

TSUNAMI PREPARATION AND RESPONSE RECOMMENDATIONS





The inter-institutional roundtable on tsunami preparation and response recommendations is comprised of:

- Servicio Hidrográfico y Oceanográfico de la Armada (SHOA) [Army Hydrography and Oceanography Service].
- Centro Sismológico Nacional (CSN) [National Seismology Center].
- Ministerio de Obras Públicas (MOP) [Ministry of Public Works].
 - Dirección General de Obras Públicas [General Administration of Public Works].
 - Dirección Nacional de Arquitectura [National Architecture Administration].
 - Instituto Nacional de Hidráulica [National Hydraulics Institute].
 - Dirección Nacional de Vialidad [National Road Administration].
- Ministerio de Vivienda y Urbanismo (MINVU) [Ministry of Housing and Urbanism].
- Departamento de Emergencias y Desastres (MINSAL) [Department of Emergencies and Disasters].
- Servicio Nacional de Geología y Minería (SERNAGEOMIN) [National Geology and Mining Service].
- Instituto de Ingenieros de Chile [Chilean Institute of Engineers].
- Colegio de Ingenieros de Chile [Chilean College of Engineers].
- Centro Nacional de Investigación para la Gestión Integrada de Desastres Naturales (CIGIDEN) [National Research Center for Integrated Natural Disaster Management].
- Universidad Técnica Federico Santa María (UTFSM).
- Asociación Chilena de Seguridad (ACHS) [Chilean Health Safety Association].
- Instituto de Seguridad del Trabajo (IST) [Institute of Occupational Safety].
- Mutual de Seguridad CCHC.
- Academia Nacional de Bomberos de Chile (ANB) [Chilean National Fire Department Training Academy].
- Cruz Roja Chilena (CRCH) [Chilean Red Cross].
- Servicio Nacional de la Discapacidad (SENADIS) [National Disability Service].
- Comisión Nacional de Seguridad de Tránsito (CONASET) [National Transport Safety Committee].

Under the coordination of the National Emergency Office of the Ministry of the Interior and Public Safety (ONEMI)

The bodies participating in the preparation of this document hereby state that the information it contains are recommendations of good practices based on existing knowledge, aiming to decrease the risks of incidents associated with a tsunami caused by seismic activity, but which do not guarantee the absence of accidents or possible fatalities.

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A tsunami is a physical phenomenon caused by earthquakes occurring below or close to the ocean floor, mass movements, underwater landslides and/or volcanic eruptions, and it is manifested along the coast as a large mass of water that can flood lands and cause destruction in coastal areas.

Tsunamis caused by earthquakes near the coast can arrive within minutes and their effect can continue for several hours after the earthquake has occurred. Tsunamis may also originate in other places in the Pacific Ocean, generally located more than 1000 kilometers and more than three hours' travel away, reaching the coast several hours after the earthquake occurs.

These phenomena are amongst the most disastrous and complex in nature. All tsunamis are potentially dangerous and when one reaches the coast it can cause loss of life and damage to property. Due to their destructive power, they have a significant effect on human, social and economic factors within a community. Historical archives show that they have caused large-scale destruction in coastal settlements around the world, and Chile is no exception.

Chile, with its very long coastline, has experienced large and destructive tsunamis throughout history. For example, on May 22nd 1960 in Valdivia and February 17th 2010 in Cauquenes. On other occasions, less destructive tsunamis have been recorded, such as on March 3rd 1985 and on April 1st 2014. Since the year 1500 to the present, at least 70 tsunamis have been recorded on the Chilean coast.

An understanding of this phenomenon, its behaviour and consequences is necessary for implementing the necessary measures at the correct time to protect people's lives.

As a tsunami can occur at any moment and affect people who live along the coast or anyone nearby, all Chileans must know what to do in the case of a tsunami.

The use of this document and the proper preparation will reduce fear and gain valuable time during an emergency.

The manual "Tsunami Preparation and Response Recommendations", is complementary to the previous manual "Recommendations for 'before, during and after' Earthquakes", published by ONEMI in October 2013, and which can be downloaded here:

<http://siac.onemi.gob.cl/documentos/INGLES.pdf>

CENTRAL MESSAGE

- Get information and find out if you are in a Tsunami Risk Zone.
- Familiarise yourself with Evacuation Routes, Safe Zones and Meeting Points.
- Make an Evacuation Plan with your family, colleagues, classmates and community.
- Practice the evacuation.
- Know the natural signs that precede a tsunami.
- Remember that you may only have a few minutes to evacuate.
- Be aware of the needs of young children, people with disabilities, pregnant women and the elderly.



2.1. GENERAL RECOMMENDATIONS

If you live on the coast or are just visiting:

- **Get information and find out if you are in a Tsunami Risk Zone.** All areas along the coast under the Safety Line, located approximately 30 metres above sea level, are considered within the Tsunami Risk Zone. You should also be aware that river banks and estuaries are also considered risk zones, as a tsunami can enter via these water courses and advance several kilometers inland.
- **Find out if there are any Tsunami Evacuation Maps of the local area.** These maps show Risk Zones, Evacuation Routes and Safe Zones, allowing citizens to evacuate properly. Download and consult the maps from the following website:

<http://www.onemi.cl>

Access Tsunami Evacuation Maps directly at the following link:

