

Item 3: Infrastructure Compliance Update

SESSION TYPE: Briefing

PURPOSE/DESIRED OUTCOME:

To brief the Infrastructure Committee on Council’s compliance status across its core infrastructure activities.

DATE/START TIME:

Friday, 25 July 2025 at 11.00am

TIME BREAKDOWN:

Presentation: 15 minutes
Questions: 15 minutes

Prepared by:



Name: Simon Mason
Title: Infrastructure Operations Manager
14 July 2025

Reviewed and Authorised by:



Name: Tony Avery
Title: General Manager Property & Infrastructure
17 July 2025

ATTACHMENTS:

A	Presentation
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Infrastructure Compliance Update

Infrastructure Committee – 25 July 2025

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Drinking Water - Quality

Status of Infrastructure

SCHEME	TREATMENT BARRIERS PRESENT		
	PROTOZOA	BACTERIA	RESIDUAL
ARROWTOWN	UV	UV	CHLORINE
ARTHUR'S POINT	UV	UV	CHLORINE
CORBRIDGE (T1)	DUE DEC 2025	CHLORINE (UV FROM DEC 2025) <i>*Insufficient Contact Time</i>	CHLORINE
GLENORCHY	UV	UV	CHLORINE
CARDRONA	MEMBRANE	CHLORINE	CHLORINE
HĀWEA	UV	UV	CHLORINE
LUGGATE	DUE DEC 2025	CHLORINE (UV FROM DEC 2025)	CHLORINE
QUEENSTOWN - SHOTOVER BORES	UV	UV	CHLORINE
QUEENSTOWN – TWO MILE	UV	UV	CHLORINE
LAKE HAYES	UV	UV	CHLORINE
WĀNAKA – BEACON POINT	UV	UV	CHLORINE
WĀNAKA - WESTERN	UV	UV	CHLORINE
WĀNAKA AIRPORT	UV	UV	CHLORINE

Planned Treatment Upgrades:

- New Two Mile WTP commissioned April 2025 and temporary Fernhill WTP decommissioned
- Luggate WTP construction (incl. protozoa barrier) contract to be awarded shortly and scheduled for completion in December 2025
- Corbridge to be connected to Luggate scheme (also on track for December 2025)
- Pre-UV filtration project commencing this FY

**Insufficient Chlorine (Cl) contact time at Corbridge scheme only applies for first user, which is the Wānaka WWTP.*

Drinking Water - Quality

Drinking Water Compliance YTD

SCHEME	COMPLIANCE PERFORMANCE (MONTHLY RULES)					
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
ARROWTOWN	PASS	PASS	PASS	PASS (EVIDENCED)	2 DAYS WITH MISSING DATA	PASS
ARTHUR'S POINT	PASS	1 DAY WITH MISSING DATA	PASS	PASS (EVIDENCED)	1 DAY WITH MISSING DATA	PASS
CORBRIDGE (T1)	NO PROTOZOA BARRIER	NO PROTOZOA BARRIER	NO PROTOZOA BARRIER	NO PROTOZOA BARRIER	NO PROTOZOA BARRIER	NO PROTOZOA BARRIER
GLENORCHY	1 DAY WITH LOW UVT	PASS	PASS	PASS (EVIDENCED)	3 DAYS WITH MISSING DATA	PASS
CARDRONA	PASS	PASS	PASS	1 MISSED INTEGRITY TEST	PASS	PASS
HĀWEA	PASS	PASS	PASS	PASS (EVIDENCED)	2 DAYS WITH MISSING DATA	PASS
LUGGATE	NO PROTOZOA BARRIER	NO PROTOZOA BARRIER	NO PROTOZOA BARRIER	NO PROTOZOA BARRIER	NO PROTOZOA BARRIER	NO PROTOZOA BARRIER
QUEENSTOWN - SHOTOVER BORES	PASS	PASS	PASS	PASS (EVIDENCED)	2 DAYS WITH MISSING DATA	PASS
QUEENSTOWN – TWO MILE	PASS	PASS	1 DAY WITH LOW UV DOSE	PASS (EVIDENCED)	1 DAY WITH LOW UV DOSE	PASS
LAKE HAYES	2 DAYS WITH LOW UVT	1 DAY WITH LOW UVT	1 DAY WITH HIGH TURBIDITY	PASS (EVIDENCED)	PASS	PASS
WĀNAKA – BEACON POINT	PASS	PASS	PASS	PASS (EVIDENCED)	2 DAYS WITH MISSING DATA	PASS
WĀNAKA - WESTERN	PASS	PASS	1 DAY WITH LOW UV DOSE	PASS (EVIDENCED)	1 DAY WITH MISSING DATA	PASS
WĀNAKA AIRPORT	1 DAY WITH LOW UVT	PASS	PASS	PASS (EVIDENCED)	3 DAYS WITH MISSING DATA	PASS

