

**Te Pātaka o Rākaihautū Banks Peninsula Community
Board Information Session/Workshop
MINUTES ATTACHMENTS**

Date: Monday 20 May 2024
Time: 10.00 am
Venue: Akaroa Boardroom, 78 Rue Lavaud Akaroa

TABLE OF CONTENTS NGĀ IHIRANGI	PAGE
4. Duvauchelle & Akaroa Wastewater scheme update	
A. Item 4 - Akaroa & Duvauchelle Wastewater Elected Members Questions and Staff Advice – 20 May 2024 Information Session Te Pātaka o Rākaihautū Banks Peninsula Community Board.....	3
B. Item 4 - Akaroa & Duvauchelle Wastewater Treatment Plan Presentation - 20 May 2024 Information Session Te Pātaka o Rākaihautū Banks Peninsula Community Board	8

AKAROA & DUVAUCHELLE WASTEWATER INFORMATION SESSION – 20 MAY 2024
ELECTED MEMBERS QUESTIONS

1. Is the present proposed scheme likely to get the resource consents needed?
It is the staff opinion that it will; but this is a matter for the consent authorities to determine.
2. If so, what changes will be needed, and what will they cost in dollars and time?
If Council obtain consents for the scheme as proposed there is no change in the planned scope and budgets.
3. If not, what will be the consequences?
If Council do not obtain consents for the scheme then we will consider the reasoning behind the decision from the Consent Authority and how best to proceed.
4. Based on the new model the estimated storage required is up to 24,000m³. How is the council going to mitigate that with a current storage size of 12,000m³? Even with new estimates, it is estimated that there will be overflow events that could last for weeks or months.
Council have applied for consents for storage tanks at Robinsons Bay of 24,000m³ plus our application for the wetland and raw storage at the treatment plant site. Total: 27,800m³.
5. Is these overflows going to be raw sewage overflows? If yes, how the council is going to manage that and how it is going to be different than current treated water outflow into the harbour? How this overflow will be addressed in terms of cultural sensitivity and impact on Kai Moana in the harbour?
Water discharged from the storage will be treated wastewater of a higher quality than that already discharged from the Takapūneke outfall.

We recognise that mana whenua remain opposed to discharging wastewater, treated or otherwise, to the harbour. But we also recognise that no scheme is infallible and any storage scheme will have limitations requiring contingency plans.
6. How the council is going to manage bypass flows as it is being explored in the new report?
We are not intending to bypass the treatment plant process.
7. How the council is going to manage overflows in case of extreme weather event as both the ground (for irrigation) and I&I are going to be more than 60 %.
We are planning to focus our next stage of I&I reduction on gulley traps and drains on private property as the recent events where I&I exceeded 60% were in periods of very heavy rainfall. Which indicates surface inflows.
8. The initial estimates were based on Akaroa population only. Now that the council is proposing to including Duvauchelle and perhaps possibly Takamatua and Robinson's bay. How this is going to affect the overall project capacity? If the council is not going

to include other bays along the way? If not why not? Would it not fit the current narrative of car saving and making the project viable by combining two projects - Akaroa and Duvauchelle?

We are proposing to combine the Akaroa and Duvauchelle treatment in one site, but still need the Duvauchelle irrigation site.

We would like to build in sufficient treatment capacity for Takamātua and Onuku as well, although there are currently no plans to reticulate those areas.

9. What operational plans are being implemented to manage overflows, discharge rate, its cultural and environmental impacts based on the overflow of raw sewer- which possibly would overflow upstream? The impact on the town visitors and residents right at the start of the town?
Development of operational plans will come later in the project after obtaining resource consents.

10. Has the council considered upgrading the current treatment facility and bring the treated wastewater to drinkable standards and then discharges it into the harbour? Has the council discussed this option with iwi? If yes, when was it done and if not why not?
There was significant consultation on this matter after amalgamation and in 2010 the Council passed a resolution to build a new treatment plant on Old Coach Road rather than upgrading the old plant.

The site holds significant value to Onuku, Ngai Tahu and New Zealand. It was resolved by Council in 2010 that the plant should be removed. This is not related to discharge quality.

11. Has the council at any stage of this project consulted local iwi to show some flexibility in terms of discharge of drinkable standards water into the harbour? If yes, when were those consultations carried out and what was the outcome? If no, why not?
Yes. Significant consultation was undertaken between 2015 and 2020.

Iwi remain strongly opposed to a discharge to harbour.

12. In an event of extreme weather event (50mm/day) the council is not planning to irrigate the land where is this water going to be stored as I&I will also increase due to extreme weather event, requiring more water processing and storage facilities? This water would be stored in tanks planned for Robinsons Bay.
13. How the terminal pump station (TPS) with daily peak rate of 1800m³ going to cope with actual volume spilled due to TPS 1800m³ daily limit based on the actual data which could have caused spill of approximately 5257m³ (2022) and 8285m³ (2023). The question is unclear. Please provide the dates of the rain events you are referring to and we can advise if the model predicted a raw sewage overflow.

