

# **STANDING COMMITTEES**

**THURSDAY 21 NOVEMBER 2024**

**commencing at 1.30 pm**

**In the Council Chambers**

**1 Rosebank Terrace**

**Balclutha**

# CLUTHA DISTRICT COUNCIL

Notice is hereby given that a Meeting of the Infrastructure Strategy & Operations Committee will be held in the Council Chambers, 1 Rosebank Terrace, Balclutha on Thursday 21 November 2024, commencing at 1.30pm.

Steve Hill  
**CHIEF EXECUTIVE OFFICER**

## Committee Members

Councillor Bruce Graham (Chairman)  
Councillor Kevin Barron  
Councillor Dane Catherwood  
Councillor Wayne Felts  
Councillor Gaynor Finch  
Councillor John Herbert  
Councillor Michele Kennedy  
Councillor Alison Ludemann

Mayor Bryan Cadogan  
Councillor Simon McAtamney  
Councillor Dean McCrostie  
Councillor Brent Mackie  
Councillor Jock Martin  
Councillor Ken Payne  
Councillor Bruce Vollweiler

# INFRASTRUCTURE STRATEGY & OPERATIONS COMMITTEE

## 21 November 2024

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### APOLOGIES

Mayor Bryan Cadogan

### DECLARATIONS OF INTEREST

*No declarations of interest advised at the time of printing this agenda.*

Item	Page #	Title
1.	4	<b>Operations Update – Transportation</b> <i>(For the Committee’s Information)</i> Reports progress on transportation items within the department.
2.	8	<b>Operations Update – Greenspace and Waste</b> <i>(For the Committee’s Information)</i> Reports progress on greenspace and waste matters within the department.
3.	19	<b>Operations Update – Three Waters</b> <i>(For the Committee’s Information)</i> Reports progress on Three Waters matters within the department.
4.	30	<b>Compliance Update Report</b> <i>(For the Committee’s Information)</i> The report provides updates on compliance-related issues across the Service Delivery Department.
5.	56	<b>Infrastructure Strategy &amp; Delivery Update</b> <i>(For the Committee’s Information)</i> The report provides information on various Projects/Contracts that are in progress at this time.

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# Infrastructure Strategy & Operations Committee

## Item for INFORMATION

<b>Report</b>	Operations Update – Transportation
<b>Meeting Date</b>	21 November 2024
<b>Item Number</b>	1
<b>Prepared By</b>	James Allison – Transportation Operations Manager
<b>File Reference</b>	913122

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### REPORT SUMMARY

The report details items from the Operations Transportation Team that are for information only.

### RECOMMENDATIONS

1. That the Infrastructure Strategy & Operations Committee receives the ‘Operations Update – Transportation’ report date 21 November 2024.

### REPORT

#### 1. Roothing

October was a very wet month, so much so a State of Emergency was declared on 4 October for the Clutha District. The contractors were kept busy with flood inspections and closing roads. They then started the mammoth task of clearing slips, drop-outs and flood damage. During October (while not helping with flood repairs), the metaling crews were working out of Lyders quarry. The digger and drainage crew in the North were busy with slip clearing down the Chaslands and Papatowai Highways. The South drainage crew had a busy month too with flood repairs on Karoro Creek and Puaho Roads. Our contractors also sent a crew down from Dunedin to help with flood repairs.

We estimate that we have now completed about 25% of the repairs. It is anticipated that progress will be slower from here on, as the crews will need to resume their usual maintenance tasks along with the flood repairs.

The routine trucks continued to focus on improving visibility and safety on the Network – cutting back vegetation, sweeping intersections, filling potholes and repairing edge breaks and cleaning and reinstating signs.



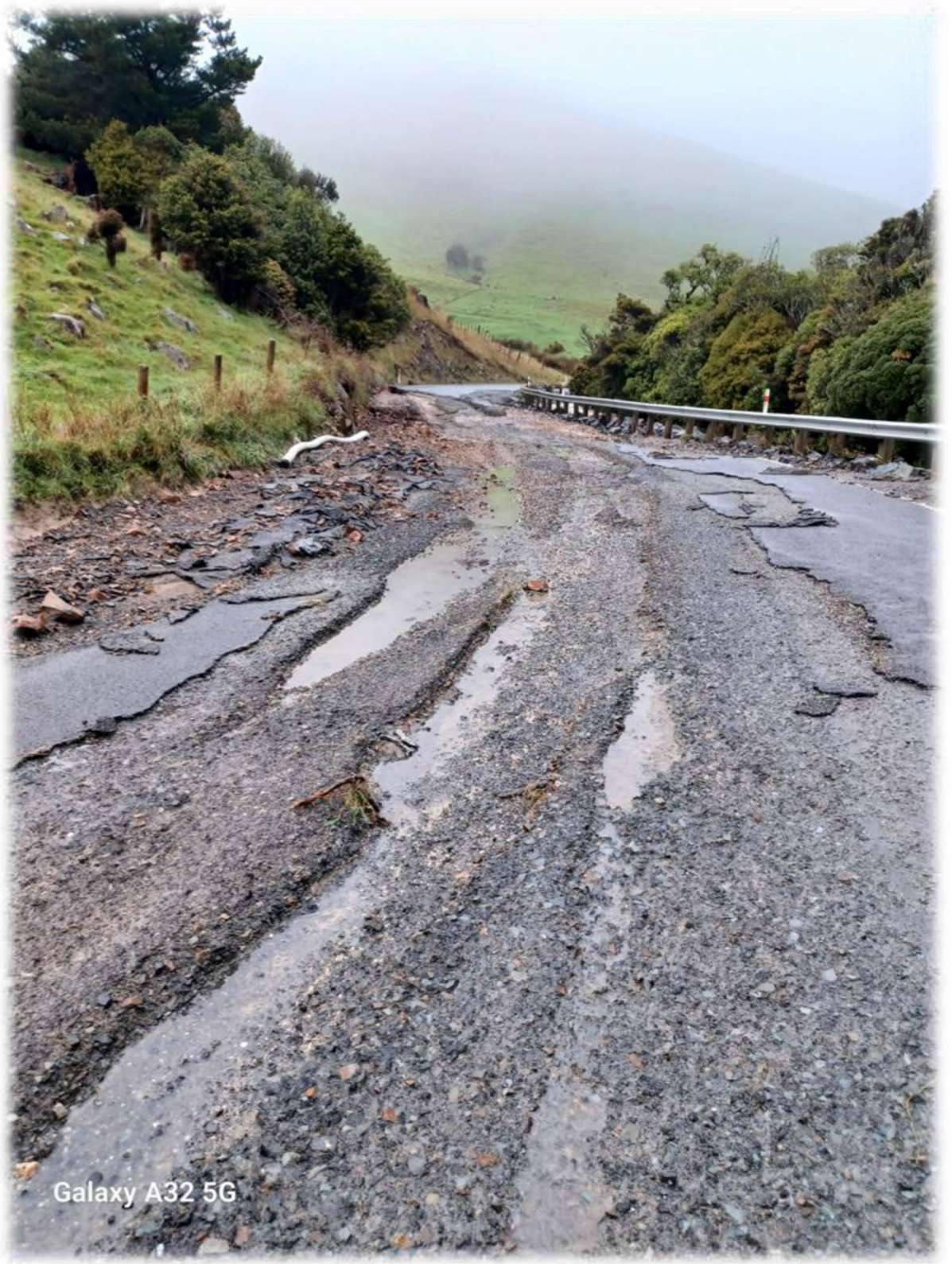


*Summer Hill Road Washout*



*Wingfield Road Slip*





*Karoro Creek Road*

## **2. Streetlight Maintenance Contract**

Infill lighting is currently being installed in Milton; this will be the last of the installations for this financial year.

## **3. CCTV Update.**

CCTV cameras have been installed at the Balclutha and Milton toilets; these have already been used in Balclutha after an incident of vandalism on the night of November 6, 2024.

CCTV cameras were used 6 times in the month of October, for incidents including threatening behaviour, breach of release conditions, 3 incidents of vehicle complaints, a male entering a property uninvited and a mental health episode.

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# Infrastructure Strategy & Operations Committee

## Item for INFORMATION

<b>Report</b>	Operations Update – Greenspace, Waste and Compliance
<b>Meeting Date</b>	21 November 2024
<b>Item Number</b>	2
<b>Prepared By</b>	Jason Foster – Head of Infrastructure Operations
<b>File Reference</b>	920343

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### REPORT SUMMARY

The report details items from the Operations Greenspace, Waste and Compliance and Freedom Camping and are for information only.

### RECOMMENDATIONS

1. That the Infrastructure Strategy & Operations Committee receives the 'Operations Update – Greenspace & Waste and Compliance' report dated 21 November 2024.

### REPORT

#### 2. Health and Safety

##### Greenspace: -

There have been two proactive safety observations this period, and one near hit. These are summarised as:

**Observation:** adjusting mower operation speeds during wet conditions to prevent slips,

**Observation:** ensuring hazard identification sheets are updated when conditions change during works.

**Near Miss:** Unsafe passing of our contractor's vehicle.

Our Greenspace Supervisor conducted one external audit of the contractor upgrading the Lawrence Playground. The site was well set up with public exclusion and all staff appeared to have the correct PPE and all apparent hazards were identified and looked to be controlled.

**Waste: -**

No incidents or near misses were reported over this period.

Our contractor reported undertaking several "Tailgate" meetings. These safety discussions focused on building mental resilience, traffic management changes, and safe practices when traveling behind trucks and other heavy vehicles. Additional topics covered working safely between truck tail doors and truck decks, operating machinery with blind spots, and preventing musculoskeletal injuries.

No contractor safety audits were conducted by the infrastructure operations team over this period, this is related to the position of contract supervisor currently being vacant.

**3. Greenspace****Service Delivery and Quality Management:**

Despite challenging weather conditions recently, our greenspace contractor has performed well and met all required outcomes. Service request numbers for this period were:

**Toilets (3)** – There were generally fewer toilet related service requests, these included blocked toilets, missing and stolen consumables and a seized vent.

**Cemeteries (2)** – There were two cemetery related service requests, enquiries of ash plots and a slumped grave.

**Parks and Greenspace (25)** - The requests fall into several key areas. Firstly, there are concerns about tree health and safety. Secondly, playground-related requests include installing sunshades and addressing food rubbish. Thirdly, general maintenance needs include cleaning spouting, adding berms to the mowing program, filling holes, and removing unwanted items. Environmental concerns focus on algal growth in water features and the control of noxious weeds. Finally, requests for amenities include providing more bins and removing graffiti.

**Community Engagement:**

The team engaged the following group/s

- **Waihola Looking Forward:** - the team met with the chair and contractors about what trees to remove and what to keep with the upcoming cricket ground upgrade at the Waihola Domain. It has been noted at this point that the impact of the project is substantial with regards to traffic movements and tree removals.

#### 4. Greenspace Area Updates

##### General:

Spring's early arrival has put pressure on our greenspace maintenance. Our contractors are working hard to tackle fast-growing vegetation and weather-related issues, including recent heavy rains. They've been vital in handling storm cleanup and managing the surge in spring growth.

##### Lawrence:

**Cemetery:** The extension is progressing although we continue to wait for drier conditions for the installation of the first beam.

**Market Reserve:** Tree work at Market Reserve is nearly complete, with our contractors having removed dangerous trees from the bank. Final clean-up and stump work will be done once conditions are drier to minimise mess. The driveway and parking area have been refreshed with new gravel.

In Lawrence, we've replaced four Whitespire Birches - two outside the hospital (where the originals may have been planted too deeply), one on Whitehaven Street replacing earlier storm damage, and one at Market Reserve.

##### Balclutha:

**Balclutha Cemetery:** A new burial beam has been installed. Following recent weather, we're addressing significant ground settling across both old and new burial sites. While some settling is normal with casket burials, recent weather conditions have accelerated this process.

**Clyde Street:** Clyde Street replanting project has been completed; this has had an impact on non-routine budgets.

**Balclutha Showgrounds Seeding:** We've completed seeding of the showring and patchy areas of the football pitches. While current wet conditions are promoting lush growth everywhere, we'll need drier weather to properly assess how well the coring and seeding have improved the traditionally dry areas of the football pitches.

**Balclutha Grandstand:** We are currently obtaining quotes to replace a large Perspex panel in the Balclutha Grandstand that was dislodged and damaged during strong winds.

**Pearson Lane / Centennial Park Carpark:** A budget of \$24K was approved for sealing the car park in this area. Initial work has been completed and for this budget amount (including repairs to the incoming road and pothole filling) only a car park area for six cars can be constructed (see Figure 1 overleaf). However, an allocation of \$16K for maintenance work will be applied to this project from the Balclutha Parks Non-Routine Budget and this will enable an area for approx. 22 car parks to be installed. The wider area that will not be sealed will hopefully be able to be improved over the next year by using asphalt millings to provide a better surface – similar to the work undertaken at the at the Riverside Reserve Road and parking area.