Non-Compliances:

All non-compliances noted (excluding Luggate and Corbridge which lack a protozoa barrier) are short duration, technical in nature and did not result in a risk to water safety but rather impacted on the ability to **demonstrate** compliance in accordance with the Drinking Water Quality Assurance Rules.

The key themes of non-compliance are as follows:

- Missing data (lost through communications network outages – notable outage in May)
- Instrumentation faults
- Scheduling of membrane integrity tests

Drinking Water - Quantity

SCHEME	MAXIMUM ABSTRACTION (PER YEAR)	2024-25 PERFORMANCE	COMMENTS
ARROWTOWN (RM19.410.01)	1,274,200 m ³	1,340,073 m ³	2024/25 water usage exceeds annual limit. Priority area for demand management interventions.
ARTHUR'S POINT (2005.762)	823,200 m ³	317,874 m ³	Fully compliant with abstraction limits
CORBRIDGE (RM11.177.01)	167,900 m ³	81,026 m ³	Fully compliant with abstraction limits
GLENORCHY (2009.158)	599,184 m ³	130,992 m ³	Fully compliant with abstraction limits
HAWEA (RM.14.278.01.V1)	1,202,100 m ³	736,826 m ³	Fully compliant with abstraction limits
LAKE HAYES (2001.822)	800,800 m ³ *	454,874 m ³	Daily abstraction limits exceeded through January (4 days) & February (16 days), and weekly volume exceeded in February (14 days where rolling mean exceeded 15,400 m ³ /week). Priority area for demand management interventions. Current permit expires May 2027, work on application for replacement permit to commence this FY.
LUGGATE (RM19.413.01)	187,307 m ³	145,936 m ³	Fully compliant with abstraction limits
QUEENSTOWN – TWO MILE (2007.665)	10,950,000 m ³ *	2,869,127 m ³	Fully compliant with abstraction limits
QUEENSTOWN – SHOTOVER (RM16.142.01)	6,223,165 m ³	2,958,916 m ³	Fully compliant with abstraction limits
WANAKA AIRPORT (RM19.097.01)	26,941 m ³	15,344 m ³	Instantaneous abstraction rate exceeded (NMT 2.8 l/s). Pump operation being explored to remove short duration spikes on start up.
WANAKA – WESTERN (2008.459)	3,888,000 m ³ *	484,557 m ³	Fully compliant with abstraction limits
WANAKA – BEACON POINT (2008.46)	8,164,800 m ³ *	3,808,516 m ³	Fully compliant with abstraction limits

*No annual limit in consent. Annual allocation extrapolated from other limits in water permit.

Wastewater Treatment

SHOTOVER WWTP

RM13.215.03.V2 Discharge to Land - Compliance Status (as at April ORC Audit)		Significant Non-Compliance. Enforcement order in place. Plant now operating under emergency discharge direct to Shotover River.			
RM13.215.01 Discharge to Air - Compliance Status (as at April ORC Audit)		Low Risk Non-Compliance. Odour Management Plan had not been submitted to Reference Group at time of ORC audit (now completed).			
Parameter	June Result	12-Month Rolling Mean	12-Month Rolling Mean Limit	12-Month Rolling 95th %ile	12-Month Rolling 95th %ile Limit
BOD ₅ (mg/l)	14	19.6	30	47.4	50
TSS (mg/l)	19	19.5	30	49.1	50
TN (mg/l)	14.8	18.8	23	39.3	35
E.Coli (cfu/100ml)	10	13	260	38	260

