

Date: Tuesday 24 June 2025
Time: 11.00am
Meeting Room: Local Board Office
Venue: 560 Mount Albert Road
Three Kings

Maungakiekie-Tāmaki Local Board

OPEN ATTACHMENTS

ATTACHMENTS UNDER SEPARATE COVER

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Item 25

Attachment A

Enhancing Tsunami Resilience in Tāmaki Makaurau Auckland.

Recommendations by local board area

02 April 2025, Version 1.0

aem.govt.nz




**Auckland
Emergency
Management**
Tokonga Mate Ohotata o Tāmaki Makaurau



The information within this document was produced for the express purpose of the Enhancing Tsunami Resilience in Tāmaki Makaurau project. For information on your tsunami risk and what you can do to protect yourself and household, go to:

www.aem.govt.nz

Document Approval

| | | | |
|----------------------|---|--|------------------|
| Document Title | Enhancing tsunami resilience in Tāmaki Makaurau Auckland. Recommendations by local board area. | | |
| Document version | V1.0 | | |
| Approved for release |  | | Date: 02/04/2025 |
| Approver | Adam Maggs | | |
| Position | General Manager Auckland Emergency Management | | |

Introduction

This document presents recommendations for the Civil Defence and Emergency Management Committee's investment in tsunami resilience across Tāmaki Makaurau Auckland. It includes an introduction with background on the hazard and project history, followed by recommendations organised by local board areas for easy navigation. A summary table and FAQs are provided at the end.

Tsunami in Tāmaki Makaurau Auckland

All of Aotearoa New Zealand's coastline is at risk of tsunami. Tsunami are waves caused by disturbances of the sea floor, most commonly from large earthquakes. Our location in the southwest Pacific means we are exposed to tsunami from anywhere along the different fault lines and subduction zones around the ocean sometimes known as the 'Pacific Ring of Fire.'



Major submarine subduction zones around the Pacific Ocean. (from GNS Science)

Tāmaki Makaurau Auckland's highest tsunami risk comes from the Kermadec and Hikurangi Trench, a fault system stretching from Tonga down the North Island's east coast to the Alpine Fault. A tsunami from this area could reach Aotea Great Barrier Island within an hour and the Auckland mainland in 1.5 to 2 hours.

Tsunami information, warning, and alerting

Natural warning signs are the most reliable tsunami alert method, as they don't depend on power or technology and are the same worldwide. If you're at the coast and feel an earthquake which is LONG earthquake (over a minute) or STRONG (hard to stand), or notice unusual ocean sounds or behaviour from the sea, EVACUATE IMMEDIATELY inland or to higher ground.

GNS Science's National Geoscience Monitoring Centre tracks tsunami-causing events and assesses their risk to Aotearoa New Zealand. They advise the National Emergency Management Agency (NEMA), which issues official tsunami warnings through national systems, including Emergency Mobile Alerts. These alerts, used by NEMA, Fire and Emergency New Zealand, and NZ Police, are the primary national alert method. More details on Emergency Mobile Alerts can be found in the FAQ section.

There are generally TWO types of national warnings and alerts issued regarding tsunami:

- Large tsunami that may cause land flooding (known in our maps as LAND THREAT TSUNAMI).
- Smaller tsunami that may cause 'strong and unusual currents and unpredictable surges at the shore' (known in our maps as SHORE AND MARINE THREAT TSUNAMI)

NEMA issues Emergency Mobile Alerts only for land-threat tsunami. For tsunami affecting the shore and marine areas, NEMA warnings may be shared via email or social media. Arrangements with national media, including TV and radio, help distribute national alerts quickly and widely.

Local Civil Defence and Emergency Management Groups can issue additional warnings (including Emergency Mobile Alerts), including for shore and marine-threat tsunami. They also provide information on local tsunami risks, evacuation zones, and emergency plans. This includes maps, signage, and public awareness campaigns.

Before Auckland Council's 2010 amalgamation, tsunami preparedness varied across the region based on local authority investment decisions. Some areas, like west coast beaches, had sirens, while others—despite higher tsunami risk—lacked sirens, signs, or other warning or information systems. This means that there is currently an inconsistent approach to how we inform and warn our communities about tsunami risk across the region.

Project outline and principles

This project aims to strengthen tsunami resilience in Tāmaki Makaurau Auckland by providing clear information and tools to help people understand their risk and respond effectively in an emergency.

Historically, some communities had sirens and other tsunami alert systems based on decisions by former local authorities. This project adopts a region-wide approach to resilience, guided by the following principles and assumptions:

- We will never be able to eliminate all tsunami risk.
- Aucklanders frequently visit coastal areas outside their local board.
- Tsunami vulnerability varies across the region due to factors like school locations and resident populations, requiring both local and regional resilience efforts.

- Communities not directly vulnerable to tsunami may experience hardship following an event as a result of other societal factors.
- Auckland Council supports an equitable approach to regional projects.
- Auckland Council supports decision-making informed by quality advice and a strong evidence base.
- Activities or initiatives that could be used for multiple different hazards are preferred.
- Procurement and investment decisions should align with the Auckland Council Procurement Principles, Auckland Plan 2050, and Whiria Te Muka Tangata (Māori Responsiveness Framework).

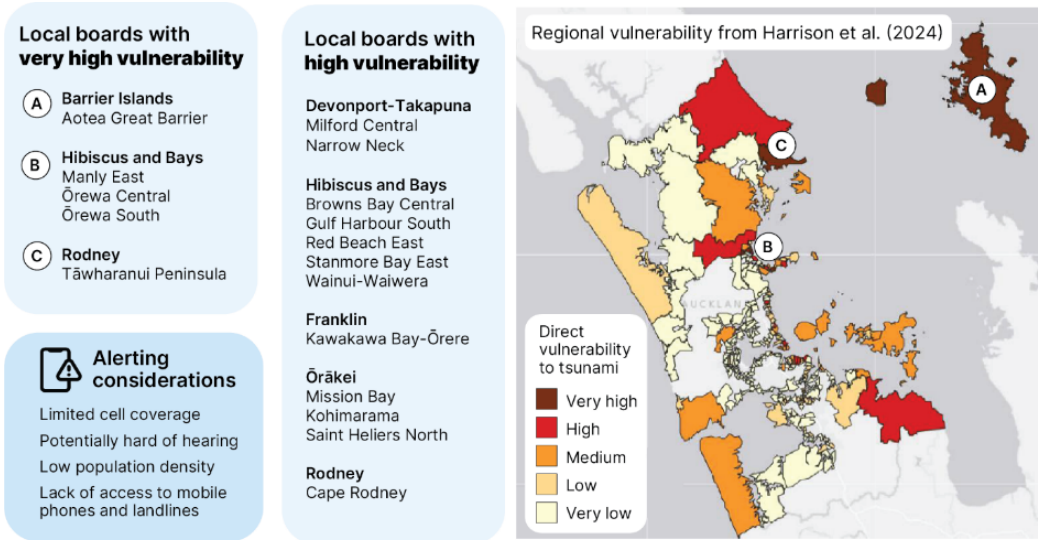
History

This document brings together findings from multiple projects aimed at improving understanding of tsunami risk and strengthening resilience in Tāmaki Makaurau Auckland.

The first major project used advanced computer models to assess the region’s exposure to the most damaging tsunami. These models informed updates to the tsunami evacuation maps.

You can find out whether you work, live or play in a tsunami evacuation zone by visiting the Auckland Emergency Management Hazard’s Viewer at aem.govt.nz.