14. Based on these estimates where and how much would be the size of TPS buffer tanks? And where are they going to be located?
Terminal Pump Station buffer tanks are not planned. You may be referring to storage available in the network pipes which is often used in calculating attenuation for flows at wastewater pumps stations.
15. The current proposed location of TPS is reclaimed land. How council is going to protect this from extreme flood events and sea level rise? Putting a pump at such a location would potentially make this project vulnerable. And the whole project relies on the success of TPS.
We will be setting the TPS floor level based on climate change predictions, king tide levels and wave set up in storms.
16. Why the pipe network upgrades are being designed to a 1 in 1 year ARI but the TPS to a 1 in 5 ARI
We are unclear 1 in 1 year ARI factor comes from. Where changes are being made to the gravity parts of the network we are aiming to accommodate a 1 in 10 year 24 hour event.
17. Why does the consent application assume I'm to a 'no bypass' approach to wastewater treatment, meaning that all wastewater conveyed to the WWTP will either be treated as it arrives or if inflows exceed 14 L/s (equivalent to the peak summer mean daily flow) raw wastewater will be stored in the wet weather flow storage tank (*2,000 m³) for future treatment.?
The treatment plant is being designed with no bypass. When inflows exceed the treatment plant capacity we will hold the excess in the untreated wastewater storage tank at the WWTP site and process as inflows reduce.
18. Beca report states that population does not have a greater impact on the system capacity, and wet weather flows from rainfall are multiples of peak day population flows. So here I&I the main issue to consider. Why not invest in that and solve this issue first? Based on media reports the councils have confirmed that I&I were 70% (2022) and 69% (2023).
The average I&I flow for 2020 – 2023 (inclusive) was about 24% with two 1 month peaks of 70% and 69% as described. We suspect these peaks were due to surface water inflows into drains and gulley traps on private property. Council will be undertaking household inspections of properties in Akaroa and working with home owners to get any issues found fixed.

It is important to separate the problems of peak wet weather I&I and average annual I&I.
The peak is what drives network design to prevent raw sewage overflows.
The average is what drives the irrigation and storage design.
19. How is the Council planning to proceed with the 'Akaroa Treated Wastewater Irrigation System' application given all the issues that have now come to light, with it being undersized resulting in frequent overflows of raw and treated sewage? Is the application now being amended to address these effects?

We are not aware of issues coming to light that will result in frequent raw wastewater and treated water overflows, and disagree with this statement.

20. How can the Council add Duvauchelle's load to the ATWIS Treatment Plant and Storage when both are substantially undersized already – are CCC considering treatment bypass during times of high capacity, and treated wastewater overflows every few winters due to inadequate storage?
We disagree with this interpretation that the scheme is undersized.
21. How do they propose to consent this? This would be a significant increase in scope of the ATWIS system which is being notified now. It would require more tanks, more storage and a bigger treatment plant.
We are unclear on the question being asked.
22. Several years ago we were told that the proposed irrigation field on Church Land in Takamatua, and the bottom of the Masfield block were surplus to requirement and no longer needed, will the change in the plan to bring Duvauchelle in change that.
We do not think so.
23. Did council ask that the I AND I get reduced to 20 percent, what is the Percentage at now.
The resolution requested that:
"the Council aim to reduce I&I to 20% by looking at both public and private infrastructure that contributes to the I&I"
- The Council has undertaken significant investigation and renewal of wastewater infrastructure in Akaroa in an effort to reduce I&I. We are planning to undertake private side drainage inspections and investigate potential areas of ponding in order to further reduce the I&I.
Based on the measured flows, Council staff have estimated that the I&I is at the levels reported below.
I&I reduction works commenced in 2019, and for the period January 2020 to April 2024 (since the resolution) the average I&I has been 23%. It should be noted that 2022 and 2023 were dominated by very heavy rainfall and flooding in the two July's and peaked at 68% in July 2023.

Calendar Year	Annual
2017 (Jul - Dec)	42%
2018	30%
2019	10%
2020	3%
2021	20%
2022	30%
2023	39%

2024 (Jan - Apr)	2%
------------------	----

24. Will extra land now be required to cover irrigation and if so will that include the orchard at Pavit Cottage and or the children's bay land.
 Council staff are currently not looking for additional irrigation land. If we do need additional land, the Council would have a preference for areas higher up the Robinsons Bay site and not down by the cottage. Council has no plans for any other land in the Children Bay catchment.

25. Will raw sewage end up in the harbour with severe weather events.
 The current network overflows raw sewage to harbour about five times per year (based on the total number of overflows since 2012).
 The project is expected to have significantly more reticulation capacity which will reduce raw sewage overflows to the harbour to roughly a 1 in 5 year storm event.
 So yes; raw sewage will still go to harbour, as we can't engineer out every possible outcome, but we expect to see a significant reduction in raw sewage overflows due to wet weather.