*E.Coli is assessed against as a 12-month Geomean and 90th%ile

CARDRONA WWTP

2009.348 Discharge to Land - Compliance Status (as at April ORC Audit)		Low Risk Non-Compliance. Associated with incorrect scheduling of sampling.			
Parameter	June Result	12-Month Rolling Mean	12-Month Rolling Mean Limit	12-Month Rolling 95th %ile	12-Month Rolling 95th %ile Limit
BOD ₅ (mg/l)	2.2	3.6	20	19.4	50
TSS (mg/l)	4.4	10.3	30	57	50
TN (mg/l)	0.64	4.0	30	50.7	50
TP (mg/l)	0.35	3.4	8	6.9	15
E.Coli (cfu/100ml)	2	4.4	1,000	80	10,000

WANAKA (PURE) WWTP

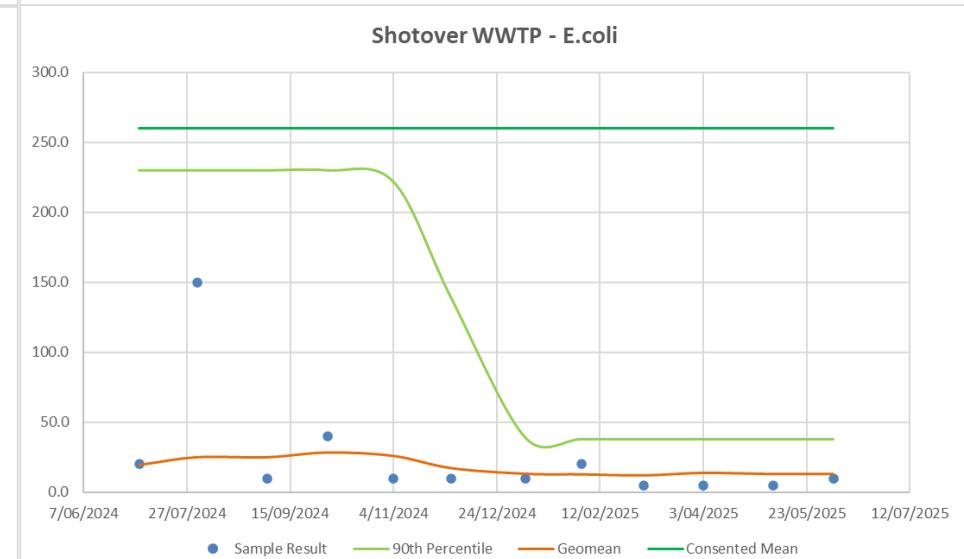
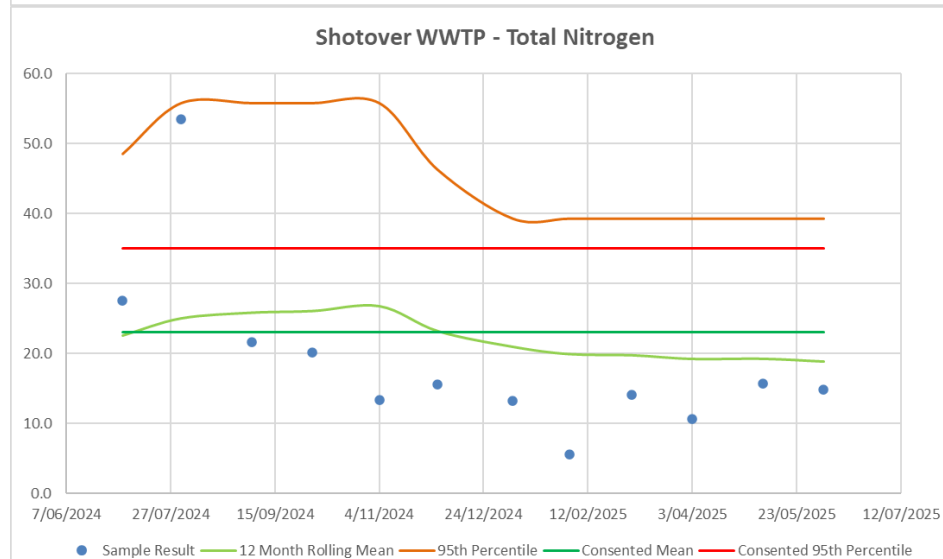
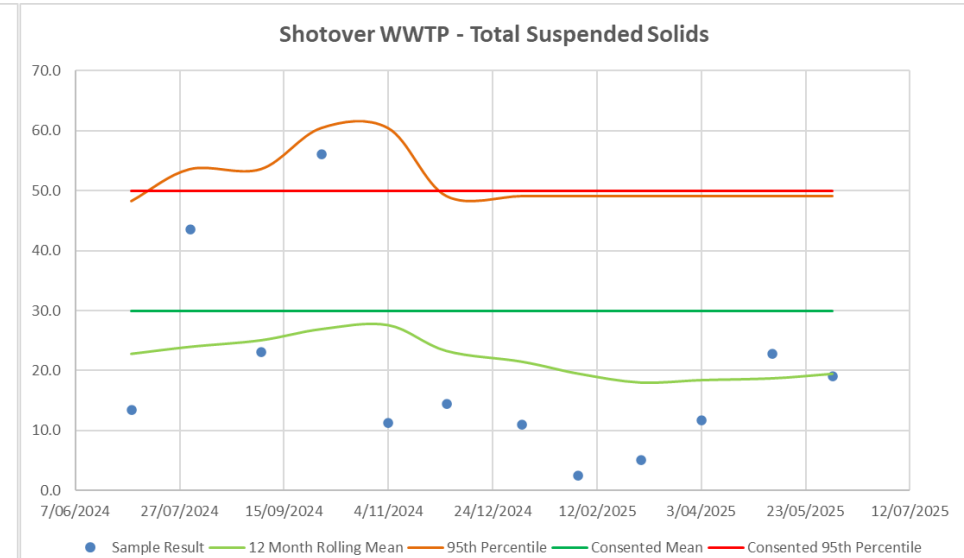
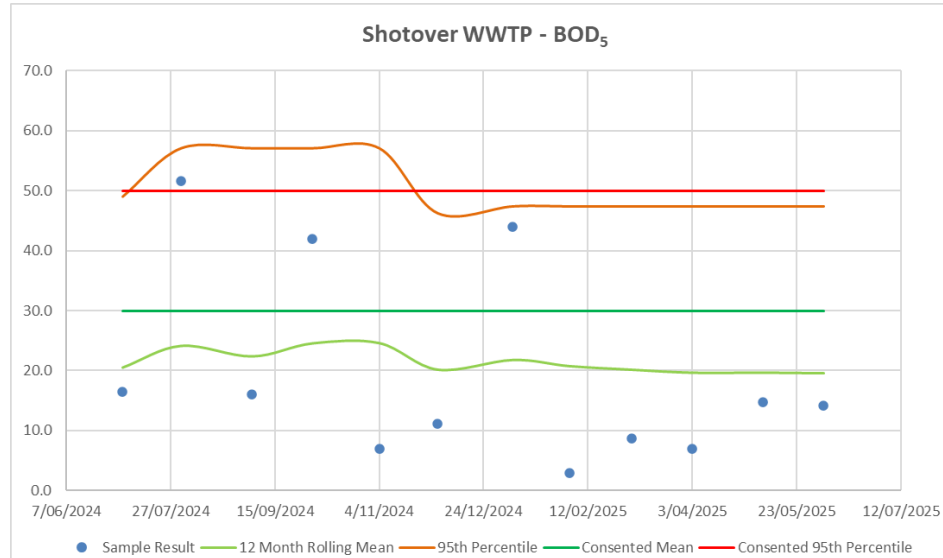
2205.484.V1 Discharge to Land - Compliance Status (as at April ORC Audit)		Full Compliance	
2005.485 Discharge to Air - Compliance Status (as at April ORC Audit)		Full Compliance	
Parameter	June Result	12-Month Rolling 80th %ile	12-Month Rolling Mean Limit
BOD ₅ (mg/l)	7.47	8.9	35
TSS (mg/l)	4.4	8.5	35
TN (mg/l)	9.56	9.5	12
E.Coli (cfu/100ml)	10	10	1,000