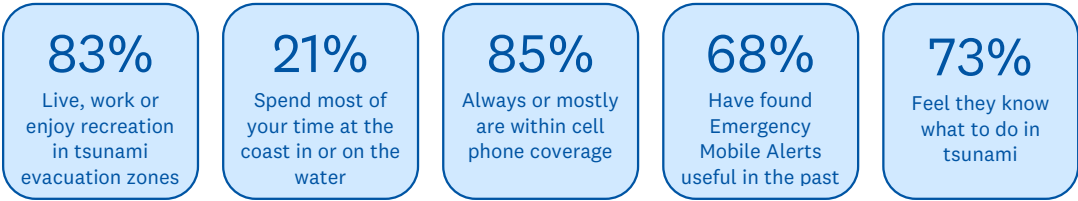
After identifying the areas most exposed to tsunami, we focused on understanding which communities might be the most vulnerable and why. We worked with researchers to map the demographics of communities at risk of flooding and assess critical infrastructure (e.g., roads, power, telecommunications, water) and social services (e.g., schools, hospitals, emergency services). Using this data, we categorised suburbs and communities by their direct tsunami vulnerability, ranging from 'Very Low' to 'Very High.' We also identified communities that could be indirectly affected, such as those with limited access routes or critical services at risk of flooding during a large tsunami.



A summary of regional direct tsunami vulnerability organised by 'census area unit'. Note, while census area units do not align exactly with local board boundaries, the underlying communities and population centres, which were used as the basis for assigning census area units to local boards, do align closely.

We consulted experts in emergency public alerting, as well as other Civil Defence and Emergency Management Groups and the National Emergency Management Agency, to understand what makes an effective alerting network and how other regions build tsunami resilience.

A public survey on why people visit the coast, how they receive emergency alerts, and their confidence in responding to a tsunami emergency received over one thousand responses. We also engaged with mana whenua and iwi exposed to tsunami risk to better understand their communication needs. Key survey metrics are summarised here and further broken down by local board area in the following report. Of the respondents:



Summary of regional results from key metrics of our first survey in July/August 2024.

Finally, we used a cost-benefit analysis to understand the how we could maximise tsunami resilience-building impact while providing value for our ratepayers.

What options we considered

We worked with leaders in the field of public information, education and warning and alerting, to identify and evaluate the effectiveness and cost of different approaches. We considered what can be done before and during tsunami emergencies including national and international best practices in tsunami education, awareness, and planning.

| Tsunami warning and alerting approaches assessed. | | |
|---|--------------------------------------|---------------------------------|
| Natural warnings | GPS receiver messaging* | Radio Data Systems* |
| Independent community networks | Marine radio | and Tone-activated alert radio* |
| Aircraft/ helicopter PA loudspeaker or siren | Messaging apps | Sirens - Fixed |
| Beach flags, bells/air horns | Mobile device apps | Sirens - Mobile |
| Call-in telephone line | Mobile PA loudspeakers | Phone auto-dialler |
| Digital billboards and signage | Newspaper content | Telephone trees |
| Email | Pagers | Tourist radio |
| Emergency Mobile Alert | Paid online advertising. | TV announcements |
| Fixed PA loudspeakers | Power mains messaging | Website banners |
| Government-maintained electronic signage | Radio announcements | Websites/WAP |
| | Route alerts (door-to-door knocking) | |
| | SMS text messaging | *Emerging technology |
| | Social media | |
| | Radio (UHF, VHF or HF) | |

Tsunami alerting options considered as part of this project

Each method of warning and alerting has its benefits and limitations. For example, Emergency Mobile Alerts are effective at notifying people of an incoming tsunami threat, but if people don't have their phones or are outside coverage areas, they may miss the message. Fixed sirens and Public Address (PA) systems can reach people without cell phones, but they are highly localised and can be affected by factors like weather, home construction (e.g., double glazing), or people's ability to hear them.

Relying solely on technology may also create a false sense of security, leading to delays in community evacuation. Any alerting method is less effective if people don't understand the risks or actions to take, making public information essential for building tsunami resilience.

Some methods, like physical alerting infrastructure, require high upfront costs, particularly in remote or isolated areas without existing utilities. On the other hand, traditional media (e.g., TV, radio) have no such costs, as the infrastructure is already in place, allowing investments in media campaigns to reach a wider audience.

In summary, our recommendations approach improving tsunami resilience from various angles, including what can be done before and during tsunami emergencies. They are based on a thorough understanding of tsunami exposure, community vulnerability, and the value for money in reaching the greatest number of people.

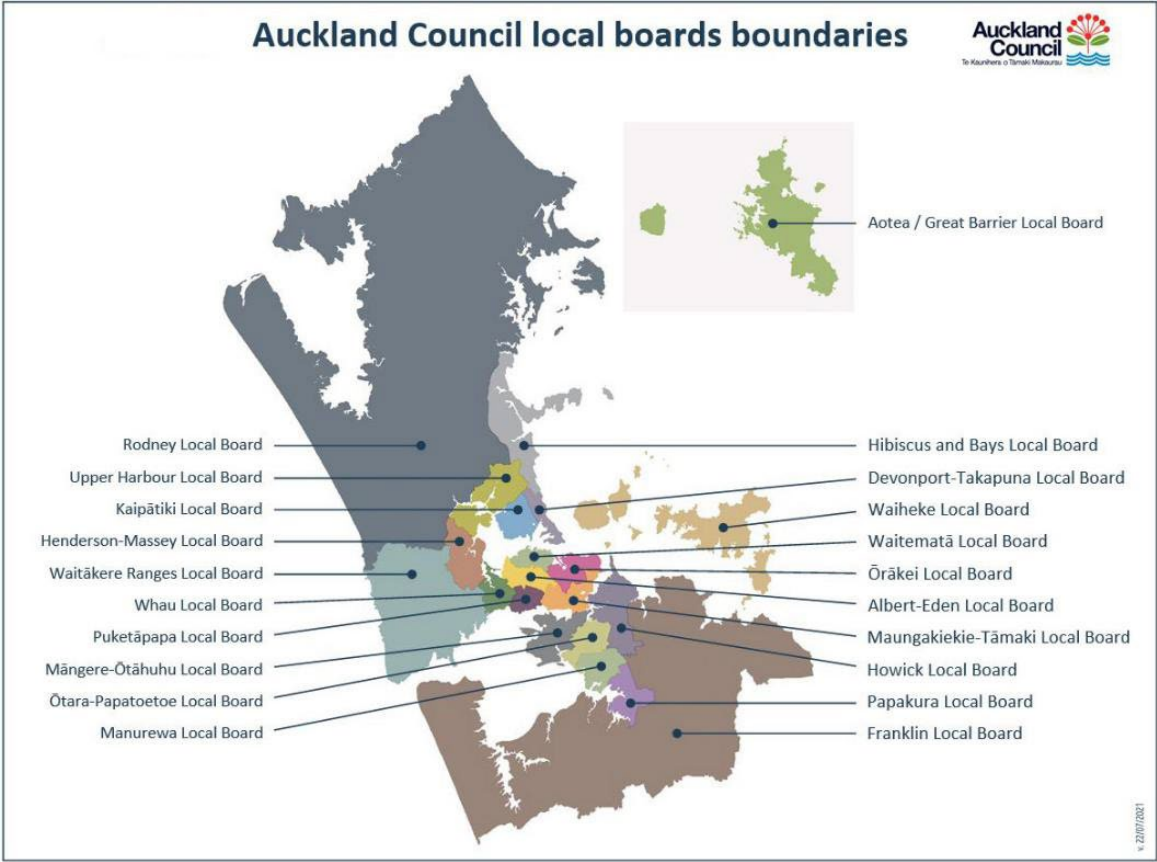
Partners

We have worked with experts to develop these recommendations including:

- eCoast
- ORCAS Consulting
- National Institute of Water and Atmospheric Research (NIWA)
- GNS Science
- The National Emergency Management Agency
- Neighbouring Civil Defence and Emergency Management Groups

How to use this document

The recommendations are presented by local board area. If you are not sure which local board you belong to, you can find it in the map below, or by going to <http://aucklandcouncil.govt.nz> and search for "Find your local board".



