How climate change is affecting

Southern Ōtautahi Christchurch



Know your climate risks

ccc.govt.nz/climaterisks

Christchurch City Council

Our climate is changing

To understand what this means for Ōtautahi Christchurch and the places and things we care about, we've looked at the risks facing our communities.

Our weather is expected to become more extreme – bigger storms, heavier rainfall, stronger winds, more high-heat days, and more severe droughts.

There are hazards right across our district, but they're not evenly spread. Some, like heat, wind, and wildfire, can affect many areas. Others, like flooding and landslides, are more localised. The most at-risk areas are along river corridors, low-lying and coastal estuarine areas, and hill environments, as multiple hazards often overlap.

Impacts on homes and communities

Private homes are at risk. Across the district, a large event could already cause moderate or greater damage to one in 10 homes. This could rise to one in four homes within the next 100 years.

Almost 40 percent of the district's climate risk to homes is in this southern Ōtautahi Christchurch area.

Over time, growing risk could affect insurance availability and cost, mortgage lending, and property values. Understanding risks and planning ahead gives us choices – and the chance to shape a safer, fairer future for ourselves and for generations to come.

Financial and service impacts

Climate change will become increasingly expensive. With current funding, we won't be able to maintain today's levels of service for all public assets.

Extra costs will need to be built into future planning and will affect ratepayers. Some services may not work as well as they do today, and repairs may take longer as damage becomes more frequent and widespread.

As a result, we might need to shift our expectations and learn to live differently in our changing climate.

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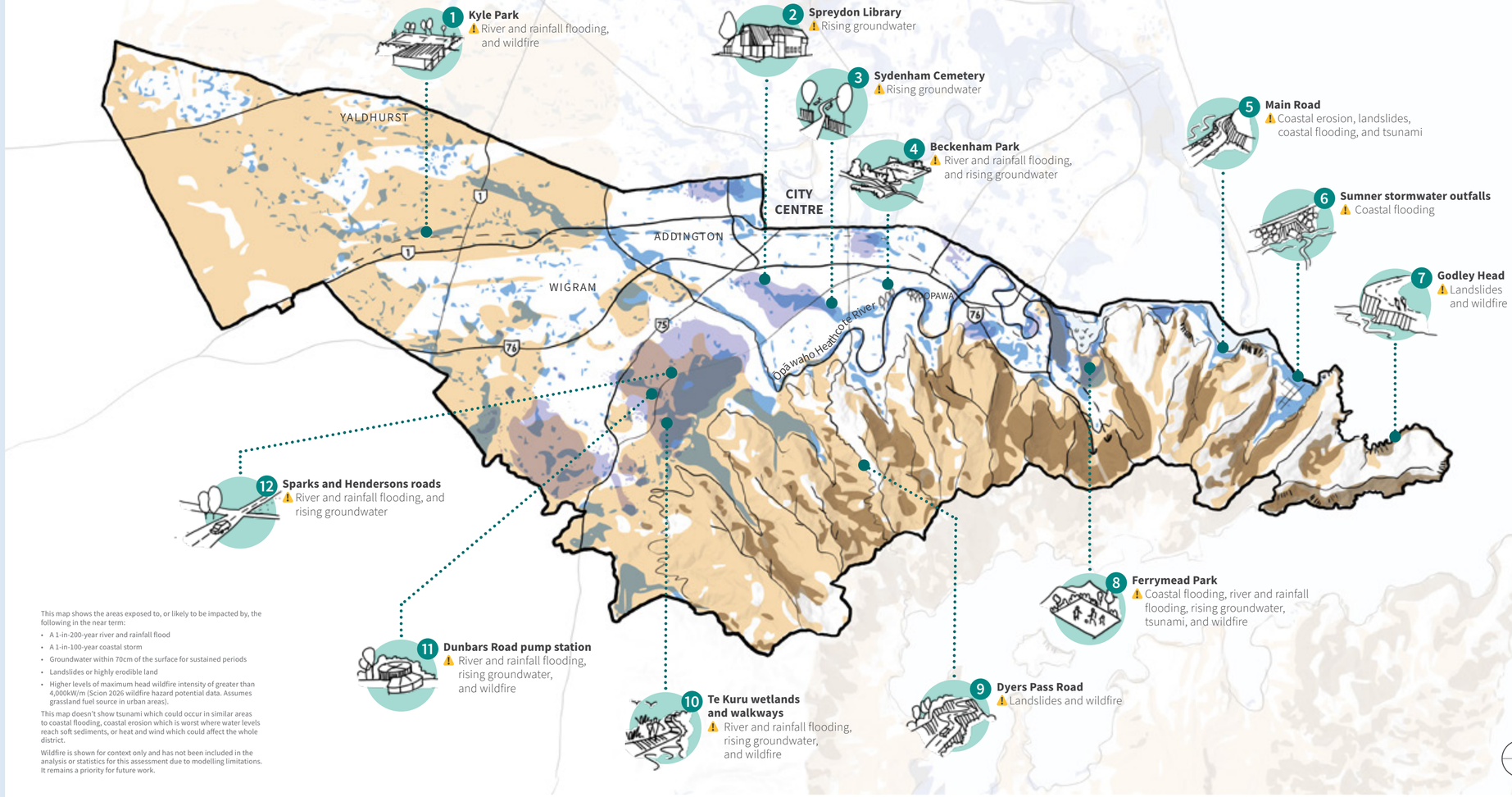
Examples of public places at risk

