



**Workshop - Council
NOTES ATTACHMENTS**

Date: Wednesday 15 April 2026
Time: 9.36 am
Venue: Camellia Chambers, Civic Offices,
53 Hereford Street, Christchurch

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Akaroa and Duvauchelle Treated Wastewater Irrigation Scheme Workshop

Presenters:

Gavin Hutchison

Brent Pizzev

Kylie Hills

Tim Ure

Purpose: How to reduce costs

1. Background:
 - Current scheme
 - Council's 2020 decision
 - The current RMA applications to implement to 2020 decision
2. Changes to law and costs
3. Reasonably practicable options to reduce costs

Timeline

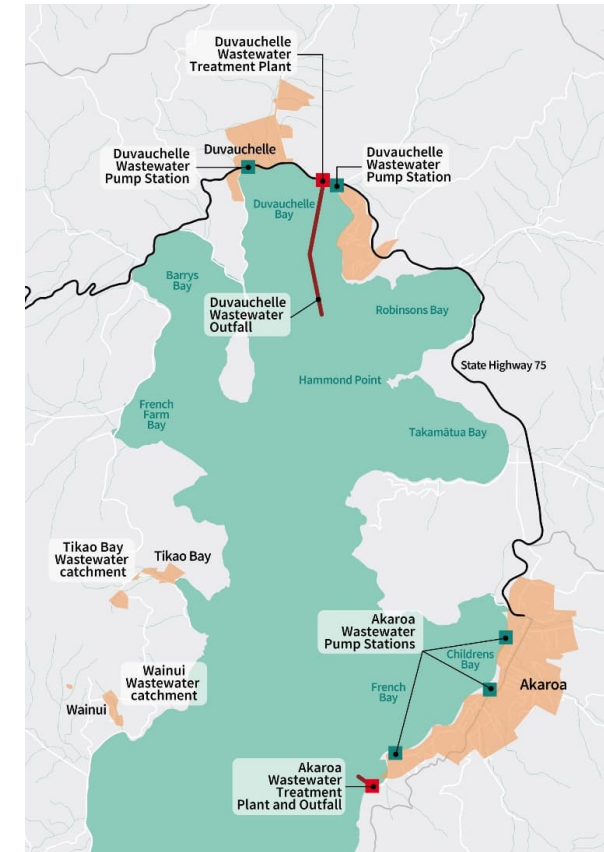
- 1960s: WWTP and outfall at Takapūneke
- Ongoing: Struggle without end by mana whenua to have it removed
- 2011: Council decision to move WWTP and discharge to mid harbour
- 2015: Resource consent applications
- Granted for new WWTP location and Akaroa pump station
 - Declined for harbour discharge: were there better options?
- 2020: Consulted on either irrigation to land (3 locations) or to mid harbour
- Decided irrigation to land at Robinsons Bay, Hammond Point, Takamātua

Timeline

- 2021: Takamātua removed because of poor ground conditions
- 2022: Council decision to irrigate Duvauchelle’s treated WW at Duvauchelle Recreation Reserve
- 2023: Lodged resource consent applications for current scheme (in process – on hold)
- 2024: Need to combine the Duvauchelle and Akaroa schemes because of issues with Duvauchelle WWTP site
- 2025: New legislation

Background: Current scheme

- Reticulated wastewater networks in Duvauchelle and Akaroa.
- Two wastewater treatment plants (WWTPs), each with their own outfall to Akaroa Harbour at Duvauchelle and Takapūneke.
- Tikao Bay and Wainui have separate wastewater networks and WWTPs discharging to land.