Figure 1 – Roadway and approx. car park area utilising capital budget – 6 parks



Figure 2 – Roadway and approx. car park area utilising capital budget + some non-routine budget - 22 parks

**Milton:**

**Taylor Park:** The recent flooding of Salmond Creek undermined and toppled a large, well-formed mature willow. The specimen was notable for its size and sound condition, unusual characteristics in willows of this age.

**Milton Memorial Park:** Arborists recently completed a clean-up of trees at Milton Memorial Park to address overcrowding around the War Memorial and reduce the accumulation of deadwood litter after strong winds. The work also included lifting branches on trees encroaching on footpaths and accessways. The arborist noted that the trees had not received thorough maintenance in the past, aside from some ground-level lifting.

**Pounaweia:** At the Pounaweia playground, a piece of legacy equipment recently fell over due to internal corrosion. No one was harmed. The equipment had long been decommissioned as active play equipment and served primarily as an ornament. Due to the equipment's type and age, assessing similar issues in other legacy pieces on site will be challenging without causing damage to the structures. If we do need to remove equipment this will be articulated to any stakeholders first.

**Tapanui:** The first of many truckloads of bark to top up the playground has arrived, with more to come for both the existing playground and new additions. We are working closely with the community group overseeing the upgrade to coordinate timelines, facilitate delivery, and manage labour to ensure everything is completed at the right times.

**Taieri Mouth:** Pothole repairs are scheduled for mid-November at Knarston Park, particularly on the eastern corner exposed to river and ocean elements. The work involves excavating key areas applying and compacting gravel, then potentially using the excavated material to fill rabbit damage and isolated potholes in other areas of the site. This approach aims to stabilise the site within available resources until larger improvements can be undertaken. Productive discussions with local community groups are underway to develop short-, medium-, and long-term plans, with the understanding that addressing long-term issues may require changes to current site usage.

**Rural:** The Taieri Millennium Track sustained significant damage during the recent weather event and is currently closed due to damage to culverts in remote sections between Henley and John Bull Gully. Although most of the track remained intact, several areas around culverts and hillside streams were washed away. Track maintenance is facilitated by Waihola Looking Forward, a community group currently assessing the materials and labour needed for repairs. This will need to be funded from Rural Parks non-routine budgets or some other funding source if the repairs are very costly.

**Toilets:**

Across the district there have been several replacements of broken or missing toilet roll holders, as well as small repairs being carried out ranging from blockages, low water pressure, pump issues and plumbing repairs.



## 5. Waste

### Service Delivery and Quality Management

WasteCo continues to deliver our kerbside collection, transfer and landfill services, meeting all contractual requirements. As the current contract term concludes in 2026, we are beginning preliminary planning for the renewal process.

Between October 10 and November 7, a total of 32 service requests were received. Key themes identified from these requests highlight a strong emphasis on bin-related services, including:

**Bin Repairs/Replacements (19 requests):**

**Missed Collections/Service Issues (6 requests):**

**New Services/Route Changes (3 requests):**

**Other (4 requests):**

**Collection Vehicle update on delivery.**

Our first collection vehicle is scheduled for delivery in mid-December, with the second unit following shortly thereafter. These dates could change noting the possibility of shipping delays. Currently council are liable for the costs of major breakdowns on the old trucks since the contract extension date of November 2023. The net value of these repairs is around \$50k. However, we currently get preferential collection rates to support this.

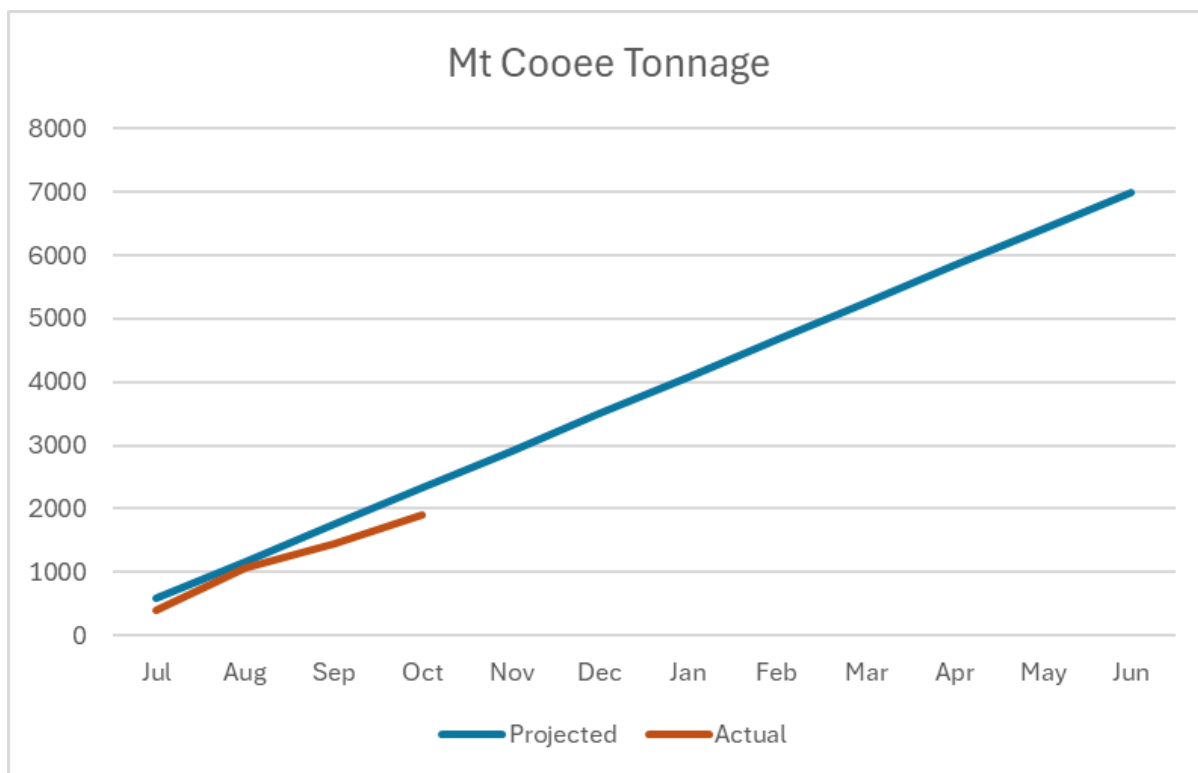
### Landfill/Transfer Station Operations

#### Performance to Budget

To meet operational and sales targets for the first quarter, Mt Coee needed to have received approximately 2,270 tons of commercial sales volume, as of August 31st, actual sales were less at 1,915 tons, resulting in a 355-ton deficit.

These numbers indicate a significant revenue shortfall of approximately \$98,000, primarily driven by declining waste volumes, particularly clean fill sales. This downward trend in waste tonnage affects our immediate operational budget and will necessitate a comprehensive review of our fee structure and service offerings if they continue.

Additional budget pressures are arising from the need to transport our recycling to Invercargill. October marked the first month of the new invoicing. Initially, we had increased the budget to account for higher processing costs in Dunedin, but further cost increases led us to opt for the more cost-effective solution in Invercargill. We continue to estimate the overall impact of this change at approximately \$40,000 for the year.



### Landfill Space Update

The current landfill closure plan provides sufficient capacity through to August 2025. The operations team are actively pursuing strategic guidance regarding closure implications and exploring viable expansion options to extend operational capacity. The main issue is that as part of the consent application to build a new cell, it may have included a drawing showing the current proposed final dimensions. We expect to receive comprehensive analyses and recommendations by late November 2024 to inform our path forward.

To validate our timeline, we are conducting a detailed volumetric analysis using drone surveying. This assessment will compare current site dimensions against both the current closure plan (used to estimate the August 2025 completion date) and a previous 2019 closure plan, which specified wider dimensions but was later modified due to extending beyond the leachate drainage system boundaries. While this modification was made assuming the leachate system was a constraint, the impact of extending beyond it was not fully evaluated at the time. Survey results are expected in December 2024

Among the two expansion options under consideration, our preliminary analysis favours a lateral expansion strategy as this aligns with work already undertaken. This option of filling in the lower portion, whilst feasible, does present additional complexities related to drainage system modifications and operational inefficiencies.

There are several risks associated with this approach overall and are summarised as follows.

1. The closure model cannot be changed without making a minor amendment to the current consent application causing further delay.
2. Any changes to the operation of Mt Cooee may trigger a variation in the contract, increasing overall operating costs. Mainly if a bulldozer is required to move waste from the top of the landfill to the lower south side.
3. Cost for minor adjustments to Mt Cooee draining infrastructure are not budgeted for.

## **Tyrewise**

Mt Cooe landfill continues to demonstrate strong end destination for tyres. Recent data shows impressive tyre collection numbers, with an additional 461 tyres received for recycling. This maintains the significant increase from our pre-scheme average of just 25 tyres per month.

The programme's visibility is being enhanced with new signage being installed at the entrance, helping to guide residents and get the word out. The first few collection cycles have proceeded smoothly, indicating successful implementation of the scheme's protocols.

## **Transfer stations:**

The Transfer/Collection points are currently under review for effectiveness. From the total number of sites operations currently managed, the average throughput is around 400kgs per month, including glass and other recycling.

## **Closed Landfill Updates**

After reviewing the environmental assessments of nine closed landfill sites, it is recommended that four sites (Kaitangata, Milton, Owaka, and Tahakopa) proceed with renewed resource consent applications due to evidence of elevated contaminants and potential environmental impacts. The remaining five sites (Tapanui, Clinton, Clydevale, MacLennan, and Tuapeka Mouth) exhibit low contaminant levels and limited ecological risk, suggesting that renewal of consents may not be necessary for these locations. This differentiation will allow for targeted environmental management, focusing resources on sites with demonstrable ecological impact.

## **6. Waste Minimisation**

### **Recycling Services**

Clutha's recycling is now being processed by RecycleSouth in Invercargill, following the significant increase in processing costs available currently in Dunedin.

The Waste Team recently visited the Invercargill facility and was particularly impressed with their social enterprise model, which provides meaningful employment opportunities for people who may face challenges securing full-time work. Recycling materials are being bulked within Clutha before onwards transport to Invercargill for processing.

### **Rural Recycling Initiative**

RecycleSouth offers a baling wrap recycling service which could benefit our farming community. While there is a cost of approximately \$1 per kg, reflecting the processing required to create a marketable product, this provides an environmentally responsible disposal option for our agricultural sector. The Waste Team will continue to promote this service throughout our rural communities.

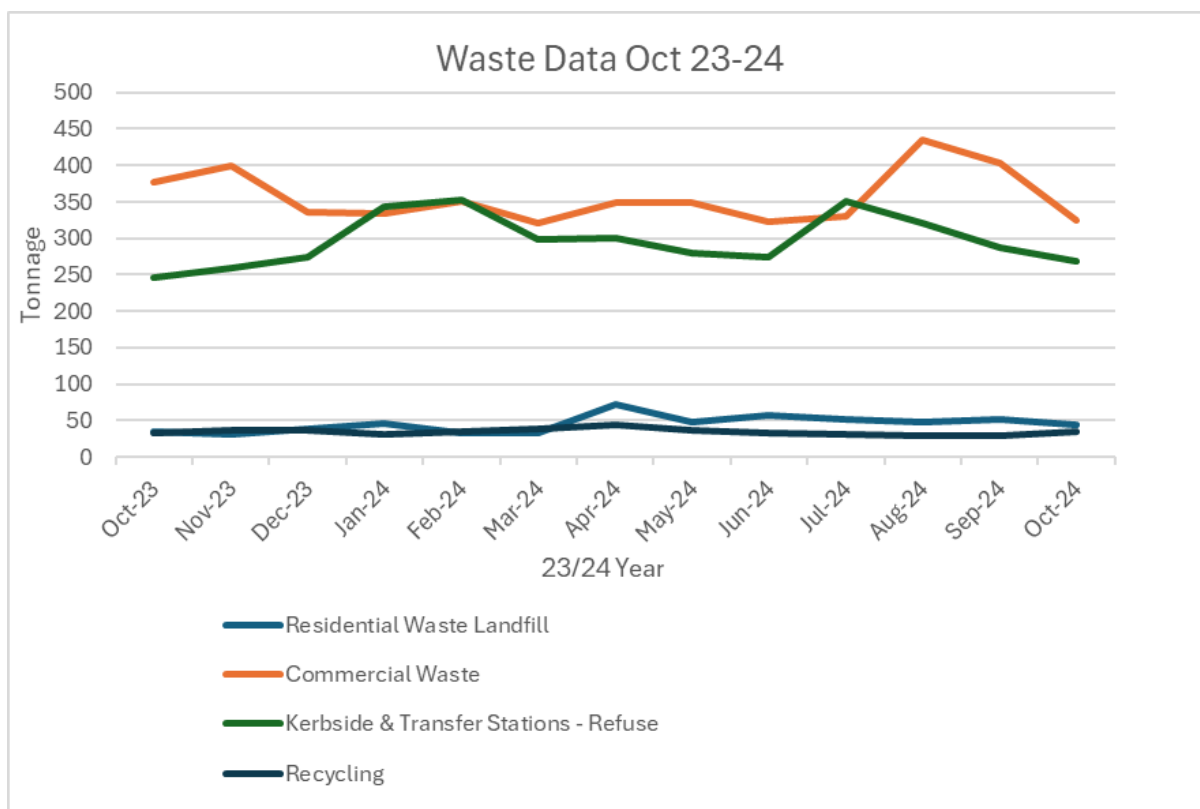
**Bylaw Review**

The team are currently reviewing our Waste Management and Minimisation Bylaw, with a key focus on ensuring households maintain a single residual waste bin. This aligns with our Waste Minimisation Plan's objectives of diverting as much waste from landfill as possible by encouraging proper use of recycling services.