Auckland Council local board areas.



Recommendations by local board area

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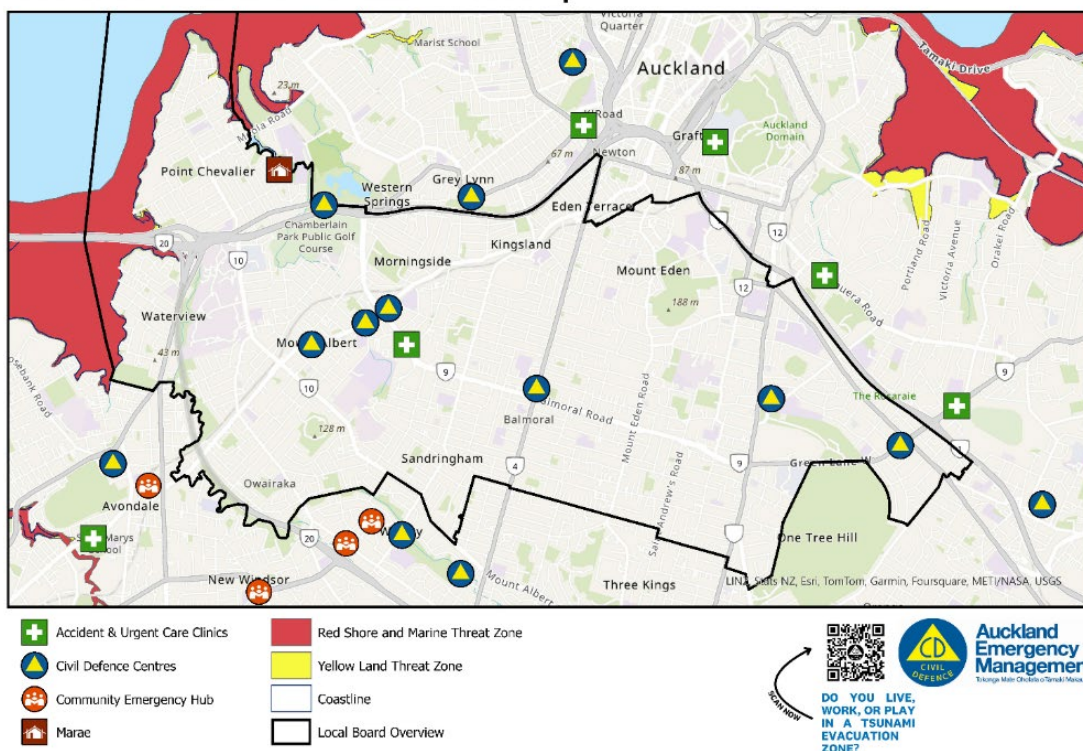
Summary of local board recommendations 105

Albert-Eden Local Board

Tsunami evacuation zones

Please visit aem.govt.nz and find the Hazard Viewer in the menu to explore the map in more detail.

Albert-Eden Tsunami Evacuation Zone Map



What our modelling tells us

All the coastline, shore, and marine areas of the Albert-Eden local board are at risk in tsunami of any size. Additionally, the on-land recreational areas around Eric Armishaw Park, boat ramp and boardwalk are in areas that may flood in any tsunami. However, the modelling suggests there are very few, isolated residential properties in this local board in Point Chevalier that may also flood during larger land-threat tsunami.

This means that while Albert-Eden local board residents and visitors should evacuate and avoid all beach, shore, and marine areas (red evacuation zones) during any tsunami alert. During alerts for larger land-threat tsunami, a small number of residents within the land-threat (yellow) evacuation zone should also evacuate inland or to higher ground.

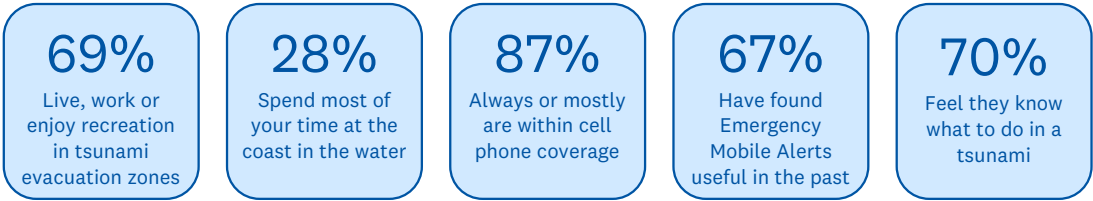
The Albert-Eden local board area is considered to have 'Very Low' direct vulnerability to tsunami. This was calculated by looking at the area expected to be impacted by tsunami and assessing the exposure of

housing, critical infrastructure (including where people might be gathered like hospitals, schools, marae), and the vulnerability of the community.

Telecommunication coverage in this area is generally excellent and not far to travel to exit tsunami evacuation zones.

What you have told us

We surveyed over one thousand people to ask them how they use the coast, how they receive emergency alerts, and how confident they feel that they know what to do in a tsunami emergency. Of the respondents from the Albert-Eden local board:



The favourite places for residents of the Albert-Eden local board to spend time at the coast include:

- Auckland's 'urban' beaches and coastal areas across the region (e.g. Orewa, Brown's Bay, Milford, Devonport, Viaduct Harbour, Mission Bay, Wynyard Quarter, Herne Bay, Point Chevalier, Onehunga Wharf, Panmure, Bucklands Beach)
- Piha Beach
- Te Henga / Bethells Beach
- In or on the water in the central coastal areas
- Waiheke Island

Other comments from respondents included:

"When was the last time we had a tsunami in Auckland? Whilst it is good to have plans it is important not to make people fearful and I do wonder if this is the agenda of all this work for small risk?"









"... Teach kids tsunami safety at school in Auckland."




"I think we all need to learn more."

"...more accessible maps and evacuation plans at beaches."