HAWEA WWTP

RM22.178.02 Discharge to Land - Compliance Status		Significant Non-Conformance. Abatement Notice in place.	
RM22.178.01 Discharge to Air - Compliance Status		Full Compliance	
Parameter	June Result	12-Month Rolling Mean	12-Month Rolling Mean Limit
TN (mg/l)	41.4	40.6	35
NH ₄ -N (mg/l)	20.7	18.6	20
TP (mg/l)	4.5	5.8	10
E.Coli* (cfu/100ml)	53,000	53,382	250,000

*E.Coli is assessed against as a 12-month Geomean

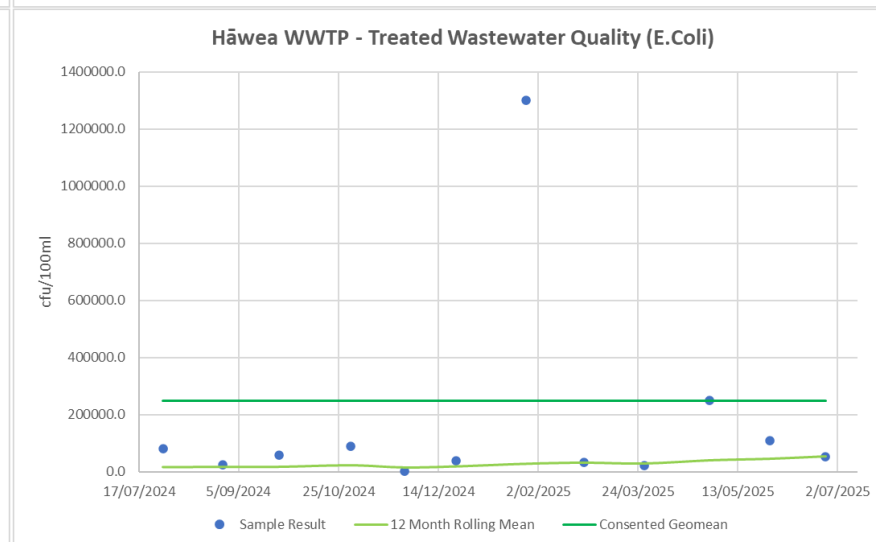
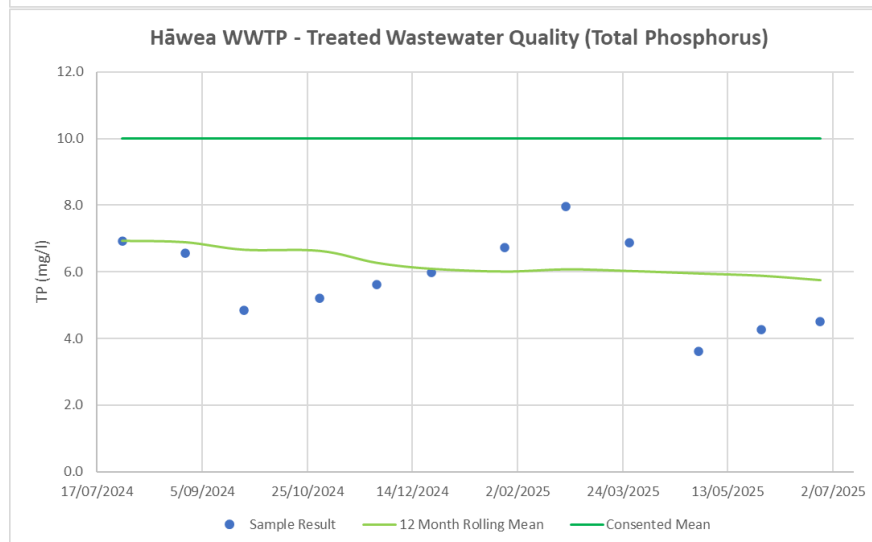
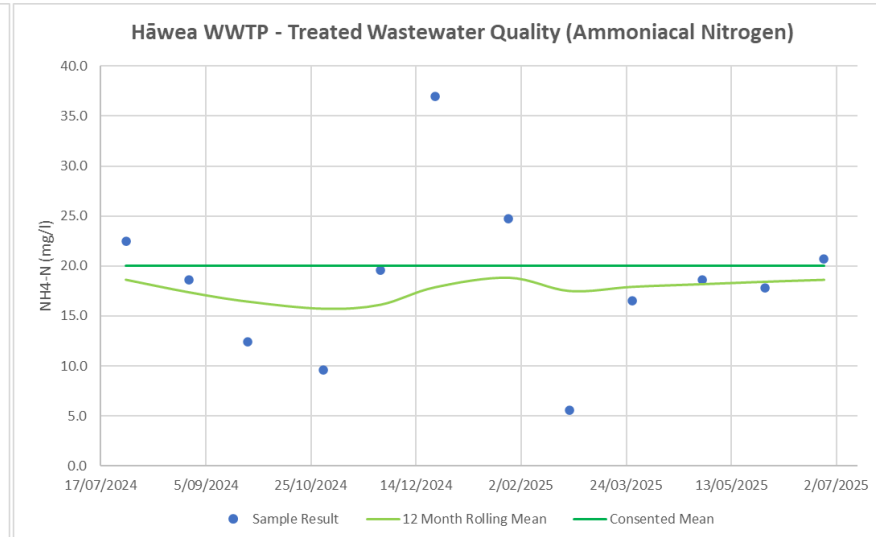
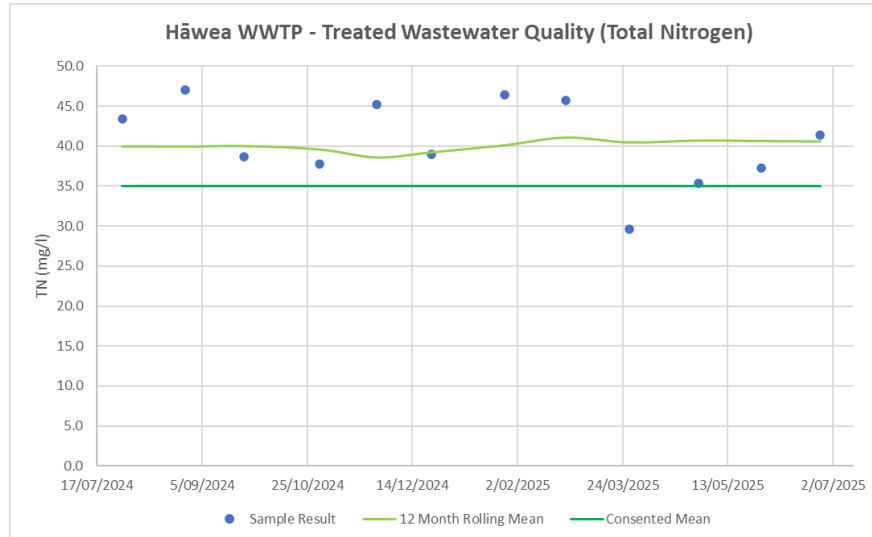
Shotover WWTP – Current Performance



Shotover WWTP – Key Updates

- > Disposal field out of service since 31 March 2025. Largely drained with isolated pockets of shallow ponding in some cells.
- > Monthly surveys of wildlife continue. No issues have been reported from the ecologist and negligible numbers of birds remain at the disposal field.
- > **Earthworks and Diversion within Shotover Riverbed Consent (RM25.177)** - Consent lodged 10/04/25. Site visit undertaken with ORC representatives on 30/4/25 as part of the annual audit. S92 request received 19/06/25 and responses being prepared by QLDC.
- > **Discharge of Treated Wastewater to Shotover River Consent (RM25.206)** - Consent lodged on 1/5/25. S92 request received 19/06/25 and responses being prepared by QLDC.
- > Stage 3 project now in commissioning phase.