26. Could the treated wastewater be used for fire ponds in the hills.
 Council is committed to the community benefits of maximising beneficial reuse in the scheme. The treated storage tanks are designed to balance flows for short periods when irrigation can't keep up with the incoming flows which tend to occur during wet weather periods. If we can extend this into a solution to store treated water during dry periods, or push, higher flows through the treatment plant to assist with a short term fire, it would warrant further exploration.

 We have previously proposed including hydrants on the treated water main between Robinsons Bay and Akaroa for emergency use. Whilst some members of previous working parties were strongly opposed to this we would like to discuss the idea further with Fire & Emergency New Zealand.

Akaroa and Duvauchelle Wastewater Projects Update

Prepared: May 2024

TRIM Reference: 24/7989925

Kylie Hills

Senior Planning Engineer, Water & Wastewater

Thomas Fietzko

Senior Project Manager, Water & Wastewater

Tim Ure

Senior Project Manager, Water & Wastewater

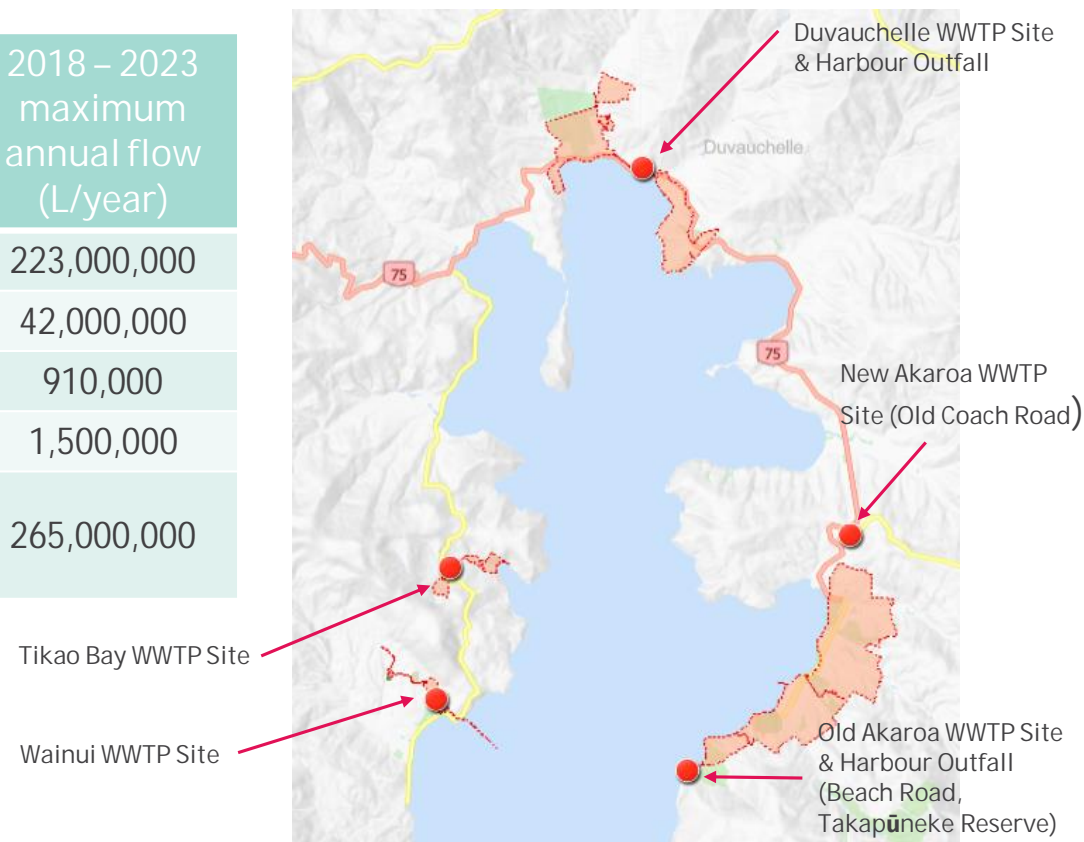
Purpose

This briefing will provide:

1. Provide a general update to the Community Board on the status of the Akaroa and Duvauchelle wastewater projects.
2. Provide an update on the option to irrigate treated wastewater to the Akaroa Golf Club fairways, tees and greens (the playing area) area.
3. Inform board members of plans to merge the Duvauchelle and Akaroa wastewater treatment plants.
4. Provide an update on inflow and infiltration (I&I) reductions in Akaroa.
5. Provide a response to matters raised by members of the public.