Recommendations

The recommendations are separated into things that may already be happening but should be enhanced or updated ('Continue'), and new initiatives that should be developed ('Develop'). A summary of all local board recommendations can be found at the end of this document.

| Continue | Develop |
|--|---|
| <div>  Emergency Mobile Alert and Natural Warnings </div> <p><u>Emergency Mobile Alerts</u></p> <p>Our primary all-hazards alerting method remains Emergency Mobile Alert and natural warning signs</p> | <div>  Tsunami Information Boards and Signs </div> <p><u>Tsunami Information Boards and Signs</u></p> <p>Sensible and site appropriate public tsunami information and evacuation signage at key coastal locations across the region</p> |
| <div>  Expand Emergency Mobile Alert Network </div> <p><u>Expand Emergency Mobile Alert Network</u></p> <p>Advocate for expansion of the Emergency Mobile Alert network (including cellular coverage and national messaging procedures)</p> | <div>  Tsunami Responsible Host </div> <p><u>Tsunami Responsible Host</u></p> <p>Ensure tsunami feature in plans of any Auckland Council public facilities and accommodation inside evacuation zones (e.g. campgrounds, libraries, key coastal recreation areas)</p> |
| <div>  Strengthen Partnerships </div> <p><u>Strengthen Partnerships</u></p> <p>Work with partner organisations and community groups to promote tsunami readiness and response activities</p> | <div>  Public Awareness Programme </div> <p><u>Public Awareness Programme</u></p> <p>Expand existing communications into a regional campaign to increase public awareness of tsunami risk and evacuations</p> |
| <div>  Local Board Leadership </div> <p><u>Local Board Leadership</u></p> <p>Involve Local Board members in future decision-making or tsunami readiness and response</p> | <div>  Advice and Guidance for Boaties </div> <p><u>Advice and Guidance for Boaties</u></p> <p>Develop tsunami advice and guidance specifically for boaties and marinas with our partner agencies</p> |

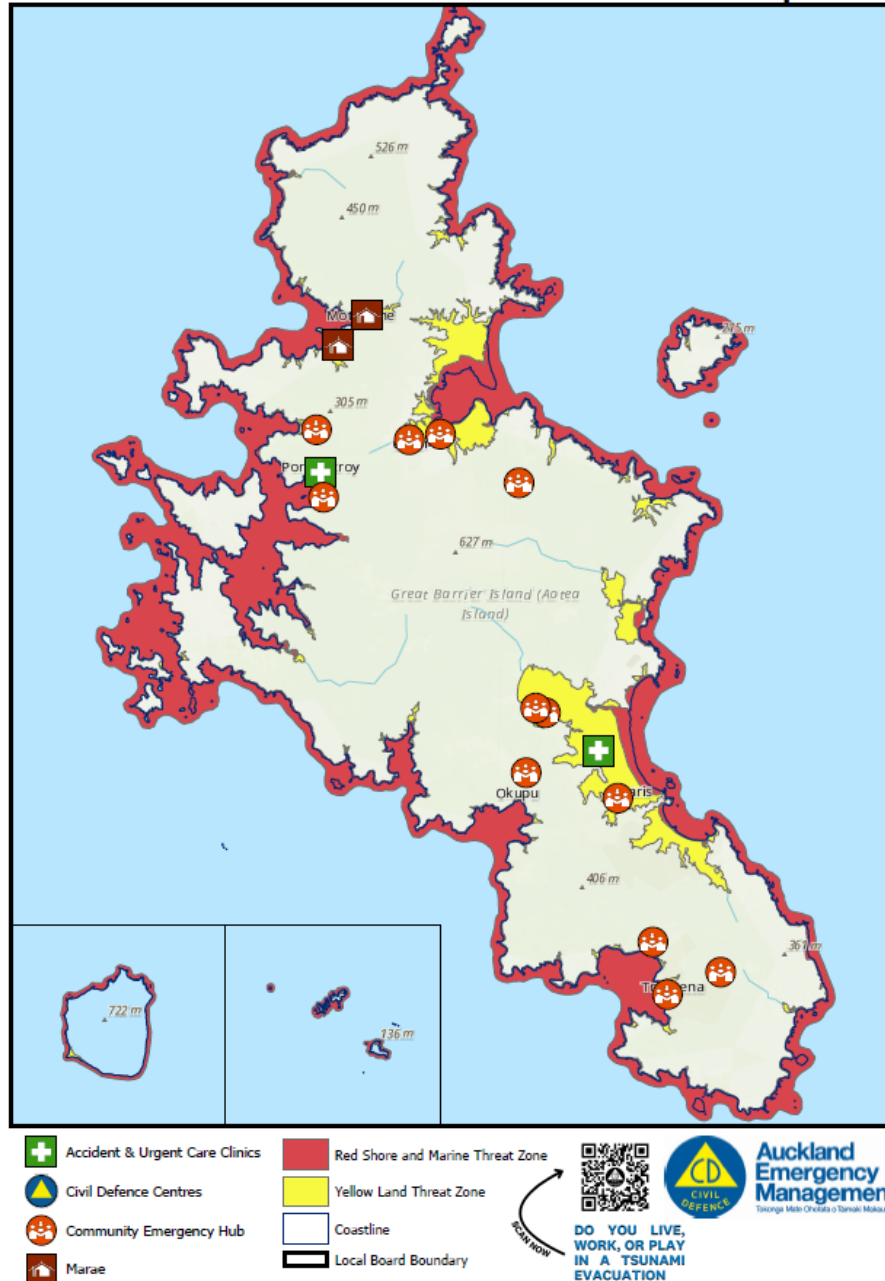
| Continue | Develop |
|---|---|
| <div>Marae Response Plans</div> <div><u>Marae Response Plans</u></div> <div>Support marae to include tsunami in their marae response planning</div> | <div>Joint Tsunami Alerting</div> <div><u>Joint Tsunami Alerting</u></div> <div>Strengthen joint tsunami warning and alerting communication plans with operational partner agencies</div> |
| <div>Explore Emerging Technology</div> <div><u>Explore Emerging Technologies</u></div> <div>Monitor and explore emerging alerting technologies including options for the disabled or vulnerable community</div> | |

Aotea Great Barrier Local Board

Tsunami evacuation zones

Please visit aem.govt.nz and find the Hazard Viewer in the menu to explore the map in more detail.

Aotea/Great Barrier Tsunami Evacuation Zone Map



What our modelling tells us

All the coastline, shore, and marine areas of the Aotea Great Barrier Island local board (including outer islands) are at risk of tsunami of any size. This also extends to the anchorages and moorings around the islands, including at Tryphena and Port Fitzroy. Additionally, the island's location, closer to the areas where tsunami are more likely to be generated, means it may be exposed to larger tsunami waves. This means Aotea Great Barrier Island is at generally greater risk of land flooding from tsunami than many communities on the mainland, and that tsunami may reach this area in less than an hour. Low-lying and coastal areas around the island, especially on the east coast, are in areas that may experience flooding from larger tsunami, including the communities of Claris, Medlands Beach, Okiwi and Tryphena. This includes Tryphena Wharf and many of the coastal access routes between communities as well as the Motairehe and Kawa marae, the aerodrome, multiple camping sites, and recreational areas.

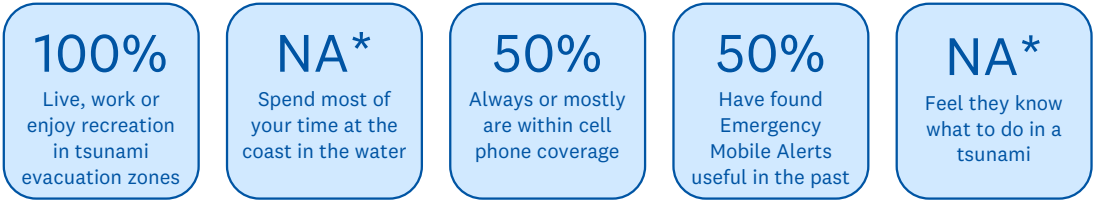
This means that while Aotea Great Barrier Island local board residents and visitors should evacuate and avoid all beach, shore, and marine areas (red evacuation zones) during any tsunami alert. Strong and unusual currents and unpredictable surges may cause damage to boats that remain moored or in the anchorages near Tryphena and Port Fitzroy in any tsunami. During alerts for larger land-threat tsunami, those within the land-threat (yellow) evacuation zone should also evacuate inland or to higher ground. Claris and Medlands Beach have the largest number of residential properties in the yellow land-threat evacuation zone. However, there are also multiple camping grounds, sports grounds, and recreational parks around the local board area in both the red and yellow evacuation zones where people may be congregating, particularly on weekends and in the summer months.

