Information Session/Workshop – Waitai Coastal-Burwood-Linwood Community Board NOTES ATTACHMENTS

Date: Monday 16 March 2026
Time: 4.30pm
Venue: Boardroom, Corner Beresford and Union Streets, New Brighton

TABLE OF CONTENTS NGĀ IHIRANGI **PAGE**

CWTP Odour Proposed Pond By-pass

Adam Twose – Manager Operations

Intro

- Nothing has been confirmed or agreed
- Concept and preliminary design is still underway
- This is an update to provide more details around the concept of the pond by-pass proposal.
- High level legal position is provided
- Recommend that questions are held to the end

Agenda

- Background & Previous Considerations of Pond By-pass
- Rationale for a Pond By-pass
- By-pass Concept & Operation
- Impacts & Risks
- Disinfection Options

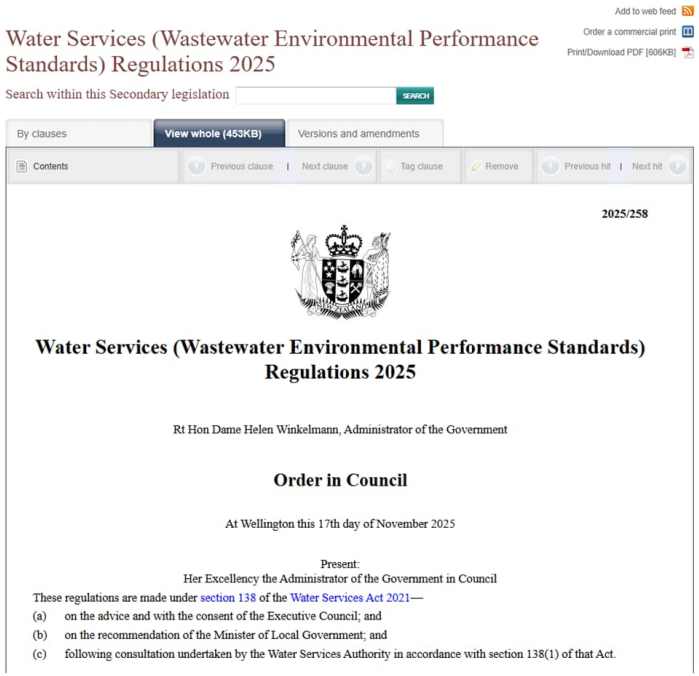
Background

- 2021 - Fire destroyed the trickling filters
- 2022 – Temporary Activated Sludge Plant installed
- 2022 – Aerators installed on Pond 1
- 2028 – New Activated Sludge Plant build forecast to be completed

Previous consideration of installing a pond by-pass

- As part of every large project at the CWTP, a full range of options is always considered, a by-pass of the ponds and various mitigation has previously been considered;
  - 2006 – Ocean Outfall - retention of ponds was preferred option
  - 2018 – Midge control - retention of ponds and midge management plan was preferred option
  - Early 2021 – Loss of Secondary Treatment - Temporary ASP option was preferred option
  - Late 2021 – Aerators on Pond 1 was preferred option
- Each time the pond by-pass by not selected due to other options having restrictions, e.g. environmental benefits, ability to implement, etc.
- Biggest risk is impact on human health (i.e. faecals, enterococci) and the need for disinfection

Why could a by-pass be considered this time?



Add to web feed
Order a commercial print
Print/Download PDF [606KB]

Water Services (Wastewater Environmental Performance Standards) Regulations 2025

Search within this Secondary legislation SEARCH

By clauses | View whole (453KB) | Versions and amendments

Contents | Previous clause | Next clause | Tag clause | Remove | Previous hit | Next hit

2025/258

Water Services (Wastewater Environmental Performance Standards) Regulations 2025

Rt Hon Dame Helen Winkelmann, Administrator of the Government

Order in Council

At Wellington this 17th day of November 2025

Present:
Her Excellency the Administrator of the Government in Council

These regulations are made under section 138 of the Water Services Act 2021—

(a) on the advice and with the consent of the Executive Council; and
(b) on the recommendation of the Minister of Local Government; and
(c) following consultation undertaken by the Water Services Authority in accordance with section 138(1) of that Act.

- Legislation has changed – Waters Services Act 2025 proposed Standard Wastewater limits which are significantly more relaxed then our CWTP current consent discharge conditions

Why could a by-pass be considered this time?

