

Tsunami Preparedness in the Capital Region

*A presentation by:
the CRD Local Government Emergency Program
Advisory Commission (LG EPAC) and your
community emergency programs*

What is a tsunami?

- A tsunami is a natural hazard consisting of a series of long surge-like waves generated when a large volume of ocean water is rapidly displaced.
- There is no way to predict if a tsunami may happen.
- Tsunami waves can keep coming for hours.
- The largest wave may be hours after the first one – stay away from the shore until local government officials tell you it is safe to return.

Why shouldn't I wait for an official warning if I feel a major earthquake?

- **STRONG SHAKING IS YOUR WARNING!**
- If you feel a strong earthquake that lasts for 60 seconds or more, or makes it difficult to stand, go to higher ground immediately!
- Officials may not have time to get to coastal areas to warn you or communications systems may be damaged due to earthquake.

What causes a tsunami?

- Major submarine or coastal earthquakes are the cause of most tsunamis and create the biggest tsunamis, in terms of wave height at shore and the size of affected area.
- Tsunamis may also be triggered by landslides, volcanoes or explosions.

What types of events could cause a tsunami in the CRD?

There are two types of tsunamis:

- Distant Tsunami - **Will not be “felt,”** Alaska or Japan.
- Local Tsunami – **Will be “felt,”** Cascadia Subduction Zone (CSZ) or “the Big One”.

Earthquake safety

- Most tsunami risk in our region is from a “felt” earthquake.
- Remember your earthquake safety:



- If you are near the ocean, move to higher ground or inland once the shaking has stopped.

How long will it take for the tsunami to arrive?

Location	Tsunami Arrival Time (min)	Time to Maximum Water level (min)	Maximum Water level (m)
Port Renfrew (entrance)	35	50	3.5
Sooke Harbour (entrance)	60	75	2.5
Esquimalt Harbour (entrance)	77	96	2.7
Victoria Harbour and Gorge Waterway (Entrance)	76	95	2.5
Cadboro Bay	90	160	2.0
Sidney	110	150	2.0

Reference: Capital Regional District Modelling of Potential Tsunami Inundation Limits and Run-Up

How will I know a distant tsunami is coming?

- You will generally have hours before a tsunami arrives.
- It is low risk, maximum 20 cm or 8 inch rise in water height.
- An alert is issued by authorities (WCATWC, EMBC).
- Local government officials enact community notification procedures if necessary.
- Subscribe directly to receive WCATWC alerts:
<https://public.govdelivery.com/accounts/GOVDUSNWS/subscriber/new>

Tsunami Alerts: What do they mean?

A **Watch** (least serious level of alert) is issued if the danger level is not known and you should stay alert for more information.

An **Advisory** (second highest level of alert) indicates that strong currents are likely and you should stay away from the shore.