The tsunami vulnerability for communities in the Aotea Great Barrier Island local board area is rated as 'Very High.' This reflects both the exposure of the islands to potentially bigger tsunami waves, and the geography and demographics of the community. For example, the coastal roads that connect many communities as well as critical infrastructure such as the ports and airport are at risk. Most of the critical services including fuel, food and emergency services are located within the yellow land threat evacuation zones and there is a relatively high proportion of households with single-persons and people over-65 years old which may require additional time or assistance to evacuate. It is also a popular destination for boaties and campers which may result in increased visitor numbers during weekends and in the summer months.

Telecommunication coverage in this area is spotty, with good coverage limited to the more populated areas. However, there is a well-developed emergency response group on the Island as well as close community networks and residents are accustomed to challenges living rurally.

What you have told us

We surveyed over one thousand people to ask them how they use the coast, how they receive emergency alerts, and how confident they feel that they know what to do in a tsunami emergency. Of the respondents from the Aotea local board:



* Insufficient data

The favourite places for residents of the Aotea local board to spend time at the coast include:

- In and on the Hauraki Gulf and Islands





Other comments from respondents included:









“I get an alert from GNS before I get an alert from an emergency centre...”




“There is a complete lack of information on Great Barrier Island regarding a tsunami and/or tsunami threat. Where are all the evacuation maps? No tsunami sirens on any of the beaches.”

Recommendations

The recommendations are separated into things that may already be happening but should be enhanced or updated (‘Continue’), and new initiatives that should be developed (‘Develop’). A summary of all local board recommendations can be found at the end of this document.

| Continue | Develop |
|---|--|
| <div>Emergency Mobile Alert and Natural Warnings</div> <div><u>Emergency Mobile Alerts</u></div> <div>Our primary all-hazards alerting method remains Emergency Mobile Alert and natural warning signs</div> | <div>Tsunami Information Boards and Signs</div> <div><u>Tsunami Information Boards and Signs</u></div> <div>Sensible and site appropriate public tsunami information and evacuation signage at key coastal locations across the region</div> |
| <div>Expand Emergency Mobile Alert Network</div> <div><u>Expand Emergency Mobile Alert Network</u></div> <div>Advocate for expansion of the Emergency Mobile Alert network (including cellular coverage and national messaging procedures)</div> | <div>Tsunami Responsible Host</div> <div><u>Tsunami Responsible Host</u></div> <div>Ensure tsunami feature in plans of any Auckland Council public facilities and accommodation inside evacuation zones (e.g. campgrounds, libraries, key coastal recreation areas)</div> |

| Continue | Develop |
|---|---|
| <div>Strengthen Partnerships</div> <div><u>Strengthen Partnerships</u></div> <div>Work with partner organisations and community groups to promote tsunami readiness and response activities</div> | <div>Public Awareness Programme</div> <div><u>Public Awareness Programme</u></div> <div>Expand existing communications into a regional campaign to increase public awareness of tsunami risk and evacuations</div> |
| <div>Local Board Leadership</div> <div><u>Local Board Leadership</u></div> <div>Involve Local Board members in future decision-making or tsunami readiness and response</div> | <div>Advice and Guidance for Boaties</div> <div><u>Advice and Guidance for Boaties</u></div> <div>Develop tsunami advice and guidance specifically for boaties and marinas with our partner agencies</div> |
| <div>Marae Response Plans</div> <div><u>Marae Response Plans</u></div> <div>Support marae to include tsunami in their marae response planning</div> | <div>Joint Tsunami Alerting</div> <div><u>Joint Tsunami Alerting</u></div> <div>Strengthen joint tsunami warning and alerting communication plans with operational partner agencies</div> |
| <div>Explore Emerging Technology</div> <div><u>Explore Emerging Technologies</u></div> <div>Monitor and explore emerging alerting technologies including options for the disabled or vulnerable community</div> | <div>Permanent Alerting Infrastructure</div> <div><u>Permanent Alerting Infrastructure</u></div> <div>Scope potential locations for permanent alerting infrastructure (e.g. sirens or public address systems) in highly vulnerable communities (e.g. Claris/Medlands Beach)</div> |

| Continue | Develop |
|---|--|
| <div data-bbox="395 353 692 495">  <p>Joint Tsunami Planning</p> </div> <p><u>Joint Tsunami Planning</u></p> <p>Identify network and infrastructure vulnerabilities and plan with partners as appropriate (e.g. Auckland Transport, Auckland Lifelines Group etc)</p> <div data-bbox="395 703 692 844">  <p>Schools and Early Childhood Education</p> </div> <p><u>Schools and Early Childhood Education</u></p> <p>Deliver education programmes and initiatives (e.g. tsunami hīkoi) for schools and early childhood centres in evacuation zones</p> | <div data-bbox="983 353 1279 495">  <p>Develop Community Networks</p> </div> <p><u>Develop Community Networks</u></p> <p>Work with community organisations and groups to develop tsunami specific readiness and response activities (e.g. response plans, response groups) in highly vulnerable communities</p> |

Devonport-Takapuna Local Board

Tsunami evacuation zones

Please visit aem.govt.nz and find the Hazard Viewer in the menu to explore the map in more detail.



What our modelling tells us

All the coastline, shore, and marine areas of the Devonport-Takapuna local board are at risk from tsunami of any size. This extends to the Milford Marina and any other anchorage or mooring locations nearby, and coastal infrastructure servicing the Devonport Naval Base. Additionally, low lying coastal areas around the entire peninsula, and inland areas at the Waitemata Golf Club, Ngataringa Park, and residential areas near Cheltenham Beach and Milford Beach are located in areas that may experience flooding during larger land-threat tsunami.

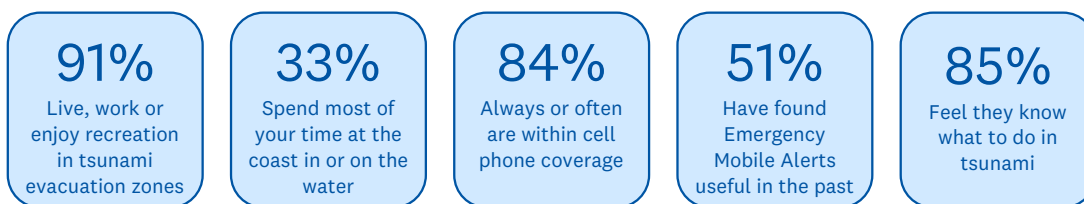
This means that Devonport-Takapuna local board residents and visitors should evacuate and avoid all beach, shore, and marine areas (red evacuation zones) during any tsunami alert (including 'live-aboards' at the marina). During alerts for larger land-threat tsunami, there are also significant areas within the land-threat (yellow) evacuation zone should also evacuate inland or to higher ground. Milford and Narrow Neck contain the largest resident populations within the yellow land-threat evacuation zone (approximately 700 and 350 people, respectively). However, there are also multiple sports grounds and recreational parks around the local board area in both the red and yellow evacuation zones where people may be congregating, particularly on weekends and in the summer months.

