

Kōrero mai | **Have your say**

Improving our stormwater

Ōpāwaho/Heathcote River
Draft Stormwater Management Plan

ccc.govt.nz/haveyoursay

Tell us what you think by
30 August 2021



Read the full draft plan

This is a summarised version of the full Ōpāwaho/Heathcote River Draft Stormwater Management Plan, for the purposes of consultation.

You can download and read the full draft plan on our website at **ccc.govt.nz/haveyoursay** or pick up a printed copy at the Council's Linwood Service Centre or Civic Offices.

What's stormwater?

Stormwater is any water that falls onto roads, paths and other hard surfaces. The water picks up pollution from these surfaces and then flows via drains into local waterways. This affects the water quality and health of local streams and rivers.

What's a stormwater management plan?

A stormwater management plan sets out the ways in which Christchurch City Council will meet the requirements of its stormwater resource consent, which was granted by Environment Canterbury in 2019. This 25-year resource consent is called the Comprehensive Stormwater Network Discharge Consent (CSNDC). Its purpose is to improve surface and groundwater quality and address problems caused by the nature of stormwater discharged into waterways. It promotes water quality improvements over time in order to meet targets in the Canterbury Land and Water Regional Plan.

What's the purpose of the Ōpāwaho/Heathcote River Draft Stormwater Management Plan?

The Ōpāwaho/Heathcote River Draft Stormwater Management Plan has three key purposes:

1. To meet the targets for lowering stormwater contaminants under the CSNDC
2. To propose extra targets for lowering stormwater contaminants above and beyond the CSNDC
3. To describe the ways stormwater discharges will be improved over time to meet environmental objectives.



Compliance and beyond

This stormwater management plan sets out what we need to do in order to meet the conditions of the CSNDC (compliance). A separate Surface Water Improvement Plan, expected to be delivered at the end of 2021, will set out the ways we want to go above and beyond those conditions (improvement). This second plan will be considered as part of the Council's next Long-Term Plan.

Compliance

Comprehensive Stormwater Network Discharge Consent (CSNDC) (standards and targets)



Stormwater Management Plan

A plan to meet standards and targets set by the CSNDC to limit the contaminants being discharged into waterways.

Improvement

Integrated Water Strategy 2019 (goals and improvements)



Surface Water Improvement Plan

(expected delivery end of 2021)

A plan identifying the best practicable options to control contaminants at their sources and to improve ecology and stream health over the long term.

