

Learn to Protect Yourself from a Tsunami

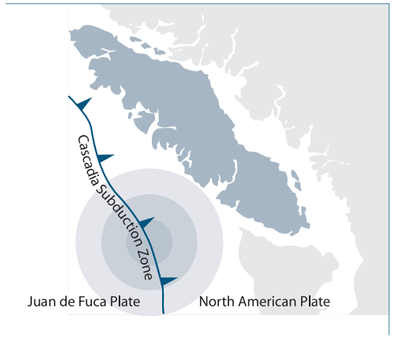
The main tsunami threat to Greater Victoria comes from a subduction earthquake off the West Coast.

A tsunami created elsewhere in the Pacific Basin would, at most, affect low-lying coastal areas in Greater Victoria, similar to large winter storms. Like large winter storms tsunami waves can threaten people on beaches because of the strong currents involved.

Other local earthquakes are not likely to generate destructive tsunamis directly. However, earthquake-generated landslides can produce large waves in the ocean and on lakes. You should move away from beaches and low lying areas if you feel a strong earthquake.

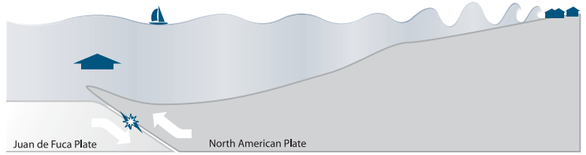
Notice to Greater Victoria Residents

The most dangerous tsunami threat will follow a major earthquake in the "subduction zone," located about 100 km off Vancouver Island. Such an earthquake (commonly called "The Big One") will cause ground shaking so severe that you will find it difficult to stand upright for 60 seconds or more. The best available science suggests that residents in the Victoria area plan for tsunami impacts within 4 metres elevation of the normal highest tide.



Because of the underwater topography in the Strait of Juan de Fuca, tsunamis created elsewhere in the Pacific Ocean are not likely to affect properties in Greater Victoria beyond the high water that normally comes with severe winter storms.

Likewise, minor or moderate earthquakes in the vicinity of Greater Victoria will not likely generate a destructive tsunami. However, strong local earthquakes can trigger landslides which in turn can generate significant waves if they enter the water.



About Tsunamis

Tsunamis are rare, but dangerous events. Scientists and technical experts agree that areas around Greater Victoria are not seriously threatened by tsunamis. (source: PEP website)

- Tsunamis can be caused by earthquakes. Earthquakes are common in BC, and more than 1,200 earthquakes are recorded each year. Most are too small to be felt, but an earthquake capable of causing structural damage is expected to occur about once every ten years, on average. A very strong earthquake is needed to generate a tsunami.
- Tsunamis, like earthquakes, may occur at any time of the day or week throughout the year.
- There is no way to predict when a tsunami may strike before one is generated.
- For Greater Victoria, our greatest chance of a damaging tsunami will follow a major earthquake occurring in the subduction zone off Vancouver Island.
- Tsunamis usually arrive as a series of waves, and each may arrive many minutes apart.

Local Earthquake – A strong earthquake in the Victoria area may also generate a local tsunami. Therefore, if you live or work in a tsunami hazard zone and feel strong ground shaking, you should move to high ground immediately and return only after local emergency officials advise that it is safe to do so. Emergency officials may not have time or means to issue a tsunami warning following a local earthquake. Refer to the map on the reverse side to identify tsunami hazard zones in your area.

Distant Earthquake – Tsunamis originating some distance away in the Pacific Ocean may not be preceded by a "felt earthquake" in Greater Victoria. When a warning from a distant tsunami is issued, local emergency officials usually have time to notify citizens close to beaches and low-lying areas. Communities in high-risk areas along the west coast of Vancouver Island will activate their emergency plans and advise people in tsunami hazard zones to move to higher ground. In the Greater Victoria area, tsunami waves caused by distant earthquakes may impact the same coastal properties that are regularly affected by serious winter storms.

For residents or workers in tsunami planning zones, the local government will issue notifications by various means, such as instructions from police, fire or other emergency personnel, use of loud hailers, telephone fan-outs, and local news media. People are advised to follow the directions of local emergency officials and stay tuned to local radio or television stations for additional information and instructions from emergency officials.