Akaroa Harbour Wastewater Networks

Site	2018 Census Population Served	Estimated Peak Population Served	2018 – 2023 maximum annual flow (L/year)
Akaroa	753	3724	223,000,000
Duvauchelle	186	1040	42,000,000
Wainui	20	136	910,000
Tikao Bay	20	136	1,500,000
Akaroa + Duvauchelle	939	4764	265,000,000



20th May 2024

Slide 3

Akaroa Wastewater Scheme

Akaroa Reclaimed Water Treatment and Reuse Scheme

Akaroa Wastewater Scheme

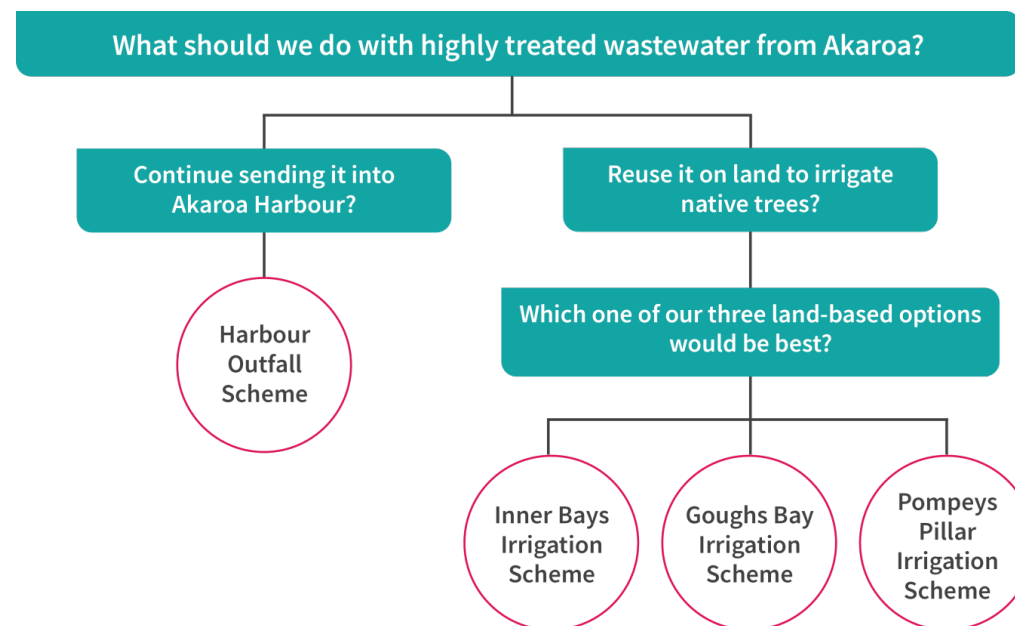
Background

- Existing treatment plant due to close in the late 2020s with a new plant to be built north of Akaroa on Old Coach Road.
(Council resolution September 2010)
- Consents were sought for a new harbour discharge in 2015 and declined following legal challenge by Ngai Tahu and local rūnanga.
- The Commissioners decided Council had not adequately considered alternative disposal methods such as land-based irrigation.
- Consents for the Akaroa Harbour discharge expire in May 2030.

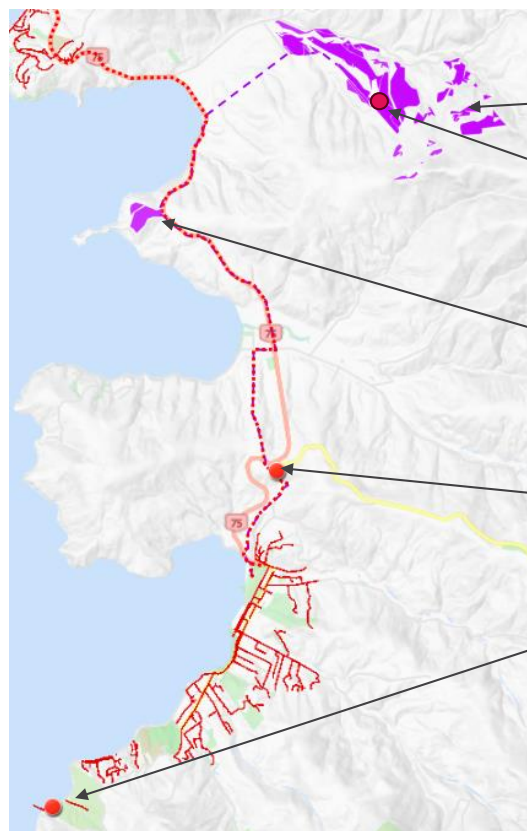


Akaroa Wastewater Scheme

- 2015-2020:
 - Many land disposal options considered.
 - Community engagement.
- Four options were put to community consultation in 2020
- Treated wastewater from the new Akaroa Wastewater Treatment Plant to be discharged to 35.7ha of new plantings of native trees in the Inner Bays Scheme (Robinsons Bay and Hammond Point).
(Council resolution December 2020)



Akaroa Wastewater Scheme



Robinsons Bay Irrigation Site

Robinsons Bay Storage Site
(32.7 ha drip irrigation)

Hammond Point Irrigation
Site WWTP Site (3 hectare
drip irrigation)