<http://bit.ly/1qyGsx2>

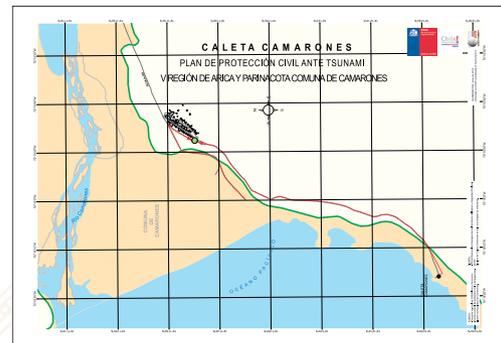
- **Find out if there are Tsunami Flood Maps (CITSU) for your area.** A CITSU represents the tsunami threat in a specific area, showing maximum expected flood levels in a simulated worst case scenario. Download and consult the maps at the following website:

<http://www.snamchile.cl>

- **If there are no Tsunami Evacuation Maps or Tsunami Flood Maps for your local area,** check around to see if there are signposts with tsunami safety information, or check with the local council for a Tsunami Evacuation Plan. The Police and Fire Departments may also have information.

- **Identify and check the Evacuation Routes, Safe Zones and Meeting Points** signposted around the area and published on Tsunami Evacuation Maps. If no Evacuation Routes or Safe Zones are signposted, explore the area and identify the most direct streets or paths to higher ground, away from water courses and which do not cross rivers or estuaries.

- **Prepare an Evacuation Plan with your family, colleagues, classmates and community.** An effective Evacuation Plan must allow you to reach a Safe Zone on foot in the event of a tsunami within approximately 15 minutes. Every meter covered is a benefit to your safety. Take into account the specific needs of children, people with disabilities, pregnant women or the elderly.



- **Practice your Evacuation Plan.** Walk the Evacuation Route and find out how long it takes you to reach the Safe Zone. If you live in a tower block, do not forget to include the time it takes to get down the stairs. You have to be able to follow your evacuation route, even at night. If you practice your plan it will be easier for you to evacuate in a real emergency situation.

- **Plan for more than one evacuation route.** In a real situation, the streets and paths may be out of service or blocked.

- **The evacuation should ideally be on foot.** In urban or densely populated areas, any other means of transport is not recommended as it can lead to accidents, road congestion and slower evacuation in general. However, if a Tsunami Safe Zone is several kilometers away, find out about the local council's Evacuation Plan and any roads especially equipped for vehicles.

- **Identify Meeting Points with your family.** These must be above the Safety Line, for a situation in which family members become separated during an emergency.

- **Create and practice a Family Emergency Plan,** setting out roles for each member of the family or with the community. For help with this check this website:

<http://www.familiapreparada.cl>

- **Recognize any of these signs** that indicate that a tsunami may occur:

- An earthquake during which it is difficult to remain standing.
- An earthquake lasting around 30 seconds or more.

If the tide goes out rapidly and noticeably, exposing the sea bed, this means that a tsunami is in progress.

- **Find out about the way that authorities give the alert for an evacuation.** Find out if there are sirens, alarms or special lights to signal a Tsunami Alert. Remember that there are situations in which a tsunami can occur even when you have not felt an earthquake and you must evacuate as soon as the authorities raise the alarm.

- **Check the settings on your cell phone to make sure it can work with the Emergency Alert System (SAE).** This system allows you to receive emergency information on compatible telephones. A message will be sent out in case of a tsunami alert. Its use is especially helpful for people with hearing disabilities. For more information check:

<http://www.sae.gob.cl/>

- **Have a backpack ready with an Emergency Kit so you can evacuate quickly.** Remember to have important documents, such as: title deeds, family health book, ID cards, etc. in waterproof bags and in the emergency kit that you will use when evacuating. Try to have some cash, as it is very likely that ATMs will not be working after a strong earthquake. Check your Emergency Kit frequently as some supplies may need to be replaced.

- **The basic elements of an Emergency Kit for evacuation are**

- Water (2 litres per person).
- Canned food and a manual can-opener.
- Toilet paper.
- Flashlight and extra batteries.
- Portable radio and extra batteries.
- First aid kit.
- Medicine.
- Copies of car and house keys.
- Cash.
- Warm clothing.
- Safety gloves.

- **When organizing your Emergency Kit, take into account the needs of children, people with disabilities, pregnant women and the elderly.**



Llena tu ficha en
www.familiapreparada.cl

y prepárate porque la mejor alternativa es estar preparado

 @onemichile


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Ministerio del Interior
y Seguridad Pública
Gobierno de Chile

2. PREPARATION

- If you have friends or family that live in a **Safe Zone**, coordinate with them regarding the possibility of keeping elements from your kit in their homes.
- Always have a **portable radio at hand**, so you can receive information on an alert and the recommendations from the authorities. Take it with you when you go to the beach. Always remember to check the batteries.
- Identify **children, people with disabilities or elderly persons** who are not self-reliant with wrist bands or some distinctive visible element.
- Consider helping others in your building as part of your **Emergency Plan**. If you live in a building with 8 floors or more that is within the Tsunami Risk Zone, ensure that the Emergency Plan for the building considers the possible presence of non-residents when carrying out a Vertical Evacuation if necessary. You should prioritize the idea of mutual help and solidarity.
- If you are visiting an area with the risk of tsunami. Ask at the hotel, hostel or campsite about information on safe zones and the alert system. It is important to know where established evacuation routes are before a Tsunami Alert is issued. If the information is not available, consult the local authorities (Council, Fire Department or Police).
- If you have **pets**, include them in your **Evacuation Plan** and include their food in your Emergency Kit. You should remember that caring for your pet should never put your own life or the lives of others at risk.



