

Kāpiti Flood Hazard Modelling Frequently Asked Questions

What are the flood hazards on the Kāpiti Coast?

Many low-lying areas of the Kāpiti Coast are at risk from flooding. Flooding may be caused by rivers overtopping their banks, or small streams and stormwater drains overflowing, or even the sea.

We have seen historical flooding events in Kāpiti. The biggest documented floods in Ōtaki and Waikanae rivers were in 1955 and 1998.

Working with the wider community, mana whenua and Kāpiti Coast District Council, Greater Wellington is looking at ways to build resilience against future flood hazards on the Coast.

What are the different types of flooding?

A flood is an event where water inundates land that is normally dry. The three waters that contribute to flooding are surface, ground, and coastal.

- **River and stream flooding** is the result of large volumes of water caused by heavy rain, coming down a river system. The volume of water can mean water flows out of riverbeds, spilling across floodplains, and overtopping or breaching stopbanks or structures.
- **Stormwater flooding** occurs where Kāpiti Coast District Council's piped network is overwhelmed because of sustained or intense rainfall. Urban areas have a lot of concrete or hard surfaces, which stop rainwater from soaking into soil, so it is channelled into stormwater drains. When the rain falls faster than the stormwater system can manage, we get surface flooding. These floods usually happen very quickly and usually don't last very long but they can block roads and damage buildings.
- **Groundwater flooding** is when water seeps from the ground and creates surface flooding issues. Groundwater flooding is much slower to occur than surface or coastal flooding – it will usually happen days, weeks, or even months after heavy or prolonged rainfall, and may last weeks or even months.
- **Coastal flooding** may be caused by a number of factors, including high tides and storm surges, waves and tsunamis. There is a tidal and groundwater influence on surface flooding where it interacts with high groundwater levels and/or incoming tide.

Who is responsible for different types of flooding?

Greater Wellington is responsible for flood risk management and mitigation across river catchment areas. It manages large-scale flood control infrastructure such as stopbanks and handles river management and floodplain control. Greater Wellington is also responsible for watercourse management, monitoring, and research of rivers and supporting emergency flood responses.

You can find out more about River Flood Protection on the [Greater Wellington website](#).

Kāpiti Coast District Council is responsible for urban stormwater management. They are responsible for constructing, maintaining and improving stormwater systems, ensuring adequate drainage in urban areas, and addressing localised flooding issues. They also control land use through district plans, which may include zoning restrictions and building controls in flood-prone areas. KCDC also provide flood-related information through LIMs and flood risk information on specific sites.

KCDC is updating stormwater modelling for the Kāpiti Coast and will be consulting on draft maps of the stormwater network and local stream flooding in 2025.

You can find out more about Stormwater Management on the [KCDC website](#).

How is the community protected from flooding?

Both the Ōtaki and Waikanae rivers have floodplain management plans outlining the communities' preferred options for dealing with the flood problem in their area.

Greater Wellington, Kāpiti Coast District Council, local iwi and the Ōtaki and Waikanae communities worked together to develop each plan.

The Friends of the Ōtaki River and Friends of the Waikanae River groups were set up to work with Greater Wellington to help put the floodplain management plans into practice, and to monitor the day-to-day activities in the rivers. These groups are active in planting thousands of native plants along the river corridors every year.

The types of flood protection measures used for the Ōtaki and Waikanae rivers are:

- Structural methods such as building stopbanks, floodgates, and making bridges higher
- Non-structural - river and catchment management
- Planning controls on where structures can be built or having rules about where people can build houses
- Emergency management such as providing information to the public and schools about what to do in a flood, having a flood warning system, developing plans for evacuation.

What size flooding event is Greater Wellington modelling for?

A flood in one of the region's major rivers could cause millions of dollars' worth of damage to property and community assets.

Greater Wellington's modelling covers a range of different flood events, including a 1% annual exceedance probability flood. We also include the latest climate change projections to understand the extent and frequency of flooding in the future. Recent flooding events across New Zealand have demonstrated the devastating consequences on unprepared communities and the need for investment in flood protection infrastructure.

What is a 1% AEP (annual exceedance probability) event? Why use this event?

A 1% AEP (Annual Exceedance Probability) event is a flood event that has a 1% or one in 100 chance of occurring in any given year. This is sometimes referred to as a 1-in-100-year flood. We use this event for our flood hazard mapping as it is industry standard best practice.

What is flood hazard modelling?

Flood hazard modelling involves the use of hydrological and hydraulic models to estimate the range of floods that could occur in a catchment and the hazard associated with these events. Flood hazard models produce a series of flood hazard maps and data for each scenario model. The models are used by Greater Wellington for flood warning, floodplain management planning, asset management and advice during emergency responses.

Greater Wellington shares the models with organisations such as Wellington Regional Emergency Management Office (WREMO), territorial authorities and the public for emergency planning and management, district planning, consenting, insurance and ownership information and decision making.