**7. Analysis of Waste and Recycling Trends (Oct 23 - Oct 24):**

Over the past year, commercial waste volumes have shown notable fluctuations, particularly peaking in August 2024 from biofilter waste from water treatment. Kerbside and transfer station refuse levels have remained relatively steady with only minor variations, indicating consistent disposal patterns for general waste. Residential waste to landfill shows minimal change throughout the year, suggesting stable household disposal rates.

Recycling volumes remain consistently low, which emphasizes the ongoing challenge of improving recycling participation and effectiveness. This trend supports the need to advance the Waste management strategy to address recycling shortfalls.



**Staff Movements**

Following an initial recruitment attempt, we have decided to re-enter the market. While this timing is not ideal, given the ongoing challenges at Mt Cooee and the need to review service options for future market testing and potential new tenders, we believe this step is necessary to ensure effective staffing for upcoming priorities.

## 8. Compliance

Freedom Camping Officer Report Summary (19 August - 3 November 2024)

During this period, Freedom Camping Officer Ian Royle reported key activities and observations across various categories:

**Camper/Vehicle Interactions:** Managed 296 camper and vehicle interactions, with weather affecting camper numbers. An increase was noted in illegal camping by non-self-contained vehicles, often unregistered, posing environmental concerns.

**Vehicle Relocations and Abandoned Vehicles:** Responded to four reports of potentially abandoned vehicles, monitoring these for any community or environmental impacts.

**Animal Encounters:** Addressed 14 animal-related incidents, primarily involving loose livestock and occasional wildlife on roadways.

**Dumped Rubbish:** Managed eight instances of illegal dumping, ranging from garden waste and household items to commercial refuse. New locks were arranged to prevent misuse of public bins.

**Homelessness:** Seven interactions with five individuals, notably in Tapanui, where recent homelessness has led to community calls. Currently, there are no known homeless individuals in the district.

**Obstructions and Parking Issues:** Cleared 10 obstructions from roads, including logs, animal remains, and other debris. Addressed eight parking complaints, issuing warnings and monitoring problem areas.

**Park and Green Space Incidents:** Managed minor issues in parks, including advising metal detectorists and monitoring potential vandalism in public spaces.

**Repairs and Maintenance:** Conducted maintenance on freedom camping sites and other facilities, including tap replacements and pothole repairs.

**Reports via Antenno and Other Channels:** Responded to 14 Antenno alerts and six additional reports on issues such as sign vandalism, littering, and penguin protection measures.

**Monitoring and Site Visits:** Carried out 12 site visits for ongoing issues, including illegal littering, public safety, and overnight parking concerns.

**Vehicles on Beaches:** Addressed three instances of vehicles driving on beaches, with educational interventions to protect local wildlife where necessary.

Kilometres Travelled: The Freedom Camping Officer logged 10,263 km during this period, demonstrating extensive field coverage across the district.

**Support Staff:** With the onset of summer in December, we anticipate a significant increase in visitor numbers. Additional resources are planned to accommodate the heightened activity and ensure continued community and environmental safety.

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# Infrastructure Strategy & Operations Committee

## Item for INFORMATION

<b>Report</b>	Operations Update – Water
<b>Meeting Date</b>	21 November 2024
<b>Item Number</b>	3
<b>Prepared By</b>	Linda Till – Head of Three Waters
<b>File Reference</b>	920344

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### REPORT SUMMARY

The report provides updates from the Operations Water Team that are for information only.

### RECOMMENDATIONS

- 1. That the Infrastructure Strategy & Operations Committee receives the ‘Operations Update – Water’ report dated 21 November 2024.**

### REPORT

#### 1. Water

##### Staffing

Mike Foley, formerly in our 3 Waters Maintenance Planning Team, has been appointed as Supervisor Rural Reticulation, and Emma Hutton, who was one our administrators has been appointed to our Trade Waste Officer position. It is pleasing to develop and promote staff from within the team. Aside from replacements for their roles, a new position of Contract Manager – Network Operations has been created and advertising is currently underway to fill this position. To create this role the vacant Manager 3 Waters Engineering position has been disestablished, with the operations project engineer roles moving into the IS Delivery team.

##### Flood Event – October 2024

A full review into the flooding event that affected many areas around the district from October 4-7 will be undertaken with council staff. An independent review of the flooding event, focussing on flooding at properties impacted in Frances St, High St and James St in Balclutha has commenced. This includes a review of how the Hospital Creek Retention Embankment, which was intended to slow stormwater flows from the upper rural catchment to reduce the strain on the lower hospital creek drainage system through the urban area, and the timing of operation of other critical infrastructure, performed. In the early phases of the review, a meeting with impacted business owners has been held by the review panel. Rainfall in the catchment, Clutha River levels and the operation of the downstream Hospital Creek Pump Station will all form part of the review.



*Balclutha Fire Brigade assisted with pumps at Hospital Creek*

Operations team members were extremely busy over the duration of the event and the weeks following as they worked to manage both water and wastewater plants that were impacted. All plants were inspected for access, security, physical and mechanical damage after the event, with all damage tabulated to assist with an insurance claim that has been raised. The extent of the claim is unknown with several plants requiring significant repairs for which strategies and pricing are being worked through.

Notable damage was incurred at Stirling Water Treatment Plant, which is still operating, but with significant repairs required to the sand filter is not meeting DWS standards. A Boil Water Notice is in place. Temporary containerised filter systems have been considered however, long lead times for these options to be sourced and commissioned discount their feasibility while a permanent refurbishment option is considered, which is expected to have a similar lead time.

River flow changes meant that the intake for Tapanui Water Treatment Plant was compromised and left “high and dry” and emergency works were undertaken in Whiskey Gully Creek on Saturday 5 October to ensure that the intake was again able to accept flows. A more permanent solution will need to be designed to reduce the risk of this recurring.

Several other Water Treatment Plants suffered lesser issues with pump failures, intake screens and leaf baskets being washed away or damaged and compromised supplies, but staff worked tirelessly to get plants operational at the earliest opportunity. We are grateful that local contractors responded so quickly over the weekend and the following week to provide services to assist.

Performance of the Wastewater Treatment Plants is provided in more detail in the following sections, with Waiholā WWTP being worst affected in terms of mechanical repairs required, estimates and costs for which have been submitted to the insurer. The necessary repairs have been attended to, to ensure protection of the environment as soon as practicable.



### Phoenix Dam

Phoenix Dam has been fully decommissioned. The bypass around the dam remains in operation, although there is some groundwater and run-off flowing through the decommissioned dam. Otago Regional Council are currently applying for a consent to implement sediment control on the outlet which should improve quality of any future discharge.

Following recent rainfall events inspections of the now operational Bungtown Race have shown that it has suffered minimal damage, with a local contractor proposing to install 20-30 meters of piping to stabilise three areas where earth has slipped. Further inspections will be planned to follow any future significant weather events.

The siphon valves that were installed are around a third open and it is expected that to provide surety of supply through summer that they will be fully exercised. The siphon is pictured in the images below, together with some sections of the open race. The bottom image shows an area of slight land slippage, which will be piped.



*Close up inspection with the siphon valves on the left of the photo*



*Clear water off the race*





*Small slippage on the left of the race*

### **Milton**

The new Drinking Water Safety Plan was submitted to Taumata Arowai on June 27th. This satisfies Section A(i) of the Milton Compliance Order issued by Taumata Arowai in November 2023. An updated Source Water Risk Management Plan was also submitted on June 27th. To date there has been no further feedback from Taumata Arowai. The next actions arising from the Order are related to training and competency and are due by the end of January 2025. Compilation of a formal training and competency document for submission is underway as evidence of our improvement in this area.

### **Moa Flat & North Bruce**

Moa Flat and North Bruce water treatment plants have been the subject of boil water notices for the past eighteen months. During that time staff and consultants have been trying a range of solutions to ensure that the plants can consistently comply with the appropriate Drinking Water Quality Assurance Rules. This includes altering chemical dosing, chemicals changes, dose rates and locations, validation of the UV disinfection plant to achieve more log credits and considering modifications to the clarifiers to encourage settlement. The water team is actively engaging with the supplier (Filttec) to produce appropriate longer-term solutions that will allow these boil water notices to be permanently lifted. A further meeting with Filttec is scheduled for 14 November to determine next steps.

### **Stirling**

On 5 October the sand filter backwash pipework failed catastrophically. It was noted at the time that backwash frequencies have increased quite significantly because of changes to the raw water quality which followed on from the wet weather event. The filter has been emptied and inspections of pipework show that it requires replacement. Specialist contractors and consultants have been working on a design for refurbishing the filter. In the meantime, the scheme has been placed on a Boil Water Notice until this work is completed.

### **Tapanui**

Following the extreme weather event of 4 October a Boil Water Notice was issued for the towns water supply. Changes to the raw water quality caused spikes in turbidity levels in the final treated water. Issues with discoloration were also noted following this weather event. The discoloration issues were resolved following extensive flushing across the reticulation network around 15 October. At the time of writing the treated water turbidity has stabilised and sampling is now underway with a plan to lift the Boil Water Notice by mid-November at the latest. In addition, the Operations Team are reviewing options for installation of an Ultraviolet disinfection system which will further help maintain compliance, particularly following heavy rain events.

### **Milton Waihola**

The Waihola township is now largely fed off the Milton urban supply. However, a number of properties have been identified as remaining on the North Bruce scheme. The Water team have now started the process of identifying which properties are fed from either scheme with a view of lifting the Boil Water Notice from those now fed by Milton. Properties fed from North Bruce will need to continue boiling water until issues with that plant are permanently resolved. The team will also be working closely with the Communications team to make sure that appropriate messaging and guidance is given to all properties.

### **Taumata Arowai Reviews and Audits**

Clutha District Council kept Taumata Arowai informed during the weather event at the beginning of October and during the aftermath regarding the performance of our drinking water supplies. Taumata Arowai did not request any further information and did not make any recommendations to Clutha District Council staff.

### **Reticulation Contract**

The final procurement recommendation report from Morrison Low, the Three Waters Reticulation contract, and Simpson Grierson Limited's recommendation letter are with council's senior management team for review ahead of contract execution.

### **Crown Street Capacity**

Site drawings are to hand, the Fire Engineers review is complete, and we are seeking assistance from the Building Regulation team to sign off compliance and QA documents following advice from the Christchurch-based Portable Building Solutions designer that Christchurch City Council are experiencing significant delay in processing times.

### **Backflow Prevention Programme**

As a drinking water supplier Council is required to implement a backflow prevention programme to protect the distribution network against the risk of backflow. Backflow is the unplanned reversal of flow of water or mixtures of water and contaminants into the water supply system from a siphon or a back-pressure source.

Under the Health Act 1956 and the Building Act 2004 it is the customer's responsibility to take all necessary measures to prevent water that has been drawn from Council's water supply, from returning to that supply.

Council's Water Services Bylaw 2019 states that Council may require a customer to provide backflow prevention by installing a backflow prevention device. Customers are required to supply evidence annually that the device has been checked. Costs for installation and annual checks are at the customer's cost. In some instances, building consent may be required.

Using Land Use information codes properties have been categorised by the operations team into one of three risk categories. To start minimising the backflow risk across the district and absorbing any learnings into the following stages of the programme a small pilot will shortly underway based on potentially high-risk activities involving engineering, car washes and chemical related automotive activities that potential use anti-freeze.

The operations team is also installing appropriate backflow prevention devices at Council owned sites. This includes a range of wastewater pump stations, wastewater treatment plants, bores, and caravan dump stations.