2.2 INCLUSIVE PREPARATION MEASURES

- **Identify any special needs** of your family members (children, people with disabilities, pregnant women or the elderly) in order to prepare the necessary help in case of an emergency.
- **Create an Evacuation Plan.** Make a plan and identify the evacuation routes that have adequate accessibility for moving people with disabilities or with special requirements, to ensure that you can get to a Safe Zone in case of a Tsunami. Always plan an alternative route and keep access points clear in your home so you can evacuate quickly and easily. If you live in a tall building, make sure you allow time and any necessary support you need to get down the stairs with people with restricted movement.
- **Remember to coordinate with a medical** centre or hospital for your Evacuation Plan, if you or anyone in your family depends on medical treatment (e.g. dialysis, insulin, oxygen dependency, etc.).
- **Identify an external support network,** with family, friends and members of your community, who may be able to help during an evacuation. It is necessary to include them in your family plan and that they know how to deal with the special needs of people

with disabilities (operating a wheelchair, administering medications, giving instructions and help to people with hearing difficulty or poor vision, supporting people with mental disabilities, etc.).

- **Include supplies and medication in your Emergency Kit,** as well as a copy of medical prescriptions and information on treatments or doses. Consider equipment used to transport and adequately store medication if it needs to be kept cold.
- **If you have an animal for support,** ensure that your animal is included in your Evacuation Plan and include their food and ID documents in your Emergency Kit.
- If the health of anyone with a disability requires a permanent source of electricity, it is necessary to **consider a portable generator,** car cables or additional batteries for devices that require them.

2.3 PREPARATION MEASURES AT SCHOOL

- Find out if your school is within a Tsunami Alert Zone.
- Find out about the Integral School Safety Plan and get information about the protocols that are in place in case of a tsunami, including:
 - **Evacuation Routes** to reach a Tsunami Safe Zone quickly and easily.
 - **The Tsunami Safe Zones and Meeting Points** where the children and adolescents from the school will go.
 - **The special needs** of some members of the school community, in order to coordinate the right help and facilitate the evacuation of people with disabilities. Include the inclusive preparation measures described above (point 2.2) which will help the evacuation proceed in a coordinated manner during an emergency.
- **Respect the indications set out in the tsunami protocol.** Not following these directions could hinder the evacuation process and generate unnecessary confusion and delays.
- Suggest that the school community conduct **tsunami drills**. Practicing the evacuation to a Tsunami Safe Zone will ensure an adequate response in the event of a real tsunami.
- **Pay attention to official alerts** of a tsunami issued by the local authorities. When receiving information of a Tsunami Alert or Alarm you will be sure that the school will activate its Evacuation Plan.



2.4 PREPARATION MEASURES WITH YOUR COMMUNITY

- Identify people with special requirements (children, people with disabilities, pregnant women or the elderly). Ask them about their needs and set up an inclusive preparation plan together as suggested in this document; this will allow you to evacuate in a coordinated way in case of an emergency.
- Check the signposts on evacuation routes and tsunami safe zones. Together with the local authorities (council, Fire Department, Police Force and Health Services) it is important to have and give out information on Safe Zones and Meeting Points to the community.



CENTRAL MESSAGE

- Remain calm.
- Stay away from the coast, rivers and estuaries.
- Help those in need during an evacuation.
- Implement your Evacuation Plan and move to a nearby Tsunami Safe Zone.
- Take your Emergency Kit.
- Stay informed and/or follow the instructions of the local authorities.



3.1 IMMEDIATE RESPONSE WHEN FEELING AN EARTHQUAKE

- If you are in a coastal area and you feel an earthquake that is strong enough to make it difficult to remain standing or which lasts around 30 seconds or more, these are signs that indicate the probable occurrence of a tsunami. **Implement your Evacuation Plan and move to a Tsunami Safe Zone. This is known as self-evacuation.**
- **During the evacuation and in a Tsunami Safe Zone,** stay away from old buildings, electricity cables,

rocky slopes or objects that may fall. Remember that aftershocks may cause additional damage. Take care on Evacuation Routes and in Safe Zones as there may be damage caused by the earthquake.

- **Whenever you feel an earthquake,** regardless of its characteristics, find information from official organisations and find out what recommendations are being issued by authorities.

3.2 RESPONSE UNDER INSTRUCTION FROM THE AUTHORITIES

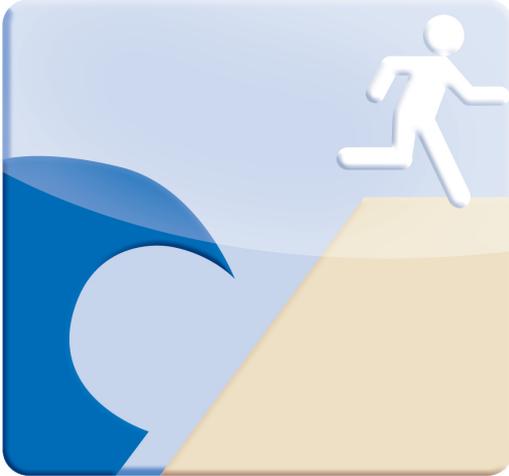
- If you become aware that an earthquake has occurred in another part of the country or along the coast of the Pacific Ocean, use any available means to find out what measures should be taken.
- If you hear or find out about a Tsunami Alert or Alarm, evacuate to a Tsunami Safe Zone or to high ground. A Tsunami Alert or Alarm is issued whenever there is a risk of tsunami and there may be little time to evacuate.