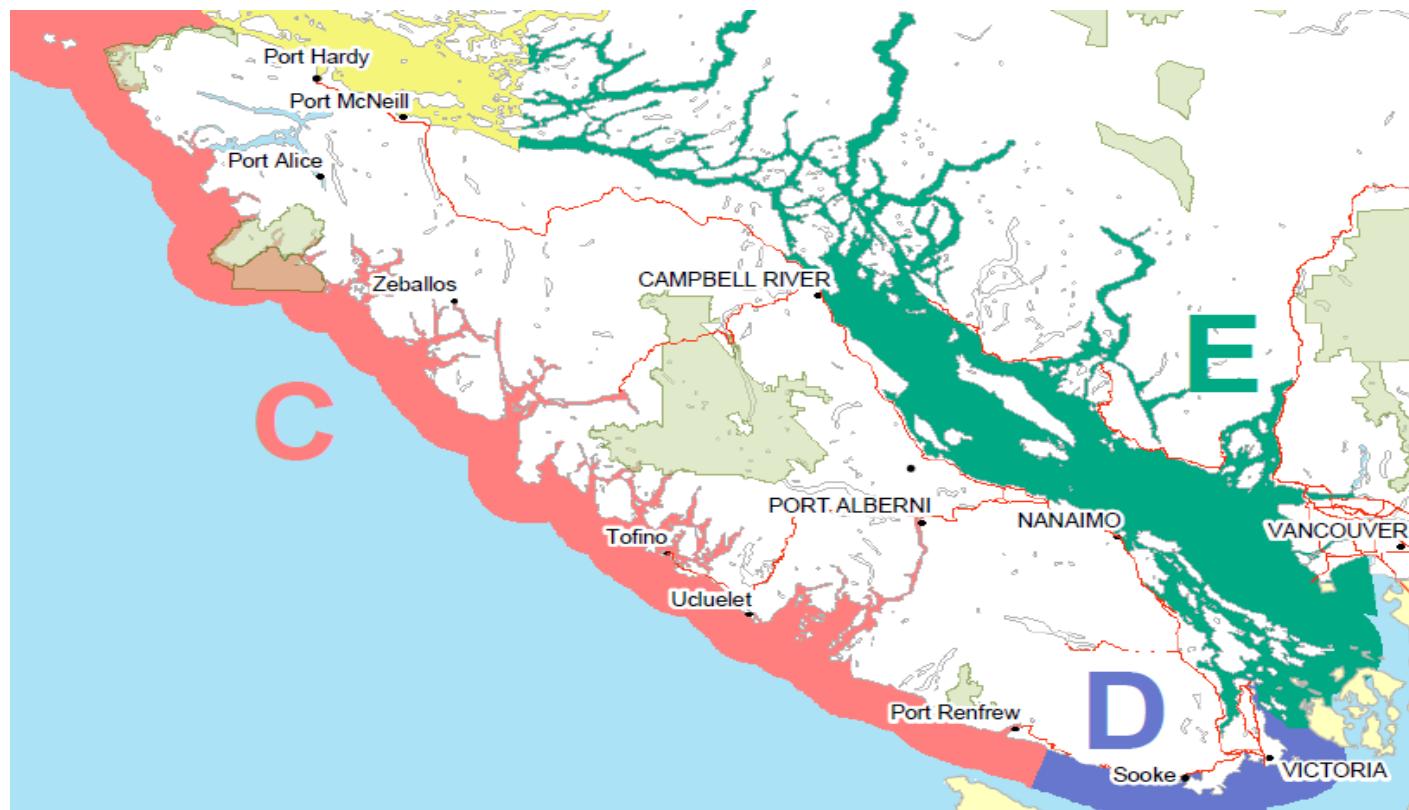
A **Warning** (most serious level of alert) indicates that an inundating wave is possible and evacuation may be suggested.

Local government officials will let you know when the danger has passed.

What are the different tsunami notification zones?

- West Coast Alaska Tsunami Warning Centre (WCATWC) has one zone that covers most of coastal BC.
- Emergency Management British Columbia (EMBC) will determine which of the 5 coastal BC zones will receive alerts.
- Residents of the capital region can be in zones C, D, or E.

What are the different BC tsunami notification zones?



What should I do in the event of a tsunami?

- If an earthquake is felt, Drop, Cover and Hold on for 60 seconds or until after the shaking stops.
- Immediately go to higher ground or inland!
 - “Higher ground” in the Capital Region is generally 4m or 13 feet elevation above high tide level.

When do I Evacuate?

- If you are near the ocean and feel a major earthquake lasting 60 seconds or more or it's hard to stand, get to higher ground!
- You may also notice:
 - A sudden rise or fall of ocean level.
 - A loud roaring noise from the ocean.

Where should I Evacuate From?

- Check www.PrepareYourself.ca for a map to find out if you live, work, play or go to school in a potential hazard area so you can be prepared.
- Move away from beaches, harbours, marinas, and low lying areas if you feel a strong earthquake.

How should I Evacuate?

- Evacuate immediately on foot or bicycle to an area outside the tsunami hazard area (check map, generally 4m or 13 ft elevation above high tide level).
- Keep roads clear for emergency vehicles - use a car only if absolutely necessary.
- It is NOT necessary to go to the highest point in the area.

How Long Should I Evacuate For?

- Return to the evacuated area only when local government officials tell you it is safe to return.
- Waves can arrive for hours, so it may not be safe to go back even after the first wave has arrived.
- Large aftershocks can also generate additional waves.

What does tsunami modeling tell us?

- An idea of where we are most at risk and the types of planning we should do.
- What we might expect in a specific, significant event.
- How the tsunami moves through the region.

What does the tsunami “hazard area” mean?

- The tsunami hazard area is below the projected inundation (flood) line where we expect water to come up onto shore, and gives us an idea of areas that may be at risk of tsunami flooding in the Region.

Where can I go to find out if I'm in a tsunami hazard area?

- Go to www.PrepareYourself.ca to view a map of the area, or contact your local emergency program.
- This area above the line gives a guideline to help determine a safe distance away from any tsunami wave run-up onshore, usually 4m or 13ft elevation above high tide level.