Like the privately owned backflow prevention devices, the council owned devices will be added to the backflow register, a maintenance schedule will be set up, and they will be tested on an annual basis. The reticulation contractor or suitably qualified staff will undertake ongoing maintenance and testing.

A backflow page has been added to the website, together with development of a series of FAQs. A brochure about backflow and the requirements will be provided to customers who will be visited by staff to complete the risk assessment and any necessary follow up visits.

### **Wastewater Treatment Plants and General**

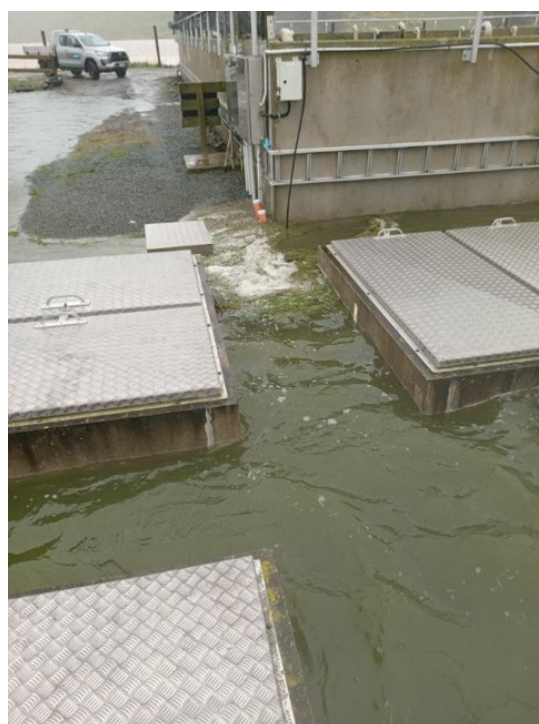
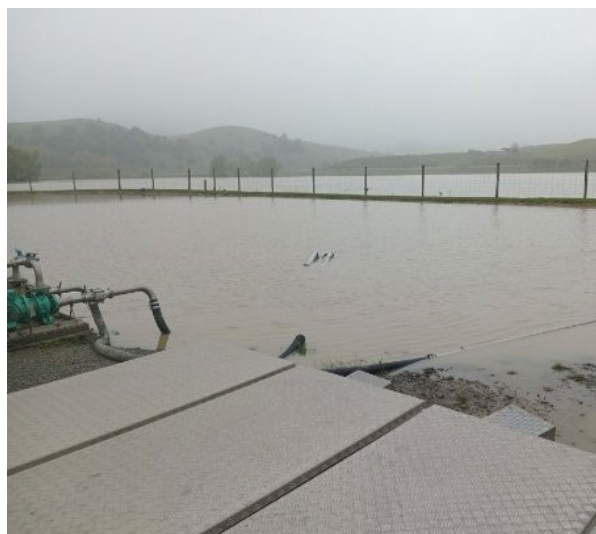
Extremely heavy rain over 4 – 6 October 2024 caused significant challenges at most of the eleven wastewater treatment plants (WWTPs). Most oxidation ponds overflowed via emergency overflow routes due to the greatly increased incoming flows.

The pond at the Owaka WWTP was completely inundated with flood waters from the river for more than 24 hours. Otago Regional Council's flow gauge on the Owaka River (installed in 2013) recorded a peak flow of 133m<sup>3</sup>/s – more than twice any previously recorded peak.

The bypass route at the Milton WWTP was operational for six consecutive days, discharging screened, but otherwise untreated, wastewater to the flooded Tokomairiro River. The normal consented maximum daily flow limit at the Milton WWTP is 1,625m<sup>3</sup>/d, but at its peak on 5 Oct., incoming flows were recorded at 6,612m<sup>3</sup>/d.

Through some sterling work by the plant operators and supervisor, damage was limited but included a drowned discharge pump and actuated valve at the Waihola WWTP, drowned ultraviolet disinfection lamps at the Owaka WWTP and escaped floating hex covers at the Balclutha and Waihola WWTPs (which have now largely been shepherded back to their normally contained location). Otago Regional Council has acknowledged the work done by CDC staff to manage the impact of the flood event.

Probably partly reflecting the unusually diluted wastewater entering the WWTPs, treated effluent samples taken during October have recorded almost fully compliant results across all sites.



*Owaka Wastewater Treatment Plant under water*





*Balclutha Wastewater oxidation pond - hex covers being moved to the correct side of the curtain & in place.*



*Waiholo Wastewater Treatment Plant – inundated wetlands & still displaced hex covers.*

## I & I Inspection Programme

I & I Inspections have resumed with the appointment of a new Trade Waste officer. The first area being focussed on is Tapanui, with re-inspections and reassessing properties to make sure the gully traps and stormwater outflows are compliant.

Contractors have not yet been notified for remedial action as most of the property owners have complied from previous correspondence that was issued.

Community	Contacted Council	Total non-compliant (October 2024)	Non-compliant gully trap(s) (Initial)	Non-compliant gully trap(s) (October 2024)	Stormwater pipe or drain directly connected to the sewerage system.	Stormwater pipe or drain directly connected to the sewerage system (October 2024)	Some of the downpipe terminations are still unknown. (Initial)	Some of the downpipe terminations are still unknown. (October 2024)
Balclutha	318	38	413	20	160	22	241	12
Stirling	24	15	28	11	18	12	45	1
Tapanui	131	42	164	17	48	7	94	7
Clinton	38	6	39	13	28	6	21	0
Heriot	14	14	21	8	12	10	8	1
Kaitangata	64	52	61	27	67	35	100	4
Kaka Point	45	26	35	14	28	10	35	2
Lawrence	64	26	62	18	36	11	62	3
Owaka	42	31	66	21	25	15	29	0
Milton	227	151	311	133	67	35	169	10
Waiholā	36	18	46	17	7	2	13	0
<b>Grand Total</b>	<b>1003</b>	<b>419</b>	<b>1246</b>	<b>299</b>	<b>496</b>	<b>169</b>	<b>817</b>	<b>41</b>

## Seasonal Water Restrictions

Stage 1 restrictions are always implemented each year on 1 December to try and avoid more stringent restrictions as summer progresses. If more stringent restrictions are not implemented, the Stage 1 restriction remains in place until the end of March, and then we review whether it can be lifted or extended.

Early-stage restriction is introduced on the premise that if all users save water early in the season, we may not need to implement Stage 2 or 3 restrictions.

Different restriction levels can be established across the district, to individual areas as required.

Given that there have been several heavy rainfall events more recently, we may review the appropriateness of implementing Stage 1 restrictions on the traditional date.

Restrictions are introduced through targeted communications by way of advertising in local newspapers and gazettes, and through Antenno and text messages for subscribed users.



The four stages of water restrictions are tabled below for information.

<b>Restriction Level</b>	<b>Water conservation method</b>
Stage 1	<p><b>Summer Mode</b> – Outdoor watering is not allowed during the day, so you can only water your garden between 8 at night and 8 in the morning.</p> <p>Watering systems may be used during these times; but please don't leave them unattended.</p>
Stage 2	<p><b>Moderate Water Restrictions</b> – People can only use a handheld hose for watering gardens, between 8pm to 8am only. Hoses cannot be left on overnight or unattended. Sprinkler &amp; irrigation system use is banned. Commercial operators that require water can contact Council for approval.</p>
Stage 3	<p><b>High Level Water Restrictions</b> – There is a hosing ban, with the exception that people can use a handheld hose for watering gardens one day a week, between 8pm to 8am only. Sprinkler &amp; irrigation system use is banned. People are asked to avoid washing cars and boats etc. Commercial operators that require water can contact Council for approval.</p>
Stage 4	<p><b>Extreme Water Restrictions</b> – Complete hosing, sprinkler &amp; irrigation system ban, no washing of boats, cars or using hoses at all. Minimise indoor water usage.</p>

Note that exemptions may be granted by Council on a case-by-case basis to commercial/industrial properties and for irrigation depending on the level of restrictions in place, the extent of the dry period, and the time of the year.

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# Infrastructure Strategy & Operations Committee

## Item for INFORMATION

<b>Report</b>	Compliance Update Report
<b>Meeting Date</b>	21 November 2024
<b>Item Number</b>	4
<b>Prepared By</b>	Daniel Pickup – Team Leader Compliance and Reporting
<b>File Reference</b>	920345

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### REPORT SUMMARY

This report provides an update on all compliance-related issues across the Three Waters Operations department. It includes information that was previously provided in both the Operations and Infrastructure Strategy reports as well as additional specific information on compliance activities.

### RECOMMENDATIONS

- 1 That the Infrastructure Strategy & Operations Committee receives the ‘Compliance Update’ report dated 21 November 2024.**

### REPORT

#### **1 Water Treatment Plant (WTP) Compliance Focus**

##### **1.1 Drinking Water Quality Assurance Rules (DWQAR) Compliance Summary**

Since the implementation of the DWQARs in November 2022, several of the Councils WTPs and distribution networks were identified, through routine sample analysis and monitoring, as having inadequate treatment processes, resulting in the supply of non-compliant drinking water to those consumers. Refer to Appendix A for an overview of the DWQARs that are not currently met by the WTPs and distribution networks subject to a Boil Water Notice (BWN) or Advisory Notice.

Monthly Compliance achieved / anticipated	Technical Non-compliance	Moderate Non-compliance	Significant Non-compliance
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<b>Balclutha WTP</b>	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
T3 Bacto: 4.10.1.4 UV Treatment	94%	100%	100%	100%	100%	100%
T3 Proto: 4.10.2.5 Filters T3 Proto: 4.10.2.13 UV Treatment	100%	100%	97%	98%	99%	100%
D3 Bacto Balclutha: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	100%
Compliance Comments	NA					

<b>Milton WTP</b>	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
T3 Bacto: 4.10.1.1 FAC Disinfection	100%	97%	99%	97%	98%	97%
T3 Proto: 4.10.2.11 Membranes	97%	97%	100%	100%	100%	99%
D3 Bacto Milton: 4.11.4 Residual Disinfection	100%	72%	100%	77%	100%	100%
D3 Bacto OCF: 4.11.4 Residual Disinfection	100%	100%	88%	96%	100%	100%
D3 Bacto Waiholo: 4.11.4 Residual Disinfection	NA	NA	NA	NA	NA	100%
Compliance Comments	NA					

<b>Stirling WTP</b>	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
T3 Bacto: 4.10.1.4 UV Treatment	100%	93%	100%	100%	98%	94%
T3 Proto: 4.10.2.5 Filters T3 Proto: 4.10.2.13 UV Treatment	100%	100%	100%	100%	100%	95%
D3 Bacto Stirling: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	95%
D3 Bacto South Bruce: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	92%
Compliance Comments	D3 Bacto: E.coli was detected in the South Bruce distribution. T3 Bacto: The UV dose was not sufficient to achieve compliance.					

<b>Kaitangata WTP</b>	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
T3 Bacto: 4.10.1.1 FAC Disinfection	97%	90%	99%	100%	100%	100%
T3 Bacto: 4.10.1.4 UV Treatment	100%	100%	97%	100%	98%	100%
T3 Proto: 4.10.2.5 Filters T3 Proto: 4.10.2.13 UV Treatment	100%	100%	98%	100%	97%	100%
D3 Bacto Kaitangata: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	100%
D3 Bacto Wangaloa: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	100%
Compliance Comments	NA					

<b>Whitelea Rd WTP</b>	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
T3 Bacto: 4.10.1.1 FAC Disinfection	23%	20%	98%	89%	91%	77%
T3 Proto: 4.10.2.11 Membranes	71%	73%	100%	100%	100%	100%
D3 Bacto North Richardson: 4.11.4 Residual Disinfection	88%	100%	100%	100%	100%	100%
Compliance Comments	T3 Bacto: The chlorine dose rate and contact time were not maintained for the required period to achieve full compliance.					

<b>Puerua WTP</b>	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
T3 Bacto: 4.10.1.4 UV Treatment	94%	97%	97%	98%	95%	90%
T3 Proto: 4.10.2.13 UV Treatment	94%	93%	97%	98%	97%	93%
D3 Bacto Richardson South: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	100%
D3 Bacto Kaka Point: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	100%
Compliance Comments	The UV dose and UVT was not sufficient to achieve compliance.					

