Kōrero mai | **Have your say**

Improving our stormwater

Huritini/Halswell River
Draft Stormwater Management Plan

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Tell us what you think by 30 August 2021

Christchurch City Council

Read the full draft plan

This is a summarised version of the full Huritini/Halswell 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 Te Hāpua: Halswell Centre or the Council's 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 Huritini/Halswell River Draft Stormwater Management Plan?

The Huritini/Halswell 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)

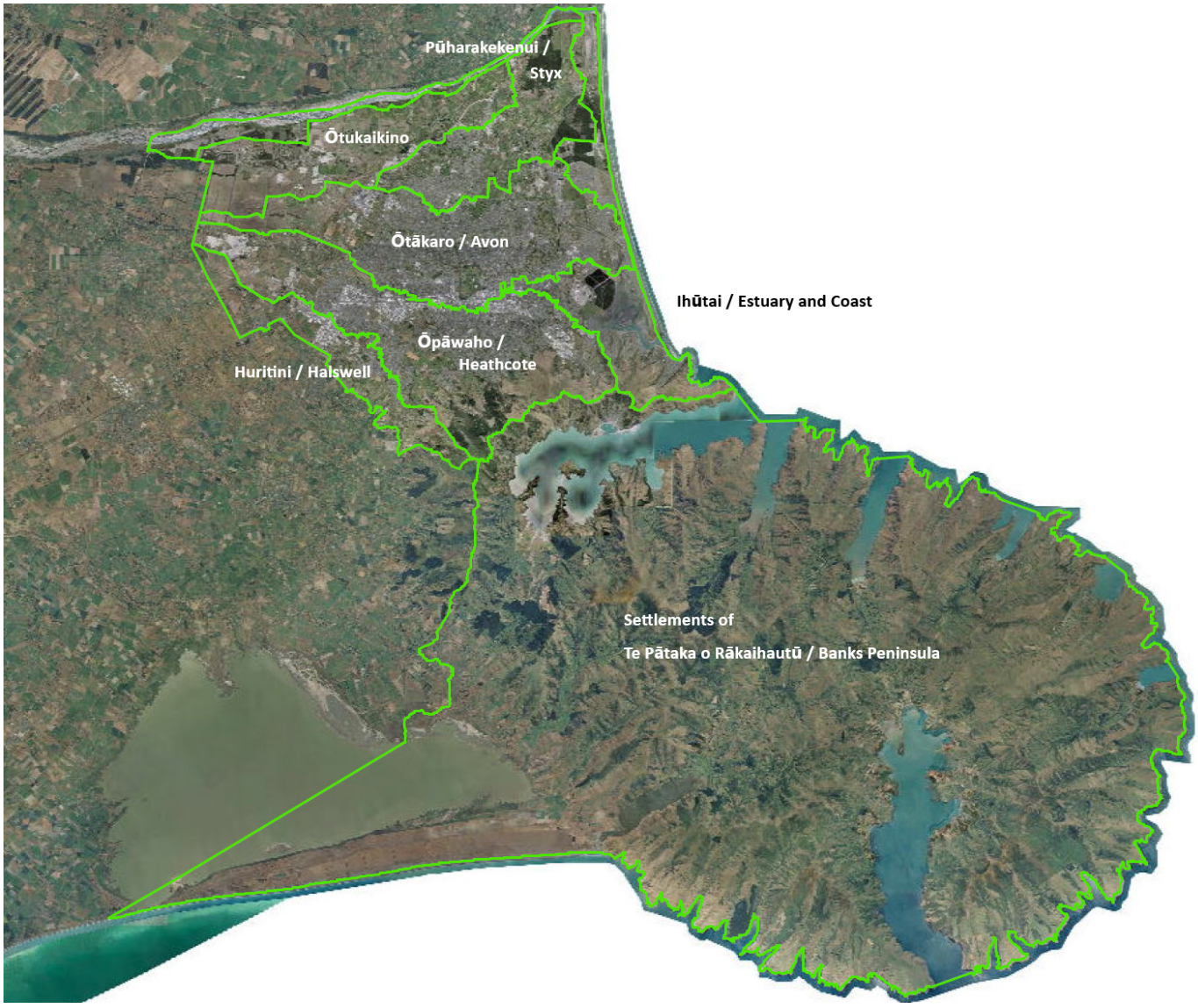
Surface Water Improvement Plan (expected delivery end of 2021)

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 Huritini/Halswell River catchment

The catchment of the Huritini/Halswell River spans most of the western fringe of the city, from the intersection of Chattertons and Langdales roads north of Templeton, to Old Tai Tapu Road, where the river leaves the city boundary. This area is 3,800 hectares.