Waters Services Act - Open Ocean Limits

55 Discharge concentration limits: open ocean

(1) The discharge concentration limits for wastewater that is discharged into the open ocean are as follows:

- (a) the annual median concentration of TSS must not exceed 100 milligrams per litre of wastewater:
- (b) the concentration of TSS must not exceed 150 milligrams per litre of wastewater, measured as a 90th percentile:
- (c) the concentration of ammoniacal nitrogen must not exceed 50 milligrams per litre of wastewater, measured as a 90th percentile:
- (d) the concentration of enterococci must not exceed 40,000 cfu per 100 millilitres of wastewater, measured as a 90th percentile.

(2) Despite subclause (1) not including a limit for cBOD5, total nitrogen, or total phosphorus, a resource consent for wastewater that is discharged into the open ocean must not include a discharge concentration limit for cBOD5, total nitrogen, or total phosphorus.

Resource Consent - CRC051724 (CWTP)

15 a. Based on the weekly sampling required by Condition 13 of this consent, and taken over a rolling six month period, no more than 16 values in each six named month period shall exceed the following standards for each of the named contaminants:

Contaminant	Unit	Standard
BOD5 (filtered)	grams per cubic metre	20
Total Suspended Solids	grams per cubic metre	50
Ammoniacal Nitrogen	grams per cubic metre	40

16 a. Based on the weekly sampling required by Condition 13 of this consent, and taken over each eight week period commencing on the first days of January, March, May, July, September and November of each year during the term of this consent, no more than six values from eight consecutive samples shall exceed the following 'Standard Values' and no more than two values from eight consecutive samples shall exceed the 'Higher Values' for faecal coliforms.

	Unit	Standard Value	Higher Value
Faecal Coliforms	number per 100 milliletres	1,000	5,000

Based on the weekly sampling required by condition 13 of this consent, in the event that the concentration of enterococci in two consecutive samples exceeds 1500 enterococci per 100 millilitres the consent holder shall notify the Canterbury Regional Council and the Medical Officer of Health for Canterbury within 48 hours of detection of this exceedance.

Determinand (mg/l or cfu)	Waters Services Act – Open Ocean Limits	Resource Consent - CRC051724 (CWTP)
Total Suspended Solids	100 (median), 150 (90%ile)	50
Ammonia	50	40
BOD	N/A	20
Enterococci	40,000	1000 - 5000
Faecals	N/A	1500

Christchurch City Council

Emergency powers under s330 RMA do not apply

Are a power to do emergency work without resource consent and then lodge the resource consent application for it afterwards. The benefit: immunity from prosecution for breaching the RMA.

Council isn't ready to do the discharge – will take several months – so the emergency power doesn't practically help

The RMA section probable does not apply because it's not an emergency. It allows Council to take action *to remove the cause of, or mitigate any actual or likely adverse effect of, the emergency*.

The section applies where the Council's infrastructure *is or is likely to be affected by*

- *An adverse effect on the environment which requires immediate preventive measures*
- *An adverse effect on the environment which requires immediate remedial measures;*
- *Any sudden [event] causing or likely to cause loss of life, injury, or serious damage to property*

Caselaw: It has to be a state of danger that is unexpected. Immediacy. Urgency.

Fast Track Applications Act not useful here

Too slow – consultation, then apply to Minister, then apply to the Panel.

Probably doesn't meet the threshold – significant regional or national benefit

Solution: Variation/new resource consent for discharge from the diversion

Don't change the resource consent wastewater quality standards for the current discharge

Seek a new resource consent for a lesser wastewater quality standard for the 30% diverted

IF that quality of diverted 30% complies with the Wastewater Environment Performance Standards (WEPS) then Ecan cannot impose tighter standards

55Discharge concentration limits: open ocean
(1) The discharge concentration limits for wastewater that is discharged into the open ocean are as follows:
(a) the annual median concentration of TSS must not exceed 100 milligrams per litre of wastewater:
(b) the concentration of TSS must not exceed 150 milligrams per litre of wastewater, measured as a 90th percentile:
(c) the concentration of ammoniacal nitrogen must not exceed 50 milligrams per litre of wastewater, measured as a 90th percentile:
(d) the concentration of enterococci must not exceed 40,000 cfu per 100 millilitres of wastewater, measured as a 90th percentile.
(2) Despite subclause (1) not including a limit for cBOD5, total nitrogen, or total phosphorus, a resource consent for wastewater that is discharged into the open ocean must not include a discharge concentration limit for cBOD5, total nitrogen, or total phosphorus.

Process risks for the solution?