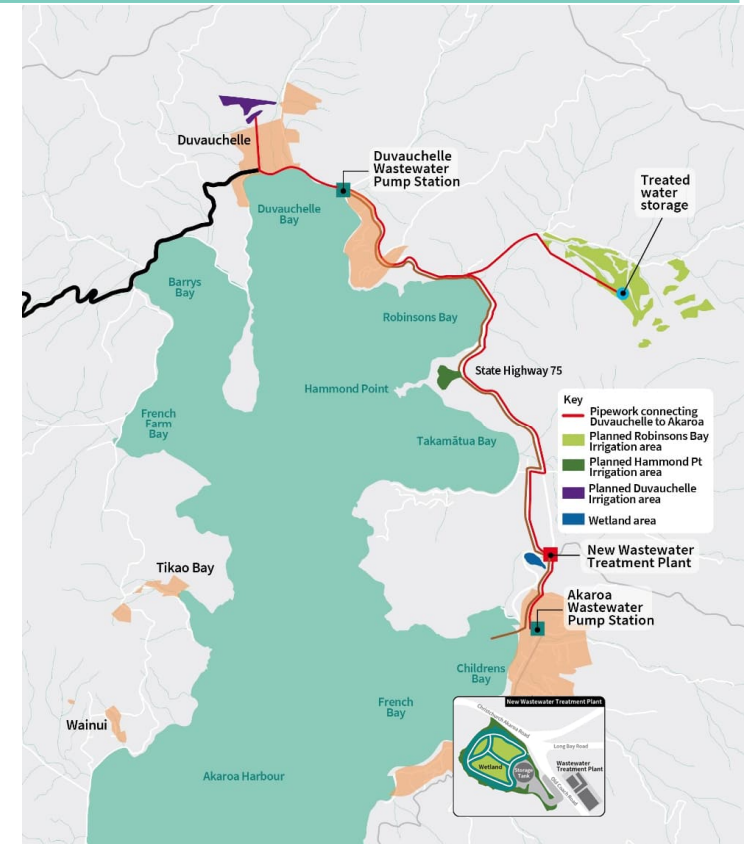
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Background: The Current Applications

- Drip irrigation
- Storage at Robinsons Bay 24,000m³
- Treated storage discharges to harbour through wetland approx. one winter every 2.9 years (could be more than once)

Hearing on hold for Council to lodge associated applications:

- 300m treated water discharge into Akaroa Harbour at Childrens Bay.
- Irrigation to land at Duvauchelle.
- Constructing pipelines between Akaroa and Duvauchelle.
- Untreated network overflows.



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Unchanged since 2020: LGA Context For Considering Impact On Mana Whenua

- Deciding a preferred option for wastewater treatment and disposal is an LGA decision.
- LGA requires decisions on options that involve *" a significant decision in relation to land or a body of water, take into account the relationship of Māori and their culture and traditions with their ancestral land, water, sites, waahi tapu, valued flora and fauna, and other taonga"* (s77 unchanged since 2020) .

The RMA

If the application complies with the new Wastewater Environmental Performance Standards:

- The RMA requirement for the consent authority to have regard to (s105)
 - (a) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and*
 - (b) the applicant's reasons for the proposed choice; and*
 - (c) any possible alternative methods of discharge, including discharge into any other receiving environment*

Does not apply
- ECan as consent authority cannot impose requirements more restrictive than the WEPS (s104)

Result: If the ease of getting consent is relevant to shortlisting and selecting options, this makes harbour or ocean outfall more comparable with other options than was the case in 2020.

Must chose the most cost-effective

“The water service provider must ...choose the option it considers to be the most cost-effective option for providing wastewater services over the life of the infrastructure assets required to implement that option”

Council’s decision in determining the most cost-effective option can include social, environmental and cultural outcomes.

CAPEX Cost Increase of Current Applications

2020 estimated costs:

- | | |
|--|---------------|
| • Ocean outfall: 11 kms outfall | ~\$110m |
| • Mid-Harbour outfall 2.7kms (as per 2015 application) | \$45m - \$52m |
| • Irrigation (the current application) | \$54m - \$63m |

The current scheme estimate is now \$175m

- \$116m is the baseline cost for discharge options - pumping, reticulation, treatment.
- Cost for irrigation scheme: \$59m

Reasons for CAPEX Cost Increase

Key cost changes applying to the all discharge options:

- Approx. 40% construction inflation since 2020.
- Increase of WWTP construction costs ~ \$26m due to geotechnical design.

