage may occur.

All Clear: Westminster Chimes, followed by the voice message "All clear."

Test Tone: This is a High/Low tone: followed by the voice message "This is a test of the tsunami warning system. If this were a real event, further instructions would be provided."

Voice messaging gives residents and visitors to the area clear instructions on what steps to take in the event of an emergency. This system is in compliance with intelligibility requirements of National Fire Protection Association (NFPA) 2010 and Underwriter Laboratories of Canada (ULC) S576.

In the event of a Tsunami or other emergency, local government emergency programs may use a public alert system to deliver critical and potentially life-saving information to residents through phone, text message, or email. Local government public alert systems are optional and you will only receive notifications if you sign up for this service. For information on how to [sign up for this service here](#).

9. What is my local government going to do about coastal flooding risk due to sea level rise and tsunamis?

Under the *British Columbia Local Government Act and Emergency Program Act* (1996), local authorities (including local governments) are responsible for assessing, understanding and managing flood and inundation risk through land use planning and regulations, including planning for potential emergencies and disasters. Local governments and regional coordination bodies will be provided this information to inform their coastal flood policy, emergency planning and communication activities. For more information contact your local government.

10. My property is in a potentially affected area. What does this mean?

If your property is in a potentially affected area, it means that it may be subject to coastal flooding. Impacts to your property will depend on physical shoreline characteristics, proximity to the sea edge and elevation above sea level.

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- Low-lying properties close to the sea may be subject to temporary (tidal) flooding, or, over time, may experience permanent inundation.
- Properties on coastal bluff may be subject to impacts from erosion.
- Properties set back from the sea may be subject to effects from wind and waves.

11. Where can I find information about how can I prepare for sea level rise and tsunamis?

For information on preparing yourself and your family for coastal flooding, visit: www.prepareyourself.ca and your local government's emergency program. For information about land use or emergency response, contact your local government.