1. Ecan unhelpful? Unlikely - they want to be helpful
2. Notified and submitters in opposition?
   Mitigation: engage with mana whenua; short term (Dec 2028 – but mandatory 35 yrs if comply with WEPS);
   If are submitters in opposition, seek direct referral to Environment Court.
2. Ecan decide need land use consent for whole WWTP? Delays.
   Mitigation: seek agreement with Ecan that land use application can be later.

Why is a pond by-pass required now?

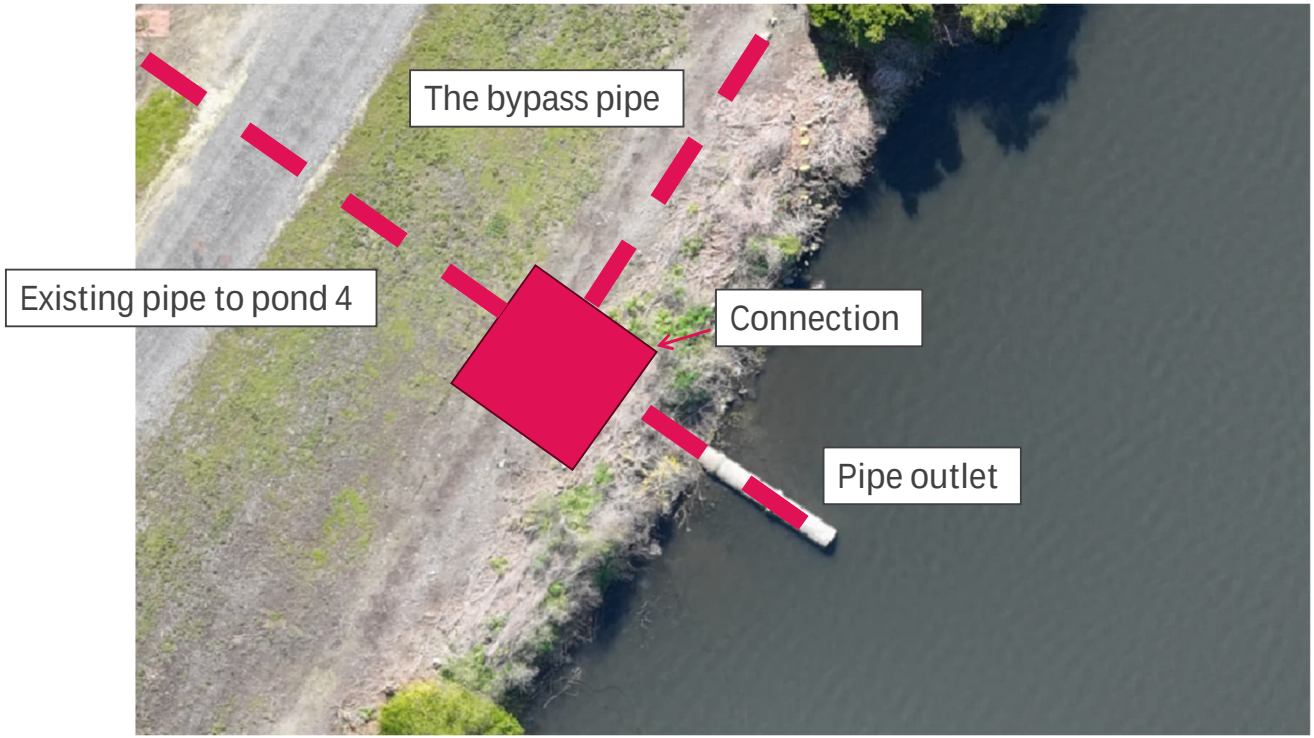
- Ponds have lost their resilience and are more susceptible to CWTP performance fluctuations and weather conditions
- Now over 4 years of sending higher than previous organic load to the ponds
- Still 2 ½ years before new Activated Sludge Plant (ASP) is commissioned
- Need to mitigate future odour incidences
- Abatement notice received from Ecan
- CWTP has been operating at maximum capacity and minimum redundancy, tanks that have been in service are now beyond maintenance interval requirements, e.g. clarifier bearings
- CWTP effluent quality to the ponds will be required to drop to allow essential enabling work for the new ASP to occur, (e.g. tie-in of the new ASP discharge into existing channels, conversion of the aeration basins back to clarifiers)

What would a pond by-pass look like?

What would a pond by-pass look like?