- **Implement your Evacuation Plan and move to a Tsunami Safe Zone.**



3.3 EXECUTING YOUR EVACUATION PLAN.

Implement the **Evacuation Plan** that you designed and practiced together with your family, colleagues, classmates or community, considering the following recommendations:



- **Evacuate to a Tsunami Safe Zone** located more than 30 meters above sea level. It may be that you have little time until the tsunami arrives. Move away from the coast, rivers and water courses. Evacuate on foot, move quickly but try not to run, every meter you move is of benefit to your safety. Do not stop to watch the tsunami arrive.

- **Keep a close watch on children or persons you are responsible for.** Remember that they should carry identification or some visible element, with information of an adult who can be contacted in case you get separated from the child.

- **Take your Emergency Kit** to enable you to survive until help arrives. Remember that this may take several hours.

- **Follow the instructions of the local authorities.** Stay aware and/or informed through a portable radio or any other means available to obtain official and up-to-date information on the emergency.

- **Try to help others,** especially people with reduced mobility, such as: children, people with disabilities, pregnant women or the elderly. Remember that a successful evacuation requires the commitment of society as a whole. Execute the Inclusive Measures (see point 2.2).



3. IMMEDIATE RESPONSE

- If you are on a boat, follow the instructions of the **Marine Authorities**. It may be the case that you are advised to evacuate away from the coast to a point where the sea is of a depth above 150 meters. Owners of small boats may find it is safer to abandon their boats at a pier and move quickly towards higher ground.

- Return to your home only when the local authorities have said it is safe to do so. A tsunami is a series of waves that may continue for several hours. Do not think that the danger has passed after the first wave.

- If you want to communicate with family or friends, first try **text messaging** or using social networks.



3.4 VERTICAL EVACUATION

• Vertical Evacuation towards the top floors of a tall building of eight floors or more can be a secondary plan to save your life, in the following cases:

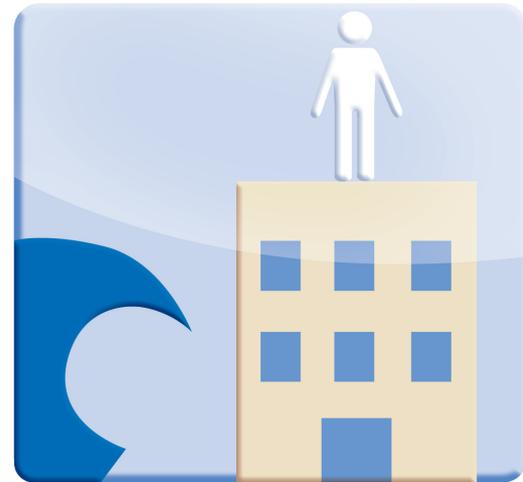
- If you have limited mobility (children, people with disabilities, pregnant women or the elderly).
- If you have determined that you cannot reach a Tsunami Safe Zone within approximately 15 minutes after an earthquake or Tsunami Alert. Take into account that aftershocks usually occur and the building may be damaged or without electricity. The lifts must not be used.

In these cases, Vertical Evacuation as a secondary plan may increase your chance of survival, as has been seen with previous tsunamis in other countries.

- Priority should always be given to Horizontal Evacuation for saving your life by walking to the nearest Tsunami Safe Zone. This is the best option, as it is not guaranteed that a building will resist a tsunami.
- Houses and buildings with less than eight floors located in the Tsunami Risk Zone may be particularly vulnerable to the impact of a tsunami, and these should not be considered for Vertical Evacuation as they lack the necessary resistance.

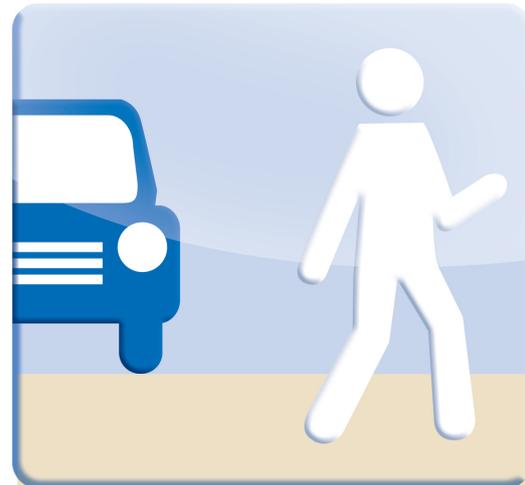
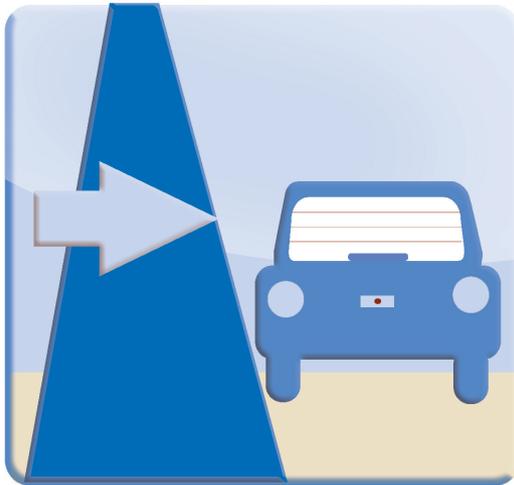
• If you live in a building with eight floors or more located within a Tsunami Risk Zone, practice your vertical evacuation Emergency Plan. There may be people outside who need to evacuate vertically. Remember that mutual help and solidarity among citizens can save lives.