New Old Coach Rd WWTP

Existing WWTP at Takapuneke

20th May 2024

Slide 7

Akaroa Wastewater Scheme

Consent Status

The following consents are already held by Council:

- | | |
|--------------|--|
| CRC150046: | To take groundwater for dewatering purposes. Terminal pump station site. |
| CRC150049: | To discharge contaminant to air. Terminal pump station site. |
| CRC150050: | To discharge contaminant to air. New WWTP site. |
| CRC150050: | To discharge construction phase and developed phase stormwater to water. Terminal Pumps Station and WWTP site. |
| RMA92026256: | Land use consent to upgrade the existing Akaroa wastewater network. |

Akaroa Wastewater Scheme

Current Application For Consents – ECan

- CRC235038:** S9 land use consent to use land for community wastewater treatment and storage.
- CRC235039:** S9 land use consent to use land for earthworks and vegetation clearance within a high soil erosion risk area and over an unconfined/semi-confined aquifer.
- CRC235040:** Discharge permit to discharge treated wastewater to land and to discharge contaminants (odour) to air.
- CRC235041:** Discharge permit to discharge construction-phase stormwater to land.

Akaroa Wastewater Scheme

Current Application For Consents – City

RMA/2023/1347

Consent to construct, maintain and operate infrastructure and structures for storing wastewater associated with the Akaroa Treated Wastewater Irrigation Scheme. Specifically, storage tanks at Robinsons Bay, and a storage tank and wetland at Old Coach Road.

Akaroa Wastewater Scheme

May 2024 - Consent status

City

- We anticipate this application will be non-notified following review by independent commissioner.

ECan

- Advised by ECan that our applications are to be 'public notified'.
- Likely to open for submissions once notification decision on the City consent is complete.
- Open for submissions for four weeks.
This is an opportunity for the public to raise their concerns.

Akaroa Wastewater Scheme

Recent public feedback

“The Independent Beca Review Report says the scheme isn’t viable”

Beca was engaged by Council to provide expert advice on the pumping and storage capacity needed for the scheme over a wide range of scenarios. Whilst Beca undertook the work in a professional, rigorous and independent manner, they were not engaged by Council to undertake an independent review, and their findings did not conclude that the scheme is not viable.

Akaroa Wastewater Scheme

Recent public feedback

“There will be more raw sewage going to the harbour”

- The project doubles the Akaroa wastewater pumping capacity
- This will reduce raw sewage overflows into Children Bay
- These overflows currently occur about 5 times a year at present
- The new system will reduce overflows to about once every 5 years

“There will be regular treated water discharges”

- Our work with Beca informs us that planned storage will reach 100% capacity, requiring a release of treated water to the harbour roughly once in 5 years.

Akaroa Wastewater Scheme

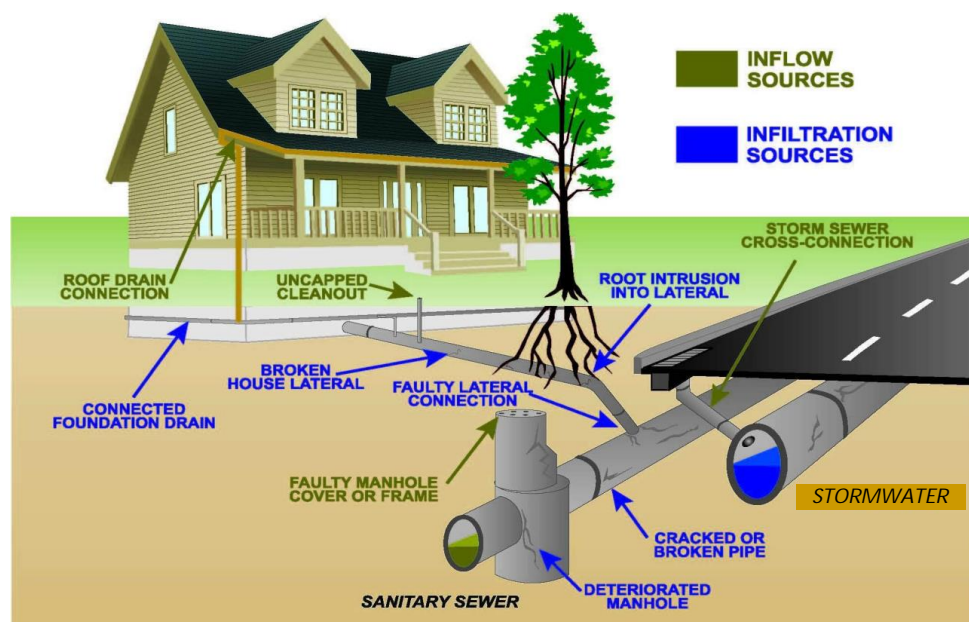
Recent public feedback

“I&I means the scheme isn’t viable. Fix the pipes first”

- We’ve completed over \$4 million of work on the network to address I&I.
- Average I&I from 2020 to present now sits at 24%, but can peak to 60% - 70% in large storm events.
(Christchurch city’s is estimated as 23% over the same period.)
- The next target for I&I reduction is wet weather surface inflows into drains. These are drains and gulley traps mostly on the private side of the network.
- Council will be undertaking property inspections across Akaroa and working with property owners to fix non-compliances.