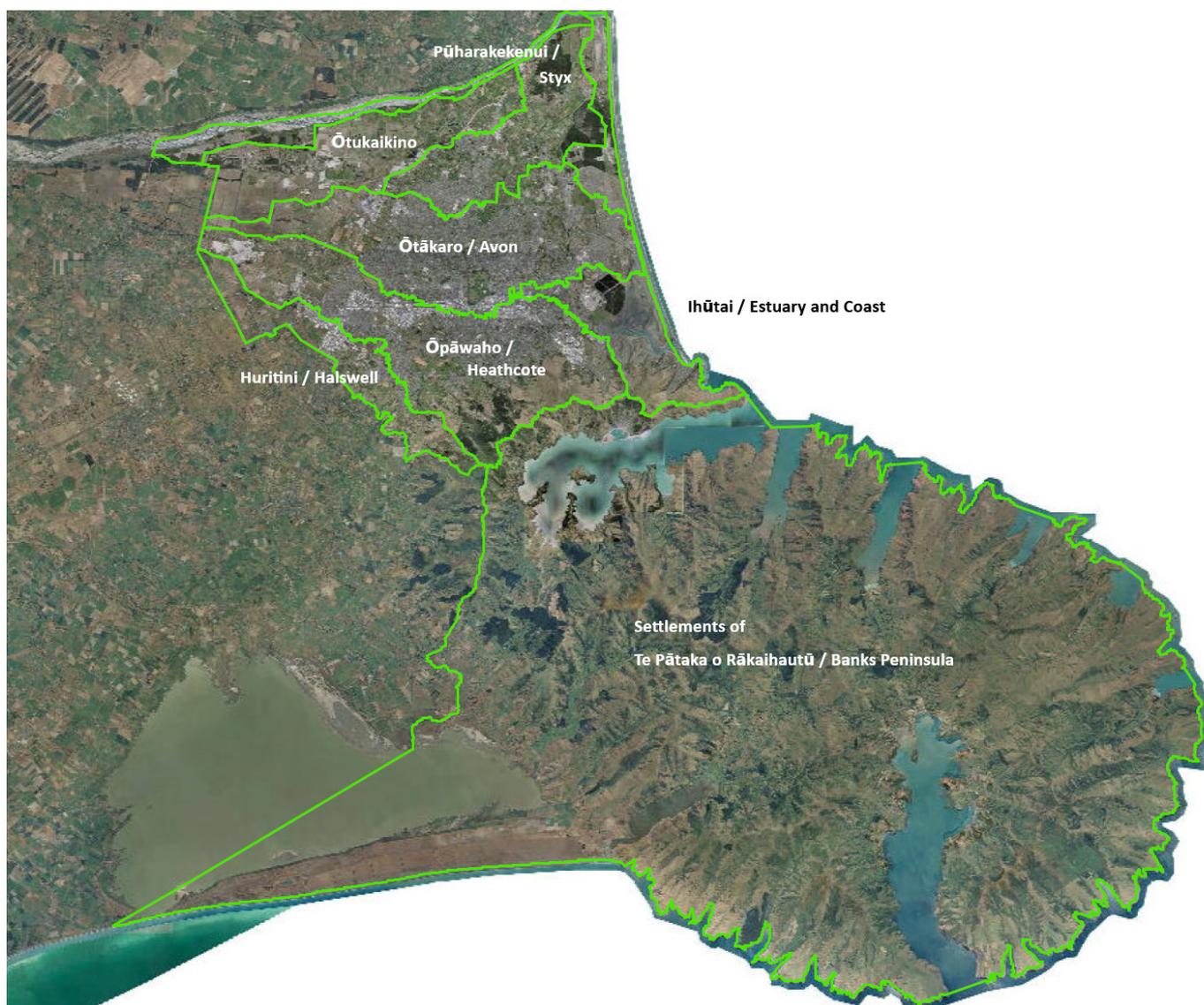


Both plans will be funded through the Council's next Long-Term Plan.



Coverage

This Stormwater Management Plan is one of seven plans being prepared over the period 2020 to 2023 for the Ōpāwaho/Heathcote, Huritini/Halswell, Pūharakekenui/Styx, Ōtākaro/Avon, Ihūtai/Estuary and Coastal, Ōtukaikino catchments, and the Te Pātaka-o-Rākaihautū/Banks Peninsula settlements.



The boundaries of the seven stormwater management catchments within the area covered by the Comprehensive Stormwater Network Discharge Consent.

The Ōpāwaho/Heathcote River catchment

The catchment of the Ōpāwaho/Heathcote River is 10,230 hectares in area. It is made up of 70 per cent flat land and 30 per cent Port Hills.

The headwaters of the Ōpāwaho/Heathcote River are in the Hei Hei area, in Paparua Stream and Cashmere Stream. Paparua Stream was probably fed by spring flows at one time, but the groundwater is no longer high enough for

this to happen. Paparua Stream now receives its flow from a water race at Delamain Drive. Cashmere Stream is fed by springs in the Sutherlands Road area.

The main issues

Water quality and ecological health

The quality and ecological health of waterways in the Ōpāwaho/Heathcote River catchment have declined greatly during 160 years of urban development. Metals in the stormwater runoff can harm many species of aquatic life, sediment can smother habitat, and E. coli poses a risk to human health during water activities such as wading or swimming.

There has been a failure to meet targets in the Land and Water Regional Plan for the catchment's urban spring-fed rivers across the areas of water quality, sediment quality and ecological surveys. Contaminants of concern include

sediment, zinc, copper and E. coli (an indicator of faecal contamination). Suspended sediment, zinc and copper levels are high, especially during wet weather, and high levels of the nutrients nitrogen and phosphorus, which can also come from sources other than stormwater, can result in excessive weed growth in waterways.

The key issue for this stormwater management plan is the need to improve surface water quality and the health of waterways in the Ōpāwaho/Heathcote River catchment despite continuing urban development.

Flood risk

River-side roads in the Ōpāwaho/Heathcote River catchment experience regular flooding and low-lying houses can be flooded in large events. Land sinking during the 2010/11 Canterbury earthquakes has increased the flooding risk for many properties, some of them distant from the river. Significant urban growth in the upper catchment will generate more and faster stormwater runoff that needs to be controlled.