The examples below show just some of the public places and infrastructure that are already affected by climate hazards or that may be in the future.

Many other places are also at risk, and impacts are likely to be felt well beyond these examples.

This map shows some of the main climate hazards and their indicative extent in the near term. Many will increase in the future.

- Flooding
- Landslide
- Groundwater
- Wildfire



This map shows the areas exposed to, or likely to be impacted by, the following in the near term:

- A 1-in-200-year river and rainfall flood
- A 1-in-100-year coastal storm
- Groundwater within 70cm of the surface for sustained periods
- Landslides or highly erodible land
- Higher levels of maximum head wildfire intensity of greater than 4,000kW/m (Scion 2026 wildfire hazard potential data. Assumes grassland fuel source in urban areas).

This map doesn't show tsunami which could occur in similar areas to coastal flooding, coastal erosion which is worst where water levels reach soft sediments, or heat and wind which could affect the whole district.

Wildfire is shown for context only and has not been included in the analysis or statistics for this assessment due to modelling limitations. It remains a priority for future work.

1 Kyle Park

Flooding could leave sports fields too wet to use. It may also leave debris or contamination, forcing parks, facilities, and access routes to close for extended periods while clean-up and repairs are carried out.

2 Spreydon Library

The library is one of many buildings exposed to rising groundwater. Over time, moisture can damage foundations, walls, floors, and furniture. This could disrupt library services and reduce the library's ability to host community activities and events.

3 Sydenham Cemetery

Sydenham Cemetery is one of several cemeteries at risk. Rising groundwater can affect burials and decomposition and may allow contaminants, like metals and bacteria, to leach into the environment and water sources.

4 Beckenham Park

The park is often slow to dry after heavy rain and can partly flood from the Ōpāwaho Heathcote River. This can limit use of sports fields, particularly in winter, and increase maintenance needs for nearby club facilities.

5 Main Road

The road and nearby coastal pathway are highly exposed because they sit between steep hills and the ocean. Damage or closures could severely limit access to places like Sumner and Te Onepoto Taylors Mistake, or make emergency evacuations more difficult. Long detours may be needed for extended periods.

6 Sumner stormwater outfalls

These outfalls help drain stormwater from behind the Sumner promenade to the ocean. Sea-level rise and sand build-up can block drainage, resulting in the flooding of streets, businesses, and homes during heavy rain.

7 Godley Head

Wildfires and landslides can damage tracks, block access, damage vegetation, and reduce the overall enjoyment of our parks. Major repairs are often needed to enjoy these spaces safely again after an event.

8 Ferrymead Park

Due to its low-lying location close to the Ōpāwaho Heathcote River mouth, the park is one of several at risk of flooding from a variety of sources, as well as wildfire. Walking tracks and recreation areas could be closed more often or damaged, reducing how people can access and enjoy the area.

9 Dyers Pass Road

These hazards can pose a risk to life and disrupt road access to Ngā Kohatu Whakarakaraka o Tamatea Pōkai Whenua Port Hills. As a key route to Summit Road, Governors Bay, and the rest of Whakaraupō Lyttelton Harbour, closures would mean long detours.

Over **40 percent** of the roads in southern Ōtautahi Christchurch could be exposed to at least one hazard within the next 100 years.

10 Te Kuru wetlands and walkways

The wetlands, paths, and open spaces are designed to flood during heavy rain. Storing stormwater helps reduce flooding of homes further downstream but also temporarily limits the use of these areas. While wetlands provide mutual benefits of flood management and recreation, they also provide fuel for wildfire.

11 Dunbars Road pump station

This pump station supplies drinking water to the Hornby and Halswell areas and is one of several at risk. It was flooded during heavy rain in 2025, causing damage, shutdown, and costly repairs. Wildfire could also cause damage to the pump controls and electrics. If the station failed, water supply may be disrupted, affecting basic household needs like drinking, cooking, washing, and toilet use.