<b>Owaka WTP</b>	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
T3 Bacto: 4.10.1.4 UV Treatment	100%	97%	98%	100%	97%	98%
T3 Proto: 4.10.2.13 UV Treatment	100%	97%	100%	100%	96%	98%
D3 Bacto Owaka: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	100%
Compliance Comments	NA					

<b>Clydevale-Pomahaka WTP</b>	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
T3 Bacto: 4.10.1.4 UV Treatment	100%	100%	100%	100%	100%	100%
T3 Proto: 4.10.2.13 UV Treatment	100%	100%	97%	100%	98%	100%
D3 Bacto Clydevale: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	100%
D3 Bacto Clinton: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	100%
Compliance Comments	NA					

<b>Glenkenich WTP</b>	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
T3 Bacto: 4.10.1.1 FAC Disinfection	100%	100%	100%	99%	100%	99%
T3 Proto: 4.10.2.11 Membranes	97%	93%	98%	99%	99%	97%
D3 Bacto Glenkenich: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	100%
Compliance Comments	NA					

<b>Lawrence WTP</b>	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
T2 Bacto: UV Disinfection	84%	100%	100%	100%	100%	99%
T3 Proto: UV Disinfection	68%	100%	100%	96%	100%	99%
T3 Proto: Filters	94%	83%	100%	95%	100%	97%
D2 Bacto Lawrence	87%	88%	100%	100%	100%	100%
Compliance Comments	NA					

<b>Tapanui WTP</b>	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
T3 Bacto: 4.10.1.1 FAC Disinfection	97%	80%	85%	99%	100%	77%
T3 Proto: 4.10.2.5 Filters	84%	23%	42%	73%	90%	8%
D3 Bacto Tapanui: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	70%
Compliance Comments	T3 Proto: The turbidity in the treated water exceeded the maximum allowable NTU. FAC levels at the treatment plant and in the Tapanui network were below the required levels.					

Tuapeka West WTP	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
T2 Bacto: FAC Disinfection	58%	93%	73%	53%	84%	85%
T2 Proto: Filters	0%	0%	0%	0%	0%	0%
D2 Bacto Tuapeka West	89%	75%	100%	67%	63%	77%
Compliance Comments	D2 Bacto non-compliance when FAC levels in the distribution are <0.1mg/L. There is no protozoal treatment at this site.					

North Bruce WTP	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
T3 Bacto: 4.10.1.4 UV Treatment	97%	63%	74%	71%	70%	53%
T3 Proto: 4.10.2.13 UV Treatment	90%	47%	71%	72%	60%	53%
D3 Bacto North Bruce: 4.11.4 Residual Disinfection	100%	100%	93%	100%	100%	77%
D3 Bacto Waihola: 4.11.4 Residual Disinfection	100%	83%	91%	93%	94%	NA
Compliance Comments	The turbidity in the treated water exceeded the maximum allowable NTU. D3 Bacto: FAC results detected in the Waihola network were below <0.1 mg/l. The UV dose and UVT was not sufficient to achieve compliance.					

Moa Flat WTP	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
T3 Bacto: 4.10.1.4 UV Treatment	74%	60%	88%	91%	94%	93%
T3 Proto: 4.10.2.13 UV Treatment	42%	17%	56%	90%	89%	93%
D3 Bacto Moa Flat: 4.11.4 Residual Disinfection	100%	100%	100%	100%	100%	100%
Compliance Comments	The UV dose and UVT was not sufficient to achieve compliance.					

Waitahuna WTP	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
T3 Bacto: 4.10.1.1 FAC Disinfection	0%	0%	32%	18%	15%	17%
T3 Proto: 4.10.2.5 Filters	0%	0%	0%	0%	0%	0%
D3 Bacto Balmoral 1: 4.11.4 Residual Disinfection	100%	77%	80%	100%	44%	42%
D3 Bacto Balmoral 2: 4.11.4 Residual Disinfection	100%	57%	69%	80%	25%	42%
D3 Bacto Tuapeka East: 4.11.4 Residual Disinfection	100%	46%	73%	67%	11%	42%
Compliance Comments	The turbidity in the treated water exceeded the maximum allowable NTU. The chlorine dose rate and contact time was not maintained for the required period to achieve compliance.					

## 1.2 Boil Water and Conserve Water Notices

Tuapeka West remains on a BWN due to inadequate treatment at the plant and inconsistent chlorine levels in the reticulation. The BWN will not be lifted without considerable upgrades as there is currently no protozoal treatment at this site. This is the only site that has no protozoal treatment. The Balmoral Tuapeka Rural Water Scheme will replace the Tuapeka West WTP once it is commissioned.

## 1.3 Boil Water and Aluminium Advisory Notices

The Tapanui BWN was issued on 5 October 2024 after the wet weather event caused treatment plant issues. The BWN will remain in place until the treatment plant issues are resolved. At time of writing this report, the plant has been operating within compliance limits

and a 3-day sampling programme has commenced. Provided results demonstrate compliance in the reservoir and distribution network, the BWN will be lifted.

#### 1.4 Moa Flat and North Bruce WTP DWS Compliance Issues

Staff are currently waiting on legal feedback regarding our contracts for upgrading these treatment plants as they contained a guarantee to meet the previous Drinking Water Standards. This is happening in parallel with several work items, that include the contractor and our independent water treatment specialist, to develop programmes to move both plants to full compliance. An update will be provided at the meeting, and we also intend to arrange meetings at the plants with the scheme committees to go over the current issues and proposed solutions.

North Bruce will remain on a BWN until the treatment plant demonstrates compliance with Sections 4.10.1.4, and 4.10.2.13 and the distribution networks demonstrate compliance with the D3 Rules. The plant does not demonstrate the consistent compliance required to lift the BWN.

- The treatment plant struggles to consistently achieve the required UV dose to provide assurance that the bacteria in the water has been adequately disinfected by the UV treatment process.
- The treatment plant struggles to achieve the required UV dose and UVT to provide assurance that protozoa in the water has been adequately disinfected by the UV treatment process.
- Low levels of residual chlorine detected in the distribution network prevents compliance with the D3 Rules.

*E. coli* was not detected in the North Bruce distribution zone during the past seven weeks of monitoring, demonstrating compliance with Rule D3.29. Three FAC results analysed were below the minimum requirement of 0.2 mg/L during the past seven weeks of monitoring, failing to comply with Rule D3.19.

*E. coli* was not detected in the Waihola distribution zone during the past seven weeks of monitoring, demonstrating compliance with Rule D3.29. All FAC results analysed were above the required 0.2 mg/L during the past seven weeks of monitoring, demonstrating compliance with Rule D3.19.

Aluminium results analysed from the Waihola distribution network were below the MAV of 1 mg/L during the past seven weeks of monitoring.

One aluminium result analysed from the North Bruce distribution network was above the MAV of 1 mg/L during the past seven weeks of monitoring. The most recent non-compliant residual was detected on 16 October 2024.

An elevated sampling programme will remain in place for the distribution while the analysed results are above the MAV.

Waihola township is now supplied by the Milton WTP and is isolated from the North Bruce supply. Future compliance update reports will not include monitoring for the Waihola township in relation to North Bruce.

North Bruce WTP	Total Aluminium <sup>1</sup>	<i>E. coli</i>	FAC
Samples Collected in the past seven weeks	1	0	0
Compliant Samples collected in the past seven weeks	1	0	0

Waihola Distribution Network	Total Aluminium	<i>E. coli</i>	FAC
Samples Collected in the past seven weeks	2	4	9
Compliant Samples collected in the past seven weeks	2	4	9

North Bruce Distribution Network	Total Aluminium	<i>E. coli</i>	FAC
Samples Collected in the past seven weeks	2	5	9
Compliant Samples collected in the past seven weeks	1	5	6

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<sup>1</sup> Includes results received up to 1 November 2024.

**Water Treatment - North Bruce WTP**

**Treated Water Compliance Report for October 2024**

Section 4.10.1.4: Bacterial Rules - Water Disinfected with Ultraviolet Light							Section 4.10.2.13: Protozoal Rules - Ultraviolet Light					
Rule:		T3.15	T3.16	T3.17	T3.18	T3.85	T3.86	T3.87	T3.88	T3.89	T3.90	
Requirement:	Plant Run Time	UV Reactor 1 Run Time	% of day flow rate within validated range	% of the day where a Reduction Equivalent Dose (RED) of at least 40mJ/cm <sup>2</sup> (or equivalent) was achieved	<40 mJ/cm <sup>2</sup> for 15 consecutive minutes or more (total time)	>5.0 NTU for 15 consecutive minutes or more (total time)	% of the day flow rate within validated range	% of day UV dose met log credit requirement	< log credit requirement for 15 consecutive minutes or more (total time)	>5.0 NTU for 15 consecutive minutes or more (total time)	% of day where UVT is ≥ 95% of lowest UVT validated	<80% of lowest validated UVT for 15 consecutive minutes or more (total time)
Date	min/day	min/day	95%	95%	0	0	95%	95%	0	0	95%	0
1/10/2024	1440	1222	100.0%	97.1%	5	0	100.0%	97.1%	5	0	100.0%	0
2/10/2024	1440	1170	100.0%	92.4%	61	0	100.0%	90.4%	61	0	99.7%	0
3/10/2024	1440	1121	100.0%	13.6%	815	0	100.0%	12.3%	815	0	4.7%	0
4/10/2024	1440	1069	100.0%	22.6%	676	0	100.0%	20.6%	676	0	0.0%	0
5/10/2024	1439	1190	100.0%	28.5%	664	0	100.0%	22.7%	664	0	0.0%	0
6/10/2024	1440	1039	100.0%	12.2%	762	0	100.0%	10.9%	762	0	0.0%	0
7/10/2024	1440	1207	100.0%	34.6%	617	0	100.0%	27.9%	617	0	0.0%	0
8/10/2024	1440	1315	100.0%	27.1%	845	0	100.0%	9.7%	845	0	0.0%	0
9/10/2024	1440	1267	100.0%	8.4%	1077	0	100.0%	7.1%	1077	0	0.0%	0
10/10/2024	1440	1140	100.0%	21.9%	744	0	100.0%	16.3%	744	0	0.0%	0
11/10/2024	1427	1172	100.0%	17.2%	830	0	100.0%	13.6%	830	0	0.7%	0
12/10/2024	1440	1089	100.0%	12.1%	840	0	100.0%	10.5%	840	0	0.0%	0
13/10/2024	1440	1123	100.0%	22.0%	723	0	100.0%	20.9%	723	0	0.0%	0
14/10/2024	1440	1220	100.0%	18.3%	859	0	100.0%	17.0%	859	0	0.0%	0
15/10/2024	1440	1161	100.0%	24.4%	738	0	100.0%	21.9%	738	0	0.0%	0
16/10/2024	1440	1108	100.0%	14.5%	829	0	100.0%	13.6%	829	0	0.0%	0
17/10/2024	1440	1221	100.0%	23.2%	778	0	100.0%	21.3%	778	0	0.0%	0
18/10/2024	1440	1199	100.0%	18.0%	839	0	100.0%	17.1%	839	0	0.0%	0
19/10/2024	1440	1045	100.0%	18.9%	735	0	100.0%	13.6%	735	0	0.0%	0
20/10/2024	1440	1143	100.0%	20.4%	750	0	100.0%	18.6%	750	0	0.0%	0
21/10/2024	1440	1153	100.0%	63.2%	340	0	100.0%	53.9%	340	0	57.9%	0
22/10/2024	1440	1142	100.0%	95.6%	7	0	100.0%	85.1%	7	0	100.0%	0
23/10/2024	1440	1162	100.0%	87.9%	97	0	100.0%	62.0%	97	0	93.5%	0
24/10/2024	1440	1206	100.0%	80.4%	135	0	100.0%	46.5%	135	0	79.3%	0
25/10/2024	1440	572	100.0%	100.0%	0	0	100.0%	76.2%	0	0	93.2%	0
26/10/2024	1440	757	100.0%	75.3%	117	0	100.0%	34.9%	117	0	68.0%	0
27/10/2024	1440	1106	100.0%	51.5%	416	0	100.0%	28.0%	416	0	45.9%	0
28/10/2024	1440	1099	100.0%	27.5%	655	0	100.0%	19.5%	655	0	0.0%	0
29/10/2024	1317	725	100.0%	5.5%	615	0	100.0%	5.1%	615	0	0.0%	0
30/10/2024	1440	1239	100.0%	13.6%	910	0	100.0%	12.3%	910	0	0.0%	0
31/10/2024	1440	1227	100.0%	21.4%	792	0	100.0%	19.0%	792	0	8.7%	0
<b>Number of Days that were Compliant:</b>			31	3	1	31	31	1	31	3	31	
<b>Compliance Percentage Achieved</b>			100%	10%	3%	100%	100%	3%	100%	10%	100%	
<b>Operator / Supplier Comments:</b>						<b>Operator / Supplier Comments:</b>						



Moa Flat will remain on a BWN until the treatment plant demonstrates compliance with Sections 4.10.1.4, and 4.10.2.13 and the distribution network demonstrates compliance with the D3 Rules. The plant does not demonstrate the consistent compliance required to lift the BWN.