• Remain on upper floors until there is official information that the Tsunami Alert has ended. This information is normally given through the media, such as radio or television.



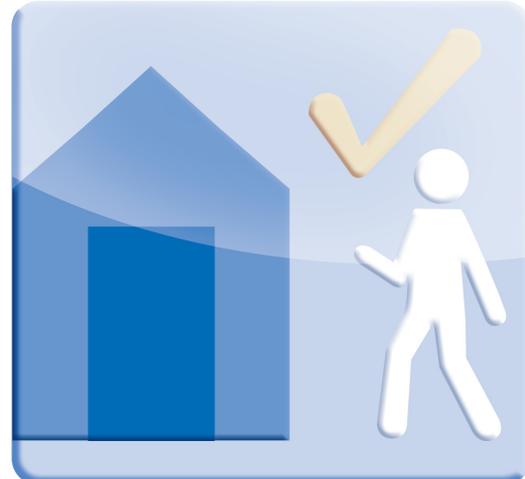
3.5 IF YOU ARE DRIVING A VEHICLE

- If you are driving on rural coastal roads and you feel or find out about an earthquake, you should slow down and move away from the shoreline, continue driving until you reach high ground at least 30 meters above sea level. Remember that you may be able to reach higher ground quicker by walking; in which case, make sure your vehicle is not left blocking any roads.
- If you are driving on urban coastal roads, leave your vehicle, making sure not to block any evacuation routes or other roads, continue on foot to the nearest Tsunami Safe Zone.
- If you are driving a public transport vehicle, park the vehicle without blocking an evacuation route or other roads. Ensure that all passengers have disembarked and continue on foot to the nearest Tsunami Safe Zone.
- Return to your vehicle only when the official authorities inform you that the tsunami threat has passed. Drive with extreme caution, as the earthquake may have caused landslides or serious damage to the highways infrastructure.



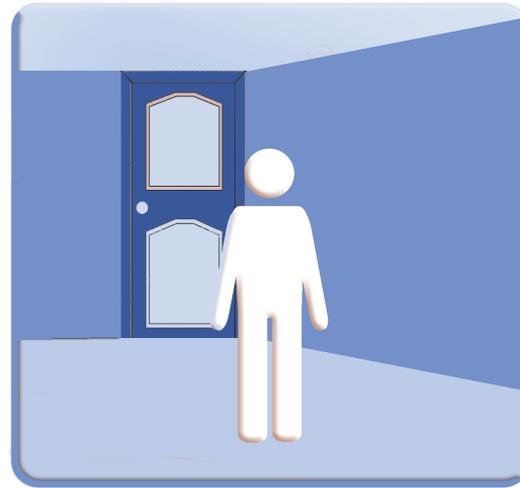
CENTRAL MESSAGE

- Remain in a Tsunami Safe Zone until the authorities indicate that you can return.
- Before entering your property, check for any health hazards or dangers.
- Stay alert, aftershocks may continue and a second tsunami alert may be issued.
- Communicate with your family, preferably by text message and/or through social networks.
- Continue to check information and follow the instructions of the local authorities.



4.1 GENERAL RECOMMENDATIONS

- **Stay in a Tsunami Safe Zone.** A tsunami can last several hours. Remember that you may have to stay in a Safe Zone longer than expected. Return to your home only when told to do so by the proper authorities.
- **Stay informed** and keep alert to the instructions of the authorities.
- **Contact the emergency services** (ambulance, fire department, police, etc.) if anyone needs to be rescued. Many people without the proper knowledge or training have died or been injured trying to rescue others, and such people may hinder real rescue and emergency operations.
- **Communicate with your family using text messaging and/or social networks.** Use your telephone for emergency calls only in order to avoid oversaturating telephone lines.
- **Check your food supplies, take care and ration your supply of food and water.** Do not eat food or drink water that may have come into contact with water from the tsunami as it may be contaminated. Try to drink only bottled water and food distributed by the authorities, following their instructions on its consumption.
- **Stay away from areas that were covered by tsunami waters** unless you are sure the electricity has been cut off, as there may be risk of electrocution.
- **If possible, use strong footwear and gloves,** if you are moving objects in your home. This will protect you against cuts and injury. The most common injury after a disaster is cuts to the hands and feet.
- **Remember that aftershocks may occur** and that they may cause additional damage. Stay alert and informed and follow the instructions of the local authorities.



4.2 IF THE AUTHORITIES INDICATE THAT YOU CAN RETURN

- If you do not live in an area affected by the tsunami, stay away from the tsunami-hit area. You would be unnecessarily exposing yourself to risks from the residual effects of the flooding, such as: contaminated water, electrocution, fallen buildings, broken roads, landslides, mudslides, rock falls and other dangers.
- Inspect the exterior of your home to check for damage that may make it dangerous to enter. If it is severely damaged it must be assessed by a specialist to determine whether it is safe to re-enter the building.
- If you are going to enter the building, exercise extreme caution. Tsunami flood-water may have caused serious damage to the structure, especially in homes made from adobe, wood or brick.
- Check that the water, gas and electricity have been cut off before entering the home. If the property has been flooded, the electrical system must be checked by a technician before reconnecting the electricity.
- Enter the property with a flashlight to minimise the risk of fire, as there may be the presence of natural gas. Do not use candles or other fire-based lights.
- Open doors and windows to help dry out and ventilate the property. Remove mud after it has solidified.
- Pay particular attention to the behaviour of your pet, as it may change drastically during an emergency, e.g. it may become more aggressive.