Key cost changes applying to current irrigation proposal:

- Inclusion of Duvauchelle scheme ~ \$20m (formerly a separate project).
- Irrigation site storage now 24,000m³ in covered tanks (formerly 12,000m³ - 16,000m³ in an open dam).
- NZTA expectation for full road rebuilds on pipe routes (i.e. full road width as opposed to just trench line).

So what are the cost reduction options?

Not practicable options

	Core Disposal Cost Reduction Options	Cost Saving	Staff Recommendation
1	Planned Scheme to irrigate treated wastewater to Hammond Point, Robinsons Bay and the Duvauchelle Recreation Reserve (*)	\$0m	Other options are more cost-effective. Not Shortlisted.
2	17 km Ocean Outfall	~ \$ 21m	Discounted on cost
3	Piping out of Harbour catchment to Christchurch or Kaitorete Spit	Cost Increase of \$45m	Discounted on cost and technical grounds
4	Injection to Ground	Not Costed	Discounted on technical grounds
5	Establishment of a Grey Water and Black Water Networks	Cost Increase of \$37m	Discounted on cost and technical grounds
6	Land disposal and storage beyond Robinsons Bay	Not Costed	Discounted on cost and technical grounds
7	Retaining an outfall at or near Takapūneke (treatment plant at Old Coach Road)	~ \$44m	Discounted on cost
8	Wetland Treatment (6 ha +) Feeding into Marine Outfall	Marine Options Cost Increase of ~ \$24m	Discounted on cost and technical grounds

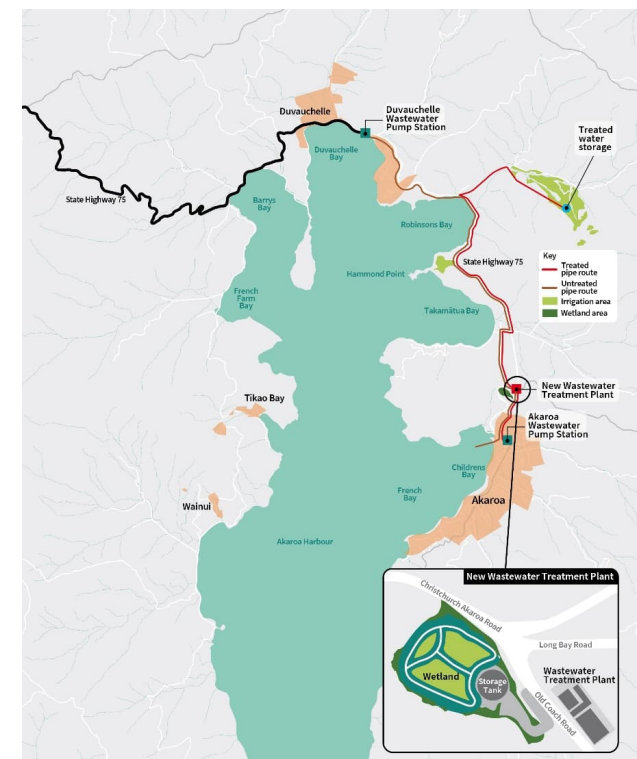
Additional to the 2,000m³ buffer tank at WWTP and wetland's storage volume
Estimates are based on concept design and intended for option comparison, values given are inclusive of contingencies.