Akaroa Wastewater Scheme

What we've done about I&I (inflow and infiltration)



Inflow & Infiltration Examples

- I&I is surface and ground water that enters the wastewater network.
- Sources: damaged pipes, leaky manholes, private drains and gully traps.
- 2017-2018: Distributed Temperature Sensing
- 2019-2023: \$4m repairs and renewals on Akaroa network.
- Private side I&I needs to be addressed for further reductions.

20th May 2024

Akaroa Wastewater Scheme

Drains and Gully Traps

A compliant gully trap:



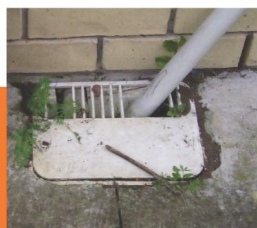
- is raised off the ground
- is covered by a grate



A non-compliant gully trap:



- is level with the ground



A compliant downpipe:



- is separate from a gully trap
- connects to the stormwater pipes on your property



A non-compliant downpipe:



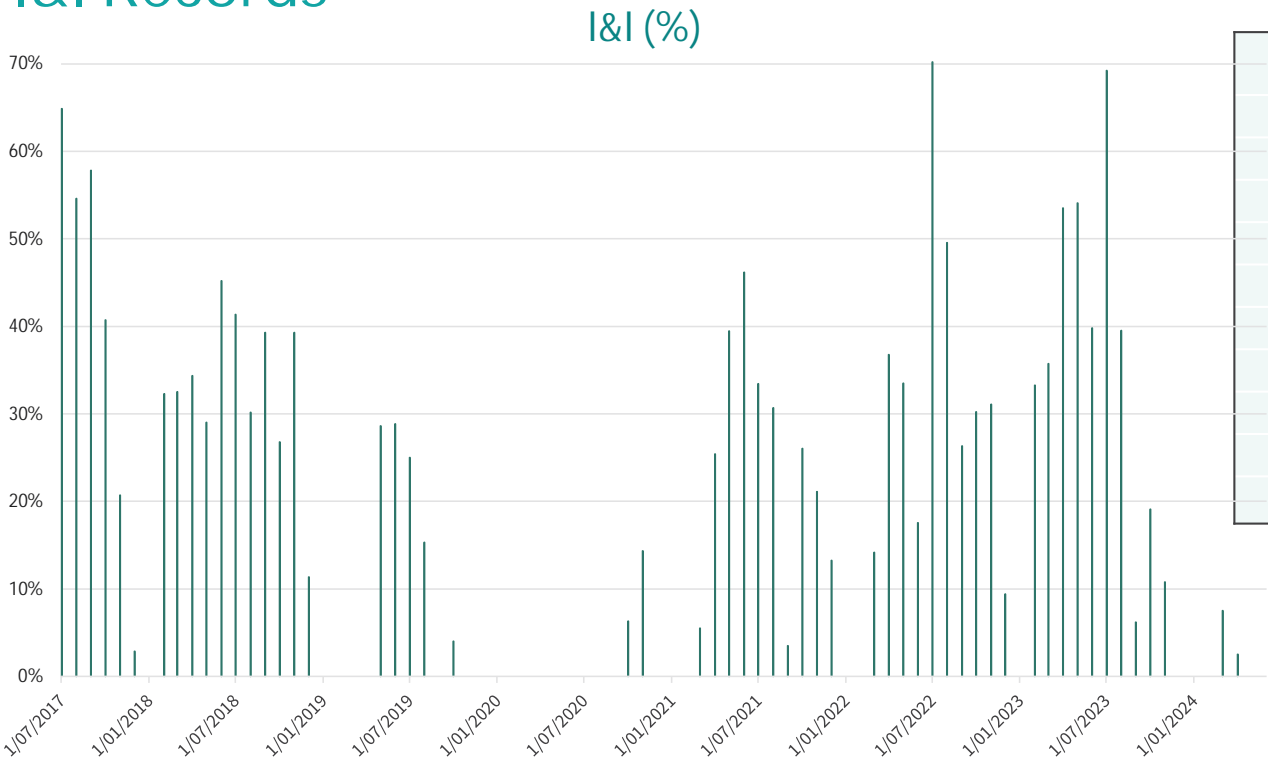
- is connected to a gully trap, so stormwater will enter wastewater pipes



Photo credit: Watercare

Akaroa Wastewater Scheme

I&I Records



Calendar Year	Annual
2017 (Jul - Dec)	42%
2018	30%
2019	10%
2020	3%
2021	20%
2022	30%
2023	39%
2024 (Jan - Apr)	2%
Average I&I	24%

Akaroa Wastewater Scheme

What's next and when?