For More Information

Find out what you can do now to make sure you and your family are prepared for earthquakes, tsunamis, and other hazards where you live, work, and play. See the Provincial Emergency Program website at: www.pep.bc.ca

Are you prepared? Be part of your community. Volunteer with your local Emergency Program. Contact the Emergency Program in your area at:

District of Central Saanich
544-4227
www.pemo.ca

Township of Esquimalt
414-7100.
www.esquimalt.ca/emerg/index.htm

District of North Saanich
656-1931
www.pemo.ca

District of Oak Bay
592-9121
www.oakbayemergency.com

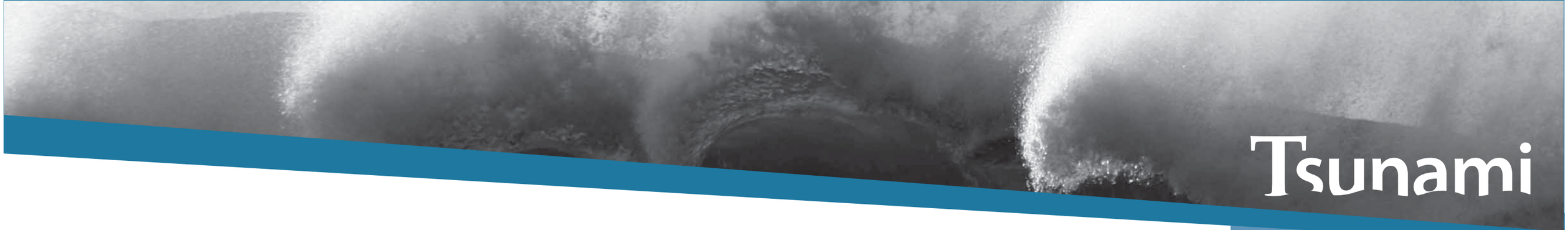
District of Saanich
475-5503
www.saanich.ca/resident/safety/prep/program.html

Town of Sidney
656-2121
www.pemo.ca

City of Victoria
920-3373
www.vema-info.ca

Town of View Royal
479-7322
www.town.viewroyal.bc.ca

Tsunami



Tsunami

How to protect yourself from tsunami following a major earthquake in Greater Victoria

1. Your best protection from a tsunami following a big earthquake is to seek high ground, approximately 4 metres or more above sea level. This is a level well above the expected tsunami height. For safe zones, see the map on the back of this brochure, or see www.pep.bc.ca. The first wave from such an earthquake could arrive in Victoria area in about an hour and a half. Expect several waves over many hours. The second or third wave may be bigger than the first.

2. Make sure your neighbours know of the tsunami potential after a major earthquake has hit, and help each other reach safety.

3. Move to a tsunami-safe zone in your community (refer to map). Remember to take your family emergency kit with you, including a portable AM/FM radio.

4. Seek an open space in a tsunami-safe zone to gather with others after the earthquake. In inclement weather, remember the potential for aftershocks and use caution in selecting a place of shelter.

5. Listen to a local radio station for further information and instructions specific to your community. Do not return to low-lying coastal areas until you are informed by officials that it is safe to do so.

Tsunami Warnings

Be aware of indications that a tsunami may be coming:

1. **Ground Shaking in the Greater Victoria Area.** A strong earthquake lasting 60 seconds or more should be your warning to seek high ground if you are near the sea. When a major subduction earthquake occurs, the first wave could arrive at Victoria in about an hour and a half.

2. **Rapid Rise or Fall in Sea Level** – If you happen to be at a beach anywhere in the world, you may observe an important natural warning sign of an approaching tsunami wave. The sea level may begin rising steadily, or the water level may drop so much that the sea floor is exposed. These are signs that a tsunami wave is coming very soon. Warn others around you and seek high ground immediately.

3. **Official Notices** – Although Greater Victoria is not significantly threatened by tsunamis generated elsewhere in the Pacific Ocean, you may hear official notices addressed to other communities through the radio and television news.