The tsunami vulnerability for communities the Devonport-Takapuna local board area ranges from Low to High. This reflects the difference across the local board area both in terms of geography and demographics. For example, the area around Milford was rated as having a 'High' direct tsunami vulnerability as there is both residential areas that may flood in a tsunami emergency, and a high proportion of the population aged 65 years and over which may require additional time to evacuate. Milford Marina is also located in the tsunami evacuation zones as well as Milford Beach and Reserve. Both of which may result in increased visitor numbers during weekends and in the summer months.

There is good telecommunication coverage in this area, and not far to travel to get out of tsunami evacuation areas.

What you have told us

We surveyed over one thousand people to ask them how they use the coast, how they receive emergency alerts, and how confident they feel that they know what to do in a tsunami emergency. Of the respondents from the Devonport-Takapuna local board:



The favourite places for residents of the Devonport-Takapuna local board to spend time at the coast include:

- Auckland's 'urban' beaches and coastal areas across the region (e.g. Orewa, Brown's Bay, Milford, Devonport, Viaduct Harbour, Mission Bay, Wynyard Quarter, Herne Bay, Point Chevalier, Onehunga Wharf, Panmure, Bucklands Beach)
- In or on the water around the region

- Long bay Regional Park
- Muriwai
- Piha







Other comments from respondents included:









*“They [tsunami evacuation maps and alerts] are a bit of a waste of time. It’s obvious that if u
r at a beach or low-lying area a tsunami would be a problem and the cure is to move to
higher ground. Tsunamis are fortunately rare.”*

“Fishing in the Waitemata Harbour reception is patchy.”

Recommendations

These recommendations are separated into things that may already be happening but should be enhanced or updated (‘Continue’), and new initiatives that should be developed (‘Develop’). A summary of all local board recommendations can be found at the end of this document.

| Continue | Develop |
|--|---|
| <div> Emergency Mobile Alert and Natural Warnings</div> <div><u>Emergency Mobile Alerts</u></div> <div>Our primary all-hazards alerting method remains Emergency Mobile Alert and natural warning signs</div> | <div> Tsunami Information Boards and Signs</div> <div><u>Tsunami Information Boards and Signs</u></div> <div>Sensible and site appropriate public tsunami information and evacuation signage at key coastal locations across the region</div> |
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| <div> Strengthen Partnerships</div> <div><u>Strengthen Partnerships</u></div> <div>Work with partner organisations and community groups to promote tsunami readiness and response activities</div> | <div> Public Awareness Programme</div> <div><u>Public Awareness Programme</u></div> <div>Expand existing communications into a regional campaign to increase public awareness of tsunami risk and evacuations</div> |

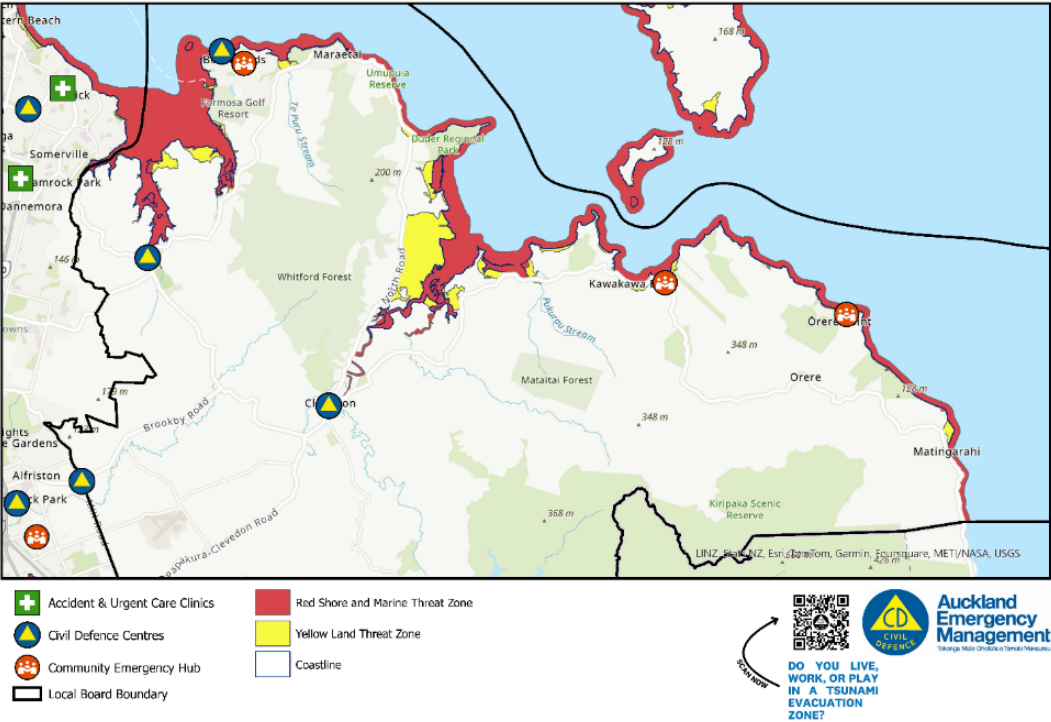
| Continue | Develop |
|---|--|
|  Local Board Leadership <u>Local Board Leadership</u> Involve Local Board members in future decision-making or tsunami readiness and response |  Advice and Guidance for Boats <u>Advice and Guidance for Boats</u> Develop tsunami advice and guidance specifically for boats and marinas with our partner agencies |
|  Marae Response Plans <u>Marae Response Plans</u> Support marae to include tsunami in their marae response planning |  Joint Tsunami Alerting <u>Joint Tsunami Alerting</u> Strengthen joint tsunami warning and alerting communication plans with operational partner agencies |
|  Explore Emerging Technology <u>Explore Emerging Technologies</u> Monitor and explore emerging alerting technologies including options for the disabled or vulnerable community |  Schools and Early Childhood Education <u>Schools and Early Childhood Education</u> Deliver education programmes and initiatives (e.g. tsunami hīkoi) for schools and early childhood centres in evacuation zones |
|  Joint Tsunami Planning <u>Joint Tsunami Planning</u> Identify network and infrastructure vulnerabilities and plan with partners as appropriate (e.g. Auckland Transport, Auckland Lifelines Group etc) |  Develop Community Networks <u>Develop Community Networks</u> Work with community organisations and groups to develop tsunami specific readiness and response activities (e.g. response plans, response groups) in highly vulnerable communities |