12 Sparks and Hendersons roads

Flooding in this area already causes road closures and traffic disruption, and this is likely to worsen. Floodwater can damage road surfaces – especially with heavy vehicle use – leading to more potholes and uneven pavement. These disruptions affect cars, buses, cyclists, and pedestrians travelling between south Ōtautahi Christchurch and Halswell.

How climate hazards may affect the district and this area

A major flood could impact around **21,000** homes across our district – roughly one in every six – and cause an average of **$56,000** worth of damage to each, although some would be more impacted than others. In 100 years, these damages could triple.

Right now, **34 percent** of our district is exposed to at least one climate hazard. This is expected to grow to **42 percent** over the next 100 years.

While this isn't a big increase, the magnitude and frequency of events will grow, which means **more severe impacts.**

Landslides

Some land in our district is naturally unstable because of steep slopes and soil type. During heavy rain, slopes can suddenly slip or collapse.

Climate change is bringing heavier rainfall, which increases landslide risk.

Steep hilly areas like Ngā Kohatu Whakarakaraka o Tamatea Pōkai Whenua Port Hills are most vulnerable.

Wildfire

Wildfires spread fast and can cause serious harm to people, homes, infrastructure, and the environment.

Hotter temperatures, longer dry periods, and stronger winds mean wildfires are likely to become more frequent and harder to control.

Most of the district is exposed, but Ngā Kohatu Whakarakaraka o Tamatea Pōkai Whenua Port Hills, rural areas to the west, more vegetated areas such as Te Kuru wetlands or Ferrymead Park, and nearby urban edges face the greatest risk.

Wind

Flying or falling debris causes most wind damage. Strong winds put people and property at risk, trigger power outages, block roads, and damage buildings.

Climate change is expected to bring stronger extreme winds.

High winds can affect the whole district but are strongest in exposed places like hilltops around Ngā Kohatu Whakarakaraka o Tamatea Pōkai Whenua Port Hills.

River and rainfall flooding

Heavy rain can cause rivers and streams to overflow, spreading floodwater quickly across land and into buildings.

Floodwaters can knock an adult off their feet, float cars, and damage homes, roads, and essential services. Even shallow water can be dangerous when it's fast flowing. Floodwater is often contaminated too.

Flash flooding can strike below steep hills, while low-lying river areas face growing risk as rainfall intensifies and water drains away more slowly.

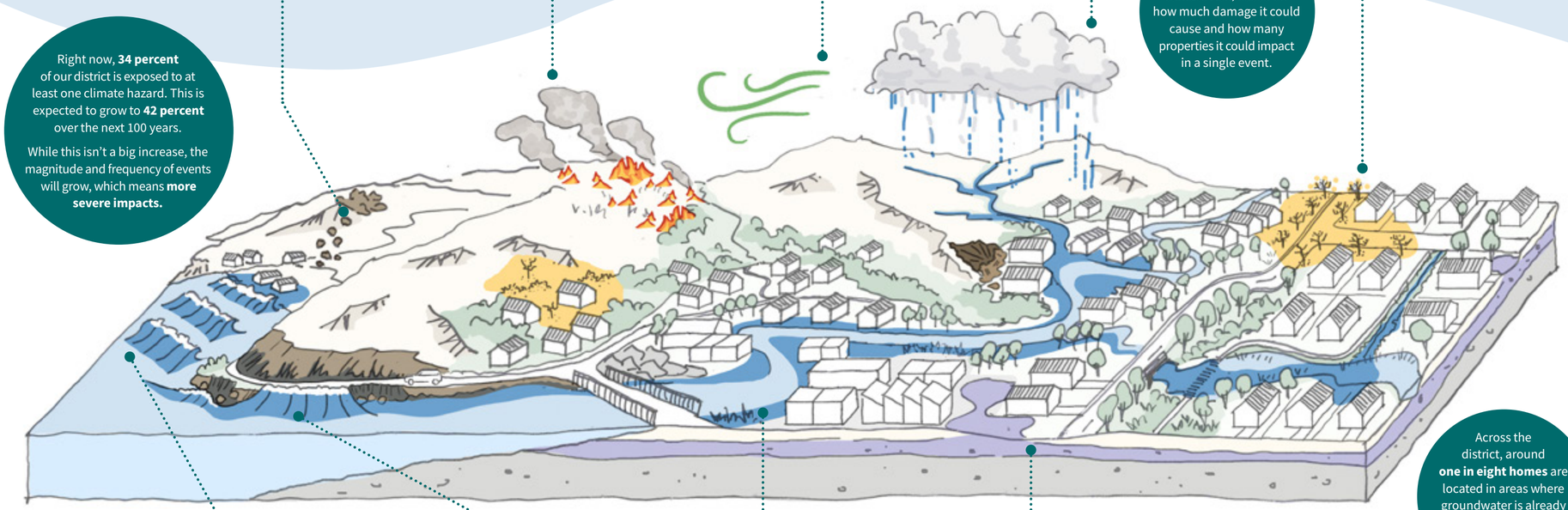
High heat

High heat affects the whole district. It can harm people's health, animals, food production, roads, and the natural environment.