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Options 1-4: Reduced cost versions of current proposal

- Duvauchelle irrigation removed.
- Higher rate irrigation at Robinsons Bay and Hammond Point within the WEPS regulations.
- Outfall to Childrens Bay.
- Less storage.
- Possibly move WWTP to other side of the road

	Option 1	Option 2	Option 3	Option 4
Storage at Robinsons Bay	16,000m ³	4,000m ³	16,000m ³	4,000m ³
WWTP Location	Hay Paddock	Hay Paddock	Hillside	Hillside



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Options 1-4: Reduced cost versions of current proposal

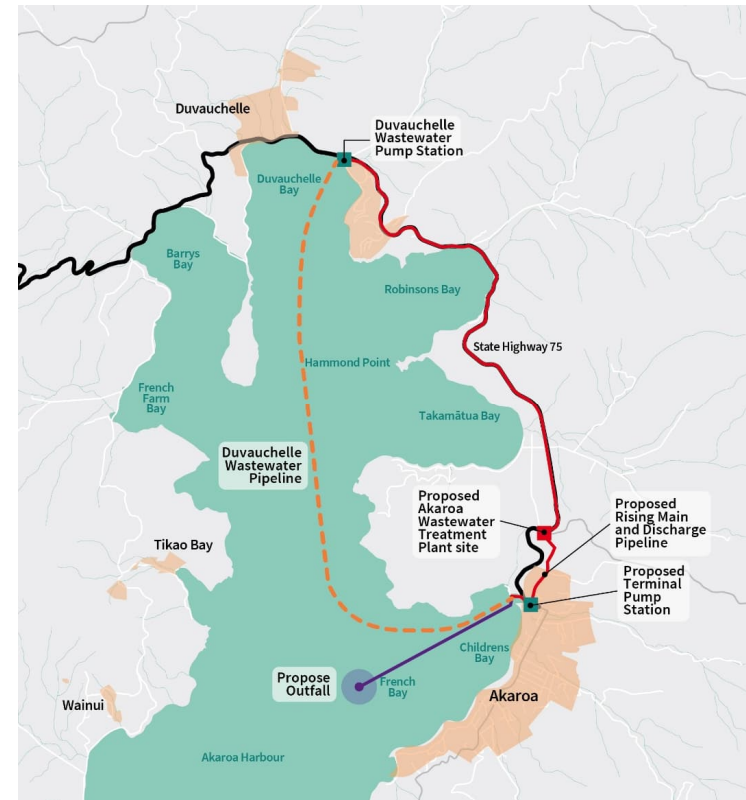
WWTP Location	Storage: 16,000m ³	Storage: 4,000m ³
	Option 1	Option 2
WWTP at hay paddock Wetland: 1000m ²	Approx. \$24m saving on planned scheme < 3 days through wetland over 10 years: 15.9 ≥ 3 days through wetland over 10 years: 10.2	Approx. \$38m saving on planned scheme < 3 days through wetland over 10 years: 62.5 ≥ 3 days through wetland over 10 years: 39.0
	Option 3	Option 4
WWTP at hillside Wetland: 3200m ²	Approx. \$14m saving on planned scheme < 3 days through wetland over 10 years: 5.0 ≥ 3 days through wetland over 10 years: 16.8	Approx. \$28m saving on planned scheme < 3 days through wetland over 10 years: 21.3 ≥ 3 days through wetland over 10 years: 62.9

- Staff need to undertake further engineering to finalise the cost benefit and discharge impact of moving the WWTP to the hay paddock
- Cost saving of moving WWTP is already included in marine discharge options.

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Options 5: 2.7 km Harbour Outfall

- No irrigation.
- No wetland.
- 2.7 km outfall to discharge to mid-harbour.
- Pricing assumes a harbour crossing from Duvauchelle to Akaroa TPS.