The catchment has a varied and sensitive water environment, characterised by the temporary upper reaches of tributaries and a number of built drains, natural springs and ponding areas. The area includes Nottingham and Knights streams, and the suburbs of Wigram, Halswell, Cashmere and Hornby. The headwaters of the Huritini/Halswell River arise in:

- The tailwater from a water race (and some land-drainage water) in Marshs Road Drain
- Knights Stream, which is temporary above natural springs near Whincops Road
- Nottingham Stream, which is temporary above Muir Avenue.

There is a strong relationship between surface water and groundwater in Christchurch, and particularly in south-west Christchurch, where groundwater flows from north-west of the city towards the Port Hills to emerge as the headwaters of the Huritini/Halswell and Ōpāwaho/Heathcote rivers.

The main issues

Water quality and ecological health

All waterways in the Huritini/Halswell River catchment are affected significantly by rural and urban land use, including the depletion of groundwater. The catchment's aquatic life is similar to that of other modified lowland streams in Canterbury and New Zealand, and its streams generally have low ecological value. However, two sites in the Quaifes Road spring-fed drain network were assessed as having high ecological values compared to other waterways in the catchment.

Te Waihora/Lake Ellesmere is the receiving environment for the Huritini/Halswell River catchment. It is recognised as a wetland of international significance under a National Water Conservation Order and also supports a commercial eel fishery. The fact the lake is only occasionally opened to the sea increases its vulnerability to a build-up of a range of contaminants.

Christchurch Boys' High School students and Lincoln University Waterwatch taking samples at Te Waihora (source: https://tewaihora.org/testing-the-water-at-te-waihora).

The Halswell District Drainage Scheme

The limited capacity of the Huritini/Halswell River system means the Halswell District Drainage Scheme relies on temporarily storing surface water on low-lying agricultural land. This ponded water drains slowly, and this could be made worse if urban runoff increases.

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.

Te Waihora

When tangata whenua first came to Te Waihora/Lake Ellesmere the lake waters extended back toward Motukarara, Irwell and Leeston, covering nearly twice the present-day lake area. The outer margin of the lake was also much larger – a vast swampland complex of tall raupo, flax/harakeke, toetoe, sedges/mania and rushes, interspersed with higher, drier strips of land where tussock grasses, tutu and bracken fern grew. There were a large number of settlements and mahinga kai (food gathering) sites along the spit. Most mahinga kai in and around the lake included patiki (flounder), tuna (eels), aua (yellow-eyed mullet), inanga (whitebait), pingao (sand sedge), harakeke (flax) and paru (mud for dyeing), brown teal (pukeko/pakura), and paradise shelducks (putakitak).

Today, Lake Ellesmere/Te Waihora remains a mahinga kai of great importance to Ngāi Tahu. Of all the resources gathered from Lake Ellesmere/Te Waihora the fish are most valued. These resources are considered taonga (treasured for food and cultural identity), because they have supported life and an industry for the area and those who have lived there. For Ngāi Tahu today, participation in mahinga kai activities is an important part of their cultural identity. This participation relies on access to mahinga kai sites, resources and a healthy environment.

The contaminants

What we know about sediment

- Hillside earthworks are a major source
- Construction is a major source
- Cuttings and banks (road cuttings, old quarries, private sections) are a significant source
- Stormwater discharges to hillsides and hill waterways are a significant source
- Depoists from the atmosphere are a moderate source
- Road wear and vehicle tyres are a moderate source
- Stream-bank erosion is a significant source in hill waterways
- Rural Port Hills erosion contributes to some extent.

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 zinc

- Roofs are the source of maybe 65-70 per cent
- Tyres are the source of maybe 25-30 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
- Soil contributes to a small extent.

Possible ways to control contaminants

Contaminant	Source	Possible controls
Sediment, copper, zinc	New land developments	• 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	• 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)	• 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.
• There is no current alternative. • Keep monitoring overseas developments.	Work with the Government through the Ministry for the Environment.
• 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 claddings, 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.