- The treatment plant does not consistently achieve the required UV dose to provide assurance that the bacteria in the water has been adequately disinfected by the UV treatment process.
- The treatment plant struggles to achieve the required UV dose and UVT required to provide assurance that protozoa in the water has been adequately disinfected by the UV treatment process.

*E. coli* was not detected in the Moa Flat distribution network during the past seven weeks of monitoring, demonstrating compliance with Rule D3.29. All FAC results analysed were above the minimum requirement of 0.2 mg/L during the past seven weeks of monitoring, demonstrating compliance with Rule D3.19.

All aluminium results analysed from the Moa Flat WTP, and distribution network were below the MAV of 1 mg/L during the past seven weeks of monitoring.

An elevated sampling programme will remain in place while carbon-based media is trialled at the treatment plant.

Moa Flat WTP	Total Aluminium	<i>E. coli</i>	FAC
Samples Collected in the past seven weeks	1	0	0
Compliant Samples collected in the past seven weeks	1	0	0

Moa Flat Distribution Network	Total Aluminium <sup>2</sup>	<i>E. coli</i>	FAC
Samples Collected in the past seven weeks	1	3	8
Compliant Samples collected in the past seven weeks	1	3	8

<sup>2</sup> Includes results received up to 1 November 2024.

Water Treatment - Moa Flat WTP

Treated Water Compliance Report for October 2024

Section 4.10.1.4: Bacterial Rules - Water Disinfected with Ultraviolet Light							Section 4.10.2.13: Protozoal Rules - Ultraviolet Light					
Rule:	T3.15		T3.16	T3.17	T3.18		T3.85	T3.86	T3.87	T3.88	T3.89	T3.90
Requirement:	UV Reactor 1 Run Time	% of day flow rate within validated range	% of the day where a Reduction Equivalent Dose (RED) of at least 40mJ/cm <sup>2</sup> (or equivalent) was achieved	<40 mJ/cm <sup>2</sup> for 15 consecutive minutes or more (total time)	>5.0 NTU for 15 consecutive minutes or more (total time)		% of the day flow rate within validated range	% of day UV dose met log credit requirement	< log credit requirement for 15 consecutive minutes or more (total time)	>5.0 NTU for 15 consecutive minutes or more (total time)	% of day where UVT is ≥ 95% of lowest UVT validated	<80% of lowest validated UVT for 15 consecutive minutes or more (total time)
Date	min/day	min/day	95%	95%	0	0	95%	95%	0	0	95%	0
1/10/2024	1395	1395	100.0%	100.0%	0	0	100.0%	98.4%	0	0	100.0%	0
2/10/2024	1366	1366	100.0%	100.0%	0	0	100.0%	98.8%	0	0	100.0%	0
3/10/2024	1328	1328	100.0%	100.0%	0	0	100.0%	97.8%	0	0	100.0%	0
4/10/2024	1379	1379	100.0%	98.9%	0	0	100.0%	98.8%	0	0	100.0%	0
5/10/2024	1410	1410	100.0%	100.0%	0	0	100.0%	99.8%	0	0	100.0%	0
6/10/2024	1396	1396	100.0%	100.0%	0	0	100.0%	100.0%	0	0	100.0%	0
7/10/2024	1410	1410	100.0%	100.0%	0	0	100.0%	100.0%	0	0	100.0%	0
8/10/2024	1410	1410	98.9%	99.7%	0	0	98.9%	97.7%	0	0	100.0%	0
9/10/2024	1360	1360	98.9%	100.0%	0	0	98.9%	98.6%	0	0	100.0%	0
10/10/2024	1331	1331	100.0%	100.0%	0	0	100.0%	98.7%	0	0	100.0%	0
11/10/2024	1401	1401	100.0%	100.0%	0	0	100.0%	99.0%	0	0	100.0%	0
12/10/2024	1395	1395	100.0%	98.1%	12	0	100.0%	95.9%	12	0	98.5%	0
13/10/2024	1374	1374	98.9%	100.0%	0	0	98.9%	99.5%	0	0	99.9%	0
14/10/2024	1379	1379	100.0%	99.9%	0	0	100.0%	97.0%	0	0	100.0%	0
15/10/2024	1410	1410	100.0%	100.0%	0	0	100.0%	96.4%	0	0	100.0%	0
16/10/2024	1410	1410	98.9%	100.0%	0	0	98.9%	96.4%	0	0	100.0%	0
17/10/2024	1395	1395	100.0%	100.0%	0	0	100.0%	97.8%	0	0	100.0%	0
18/10/2024	1410	1410	100.0%	100.0%	0	0	100.0%	96.1%	0	0	100.0%	0
19/10/2024	1397	1397	100.0%	100.0%	0	0	100.0%	97.9%	0	0	100.0%	0
20/10/2024	1410	1410	100.0%	100.0%	0	0	100.0%	98.2%	0	0	100.0%	0
21/10/2024	1396	1396	100.0%	100.0%	0	0	100.0%	95.1%	0	0	100.0%	0
22/10/2024	1382	1382	98.9%	98.1%	9	0	98.9%	96.5%	9	0	99.8%	0
23/10/2024	1380	1380	100.0%	98.9%	1	0	100.0%	90.7%	1	0	100.0%	0
24/10/2024	1206	1206	98.8%	91.4%	83	0	98.8%	82.7%	83	0	100.0%	0
25/10/2024	1410	1410	98.9%	98.8%	3	0	98.9%	96.2%	3	0	100.0%	0
26/10/2024	1325	1325	97.8%	100.0%	0	0	97.8%	94.5%	0	0	100.0%	0
27/10/2024	1359	1359	100.0%	99.6%	0	0	100.0%	97.5%	0	0	100.0%	0
28/10/2024	1410	1410	98.9%	100.0%	0	0	98.9%	99.9%	0	0	100.0%	0
29/10/2024	1396	1396	98.9%	100.0%	0	0	98.9%	100.0%	0	0	100.0%	0
30/10/2024	1388	1388	98.9%	95.8%	43	0	98.9%	78.0%	43	0	96.8%	0
31/10/2024	1304	1304	100.0%	68.7%	362	0	100.0%	43.9%	362	0	46.7%	0
Number of Days that were Compliant:		31	29	24	31	31	31	26	24	31	30	31
Compliance Percentage Achieved		100%	94%	77%	100%	100%	100%	84%	77%	100%	97%	100%
Notes												

Waitahuna will remain on a BWN until the treatment plant demonstrates compliance with Sections 4.10.1.1, and 4.10.2.5 and the distribution networks demonstrate compliance with the D3 Rules. The plant does not demonstrate the consistent compliance required to lift the BWN.

- The treatment plant struggles to achieve the required contact time, and turbidity levels to provide assurance that the bacteria in the water has been adequately disinfected with chlorine.
- The treatment plant struggles to achieve the required turbidity levels to provide assurance that protozoa in the water has been adequately removed by the coagulation, flocculation, sedimentation, and filtration process.
- Low levels of residual chlorine detected in two of the three distribution networks limits compliance with Rule D3.19.

*E. coli* was not detected in any of the distribution networks during the past seven weeks of monitoring, demonstrating compliance with Rule D3.29.

Of the eight FAC samples analysed from the Balmoral 1 distribution two samples were below 0.1 mg/L during the past seven weeks of monitoring, failing to comply with Rule D3.19.

Of the eight FAC samples analysed from the Balmoral 2 distribution three samples were below 0.1 mg/L during the past seven weeks of monitoring, failing to comply with Rule D3.19.

Of the eight FAC samples analysed from the Tuapeka East distribution two samples were below the 0.1 mg/L during the past seven weeks of monitoring, failing to comply with Rule D3.19.

One aluminium result analysed from the Balmoral 1 distribution network was above the MAV of 1 mg/L during the past seven weeks of monitoring. The most recent non-compliant residual was detected on 16 October 2024.

All aluminium results analysed from the Balmoral 2 and Tuapeka East distribution networks were below the MAV of 1 mg/L during the past seven weeks of monitoring.

One aluminium result analysed from the Balmoral WTP was above the MAV of 1 mg/L during the past seven weeks of monitoring. The most recent non-compliant residual was detected on 16 October 2024.

Waitahuna WTP	Total Aluminium <sup>3</sup>	E. coli	FAC
Samples Collected in the past seven weeks	1	0	0
Compliant Samples collected in the past seven weeks	0	0	0

Balmoral 1 Distribution Network	Total Aluminium	E. coli	FAC
Samples Collected in the past seven weeks	2	4	8
Compliant Samples collected in the past seven weeks	1	4	6

Balmoral 2 Distribution Network	Total Aluminium	E. coli	FAC
Samples Collected in the past seven weeks	1	5	8
Compliant Samples collected in the past seven weeks	1	5	5

Tuapeka East Distribution Network	Total Aluminium	E. coli	FAC
Samples Collected in the past seven weeks	2	4	8
Compliant Samples collected in the past seven weeks	1	4	6

### Water Treatment - Waitahuna WTP

#### Treated Water Compliance Report for October 2024

##### Section 4.10.2.5: Protozoal Rules - Coagulation, Flocculation, Sedimentation, and Filtration

Rule:		Filter 1						
	Plant Run Time	Filter 1 Run Time	T3.39	T3.40	T3.43	T3.44	T3.47	T3.48
			% of day where turbidity was <= 0.3 NTU	# consecutive 15 min periods where turbidity was > 0.5 NTU	% of day where turbidity was <= 0.15 NTU	# consecutive 15 min periods where turbidity was > 0.5 NTU	% of day where turbidity was <= 0.1 NTU	# consecutive 15 min periods where turbidity was > 0.3 NTU
Date	min/day	min/day	95%	0	95%	0	95%	0
1/10/2024	789	789	12.3%	400	7.0%	400	3.2%	407
2/10/2024	496	496	0.0%	146	0.0%	146	0.0%	146
3/10/2024	641	641	0.0%	165	0.0%	165	0.0%	165
4/10/2024	977	977	0.0%	764	0.0%	764	0.0%	764
5/10/2024	878	878	0.0%	570	0.0%	570	0.0%	570
6/10/2024	955	955	0.0%	703	0.0%	703	0.0%	703
7/10/2024	685	685	6.6%	420	4.2%	420	0.7%	428
8/10/2024	647	647	0.0%	283	0.0%	283	0.0%	283
9/10/2024	709	709	0.0%	217	0.0%	217	0.0%	217
10/10/2024	870	870	0.0%	520	0.0%	520	0.0%	520
11/10/2024	814	814	0.0%	392	0.0%	392	0.0%	392
12/10/2024	724	724	0.0%	469	0.0%	469	0.0%	469
13/10/2024	537	537	4.5%	405	0.0%	405	0.0%	425
14/10/2024	1277	1277	0.0%	1151	0.0%	1151	0.0%	1151
15/10/2024	1062	1062	0.0%	793	0.0%	793	0.0%	793
16/10/2024	962	962	5.8%	661	2.1%	661	0.1%	677
17/10/2024	597	597	0.0%	317	0.0%	317	0.0%	317
18/10/2024	800	800	0.0%	702	0.0%	702	0.0%	702
19/10/2024	1187	1187	0.0%	1019	0.0%	1019	0.0%	1019
20/10/2024	860	860	0.0%	804	0.0%	804	0.0%	804
21/10/2024	1229	1229	0.0%	1061	0.0%	1061	0.0%	1061
22/10/2024	559	559	8.1%	336	1.8%	336	0.0%	389
23/10/2024	668	668	4.8%	429	0.9%	429	0.1%	440
24/10/2024	805	805	1.0%	586	0.0%	586	0.0%	607
25/10/2024	135	135	0.0%	107	0.0%	107	0.0%	107
26/10/2024	1022	1022	0.0%	683	0.0%	683	0.0%	683
27/10/2024	883	883	0.0%	603	0.0%	603	0.0%	603
28/10/2024	876	876	0.0%	512	0.0%	512	0.0%	512
29/10/2024	694	694	0.0%	414	0.0%	414	0.0%	414
30/10/2024	884	884	0.0%	562	0.0%	562	0.0%	562
31/10/2024	883	883	0.0%	531	0.0%	531	0.0%	531
Number of Days that were Compliant			0	0	0	0	0	0
Compliance Percentage Achieved			0%	0%	0%	0%	0%	0%
Operator / Supplier Comments:								

<sup>3</sup> Includes results received up to 1 November 2024.