Franklin Local Board

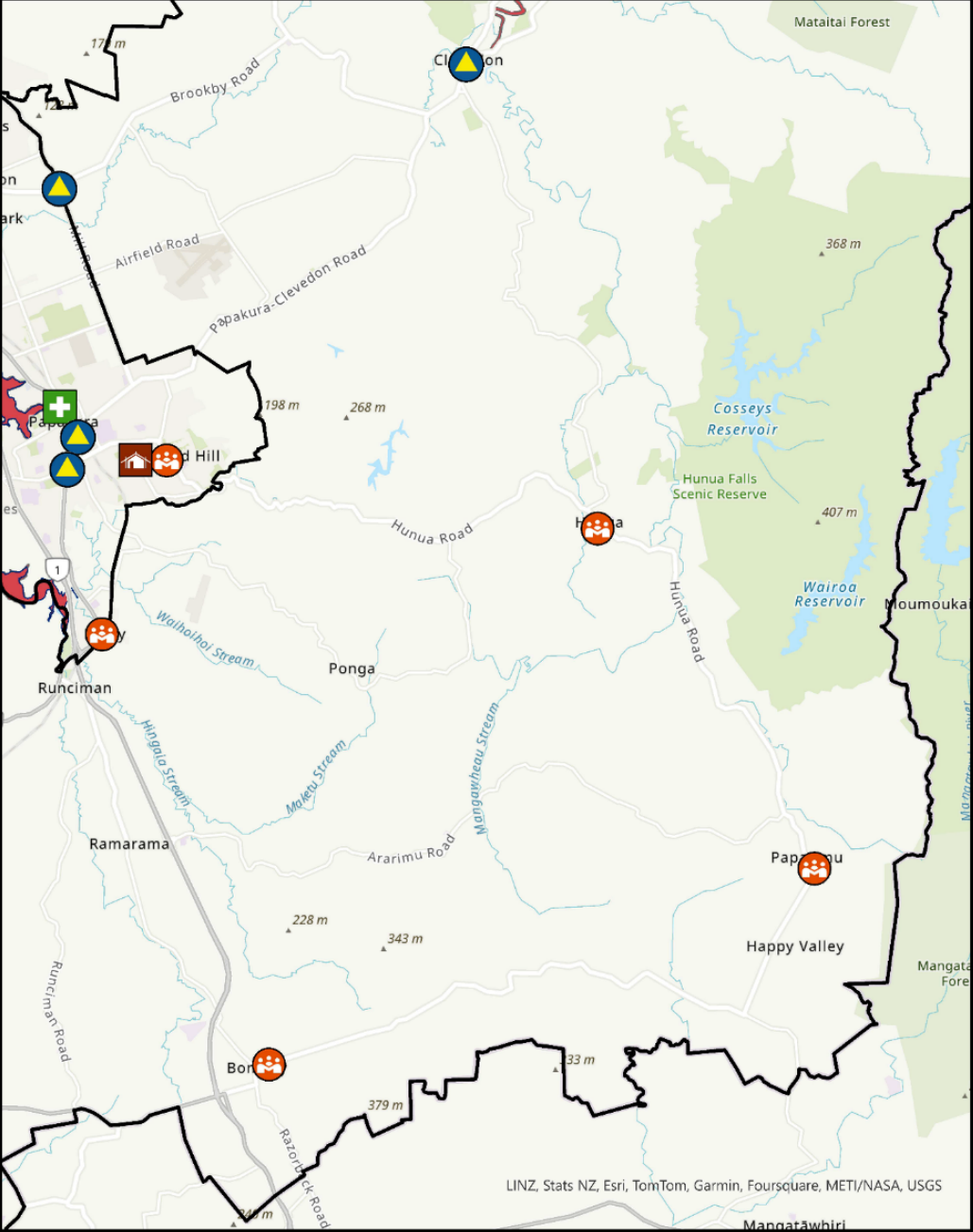
Tsunami evacuation zones

Franklin local board covers a large area, and the tsunami evacuation zones are divides into four maps over the next few pages. Please visit aem.govt.nz and find the Hazard Viewer in the menu to explore these maps in more detail.

Franklin (North) Tsunami Evacuation Zone Map



Franklin (South East) Tsunami Evacuation Zone Map



- Accident & Urgent Care Clinics
- Civil Defence Centres
- Community Emergency Hub
- Marae
- Local Board Boundary

- Red Shore and Marine Threat Zone
- Coastline

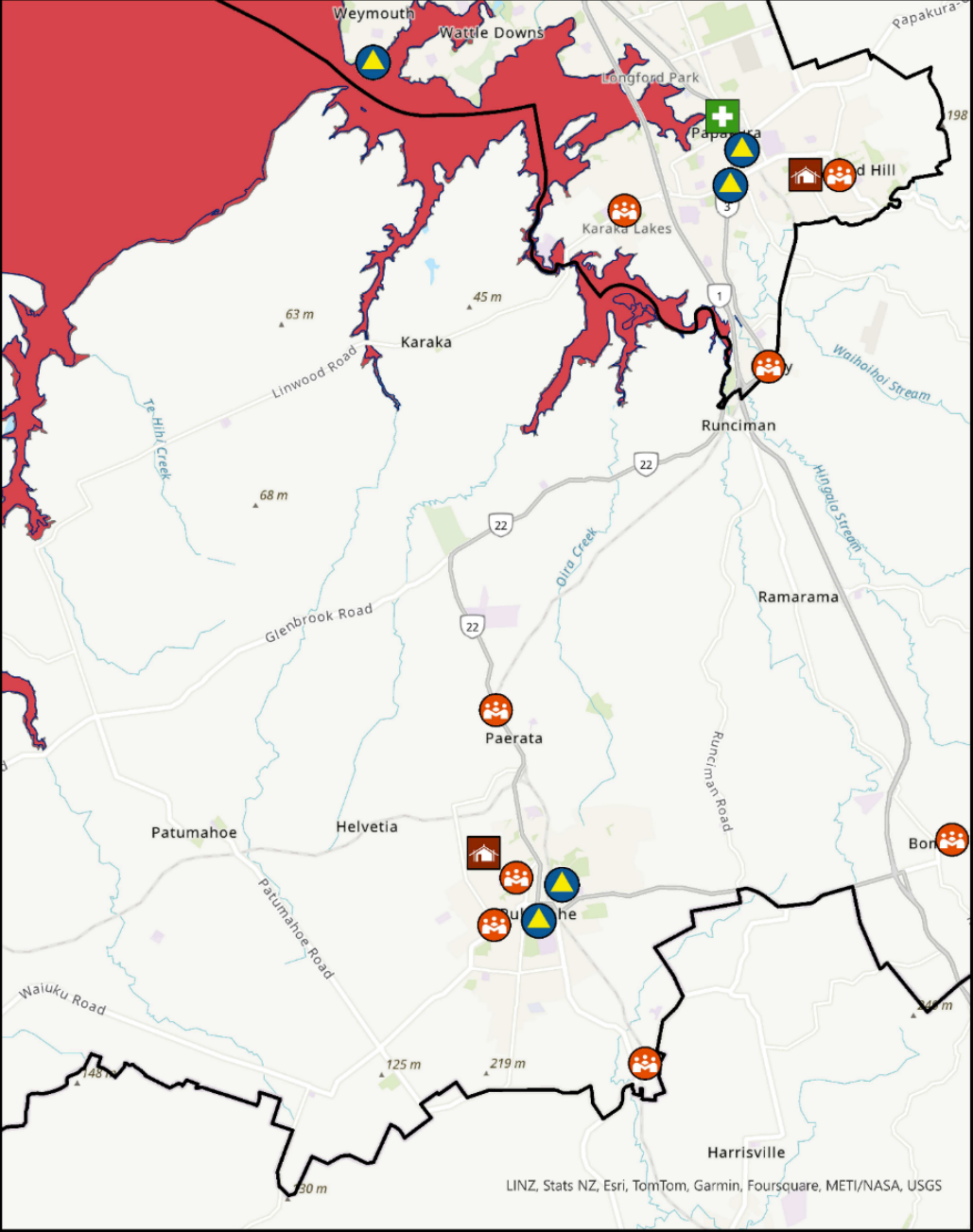


DO YOU LIVE,
WORK, OR PLAY
IN A TSUNAMI
EVACUATION
ZONE?