Hāwea WWTP – Current Performance



Hāwea WWTP – Key Updates

- > Abatement notice issued April 2025 as a result of exceedances of both the mean 12-month Total Nitrogen concentration and the total mass of Nitrogen discharged.
- > Monitoring undertaken upstream and downstream in the Hāwea River reflect that the non-compliance is not adversely affecting the receiving environment
- > QLDC are investigating multiple avenues to optimise performance, including:
 - > Arrange to trial an ultrasonic technology designed to disrupt algae cells, reducing quantity of algae in the discharge and supporting a reduction in Total Nitrogen (as N is bound up in the algae)
 - > Optimisation of network operation to 'smooth' the feed into the WWTP
 - > Engaging an independent expert to review plant operations and ensure performance is maximized
 - > Reducing additional load on treatment plant through delaying new connections where possible
- > QLDC is required to report to ORC quarterly to provide updates around steps being undertaken to achieve compliance with the consent.



Fig 1. Moving Bed Biofilm Reactor at Hāwea WWTP

Stormwater

STORMWATER CONSENTS/ENFORCEMENT ACTIONS	
Shotover Wetland SW Discharge (RM15.277) - Compliance Status (as at 2023 ORC Audit)	Significant Non-Compliance. Infiltration ponds inconsistent with consented plans (use of rip rap, extent of vegetation). Missing sampling data from when consent was held by Developer. Remedial work undertaken and awaiting next audit.
SW Discharge to Clutha River at Northlake (Permitted Activity)	Abatement Notice in place. Work on-going to identify preferred solution, complete design and construct mitigation works to enable compliance with the permitted activity rule.
SW Discharge to Bullock Creek at Alpha Series (Permitted Activity)	Abatement Notice in place. Agreement in place with Otago Fish & Game to lease a section of their land to enable increased wetland area as a interim solution until funding can be made available for the planned Stone St SW pipeline. Works will see the Developer's SW management system completed and are scheduled to be undertaken in spring 2026.