By the end of the century, average temperatures in Ōtautahi Christchurch could rise by up to 3 degrees Celsius, with around 16 extra days each year above 30 degrees.

High heat is likely to be most problematic in exposed areas with prolonged sun exposure, such as north-facing properties.

River flooding is the district's **biggest climate risk**, based on how much damage it could cause and how many properties it could impact in a single event.



Across the district, around **one in eight homes** are located in areas where groundwater is already shallow and could cause more damage over time.

Tsunami

Tsunami are caused by large movements of water, such as underwater earthquakes, volcanic eruptions, or landslides. They can travel as fast as a jet plane and move far inland, especially up rivers.

Rising sea levels mean future tsunami could reach further inland and cause greater damage.

Low-lying coastal areas and lower river stretches face the highest risk.

Coastal erosion

Coastal erosion happens when waves and tides wear away beaches and cliffs. It can be slow, or a single storm can remove beaches built up over decades.

While beaches may recover naturally, banks and cliffs cannot. Roads, buildings, and other structures are also often lost.

Rising sea levels let waves reach further inland, speeding up erosion.

Areas with soft soils, steep banks, limited sand supply, or large waves are most at risk.

Coastal flooding

Coastal flooding happens when storm conditions push seawater onto land, flooding areas normally out of reach. It puts lives, homes, and infrastructure at risk.

As sea levels rise, coastal flooding will happen more often – even without storms and especially during high tides.

Low-lying coastal areas and lower parts of rivers are most at risk. Three percent of the district is currently exposed, potentially increasing to 15 percent over the next 100 years.

Groundwater

In many places, groundwater is rising as sea levels rise.

High groundwater can damage building foundations, disrupt underground pipes, worsen surface flooding, increase dampness in homes, and affect what can grow.

Groundwater is already high in many parts of the district, especially in winter or at high tide.

Low-lying areas near the coast, river corridors and upper basins, and lakes are usually most affected. However, low-lying inland areas can also experience high groundwater.

What we're doing

Climate change is already happening, and impacts are unavoidable.

We're planning now for how climate change could affect public places and infrastructure in the decades ahead.

A key part of this work is our Coastal Hazards Adaptation Planning programme. This is where local communities, rūnanga, and technical experts work alongside the Council to recommend how roads, pipes, parks, and other public assets should adapt over time.

We're also looking at how to better manage natural hazard risks by considering changes to the District Plan. This may involve limiting new development in areas most exposed to certain hazards, and enabling other activities under some conditions.

Climate risk is also managed across our plans, policies, and consent decisions which guide how land, water, and resources are used.

Roles in managing the risks

Climate change affects everyone, and we all have a role to play in managing its impacts.

Christchurch City Council's role

We're responsible for managing climate risks to the assets we own and the services we provide on behalf of the community, like roads, water pipes, and parks – however, we don't have a legal duty to protect private property from natural hazards.

Our role includes:

- Helping plan for, and respond to, emergencies
- Providing information about known natural hazard risks
- Developing plans, policies, and rules to manage and avoid natural hazards
- Working with communities to manage natural hazard risks and their impacts
- Supporting communities to build resilience and adapt to change.

Role of private property owners

Private property owners, including individuals, businesses, organisations, and iwi, are responsible for managing risks to their own property and income.

This includes:

- Understanding the type and level of risk to their property or activities, and their responsibility to manage them
- Taking action to lower or manage those risks
- Following the laws and regulations that apply to them.

What you can do

We've faced big challenges before, and we're prepared to meet what's next – but we can't do it alone. We need to work together to prepare for climate change.

Be ready at home

Take the first step in preparing your home for extreme weather by visiting **ccc.govt.nz/beready**

There, you'll find simple, low-cost steps you can take now, as well as options for longer-term investment, to prepare your home and property for extreme weather and climate change.

Learn more about climate change

If you'd like to better understand climate change and what you can do, enrol in the University of Canterbury's free online short course Climate Change: Empowering Communities for Action.

It's a 30-hour course over nine weeks and free for Ōtautahi Christchurch residents.

Join the conversation

Get involved in our Coastal Hazards Adaptation Planning when it comes to your area. These conversations help communities work with us to shape their future and decide how public assets and infrastructure should be managed.

Stay informed by signing up for our Climate Action newsletter at **ccc.govt.nz/climateaction**

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