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Understanding Auckland's regional flood maps

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In Auckland, we've seen how natural hazards like flooding, coastal erosion and landslides can impact people, homes and businesses.

We're also seeing more Aucklanders interested in knowing about their flood risk including when they're looking to purchase property or move into a new rental property. This includes checking the flood hazard maps on [Auckland Council's Flood Viewer](#) or [Geomaps](#) beforehand, or by purchasing a Land Information Memorandum (LIM) report.

Here is some useful information on how and why we publish these maps, and what they mean.

Why does Auckland Council publish flood maps?

Auckland Council is required to maintain hazard information that is publicly available – including flooding. This publicly available flood information, including flood plains,

flood prone areas, and overland flow paths are free to view and published online on Flood Viewer and Geomaps websites.

The maps are produced for a whole catchment, group of catchments or at a regional level to show how water moves across the landscape. They're not site specific (based on individual property data) and don't include flood mitigations to a building.

What else are these maps used for?

In addition to informing the public, these flood maps are underpinned by detailed hydrological and hydraulic modelling that Auckland Council uses to analyse catchments and understand how flooding occurs.

This modelling helps the council design, upgrade, and prioritise stormwater infrastructure across the region. It is also used by the transport sector when designing roads, culverts, and associated assets, ensuring they are resilient to flooding.

Property developers rely on the same information to understand stormwater requirements for new developments and to ensure their proposals appropriately manage flood risk.

Why is this information on LIM reports?

A LIM report provides a high-level summary of information we hold about a property. It's a 'snapshot in time' and identifies hazard information the council holds about a property at the specified date and time – new information and reports are not created when a LIM is purchased, we compile the most recent information we hold at that time.

For flood maps, information is taken from regional and/or catchment maps and an overlay is applied showing the boundaries of the requested property. It is not based on individual property data and does not include any mitigations that may have occurred at the property for a building or home.

Auckland Council has a legal obligation under the law (the Local Government Official Information and Meetings Act 1987 section 44B) to identify natural hazards relating to a property, which are known to us, on LIM reports – this includes flooding.

How can I find out more information about the natural hazard information (like the flood maps) on a LIM?

The LIM report does not provide or replace site-specific information or property-level reports. It's a starting point and a summary of the information we hold.

Those receiving LIMs are encouraged to use the report to further their due diligence, like ordering a copy of the council's property file, reaching out to our technical specialists or seeking opinions and/or advice from independent third-party specialists.

What flood maps are included in LIMs?

LIMs include a map entitled 'Natural Hazards – Flooding', which displays information about the following potential flood hazards in relation to the site:

- Flood plains
- Flood prone areas
- Flood sensitive areas
- Overland flow paths

The absence of flooding information on the maps does not exclude the possibility of site flooding, including from local depressions or overland flow paths on nearby properties.

Also important to know is that Auckland Council does not have information on flood sensitive areas for all of Auckland. This potential hazard will only be depicted if the information exists.

What's the difference between flood plains, flood prone areas and overland flow paths?

Flood plains:

Flood plains appear in low-lying areas and next to streams and rivers. As many historical streams have been piped, flood plains may appear in areas where you haven't seen water before.

Flood plains are mapped from hydraulic modelling results and show the predicted flood extents during a 1 per cent annual exceedance probability (AEP) storm, assuming the stormwater system is functioning as intended and not blocked.

Flood prone areas:

Flood prone areas are topographical depressions/low lying areas where water can become trapped and pool.

In flood prone areas, water pools and gets trapped when the stormwater outlet pipe is blocked, or when the rainfall intensity exceeds the capacity of the stormwater network. Flood Prone Areas are identified by GIS techniques and not hydraulic modelling.

Overland flow paths:

Overland flow paths show the route water will take as it flows downhill through the landscape when there is no piped network or the capacity of the piped stormwater system is exceeded.

Water can move very quickly over land during heavy rain, forming temporary fast-flowing streams. On Flood Viewer, these are shown as lines, but in reality, the water will spread more broadly across the surrounding area.

Overland Flow Paths are identified using GIS-based terrain analysis, which connects the lowest points in the landscape (known as the thalweg) to map the route that water will take downhill. These paths are derived from topography and are not based on hydraulic modelling.

Major earthworks can alter the topography, and in some instances, developers may provide surveyed data to the council following a development which may result in changes to the flood mapping.

You can learn more about the different types of flood hazards on [Auckland Council's Flood Viewer](#).

What data are the flood plain maps based on?

The flood plains on LIM reports, and published on Flood Viewer, are based on an extreme weather event with a one per cent chance of occurring or being exceeded in any given year – this is also called a 1-in-a-hundred-year event.

To produce these maps, we consider things like:

- the hydraulics of water flowing through pipes, channels, and overland
- the hydrology of different rainfall events
- land-use types and soil characteristics
- and climate change.

The data is then updated across the region at catchment scale, to reflect the best and most current information available at the time.

It uses surface topography captured through LiDAR – laser imaging, detection and ranging via aircraft like drones. The LiDAR data used for 95 per cent of our maps was flown in 2016, which means the flood-plain map on the LIM reflects the landscape as it existed at that time.

The topography (land features like elevation, water bodies) data the models are based on is from 2016. How does the council account for this?

As the topography data used to inform the flood hazard maps is from 2016, when requested, we have provided a written acknowledgement of this to property owners. In the letter, we acknowledge that this means that the maps may not reflect changes made on the property including flood mitigation measures that may have been introduced by development.

Alongside this, we are in the process of providing a clarifying statement on all LIM reports to indicate when the data used to model the flood risk was gathered.

New models are expected soon. A new Auckland wide LiDAR survey was flown in 2024, and we are currently rebuilding all flood models using this updated data. This is detailed, technical work that must be done catchment by catchment – but it could be done more frequently in the future.

How often are the flood plains updated?

Councils are not required to update natural hazard information immediately whenever development occurs. Given the scale of construction across Auckland, it would be impracticable to continuously remodel every catchment for every change in topography as soon as earthworks are completed.

Auckland Council has followed a regular, cyclic update process since regional flood-plain mapping began in 2012. Historically, this schedule has been appropriate, and only since the severe weather in early 2023 has public awareness of flood risk increased to the point where this timing has become more visible in the property market.

With more interest from Aucklanders, we're looking at increasing how frequently we run this exercise including increasing the cadence.

Why can't the information on my resource consent be used to show a property's flood exposure – can the maps be adjusted?

We do not base flood-plain maps on individual resource consent information. Earthworks plans provided for resource consents only analyse the immediate development site, not the full catchment.

Developments often occur in stages over several years, consents may be varied, and construction frequently changes from the original design. For these reasons, resource consent data cannot be used as a basis for catchment wide flood plain modelling.

However, in some cases, this data can be used to update flood prone areas. This is as it is a different type of hazard to flood plains and does not require modelling – so the topographical data can be more easily updated.

My property is showing as in a flood risk area – who can I talk to for more information?

In the first instance – reach out to [Auckland Council](#). By talking to us, we can see if we can provide you with the information you're looking for and explain what it means and why a property is impacted.

We often find that the concerns people have with flood information are based on a misunderstanding of the data rather than the information itself. A conversation may be a simple way to avoid the expense of engaging an expert to dispute information which is unlikely to change.

For more information on addressing or updating information that appears on a Land Information Memorandum (LIM) from Auckland Council, visit our [website](#).