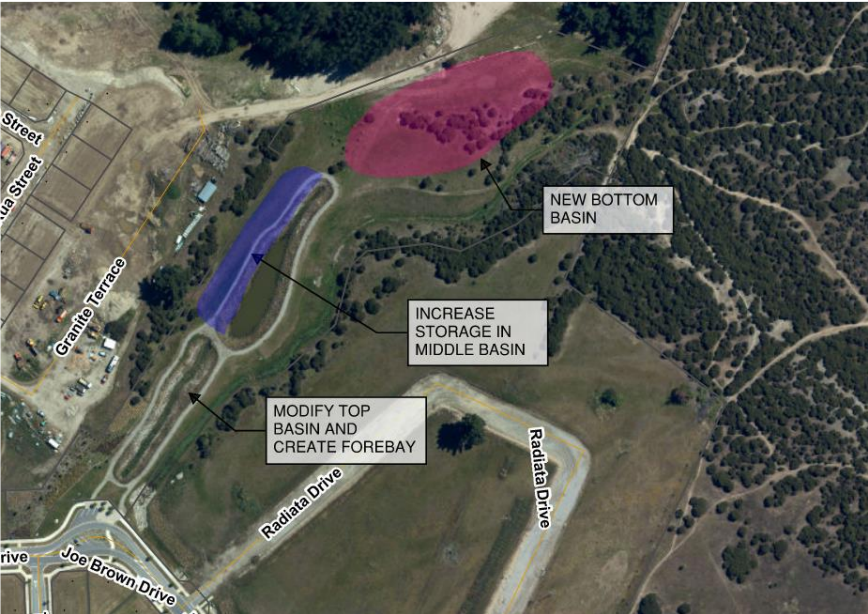


Fig 2. Sketch of proposed basin modifications at Northlake

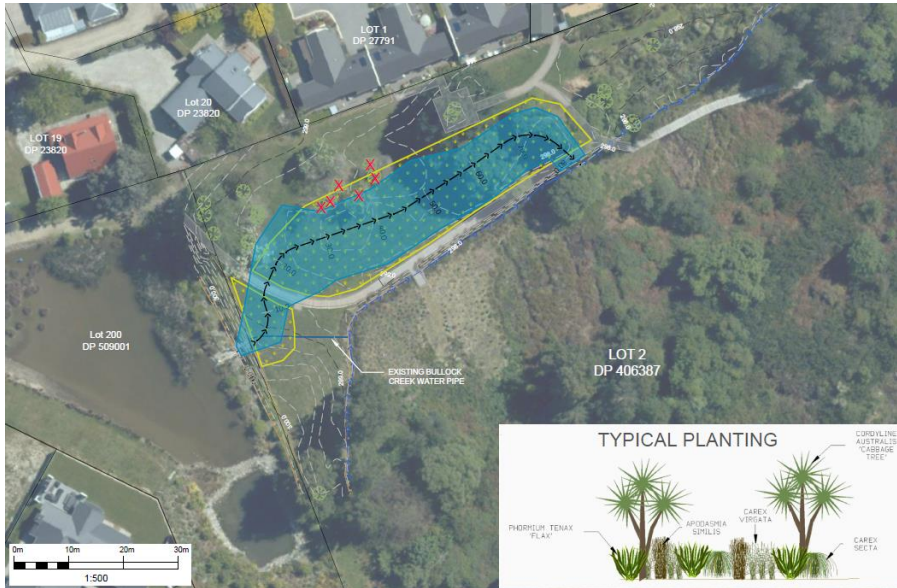


Fig 3. Alpha Series modifications to mitigate downstream effects of stormwater flow

Waste Management

WASTE MANGEMENT CONSENTS	
Victoria Flats Discharge of Mixed Waste to Land (97163_V1) – Compliance Status	Low Risk Non-Compliance. Administrative matters associated with operational manual and plans, subsequently resolved. Reconsenting process now commenced, initially focusing on design of future landfill development stages.
Victoria Flats Discharge to Air (97164_V4) – Compliance Status	Low Risk Non-Compliance. Administrative matters associated with operational manual and plans, subsequently resolved. Reconsenting process now commenced, initially focusing on design of future landfill development stages.
Victoria Flats Discharge to Leachate Land (97165) Victoria Flats Groundwater Take (97166.V1)	Full Compliance.
Tucker Beach Closed Landfill Discharge to Land (2004.290) – Compliance Status	Moderate Non-Compliance. Approx 50m of waste exposed at toe of embankment. Remedial work to capping currently seeking consents. Clean fill acquired and about to commence stockpiling. Works anticipated to start 2026.

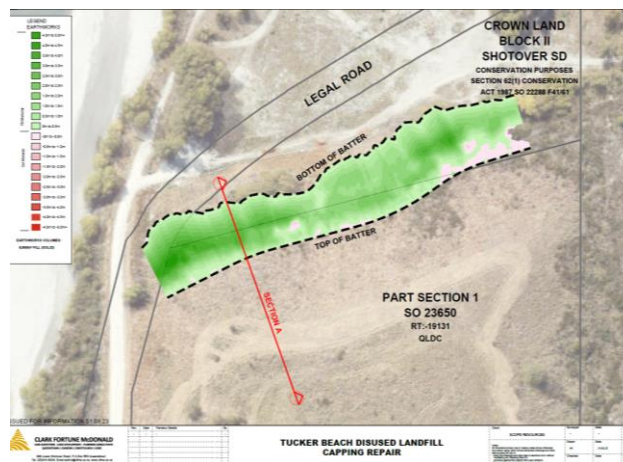


Fig 4. Remediation works at Tucker Beach Closed Landfill

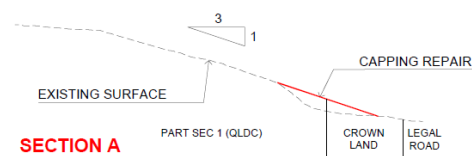


Fig 5. Victoria Flats landfill. Operative cells shown in yellow and future in red.