The Council's Land Drainage Recovery Programme investigated the impacts of the earthquakes on flooding risks, with the aim of returning the flooding risk to houses to pre-earthquake levels. We are developing a floodplain and river model to improve our understanding of the risks to houses on the floodplain. The model will better represent the effects of sea-level rise over this stormwater management plan's period.



Flooding of the Ōpāwaho/Heathcote River in 1975.

Tangata whenua and cultural values

Values

Water is a taonga (a treasured natural resource) and represents the lifeblood of the environment for tangata whenua. A relationship with the environment is central to Māori creation stories, spiritual belief, and ways to manage resources. Land, water and resources are a statement of identity. In a particular area, they relate to a group's origin, history and tribal relationships. The whakapapa of a waterway would determine its use in tohunga (spiritual), waiwhakaheketupapaku (burial sites), waitohi (spiritual use), waimataitai (coastal mix of fresh and salt water, estuaries), waiora (spiritual healing water), and mahinga kai (food gathering).

The maintenance of water quality and quantity is perhaps the greatest resource management issue for tangata whenua.

All waterways are a major feature within the landscape and should remain as a feature. Culturally, all waterways are significant and come together as one. Waterways begin as rain drops and connect together as streams, lakes, estuaries, and wetlands, all leading to the sea.

Cultural health

The cultural health of the Ōpāwaho catchment is poor. Food-gathering sites contain high levels of pollution and are considered unsafe for food sources and, in some cases, unsafe for swimming. The diversity of native plants and trees is very low, and coastal and estuarine sites typically hold only small amounts of native vegetation in the zones near waterways, which are often dominated by exotic species.



The contaminants

Cu

What we know about copper

- Vehicle brake-pads are a major source
- Copper in rainfall contributes
- Soils are a minor to moderate contributor
- Small changes in the number of copper roofs can affect copper concentrations in stormwater
- Products used to clean roofs and pathways may contribute.



What we know about sediment

- Rural erosion in the Port Hills has a major effect
- Cuttings and banks (road cuttings, old quarries, private sections) contribute
- Stormwater discharges to hillsides and hill waterways contribute to erosion
- Hillside earthworks have a major effect
- Construction has a major effect
- Deposits from the atmosphere contribute
- Road wear and vehicle tyres contribute
- Erosion of stream banks contributes to some extent.

Zn

What we know about zinc

- Roofs are the source of maybe 65 to 70 per cent
- Tyres are the source of maybe 25 to 30 per cent
- Other zinc-coated steel items (fences, ventilation ducts, poles) may produce 1 to 5 per cent
- House and garden products (e.g. moss control) contribute to some extent
- Soil contributes to a small extent.

Possible ways to control contaminants

Contaminant	Source	Possible controls
Sediment, copper, zinc	New land developments	<ul style="list-style-type: none"> • Council facilities • On-site (private) devices
Sediment	Construction and excavation sites	Put in place ways to monitor and manage on-site erosion and sediment.
Sediment	Roads	<ul style="list-style-type: none"> • Treat run-off from main roads • Road sweeping
Port Hills sediment	Slips, underground tunnelling, bank erosion	Fence and vegetate unstable valleys, slips and water courses.
Zinc	Bare steel roofs (new)	<ul style="list-style-type: none"> • All new roofs zinc-free (non-steel) or low-zinc • Treat all roof run-off
Zinc	Poorly maintained residential roofs	Most residential roofs are painted. Educate property owners about paint maintenance.
Zinc	Vehicle tyre wear	A non-toxic tyre alternative introduced by industry.
Copper	Vehicle brake-pads	Legislation requiring low or no copper in brake-pads.
Copper	Architectural copper (roofs, spouting)	Architectural copper could be banned.
Industrial waste and spills	Poorly controlled industrial sites	Surveillance, education, site improvements, enforcement.