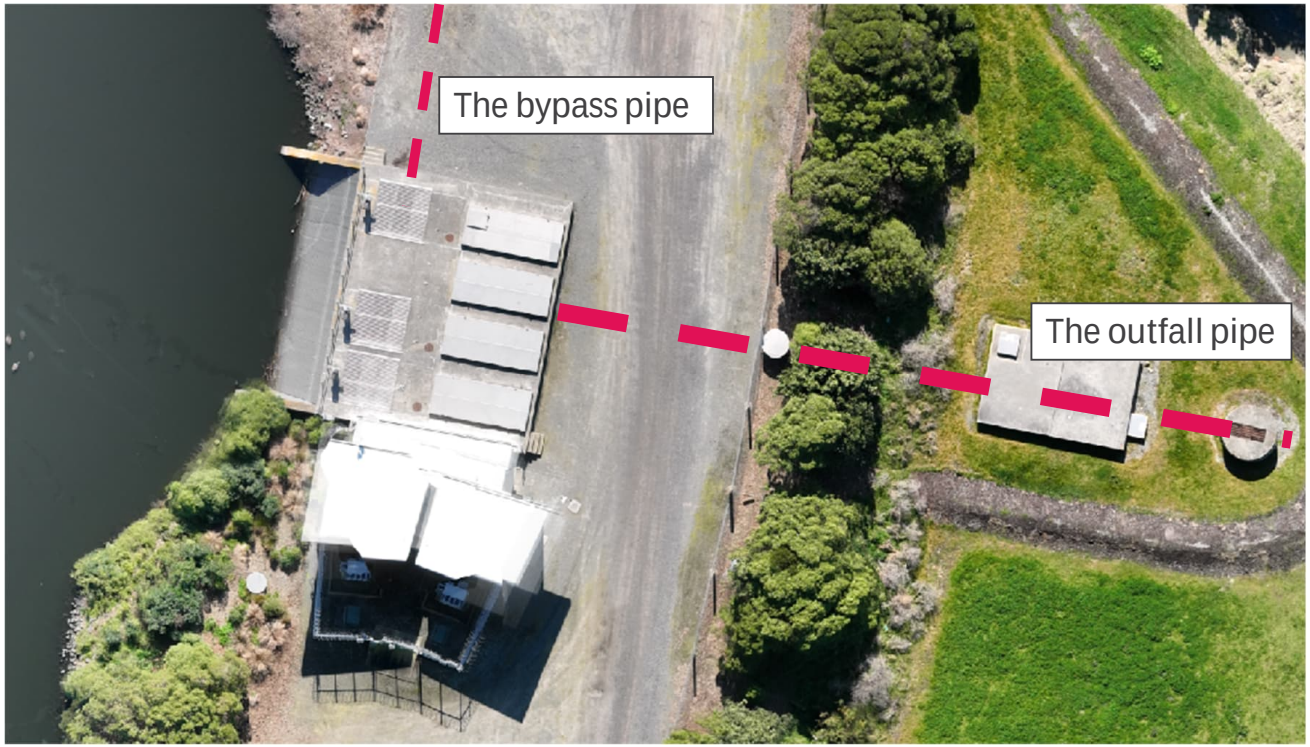
What would a pond by-pass look like?

What would a pond by-pass look like?



What would a pond by-pass look like?

What would a pond by-pass look like?



What would a pond by-pass look like?

What would a pond by-pass look like?