## Water Treatment - Waitahuna WTP

Treated Water Compliance Report for October 2024

Section 4.10.1.1: Bacterial Rules - Water Disinfected with Chlorine						
Rule:		T3.2	T3.3	T3.4	T3.5	T3.6
	Requirement: Plant Run Time	% of day C.t value is at least 15 min.mg/L	% of day FACe is $\geq$ 0.2mg/L	Minimum T <sup>10</sup> contact time	% of day where the turbidity of water leaving WTP is < 1.0 NTU	# consecutive 15 min periods where the turbidity of water leaving WTP is > 2.0 NTU
Date	min/day	95%	100%	5	95%	0
1/10/2024	789	18.0%	100%	2	18.9%	323
2/10/2024	496	5.0%	100%	2	0.0%	143
3/10/2024	641	5.8%	78%	2	0.0%	165
4/10/2024	977	3.6%	96%	2	0.0%	764
5/10/2024	878	5.9%	89%	2	0.0%	570
6/10/2024	955	6.5%	100%	2	0.0%	703
7/10/2024	685	11.5%	100%	2	9.6%	403
8/10/2024	647	5.4%	100%	1	0.0%	283
9/10/2024	709	5.2%	100%	2	0.0%	217
10/10/2024	870	6.3%	100%	2	0.0%	520
11/10/2024	814	6.3%	100%	2	0.0%	392
12/10/2024	724	3.6%	100%	2	0.0%	469
13/10/2024	537	6.5%	100%	1	30.5%	13
14/10/2024	1277	5.7%	100%	2	0.0%	193
15/10/2024	1062	20.6%	100%	2	0.0%	412
16/10/2024	962	12.5%	100%	2	10.6%	101
17/10/2024	597	4.4%	100%	2	0.0%	167
18/10/2024	800	54.0%	100%	2	22.4%	40
19/10/2024	1187	13.1%	97%	2	0.0%	878
20/10/2024	860	19.0%	100%	1	8.7%	460
21/10/2024	1229	5.7%	100%	2	0.0%	1061
22/10/2024	559	66.9%	100%	2	30.1%	1
23/10/2024	668	29.2%	100%	1	12.0%	37
24/10/2024	805	37.8%	100%	2	11.4%	279
25/10/2024	135	17.8%	100%	3	5.2%	88
26/10/2024	1022	4.0%	100%	2	0.0%	683
27/10/2024	883	3.3%	100%	2	0.0%	603
28/10/2024	876	2.7%	99%	2	0.0%	512
29/10/2024	694	9.8%	100%	2	0.0%	414
30/10/2024	884	20.8%	100%	2	0.0%	512
31/10/2024	883	7%	100%	2	0.0%	531
Number of Days that were Compliant:		0	26	0	0	0
Compliance Percentage Achieved		0%	84%	0%	0%	0%
Operator / Supplier Comments:						

## 1.5 Disinfection By-products

Disinfection by-products (DBP) are formed when disinfectants like chlorine interact with natural organic matter in the source water. The pH of the water, length of time chlorine is in contact with the organic matter, temperature, and cleanliness of the distribution network all contribute to the formation of DBPs. The increased concentration of chlorine in the water causes an increase in DBP formation.

The formation of DBPs is impacted by increased temperatures, so it would be expected that there will be more DBPs formed in spring and summer.

The type of DBP formed depends on the pH. The types found in the Waitahuna and Milton distribution networks are associated with lower water pH (6.5 – 7.5).

Waitahuna Supply				
Date	Location	Dichloroacetic acid (MAV 0.05 mg/L)	Trichloroacetic Acid (MAV 0.2 mg/L)	FAC (mg/L)
1/8/2024	Waitahuna WTP	0.026	<0.05	
7/8/2024	Balmoral 1	0.049	0.12	1.41
	Balmoral 2	0.049	0.10	0.60
	Tuapeka East	0.064	0.18	0.85
21/8/2024	Balmoral 2	0.055	0.15	0.45
	Balmoral 1	0.050	0.14	0.78
	Balmoral 2	0.065	0.16	0.30
	Tuapeka East	0.049	0.14	0.48
2/9/2024	Waitahuna WTP	0.019	<0.05	
4/9/2024	Balmoral 2	0.040	0.16	0.62
3/10/2024	Balmoral 1	0.064	0.18	0.50
	Balmoral 2	0.066	0.19	0.42
	Tuapeka East	<0.005	0.18	<0.05
	Waitahuna WTP	0.068	0.11	

Milton Supply				
Date	Location	Dichloroacetic acid (MAV 0.05 mg/L)	Trichloroacetic Acid (MAV 0.2 mg/L)	FAC (mg/L)
1/8/2024	Milton WTP	0.012	<0.05	
7/8/2024	Milton OCF	0.028	0.06	1.74
	Milton Town	0.036	0.08	1.28
2/9/2024	Milton WTP	<0.005	<0.05	
4/9/2024	Milton OCF	0.006	<0.05	2.20
	Milton Town	0.093	0.11	1.98
3/10/2024	Milton WTP	0.008	<0.05	2.28
	Milton OCF	<0.005	<0.05	2.3
	Milton Town	0.011	<0.05	1.81

Public health advice regarding DBPs, and water treatment is that the microbiological quality of the water should not be compromised to minimise DBP formation. Reducing the concentration of chlorine in the treated water to prevent DBP formation could result in increased levels of *E. coli*. Adverse health effects from DBPs are based upon long-term continuous exposures.

Improvement: Monthly Compliance achieved / anticipated	No Change (may be a non-compliance if continues)	Consent non-compliance
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Balclutha WWTP	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
<u>Discharge Volume Limit</u> 11 non-compliances in Oct 2024.								
<u>Discharge Parameters:</u> Compliant results in Oct 2024.								
<u>Dissolved Oxygen:</u> Compliant average.								
<u>HSE access:</u> Concerns for samplers and operators – existing workarounds are in place.								

Balclutha Wastewater Treatment Plant								
Resource Consent Compliance Report								
RM17.328.01								
Final Discharge Results								
Plant Effluent Sample Results (YTD) Monthly								
ORC Site Name	Parameter	CBOD5	TSS	E. Coli	NH -N	TP	DO	pH
		g/m <sup>3</sup>	g/m <sup>3</sup>	cfu/100 mL	g/m <sup>3</sup>	g/m <sup>3</sup>	g/m <sup>3</sup>	
	8 out of 12	40	70	55000	20	7.2	2	9
	2 out of 12	85	150	350000	25	8.9		6.5
Balclutha Wastewater Treatment Plant	2/11/2023	23	29	10000	28.5	1.47	0.8	7.5
Balclutha Wastewater Treatment Plant	4/12/2023	33	26	1600	33.5	2.62	2.6	7.8
Balclutha Wastewater Treatment Plant	4/01/2024	37	49	1000	31.1	2.97	5.5	7.6
Balclutha Wastewater Treatment Plant	8/02/2024	39	66	2200	28.9	2.74	6.2	8.0
Balclutha Wastewater Treatment Plant	6/03/2024	24	53	800	29.2	2.54	11.8	7.6
Balclutha Wastewater Treatment Plant	3/04/2024	24	36	5700	32.7	3.26	0.8	7.6
Balclutha Wastewater Treatment Plant	6/05/2024	30	30	210000	33.3	2.92	0.6	7.5
Balclutha Wastewater Treatment Plant	6/06/2024	32	61	20000	42.7	3.58	1.0	7.4
Balclutha Wastewater Treatment Plant	3/07/2024	22	23	10000	31.7	2.73	7.0	7.7
Balclutha Wastewater Treatment Plant	2/08/2024	17	28	35000	28.3	2.12	6.0	7.4
Balclutha Wastewater Treatment Plant	4/09/2024	21	33	9000	27.8	2.2	6.0	7.7
Balclutha Wastewater Treatment Plant	11/10/2024	36	44	2400	12.9	1.32	12.0	7.0
Number of Samples		12	12	12	12	12		
8 out of 12 consecutive samples	Limit of non-compliant samples	8	8	8	8	8		
	Actual	0	0	1	11	0		
Median Compliant?		Yes	Yes	Yes	No	Yes		
2 out of 12 consecutive samples	Limit of non-compliant samples	2	2	2	2	2		
	Actual	0	0	0	11	0		
95th Compliant?		Yes	Yes	Yes	No	Yes		

#### Balclutha WWTP compliance overview:

- The Balclutha WWTP exceeded its regular 2500 m<sup>3</sup> daily discharge limit on 11 days during October 2024, however there is a 3500 m<sup>3</sup> consented allowance for 1 in 2-year rainfall events. The exceedances were attributed to the wet weather event in early October.
- The Balclutha WWTP complied with all discharge parameter limits during October 2024. This is the first fully compliant month for individual samples since the treatment upgrades were commissioned.
- The Balclutha WWTP must comply with the ammoniacal nitrogen limits for the next nine consecutive months to become fully compliant.
- Recycle blowers and pumps are installed, the curtain wall and rock baffle have been commissioned and the inlet screen works for connection are underway with both the main and Telford lines.

Clinton WWTP	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
Discharge Volume Limit: 13 non-compliances in Oct 2024.								
Discharge Parameters: Compliant results in Oct 2024.								
Dissolved Oxygen: Compliant average.								
HSE access: Concerns for samplers and operators – existing workarounds are in place.								

Clinton Wastewater Treatment Plant								
Resource Consent Compliance Report								
RC No.:17.092.01; Expiry Date: 5/5/2027								
Final Discharge Results								
Plant Effluent Sample Results (YTD)								
ORC Site Name		DO	pH	cBOD <sub>5</sub>	TSS	E. Coli	NH <sub>3</sub> -N	TP
		g/m <sup>3</sup>		g/m <sup>3</sup>	g/m <sup>3</sup>	cfu/100ml	g/m <sup>3</sup>	g/m <sup>3</sup>
		Lower Limit	9					
		Median Limit			24	26	550	13
95th Percentile Limit				37	46	3400	17.5	11
Clinton STP Final Effluent	2/11/2023	5.0	7.3	10	23	2100	12.9	4.7
Clinton STP Final Effluent	7/12/2023	5.0	7.8	12	19	2600	11.4	4.1
Clinton STP Final Effluent	4/01/2024	3.0	7.8	4	13	6000	12.8	5.4
Clinton STP Final Effluent	8/02/2024	9.5	7.8	22	40	2100	6.9	6.2
Clinton STP Final Effluent	4/03/2024	10.3	7.9	20	53	2300	6.8	6.0
Clinton STP Final Effluent	4/04/2024	12.0	7.6	38	40	350	6.5	5.5
Clinton STP Final Effluent	6/05/2024	14.9	7.9	41	39	120	8.3	5.1
Clinton STP Final Effluent	5/06/2024	10.1	7.3	10	21	360	10.4	3.3
Clinton STP Final Effluent	3/07/2024	10.0	7.5	7	26	900	11.9	3.1
Clinton STP Final Effluent	2/08/2024	10.0	7.2	10	18	700	10.4	2.7
Clinton STP Final Effluent	4/09/2024	7.0	8.1	10	17	30	12.7	2.9
Clinton STP Final Effluent	9/10/2024	5.6	7.8	6	14	10	12.0	1.9
Number of Samples				12	12	12	12	12
8 out of 12 consecutive samples	Limit of non-compliant samples			8	8	8	8	8
	Actual			2	4	7	0	7
Median Compliant?				Yes	Yes	Yes	Yes	Yes
2 out of 12 consecutive samples	Limit of non-compliant samples			2	2	2	2	2
	Actual			2	1	1	0	0
95th Compliant?				Yes	Yes	Yes	Yes	Yes

#### Clinton WWTP compliance overview:

- The Clinton WWTP failed to comply with the daily discharge limit on 13 days during October 2024. The treatment plant is susceptible to wet weather and regularly breaches the 400 m<sup>3</sup> daily limit.
- The Clinton WWTP complied with all discharge parameter limits during September and October 2024.
- The Clinton WWTP is currently fully compliant with the consented discharge limits.
- The UV has been commissioned and the data from the last two sample cycles have shown E. coli results of <10 cfu/100ml at the UV outlet on both instances.
- Continuous monitoring for Dissolved Oxygen, pH and TSS is installed.
- Aluminium dosing is operational.



Waihola WWTP	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
Discharge Volume Limit: 22 non-compliances in Oct 2024.								
Discharge Parameters: Compliant results in Oct 2024.								
Dissolved Oxygen: Compliant average.								
HSE access: No new H&S issues have been identified at this site.								