Comment	How controls could be put in place
This is a partial solution, as it would only apply to the development of new land.	Build facilities in new developments to limit increases in flow rate and to capture total suspended solids.
This has been difficult and often poorly managed on-site. However, erosion and sediment control measures are now being regularly checked by building inspectors.	This is now required as a condition of resource consents.
Would also remove some zinc and copper.	Introduce run-off treatment for busy roads over the long term.
A small programme is ongoing.	Plant severe erosion sites that result from urban activity.
Colorsteel roofing and equivalent products are the most common new residential roofing type.	Investigate various mitigation options and choose a best practicable option.
Old paint coatings expose zinc primer and zinc substrate. This is about half as bad as having a bare roof.	Investigate various mitigation options and choose a best practicable option.
<ul style="list-style-type: none"> • There is no current alternative. • Keep monitoring overseas developments. 	Work with the Government through the Ministry for the Environment.
<ul style="list-style-type: none"> • This is already happening in the USA. • There are some low-copper pads available in NZ. 	Copper brake-pads are becoming available by market forces and/or Government regulation.
	District Plan rule or controls through the Building Act.
The Council's Pollution Prevention Team is working on this.	Contaminating materials could be better contained on-site; some contaminants could be diverted into the sewer.

Our goals



1. Control sediment discharges

Our goals are:

- 1.1. To ensure the quality of stormwater from all new development sites or re-development sites is treated to best practice.
- 1.2. To have 100 per cent of stormwater treatment facilities built and operating to Waterways and Wetlands Design Guide standards.
- 1.3. To have less than 5 per cent of all consented construction activities on the flat reported non-compliant due to sediment discharges – by 2025.
- 1.4. To have less than 10 per cent of all consented construction activities on the Port Hills reported non-compliant due to sediment discharges – by 2025.
- 1.5. To investigate ways to reduce the environmental effects of sediment discharges – by 2022.
- 1.6. To look at options for carrying out street sweeping, sump cleaning, and send-to-wastewater trials – in 2020/21.

Recommended for the Surface Water Improvement Plan

- 1.7. Plant severely eroding natural areas of the Port Hills (approximately 600 hectares) from Ōpāwaho/Heathcote Valley to Hoon Hay Valley.
- 1.8. Work with farmers to control sediment from erosion sites on Port Hills farms, with subsidies as needed to speed up controls – by 2030.
- 1.9. Put in place best-practice sediment controls on Port Hills roads and tracks – by 2025.
- 1.10. Reduce road sediment by the best practicable option determined by the results of street sweeping, sump cleaning and trialing alternative treatments.



2. Control zinc contaminants

Our goals are:

- 2.1. To have 100 per cent of stormwater treatment facilities constructed and conforming to Waterways and Wetlands Design Guide standards.
- 2.2. To investigate zinc mitigation measures and carry out cost/benefit analyses toward identifying their effectiveness as best practicable options – by 2022.
- 2.3. To consult with key stakeholders and identify a long-term zinc strategy in line with current technologies – by 2025.
- 2.4. To collaborate with local and regional government in a joint submission to the Government seeking national measures and industry standards to reduce the discharge of contaminants from buildings and vehicles.

Recommended for the Surface Water Improvement Plan

- 2.5. By 2025, install a large-scale facility (or an array of devices, such as rain gardens) in at least one urban sub-catchment, to treat runoff from busy roads. By 2029, install similar facilities/devices in at least three urban sub-catchments.
- 2.6. Adopt a strategy to limit zinc, based on finding the best practicable options.
- 2.7. Research and trial ways of trapping roof-sourced zinc on-site.



3. Control copper contaminants

Our goals are:

- 3.1. To consult with the Government, through the Ministry for the Environment, about legislation to limit the copper content in vehicle brake-pads.
- 3.2. To not permit stormwater discharges into the network from unprotected copper building cladding, spouting or downpipes.
- 3.3. To investigate a District Plan rule to discourage the use of copper building claddings.



4. Control industrial-site contaminants

Our goals are

- 4.1. To compile a database of industrial sites considered to be medium or high risk based on the best available information – by 2025.
- 4.2. To audit high-risk industrial sites by the approved procedure under the Comprehensive Stormwater Network Discharge Consent.



5. Engagement and education

Our goals are:

- 5.1. To work with community groups to educate participants about current stormwater practice and to enable the public to take action to stop contaminants at source – by 2025.
- 5.2. To engage regularly with the Ministry for the Environment to collaborate on initiatives to reduce contaminants – by 2025.



6. Manage flooding

Our goals are

- 6.1. To limit the quantity of stormwater from all new development sites to pre-development levels, and to minimise stormwater increases from re-development sites through consent conditions.
- 6.2. To protect houses from flooding during and after development by having controls on new floor levels.