5. FACT AND FICTION

Fiction: A tsunami is just one wave.

Fact: A tsunami is a series of waves generated by the sudden displacement of a large mass of water. Just as the ripples on a pond when we through in a stone, several waves are generated. There may also be more than one series of waves if an earthquake or other phenomenon causes an underwater landslide or mass movement. It is different from normal waves, which are generally caused by the wind.

Fiction: Tsunamis are giant waves.

Fact: A tsunami can take several different forms. For example, in some cases it occurs as a rapidly growing tide, while in other cases it can hit the coast as a mass of moving water. It will cause damage in either case.

Boats should seek protection in a bay or port during a tsunami.

Fact: Tsunamis are often more destructive in bays and ports, not only because of the impact of the waves, but also due to the strong currents that are generated. Tsunamis are less destructive on open water in deep ocean.

Fiction: If the epicentre of the earthquake is on land, it will not cause a tsunami.

Fact: : Even when the epicentre is on land, the subsequent rupture can affect the sea floor in a way that may cause a tsunami. The epicentre is only a reference of where the earthquake originated.

Fiction: A tsunami is always preceded by the tide going out rapidly.

Fact: A tsunami can be preceded by both a sudden rise in the tide and by a sudden drop.

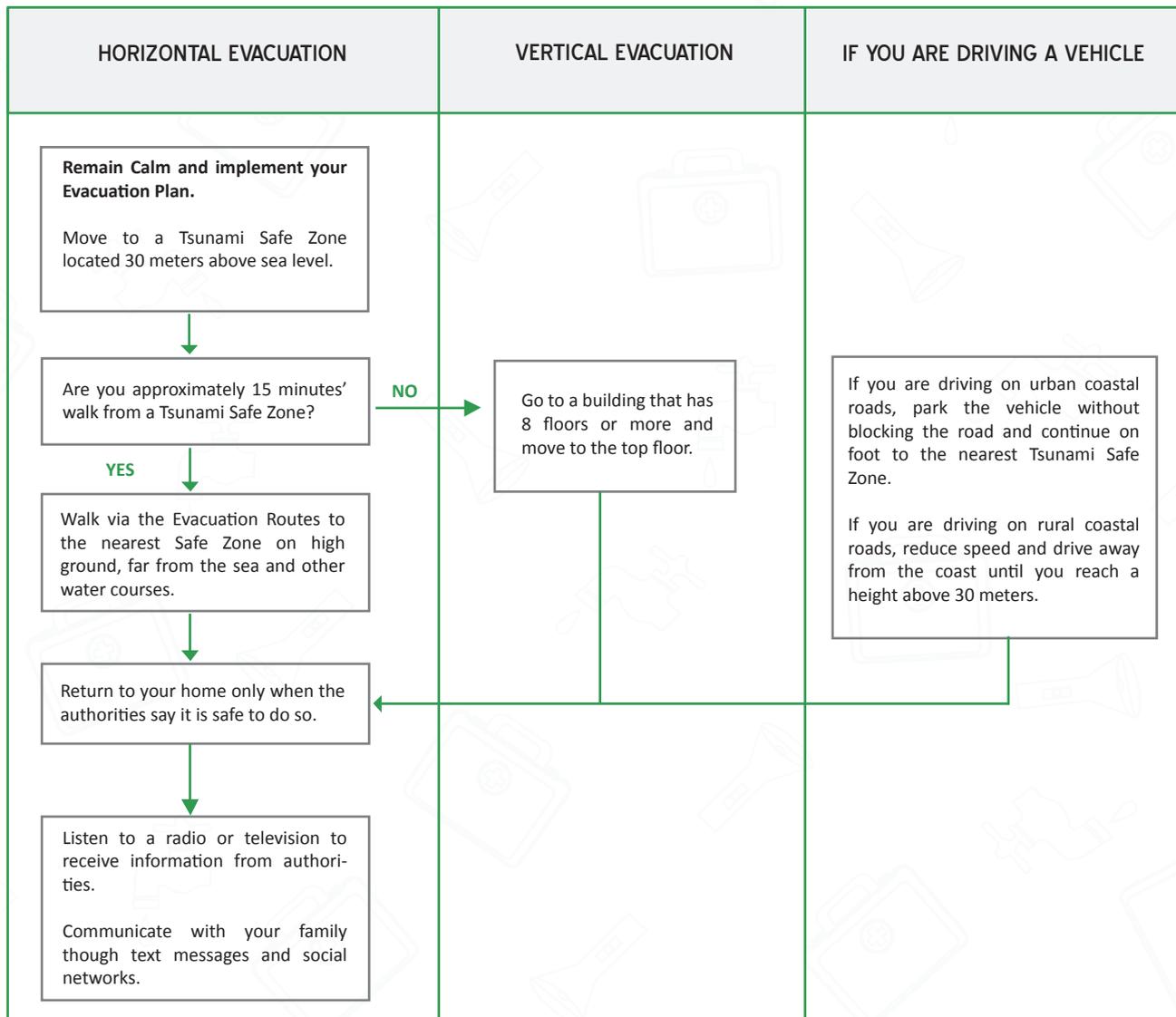
Fiction: In very deep bays, a tsunami does not cause damage.