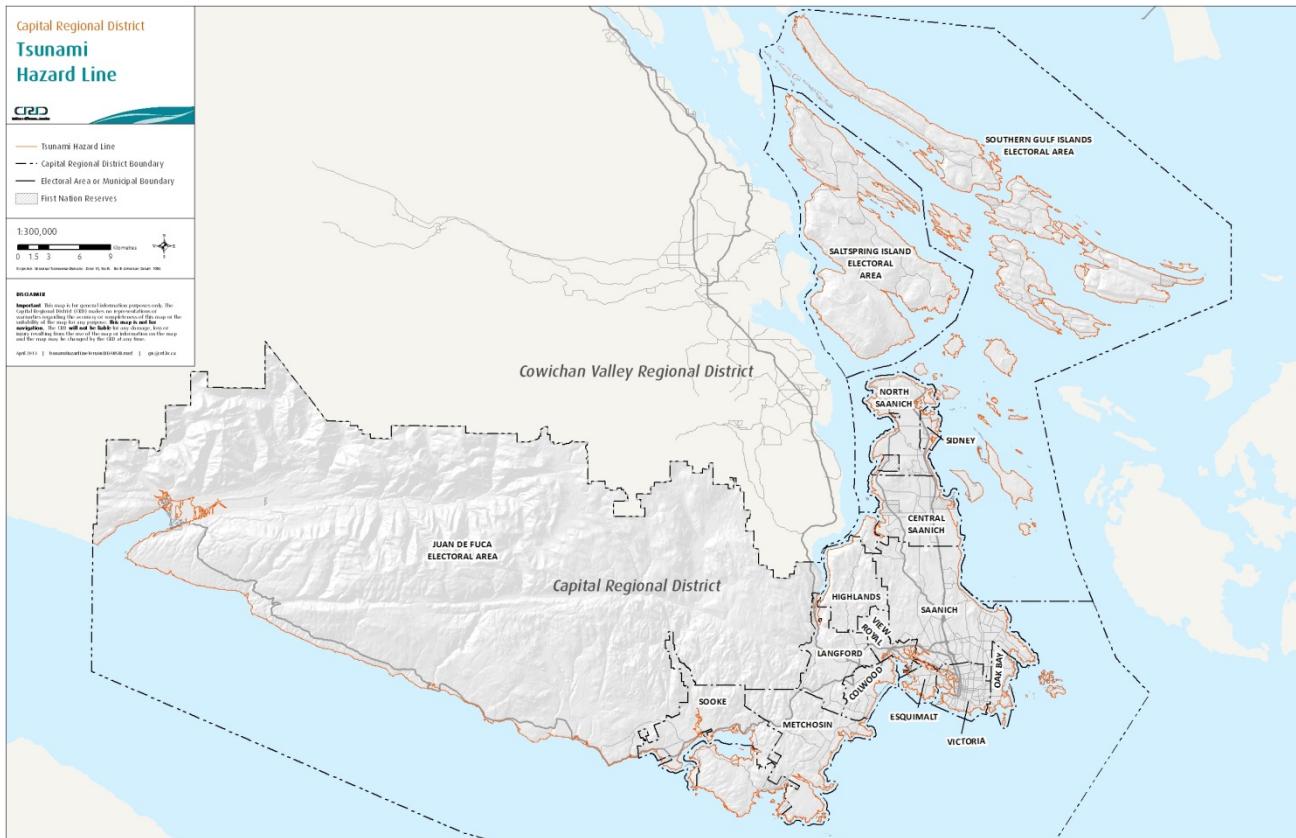
How is this map different than the one from 2004?

- This map was created with updated science and GIS data using the Neowave model.
- The map does not differ largely from the original, but confirms planning zones already in place.

How accurate is the modelling?

- It is based on many variables, looking at maximum probable results.
- Science is constantly being upgraded.
- The Neowave model has proven accurate when tested against actual events.
- The model is meant to provide a guideline for emergency planning and to help the public understand where safe areas are likely located.

Mapping



Click on the map to go to a high resolution version

Tsunami Safety

If you are near the ocean, the most important things to do if you feel an earthquake lasting 60 seconds or more, or it makes it hard to stand:

- Drop, Cover and Hold On for 60 seconds.
- Move to higher ground (generally 4m or 13ft elevation above high tide level).

Where can I get more information?

www.PrepareYourself.ca

What can I do?

- Get involved in your community emergency program.
- Know your neighbours.
- Be familiar with where the tsunami hazard areas are located and where safe areas are to evacuate.
- Have emergency kits for all family members, including pets.
- Learn more about emergency preparedness and risks in the Region at PrepareYourself.ca.

Questions?