2024

- 50,000 trees to plant (winter)
- Track and fence upgrades and maintenance
- Award contract for detailed design

2025

- 100,000 trees to plant (winter)

2026

- Construction begins (subject to construction and operation consents)

Mid-2028

- Commission new treatment plant

2029

- Decommission Takapūneke treatment plant

May 2030

- Existing discharge consent lapses

Duvauchelle Wastewater Treatment Scheme

Duvauchelle Wastewater Scheme

Harbour discharge consent

- Expires in 2031

Council Resolution

- Use treated wastewater to drip irrigate trees next to the Akaroa Golf Course and spray irrigate the fairways, tees and greens (playing area).

(Council resolution September 2022)

Duvauchelle Wastewater Scheme

- Staff have been working on options to spray irrigate the Akaroa Golf Course fairways, tees and greens.
- Proving very challenging for the Akaroa Golf Club and Council.
 - Compliance issues
 - Operational issues
 - Cost issues
- We are awaiting comment on this change from the Golf Club and will be reporting back to Council on the matter.

Duvauchelle Wastewater Scheme

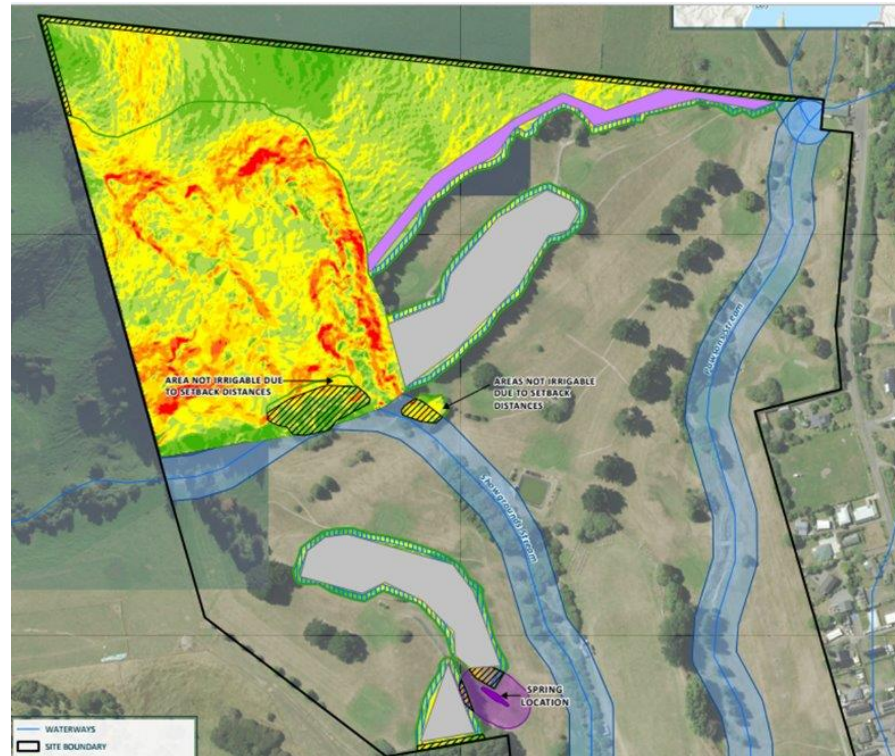
- What else we're working with the club on:
 - A long-term lease agreement
(We own the land and lease it to the Akaroa Golf Club)
 - The Pawson and Showground stream remediation project
 - The irrigation project (treated wastewater), including drainage improvement work
 - Removing exotic trees and replanting with natives, to prepare the area for irrigation
- Our project involves removing exotic trees and replacing them with natives on the Duvauchelle irrigation site. We will be seeking approval from the permission from the community board for this project.

Consents

- Plan to apply October/November 2024. Consultants PDP collecting information needed
- Will seek approval from community board to remove exotic trees and replace them with natives at irrigation site.

Duvauchelle Wastewater Scheme

Irrigation map



20th May 2024

Slide 23

Duvauchelle Wastewater Scheme

What's next and when?

Nov 2024 to Nov 2025

Apply for resource consent to
discharge treated wastewater to land

Jan 2025

Tree felling and planting begins

May 2026

Designing the new irrigation
scheme & drainage work

2027-2030

Construct and commission a new
scheme at Duvauchelle.

Akaroa and Duvauchelle Combined Wastewater Treatment

Combined scheme

Storm of July and August 2023 changed things.

- Land movement above the Duvauchelle Wastewater Treatment Plant
- Slips and rockfall into the plant
- Geotechnical investigations undertaken
- Significant works needed to stabilise the slope to remove the risk posed to the plant and to Council staff

Combined scheme

Storm damage July 2023



Figure 1: Duvauchelle Waste Water Treatment Plant and old quarry rock face, following July 2023 rain event. Note evidence of slope wash (soil debris from upper slope) on main part of cliff near the left end of the WWTP. Photo 23rd September 2023 by J. Dykstra.