**Auckland
Emergency
Management**
Tōkonga Māta Ohitaitia o Tāmaki Makaurau

Franklin (South) Tsunami Evacuation Zone Map



Accident & Urgent Care Clinics

Civil Defence Centres

Community Emergency Hub

Marae

Local Board Boundary

Red Shore and Marine Threat Zone

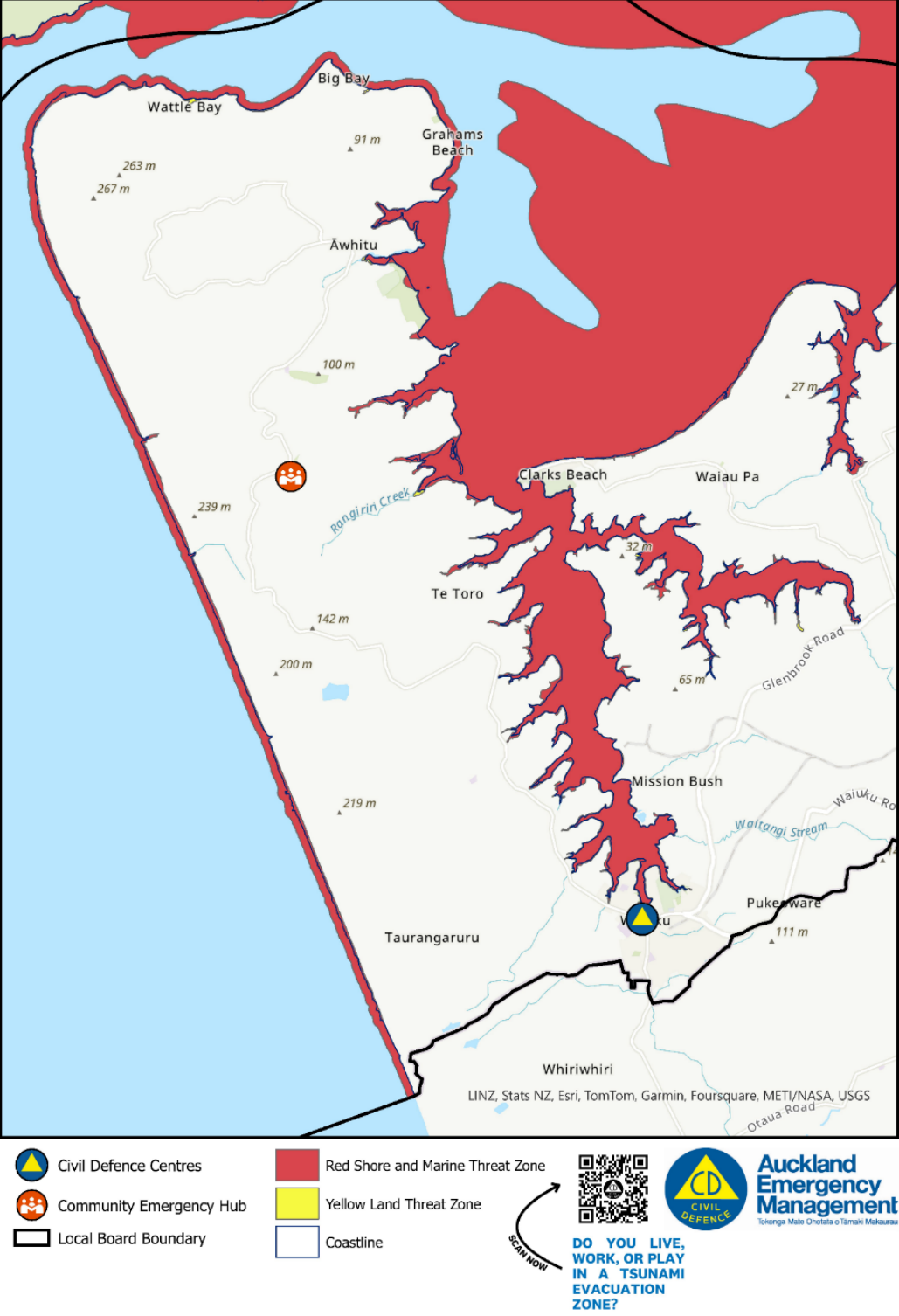
Yellow Land Threat Zone

Coastline

DO YOU LIVE, WORK, OR PLAY IN A TSUNAMI EVACUATION ZONE?
SCAN NOW

Auckland Emergency Management
Tōkonga Māta Ohaitia o Tāmaki Makaurau

Franklin (West) Tsunami Evacuation Zone Map



What our modelling tells us

All the coastline, shore, and marine areas of the Franklin local board are at risk of tsunami of any size. This extends to the anchorage and mooring areas around the local board including the Wairoa River. Additionally, there are residential areas (particularly along the eastern coast including at Kawakawa Bay and Maraetai) in areas that may experience flooding during larger land-threat tsunami. This includes low-lying areas around Te Puru Park, coastal farmland at Whitford, Umupuia Beach, including the marae, and tidal areas of the Wairoa River near Clevedon.

This means that Franklin local board residents and visitors should evacuate and avoid all beach, shore, and marine areas (red evacuation zones) during any tsunami alert. During alerts for larger land-threat tsunami, those within the land-threat (yellow) evacuation zone should also evacuate inland or to higher ground. Kawakawa Bay contains the largest resident population (approximately five hundred residents) in the yellow land-threat evacuation zone. However, there are also multiple camping grounds, sports grounds, and recreational parks around the local board area in both the red and yellow evacuation zones where people may be congregating, particularly on weekends and in the summer months.

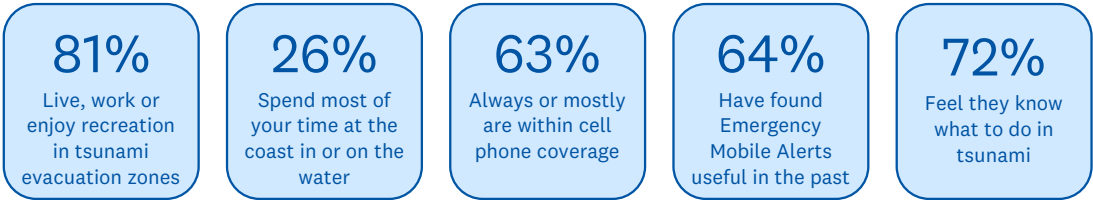
The tsunami vulnerability for communities the Franklin local board area ranges from Low to High. This reflects the difference across the local board area both in terms of geography, at-risk infrastructure, and demographics. For example, the census area unit that includes the Kawakawa Bay community was rated as having a ‘High’ direct tsunami vulnerability score as approximately 25% of the residents are located within the land-threat evacuation zone as well as significant critical social infrastructure such as the early childhood learning centre, medical centre, community centre, fire station. And critical roading access routes. There is also a high proportion of residents aged over 65 who may require additional time or support to evacuate. The Awhitu Peninsula was rated as having a ‘Medium’ direct tsunami vulnerability score, primarily because of the exposure of critical access routes to the communities in the area.

However, the more populated, rural coastal zones around Beachlands and the areas of Maraetai not adjacent to the beach, and the coastal townships around the Manukau Harbour had both very little exposure to land-threat tsunami and received direct tsunami vulnerability scores of ‘Very Low’ to ‘Low’.

Telecommunication coverage at the coast in the more populated areas is generally good, but may be spotty in some areas, particularly the rural areas along the western beaches.

What you have told us

We surveyed over one thousand people to ask them how they use the coast, how they receive emergency alerts, and how confident they feel that they know what to do in a tsunami emergency. Of the respondents from the Franklin local board:



The favourite places for residents of the Franklin local board to spend time at the coast include:

- Maraetai