Although we can't predict what impact climate change or natural hazards will have on specific locations, the information the models provide will help communities and councils prepare for a range of potential impacts.

We've undertaken similar projects in the Hutt Valley (Te Awa Kairangi) where flood protection, river restoration and public transport work is now underway.

What's the process?

The first step is to analyse rainfall patterns. Once the rainfall is modelled, we use recent flood images and data to calibrate the models developed. We then go out to the community and see whether the models correspond to their experiences of flood events and determine where the flood waters might go in the future.

Once we have collated all the information and data, the models are finalised and shared with local councils, mana whenua and the community. We then use the models to look at options to mitigate the impacts of flooding on property, people communities and the environment.

Who's involved?

Greater Wellington will be working in partnership with the local council, mana whenua, key interest groups, businesses, and the wider community.

Greater Wellington has a team of hydrologists and engineers who are experts in their fields of gathering and crunching data about river flows, weather patterns, climate change and impacts on the environment.

We also bring in technical specialists to help us with the specialised stuff.

What happens with these plans?

Flood management plans may be integrated into district plans for future proofing our communities and environments, while also planning for future growth and development.

How is the community involved?

To ensure we capture as much information as possible to develop these models, we also need your help to understand the flooding patterns and impacts from rivers and streams in the Kāpiti area.

We recognise the importance and value of your knowledge and experience of flooding in the area. We want to work with you to understand the risks of flooding and what it means for you and the community you live in. Let's build a resilient and prepared community that can still enjoy and flourish in the dynamic environment.

We'd like you to share any photos or stories you might have from previous flooding events from the following areas:

- Ōtaki River including the Waitohu Stream and the Mangapouri Stream.
- Waikanae River
- Mangaone Stream

You can do this by completing the Have Your Say form on Kāpiti Flood Hazard Modelling haveyoursay.gw.govt.nz/kapiti-flood-hazard-mapping.

Why is flood hazard modelling useful?

The hazards associated with flooding and the natural evolution of the floodplain should be considered when new development is being considered on the floodplain. This approach is useful as it helps to:

- minimise the future damage from flood events to property
- identify any potential threat to life
- allow evaluation of any impact on the river environment
- alert people to any potential flood and erosion risks

What happens with this information?

Our flood hazard maps show areas on the Kāpiti Coast that are susceptible to flooding, which includes the effects of inundation and erosion. After we have updated the flood hazard maps, this information will be incorporated into the Kāpiti Coast District Plan.

The information is also available on the local council and Greater Wellington websites to enable people to make informed decisions about land use and purchases and planning for development in the future.

Will this information affect my property value or insurance?

We have been advised by Quotable Value that valuations follow the market rather than set the market. A valuation is not discounted without there being market data to support that approach, and this was not the case from observations of the market at the time of valuations.

Many areas in the Wellington Region are subject to flood risk. We advise that any known facts relating to the physical risk to a property should be disclosed to an insurer. This includes whether the property is exposed to any hazard by virtue of its location (e.g. flood). An insurer requires these facts when evaluating whether to underwrite the risk and, if so, on what terms.

What should I do if I intend to develop, build, or renovate?

Consider the following actions if you are building or renovating in a flood or erosion-prone area: Speak to your local council before you start building.

Avoid the area affected by flood or erosion. No new development should occur beyond the Building Setback Line. Greater Wellington also advises that development avoids flood hazard areas, but if this is not possible, such as for an existing dwelling, we can provide you with site-specific advice.

Raise your building platform or floor levels or build to two storeys. The underside of the floor joists or concrete slab should be clear of the 1 in 100-year return period flood level. Remember that the design flood event could be exceeded.

Consider access issues and provide flood-free evacuation routes. No one wants to be caught in a flood event with no safe escape routes. Elevating access routes is not recommended as these may act as barriers to flood waters.

Is my property at risk of flooding?

This project will produce updated maps that show whether your property is at risk from river flooding. In the meantime, you can have a look at Greater Wellington's existing maps to see if your property is at risk. To view these maps, visit: <https://mapping.gw.govt.nz/GW/Floods/>

What do I need to do if I live in a flood prone area?

Know your risk: Find your property on the flood and erosion hazard map and find out what the predicted depth of water will be.

The Wellington Regional Emergency Management Office (WREMO) [website](#) provides information about how to reduce the effects of flooding. This information covers evacuation plans, how to protect items in your home by raising them above floor level, and how you can reduce the risk of future flooding to your home.

Be prepared: Things you should have ready

- A Household Emergency Plan that will help you and your household plan for what to do when disaster strikes.
- Well stocked emergency survival items such as food, water, clothing and medical supplies for you and your family. You will need enough for at least 3 days.
- A Getaway Kit of essential emergency and medical items you need to have if you're evacuated.

For more information on preparing for an emergency please go to the Wellington Region Emergency Management Office website: www.wremo.nz.