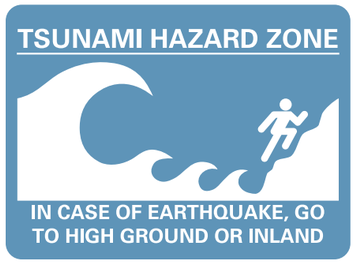
Strong shaking is your warning. When an earthquake makes it difficult to stand or the shaking lasts for 60 seconds or more, move away from beaches and low lying areas and seek higher ground. Do not count on official notices to warn you to evacuate because the earthquake may cause communication systems to fail.

Tsunami Watches and Warnings are not likely to be issued for the Greater Victoria area, however you should know these terms and how to protect yourself: WATCH, WARNING, and CANCELLATION.

A tsunami WATCH means the area indicated in the message could be impacted by a tsunami. This is an advance alert based on early seismic information to allow communities to prepare for possible evacuation and impact.

What to do when a tsunami Watch is issued:

- Listen to a local radio station for ongoing news about the potential tsunami.
- Check with others in the immediate vicinity to make sure they know about the situation.
- Assemble any items you may wish to take with you to safety, such as pets, camping equipment, or travel bags.
- If you have access to the Internet, you can check the status of tsunami alerts by viewing the PEP website at: www.pep.bc.ca. Click on "Tsunami." Note that Greater Victoria is located in Zone D on the website map.



A tsunami WARNING means there is an imminent threat of a tsunami or confirmation that a tsunami wave has been generated for the area indicated in the message. This is the highest and most serious level of tsunami notification. Local communities are expected to activate emergency plans and take safety actions, such as evacuating low-lying coastal areas. If you are visiting a community on the west coast of Vancouver Island and hear a tsunami warning, follow the instructions of local emergency personnel.

What to do when a tsunami Warning is issued:

- If you hear a tsunami warning but did not feel an earthquake, the wave is expected to be no higher than 1 meter in height. In this case, beaches and houses immediately above the high tide line should be evacuated and residents should move away from the beach and shoreline.
- If the warning was preceded by an earthquake, assume that a tsunami of 1 to 3 metres in height has been generated.
- Make sure others nearby know of the warning.
- Move to high ground nearby in the community. In Greater Victoria, the recommended safe zone in the case of a tsunami generated by an earthquake that you felt is higher than 4 meters above sea level. On the outer west coast of Vancouver Island you should move to ground that is 20 meters above sea level or greater.
- Go to an open space in a safe zone to gather with others.
- Wait until you are informed by officials that it is safe to return.

A tsunami CANCELLATION or All Clear means the threat of an imminent damaging tsunami is over.

What to do when a tsunami Cancellation is issued:

- Confirm that the Cancellation has been issued by the local emergency program for your area. One community may report a cancellation by news radio or television, but it may not apply to your location.
- If confirmed, you are free to return to coastal areas.

How to Use the Hazard Map

1. Use the map on the reverse side of this brochure to locate your home and determine if you are in a tsunami planning zone.
2. If your home is outside a tsunami planning zone, be prepared to receive neighbours in need of shelter.
3. If you home is in a tsunami planning zone, locate the nearest tsunami safe zone on the map.
4. Locate on the map the nearest park, field, parking lot, or other open space in the tsunami safe zone where you can gather with others to receive further information.
5. Identify the route you would walk to reach safety within one hour of a major earthquake. After an earthquake, roads may be blocked and driving may not be a safe option.
6. Do the same for your place of work, school, or common recreational facilities.
7. Discuss the tsunami hazard with your family and co-workers. Everyone should know what to do when a tsunami follows a major earthquake. Discussing tsunamis ahead of time will help reduce fear and save precious time.

Be Prepared for All Hazards

Tsunami is just one of many hazards that may affect your community. Learn about and prepare for them all:

Home
Prepare individual and family kits to make sure you have the supplies you need to sustain yourself. See the Individual & Neighbourhood All Hazard Emergency Preparedness Handbook at www.pep.bc.ca.

Workplace
Workplaces located in tsunami planning zones should have emergency plans for responding to potential tsunamis.

Schools
If your child's school is not in a tsunami planning zone, find out where you will go to pick up your child following a tsunami warning or impact. Remember, telephone lines may be unusable after a big earthquake and roadways may be blocked by debris.