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Options Comparison

	Option 1 Land Based Scheme with increased irrigation rates, 16,000m ³ storage, WWTP moves to hay paddock	Option 2 Land Based Scheme with increased irrigation rates, 4,000m ³ storage, WWTP moves to hay paddock	Option 3 Land Based Scheme with increased irrigation rates, 16,000m ³ storage, WWTP stays on hillside site	Option 4 Land Based Scheme with increased irrigation rates, 4,000m ³ storage, WWTP stays on hillside site	Option 5 2700m Mid-Harbour Outfall	Status quo (Not shortlisted)
Irrigation Sites	Hammond Point Robinsons Bay	Hammond Point Robinsons Bay	Hammond Point Robinsons Bay	Hammond Point Robinsons Bay	Nil	Hammond Point Robinsons Bay Duvauchelle Recreation Reserve
Irrigated Land	28.0 ha	28.0 ha	28.0 ha	28.0 ha	Nil	41.1 ha
Irrigation Storage	16,000m ³	4,000m ³	16,000m ³	4,000m ³	500m ³ (For flush flows)	24,000m ³
WWTP Location	Hay Paddock	Hay Paddock	Hillside	Hillside	Hay Paddock	Hillside
Wetland Size	1000m ²	1000m ²	3200m ²	3200m ²	Nil	3200m ²
Irrigation Rates	3.4 - 6.2 mm/day	3.4 - 6.2 mm/day	3.4 - 6.2 mm/day	3.4 - 6.2 mm/day	Nil	1.7 - 3.1 mm/day
% of days WW discharged to land	99.3%	97.2%	99.4%	97.7%	100%	98.6%
Discharge Months	Apr - Sep	Any month	Apr - Sep	Any month	All months	Apr - Sep
Discharge Days Over 10 years	< 3 days through wetland: 15.9 days ≥ 3 days through wetland: 10.2 days	< 3 days through wetland: 62.5 days ≥ 3 days through wetland: 39.0 days	< 3 days through wetland: 5.0 days ≥ 3 days through wetland: 16.8 days	< 3 days through wetland: 21.3 days ≥ 3 days through wetland: 62.9 days	All days No wetland	< 3 days through wetland: 9.6 days ≥ 3 days through wetland: 40.9 days
Capital Cost	\$150m	\$136m	\$160m	\$146m	\$127m	\$176m
35 yr NPV Cost	\$186m	\$171m	\$196m	\$181m	\$155m	\$215m

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Estimates are based on concept design and intended for option comparison

Option of Duvauchelle to Akaroa wastewater and treated water marine links

Opportunities and risks:

- High contingency in cost estimates, as there is no marine survey of pipe route complete.
- Unquantified environmental risks - sediment plume and sea grass impacts.
- A treated water pipeline to Hammond Point will still be needed.
- Significant opportunity to reduce road user disruption on SH75.
- Water supply works still planned in some parts of the SH72 corridor to extend water supplies into Hammond Point area

Staff propose to undertake additional investigations and report back to Council on the opportunity.

Next Steps

- F&P decision on cost savings options on 22 April
- Staff will be recommending other minor and misc cost saving options
- Varied or new resource consent application for the preferred option
- Staff to report back with refined costs for LTP

Thank you

Unconfirmed saving: Duvauchelle to Akaroa wastewater / treated water marine links

Option	Pipeline Details	Cost Summary
Wastewater and treated water pipelines on land route	<p>Akaroa WWTP – Robinsons Bay 2x DN 180 PE pipelines, shared trench (1.0m wide) and directional drilling. 940m: CCC road reserve 1100: Berm off road surface 1100: Shoulder of road surface 1700m: Carriage way</p> <p>Robinsons Bay – Duvauchelle TPS 1x DN 180 PE pipelines. Single use trench (0.6m wide) and directional drilling. 3200: Berm off road surface 1300: Shoulder of road surface 2800m: Carriage way</p>	<p>TW Pipeline 7.3 km: \$13.5m WW Pipeline 12.1 km: \$26.5m Total \$40.0m</p>
Wastewater and treated water pipelines on marine route	<p>Akaroa TPS – Robinsons Bay 1x DN 180 PE pipeline, trenched 7100m in marine area</p> <p>Akaroa TPS – Duvauchelle TPS 1x DN 160 PE pipeline, trenched 7500m in marine area</p>	<p>TW Pipeline 7.1 km: \$22.5m WW Pipeline 7.5 km: \$21.3m Total \$43.8m</p>