Combined scheme

We considered:

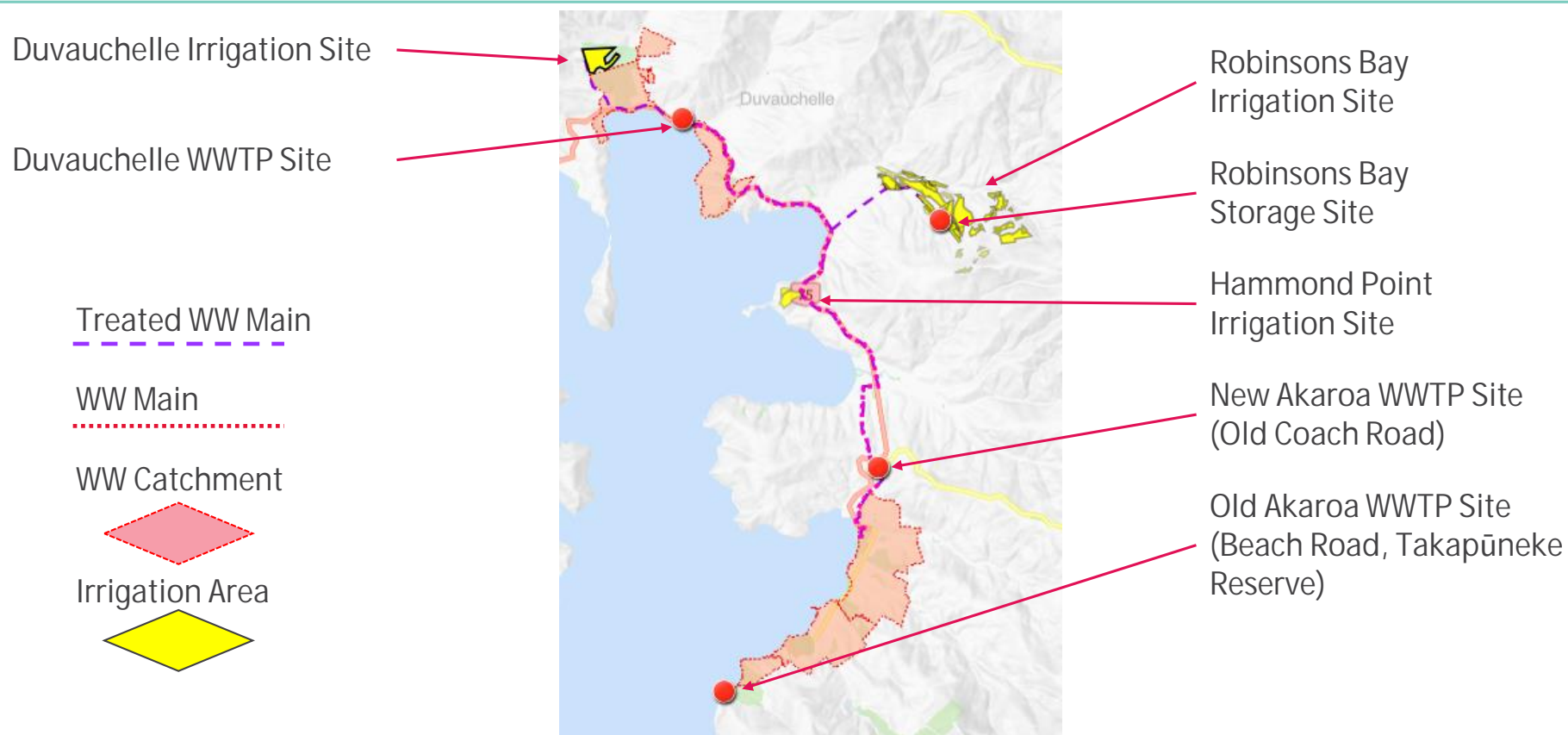
- Cost of hillside remediation
- Limited remaining life of the wastewater treatment plant
- Operating costs and risks of two plants vs one.
- Costs of the two separate wastewater projects (Akaroa and Duvauchelle) versus single site

We think it makes sense to combine the projects.

- Send Duvauchelle wastewater to the new Akaroa plant for treatment
- Return treated water to Duvauchelle for irrigation

Staff are proceeding on this basis.

Combined scheme



20th May 2024

Combined scheme

Discharge consent

- We hold consents to discharge treated water to Akaroa Harbour until 2031
- Land irrigation schemes require wet weather storage
 - Storage capacity could be exceeded in future
 - We estimate that this could happen once in five years towards the end of a very wet winter (i.e. after several heavy rain events)
 - A discharge to harbour is needed in such situations.
 - This could be for a few hours or several days (depends on circumstances)
- ECan will likely require a discharge consent for this.
 - We intend to apply for one
 - This is not a part of our current application.

Questions?

Thank you