Fact: The depth of a bay will not necessarily stop a tsunami reaching the coast and causing damage. Tsunamis propagate along the entire ocean, even at depths of thousands of meters. Therefore, the entire Chilean coastline is exposed to tsunamis and possible damage.

6. FLOW CHART

- EARTHQUAKE FELT IN COASTAL AREA AND/OR OFFICIAL TSUNAMI ALERT/ALARM

Earthquake during which it is difficult to remain standing and/or of a duration of 30 seconds or more.



7. CHECKLIST

1. GENERAL PREPARATION MEASURES

N°	Detail	YES	NO
1.1	You have information and know whether you are in a Tsunami Risk Zone.		
1.2	You are aware of the Tsunami Evacuation Map of the local area where you live or are visiting.		
1.3	You have identified and are aware of Evacuation Routes and Tsunami Safe Zones.		
1.4	You have chosen a Meeting Point with your family.		
1.5	You have an Evacuation Plan with your family, classmates and community.		
1.6	You have practiced your Evacuation Plan.		
1.7	You know how long it takes you to reach a Safe Zone on foot.		
1.8	You have considered alternative Evacuation Routes.		
1.9	You know the natural warning signs that indicate that a tsunami may occur.		
1.10	You know how the local authorities will signal an evacuation.		
1.11	The settings on your cell phones allow them to function with the SAE system.		
1.12	You have an Emergency Kit ready.		
1.13	You have a portable radio always at hand to receive notification of an alert.		
1.14	You have identified children, people with disabilities or elderly persons with wrist bands.		
1.15	If you live in a tall building, your Emergency Plan includes helping others.		
1.16	You have considered your pet in the Evacuation Plan.		

2. INCLUSIVE PREPARATION MEASURES

N°	Detail	YES	NO
2.1	You have identified the needs of children, people with disabilities, pregnant women or the elderly.		
2.2	You have planned and identified the Evacuation Routes that have the necessary accessibility.		
2.3	Your Evacuation Plan includes coordination with a medical centre or hospital.		
2.4	You have prepared an external support network (family or friends) to help in case of an Evacuation.		
2.5	Your Emergency Kit includes any necessary supplies or medications.		
2.6	Your Evacuation Plan considers the help of any support animals.		
2.7	A source of electricity has been considered, when required.		

3. PREPARATION MEASURES AT SCHOOL

N°	Detail	SI	NO
3.1	You have found out whether the school is within a Tsunami Risk Zone.		
3.2	You are aware of the school's protocol in case of a tsunami.		
3.3	You have identified the Evacuation Routes for reaching a Tsunami Safe Zone as quickly as possible.		
3.4	You have identified the Tsunami Safe Zone and Meeting Point where you intend to go.		
3.5	You have identified people in the school community who have special requirements.		
3.6	Arrangements have been made for the adequate Evacuation of people with reduced mobility.		
3.7	The school community conducts drills on a regular basis.		

8. GLOSSARY

Alert/Alarm: Status set by the National Sequake Alert System (SNAM) requiring the immediate execution of an Evacuation Plan.

They are technically defined in the following way:

- **Tsunami Alert:** when there is a high probability that a tsunami will occur on the Chilean coastline.
- **Tsunami Alarm:** when there is imminent danger of a tsunami on the Chilean coastline.

Self-evacuation: Execution of an Evacuation Plan when the natural signs of a possible tsunami are perceived (e.g. a strong earthquake during which it is difficult to remain standing or an earthquake that lasts around 30 seconds or more). It is carried out without receiving an official tsunami alert or alarm from the authorities.

Inclusive Preparation Measures: Measures that respond positively to the specific characteristics of children, people with disabilities, pregnant women or the elderly, people who require support systems and/or assistance in the event of an emergency, allowing action to be taken practically and effectively.

Preventative Evacuation: Instruction given by ONEMI in the event of the risk of tsunami after a high inten-

sity earthquake near the coastal areas of the country and without an evaluation by the National Sequake Alert System (SNAM). Once a Preventative Evacuation has been instigated, the community located in the Tsunami Risk Zone must exercise their Evacuation Plan and seek the nearest Safe Zone.

Horizontal Evacuation: This is the action of moving to a Safe Zone on high ground. Horizontal Evacuation must always be the first option.

Vertical Evacuation: This is the action of moving to the upper floors of a tall building, preferably more than 8 floors up. Vertical Evacuation should only be considered as a second option.

Safety Line: This is a line marked on Evacuation Maps that shows the Tsunami Safe Zone at a certain height above the flood area. This line is set by each local council.

Meeting Points: These are places located within a Tsunami Safe Zone that can be used as reference points for finding people who have become separated during an emergency; they are set by each local council.

Evacuation Route: This is a route from a Tsunami Risk Zone to a Safe Zone; it is defined by each local council on Safety Maps.

Earthquake: This is a strong movement of the earth, generally caused by tectonic or volcanic activity. In Chile the word tremor is used to indicate a low to medium intensity movement and earthquake refers to a high intensity movement (Mercalli Scale).