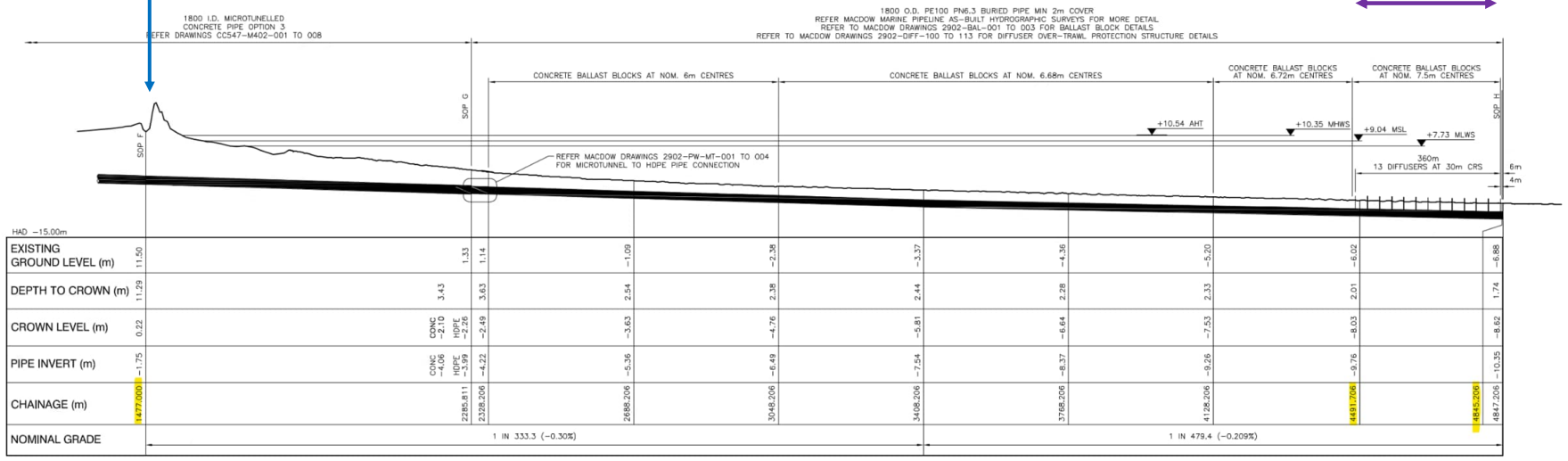
Where would the pond by-pass be discharged to?

Christchurch City Council

Where would the pond by-pass be discharged to?

New Brighton Sand Dunes

13 diffusers over 360m



3km from sand dunes to first diffuser

Christchurch City Council

Where would the pond by-pass be discharged to?

What is the impact of the pond by-pass?

- Allows a component of the flow from the CWTP to be diverted directly to the Ocean Outfall Pump Stations
- Allows for the ponds to be receive to lower flows (& therefore lower loads), returning them to the more standard loading and therefore pond performance (i.e. minimal odours) should return.

What is the impact of the pond by-pass?

- Higher Organic Loading in the Ocean Outfall;
  - BOD
  - Total Suspended Solids
  - Ammonia

Preliminary analysis has been undertaken, and it is anticipated that as a combined blend (pond effluent and by-pass effluent) the Wastewater Environmental Performance Standards for high energy ocean outfall can be achieved.

What is the impact of the pond by-pass?

- Human health impacts;
  - Faecals
  - Entercocci
  - Ecoli
- All of these can be treated to safe limits through disinfection
- Previously this was treated through the pond system;
  - UV radiation sterilisation
  - Natural predation by other bacteria, algae
  - Settles out
- Need to replace this disinfection treatment process – no treatment is not an option

What are the disinfection options?

- What are (at a very high level) the disinfection options;

Option	Capex	Deployment speed	Turbidity tolerance	DBP risk	Operational complexity
Chlorine	Low	Very fast	Good	High	Low
Chlorine + dechlorination	Low	Fast	Good	Moderate	Moderate
Peracetic acid	Medium	Fast	Moderate	Very low	Low
Ozone	Very high	Slow	Good	Low	High
UV	High	Slow	Poor	None	Moderate

- Consultant has been engaged to undertake a high level feasibility assessments

Why Chlorination is the initial Option?

- Rapid to deploy for an emergency public health response
- Proven wastewater disinfection method
- Staff already experienced with chlorine systems
- Reliable pathogen reduction to meet consent limits
- Effective in turbid / partially treated wastewater
- Simple to integrate and control operationally

What are the risks of chlorination?

Chlorine dosing without by-pass pumps operating – chlorine may discharge to oxidation ponds, potentially impacting pond biology and treatment performance.

By-pass pumps operating without chlorine dosing – partially treated wastewater may be discharged to the ocean without disinfection, increasing public health risk.

Chemical safety risk – chlorine is a hazardous chemical requiring strict handling and storage controls.

Environmental toxicity – residual chlorine can be harmful to aquatic life if not controlled.

Disinfection by-products – chlorine can form chlorinated by-products when reacting with organic matter.

Operational dependency – effective treatment relies on correct dosing, monitoring, and system interlocks.

What else is underway?

- CCC staff are running a second project in parallel to mitigate the odours from the ponds – additional aerators on Ponds 2A & 2B
- This will allow the flow and load to be split between the ponds, providing additional treatment and allowing Ponds 3,4,5 & 6 to return to maturation ponds
- CCC staff have been working with a consultant and have developed;
  - Updated aeration technical specification
  - Load scenario development and analysis – aeration demand modelling
- An aeration supplier has been approach and discussions ongoing

Open for questions