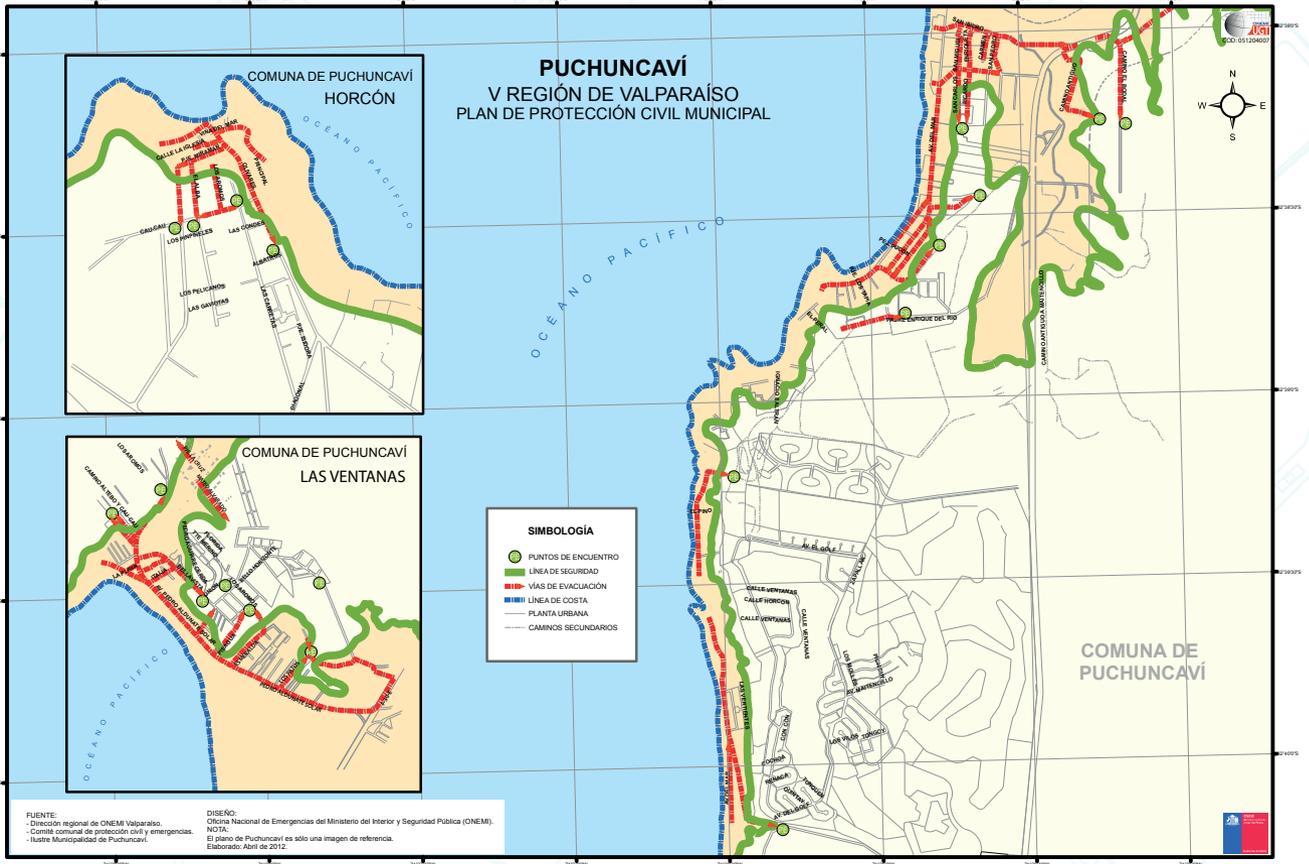
Tsunami: Also known as a seaquake, this is a series of waves of long wavelength and period. They are produced when a large mass of water is displaced suddenly.

Tsunami Risk Zone: The area that may be affected by a tsunami. It is the area between the coastline and the Safety Line.

Tsunami Safe Zone: This is the area above the Safety Line defined by the local council and which must be clearly shown on Tsunami Evacuation Maps and signposted on the ground.

Tsunami Evacuation Map: This is a map of a populated coastal area. It must include the Tsunami Risk Zone, Evacuation routes, the Safety Line and Meeting Points inside the Safe Zone, as well as streets and other landmarks. These maps provide necessary information for an adequate Evacuation and for conducting drills and Evacuation Plans.

9. EXAMPLE EVACUATION MAP



10. TSUNAMI SAFETY SIGNAGE

- **Tsunami Risk/Hazard Zone:** All areas that are susceptible to flooding in the event of a tsunami.



- **Tsunami Evacuation Route:** A route that leads people from a Tsunami Risk Zone to a Tsunami Safe Zone.



- **Vertical Evacuation Route**



- **Tsunami Safe Zone:** All areas that are above the reach of a tsunami.



11. OFFICIAL SOURCES OF INFORMATION

The Army Hydrography and Oceanography Service (SHOA) is the official technical body of the Chilean State in charge of conducting a technical evaluation and reporting on the possibility that a tsunami will occur at some point along the country's coastline through the National Seauquake Alert System (SNAM). SNAM sets the status of Alert or Alarm for a tsunami and sends this information to ONEMI and to other marine and naval authorities.

<http://www.snamchile.cl/>

The National Emergency Office (ONEMI) is the state body in charge of distributing information on alerts and alarms to the National Civilian Protection System and to the community in general in order that the necessary measures are taken to minimise the impact of a tsunami.

<http://www.onemi.cl/>

On an international level, there is the Pacific Tsunami Warning Center (PTWC) located in Hawaii, which is the centre of operations for the Pacific Tsunami Warning and Mitigation System (PTWS) and which works in coordination with sub-regional and national centres, monitoring and evaluating the potential occurrence of a tsunami.

The PTWC provides advice to Pacific countries in the event of a Tsunami Alert and directly issues the alert for Hawaii and other US islands located in the Pacific.

<http://ptwc.weather.gov/>

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