Waihola Wastewater Treatment Plant								
Resource Consent Compliance Report								
RM15.364.01 Expire date May 2028								
Final Effluent (YTD)								
ORC Site Name	Date	CBOD <sub>5</sub>	TSS	E. Coli	NH <sub>3</sub> -N	TP	DO	pH
		g/m <sup>3</sup>	g/m <sup>3</sup>	cfu/100 ml	g/m <sup>3</sup>	g/m <sup>3</sup>	g/m <sup>3</sup>	
	median	75	100	80000	23	5.7		9
95 percentile	140	175	315000	31	8.2			6.5
Waihola Wastewater Treatment Plant	8/11/2023	16	37	5400	27.9	6.64	7.8	7.3
Waihola Wastewater Treatment Plant	6/12/2023	15	122	1600	31.5	9.15	4.2	7.1
Waihola Wastewater Treatment Plant	4/01/2024	12	33	6400	37.5	9.87	10.8	9.3
Waihola Wastewater Treatment Plant	7/02/2024	8	29	780	41.7	11.6	4.6	7.1
Waihola Wastewater Treatment Plant	4/03/2024	14	52	4800	44.3	8.78	0.5	7.5
Waihola Wastewater Treatment Plant	5/04/2024	22	17	10	51.9	8.86	6.6	7.3
Waihola Wastewater Treatment Plant	6/05/2024	16	19	1400	30.3	4.91	6.9	7.5
Waihola Wastewater Treatment Plant	5/06/2024	10	26	10000	26.0	5.27	6.5	7.5
Waihola Wastewater Treatment Plant	3/07/2024	10	22	6500	12.3	4.14	6.9	7.4
Waihola Wastewater Treatment Plant	5/08/2024	10	19	8000	15.9	4.38	3.0	7.4
Waihola Wastewater Treatment Plant	3/09/2024	13	26	7500	21.6	5.99	5.0	7.4
Waihola Wastewater Treatment Plant	11/10/2024	6	17	210	14.8	3.29	8.0	7.3
Number of Samples		12	12	12	12	12		
8 out of 12 consecutive samples	Limit of non-compliant samples	8	8	8	8	8		
	Actual	0	1	0	8	7		
Median Compliant?		Yes	Yes	Yes	Yes	Yes		
2 out of 12 consecutive samples	Limit of non-compliant samples	2	2	2	2	2		
	Actual	0	0	0	5	5		
95th Compliant?		Yes	Yes	Yes	No	No		

#### Waihola WWTP compliance overview:

- The Waihola WWTP failed to comply with the daily discharge limit of 160 m<sup>3</sup> on 22 days during October 2024. This was largely caused by the wet weather event in early October.
- The treatment plant has been discharging outside of its consented discharge period to help reduce pond levels.
- The Waihola WWTP complied with all discharge parameter limits during October 2024.
- The Waihola WWTP must remain compliant with the ammoniacal nitrogen and Total Phosphorus limits for the next four consecutive months to become fully compliant with the consented discharge limits.
- Waihola has commissioned its BioShells and curtain wall.

Milton WWTP	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
<u>Discharge Volume Limit:</u> 20 non-compliances in Oct 2024.								
<u>Discharge Parameters:</u> Compliant results in Oct 2024.								
<u>Treatment Plant Bypass:</u> Partially treated effluent bypassed the treatment plant on nine days.								
<u>HSE concerns:</u> Raised by sampling staff, ORC & operators regarding safe access to sample locations and below ground maintenance pits – existing workarounds are in place.								

Milton Wastewater Treatment Plant Resource Consent Compliance Report RC No.:2007.090_V1; Expiry Date: 20/05/2044 Effluent Sample Results (YTD) CDCW-16:										
		pH	CBOD g/m3	TSS g/m3	NH3-N (Summer) Nov-Mar	NH3-N (Winter) Apr-Oct	TN g/m3	TP g/m3	E.coli cfu/100mL	
Lower Limit		6.5								
Upper Limit		9	30	40	10	19	22	14	2100	
ORC Site Name	Sample Date									
Milton STP Final Effluent	10/10/2024	6.9	9	32		2.24	13	2.1	100	
Milton STP Final Effluent	2/09/2024	7.2	6	12		7.63	17.1	3.1	10	
Milton STP Final Effluent	8/08/2024	7	7	14		5.83	19.9	3.6	10	
Milton STP Final Effluent	3/07/2024	6.9	6	18		5.53	16	2.3	90	
Milton STP Final Effluent	5/06/2024	6.9	7	16		12.6	20.8	4.5	10	
Milton STP Final Effluent	8/05/2024	7	8	16		11.5	25.3	5.5	10	
Milton STP Final Effluent	3/04/2024	7	6	13		8.78	21.6	5.1	2000	
Milton STP Final Effluent	4/03/2024	7.2	6	19	9.4		21.1	5.3	70	
Milton STP Final Effluent	7/02/2024	7.2	6	21	9.0		20.2	5.2	1100	
Milton STP Final Effluent	4/01/2024	7.6	8	17	5.2		21.1	4.5	460	
Milton STP Final Effluent	7/12/2023	7.6	8	31	7.0		17.8	5.1	150	
Milton STP Final Effluent	9/11/2023	6.8	7	8	9.0		20.3	3.8	1300	
Milton STP Final Effluent	6/10/2023	7.4	7	22		8.04	17.9	3.6	360	
Milton STP Final Effluent	5/09/2023	7.4	10	8		10.6	20.7	3.9	90	
Milton STP Final Effluent	2/08/2023	7	6	10		4.61	13.2	1.9	70	
Milton STP Final Effluent	5/07/2023	7.2	6	48		6.35	14.5	3.0	140	
Milton STP Final Effluent	7/06/2023	7	15	18		13.7	20.5	4.4	2900	
Milton STP Final Effluent	5/05/2023	6.5	14	77		9.03	17	7.0	1200	
Milton STP Final Effluent	4/04/2023	7.3	14	19		7.54	15.1	6.6	8000	
Milton STP Final Effluent	2/03/2023	7.4	12	23	10.4		22.8	6.1	4800	
Milton STP Final Effluent	2/02/2023	7	11	16	11.5		16.6	6.9	4100	
Milton STP Final Effluent	6/01/2023	6.8	24	25	9.1		20	6.8	8000	
Milton STP Final Effluent	2/10/2022	6.8	13	38	7.4		22.7	5.0	900	
Milton STP Final Effluent	3/11/2022				5.4					
90th Percentile Limit			30	40	10		19	22	14	2100
90th Percentile (Last 10 Results)		7.2	8.1	22.1	10.5		11.6	22.0	5.3	1190
95th Percentile Limit							25			
95th Percentile (Last 10 Results)							11.6			
Geometric Mean Limit										400
Geometric Mean (Last 10 Results)										76

### Milton WWTP compliance overview:

- The Milton WWTP failed to comply with the pH discharge limit of 1,625 m<sup>3</sup> on 20 days during October 2024. This was largely caused by the wet weather event in early October.
- The Milton WWTP discharged partially treated effluent to the Tokomairiro River on nine days during October 2024. The discharge of partially treated effluent is currently consented.
- The Milton WWTP complied with all discharge parameter limits during October 2024. This site has complied with all discharge parameters since June 2024.
- The Milton WWTP is likely to achieve full compliance with the consented discharge limits following analysis of the November 2024 samples.

Kaitangata WWTP	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
Discharge Volume Limit Compliant.								
Pond Overflow Pond overflowed for ten days.								
Discharge Parameters: Compliant results in Oct 2024.								
HSE access: Concerns for samplers and operators – existing workarounds are in place.								

Kaitangata Wastewater Treatment Plant Resource Consent Compliance Report RC No.: RM14.001.01; Expiry Date: 21/03/2049 Plant Discharge Volume (m <sup>3</sup> ) Plant Effluent Sample Results (YTD)									
ORC Site Name		pH	BOD	TSS	NH -N	TN	TP	E.coli	
			g/m3	g/m3	g/m3	g/m3	g/m3	cfu/100mL	
		Lower Limit	6.5	20	30	20	35	10	260
		Upper Limit	9	20	30	20	35	10	260
Kaitangata Oxidation Pond Final Effluent	2/11/2023	7.9	8	3	29.0	33.6	1.0	5	
Kaitangata Oxidation Pond Final Effluent	4/12/2023	7.8	4	3	31.6	35.3	1.1	5	
Kaitangata Oxidation Pond Final Effluent	4/01/2024	8.0	6	3	23.5	28.6	0.9	5	
Kaitangata Oxidation Pond Final Effluent	7/02/2024	8.6	3	3	14.0	19.1	1.1	5	
Kaitangata Oxidation Pond Final Effluent	6/03/2024	7.5	3	3	23.3	29.7	0.4	20	
Kaitangata Oxidation Pond Final Effluent	3/04/2024	7.8	4	3	18.5	27	0.1	5	
Kaitangata Oxidation Pond Final Effluent	3/05/2024	8.0	1	6	19.6	22.7	0.1	100	
Kaitangata Oxidation Pond Final Effluent	5/06/2024	7.5	3	6	18.3	20.2	0.0	30	
Kaitangata Oxidation Pond Final Effluent	3/07/2024	7.9	2	5	14.9	18.3	0.0	10	
Kaitangata Oxidation Pond Final Effluent	5/08/2024	7.7	6	6	17.6	24.3	1.6	10	
Kaitangata Oxidation Pond Final Effluent	4/09/2024	7.5	6	13	0.1	0.749	0.1	10	
Kaitangata Oxidation Pond Final Effluent	3/10/2024	7.8	3	6	14.1	20.3	1.1	10	
9 out of 10 consecutive samples not to exceed	Non-compliant Samples	0	0	0	2	0	0	0	
	Limit of non-compliant samples	1	1	1	1	1	1	1	
	Compliant?	Yes	Yes	Yes	No	Yes	Yes	Yes	

#### Kaitangata WWTP compliance overview:

- The Kaitangata WWTP remained compliant with the daily discharge limit during October 2024. This was largely limited by the treatment capacity of the membrane units.
- The Kaitangata WWTP discharged partially treated effluent to the Mata-Au on ten days during October 2024. This was largely caused by the wet weather event in early October and the limited treatment capacity of the membrane units.
- The Kaitangata WWTP complied with all discharge parameter limits during October 2024. This site has complied with all discharge parameters since April 2024.
- The Kaitangata WWTP is likely to achieve full compliance with the consented discharge limits following analysis of the November 2024 samples. CDC has requested to cancel the 2022 abatement notice issued against parameter non-compliances.

Heriot WWTP	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
Discharge Volume Limit: Compliant.								
Pond Overflow Compliant.								
Discharge Parameters: Compliant results in Oct 2024.								

Heriot Wastewater Treatment Plant Resource Consent Compliance Report RC No.:RM13.443.01; Expiry Date: 28/02/2049 Final Effluent Sample Results (YTD)								
ORC Site Name		NH -N	BOD	E.coli	pH	TSS	TN	TP
		g/m3	g/m3	cfu/100mL		g/m3	g/m3	g/m3
		Lower Limit	20	20	260	6.5	30	35
Upper Limit	22.9	3	10	9.2	6	26.8	3.4	
Heriot Oxidation Pond Final Effluent	2/11/2023	19.8	2	10	6.8	3	24.8	4.8
Heriot Oxidation Pond Final Effluent	4/12/2023	19.3	2	5	8.0	3	26.5	5.3
Heriot Oxidation Pond Final Effluent	4/01/2024	7.55	10	5	7.9	3	11.5	4.8
Heriot Oxidation Pond Final Effluent	7/02/2024	11.4	2	10	7.8	3	15.8	5.2
Heriot Oxidation Pond Final Effluent	6/03/2024	34.4	6	50	7.6	3		6.0
Heriot Oxidation Pond Final Effluent	29/04/2024	14.6	6	10	7.6	6	36.0	5.7
Heriot Oxidation Pond Final Effluent	6/05/2024	31.2	4	10	7.8	6	32.6	4.0
Heriot Oxidation Pond Final Effluent	7/06/2024	27.6	5	10	7.7	6	30.3	3.8
Heriot Oxidation Pond Final Effluent	5/07/2024	28.7	9	10	7.4	6	32.6	4.7
Heriot Oxidation Pond Final Effluent	5/08/2024	23.1	6	10	7.9	13	28.4	3.1
Heriot Oxidation Pond Final Effluent	6/09/2024	11.6	3	10	7.6	6	17.0	2.2
9 out of 10 consecutive samples not to exceed	Non-compliant Samples	5	0	0	0	0	1	0
	Limit of non-compliant samples	1	1	1	1	1	1	1
	Compliant?	No	Yes	Yes	Yes	Yes	Yes	Yes

#### Heriot WWTP compliance overview:

- The Heriot WWTP remained compliant with the daily discharge limit during October 2024. The treatment plant rarely experiences issues caused by wet weather events.
- The Heriot WWTP complied with all discharge parameter limits during October 2024.
- The Heriot WWTP must remain compliant with the ammoniacal nitrogen limit for the next eight consecutive months to become fully compliant with the consented discharge limits.

Kaka Point WWTP	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
Discharge Volume Limit: 14 non-compliances in Oct 2024.								
Pond Overflow: Pond overflowed for two days.								
Discharge Parameters: Compliant results in Oct 2024.								
HSE access: Concerns for samplers and operators – existing workarounds are in place.								

Kaka Point Wastewater Treatment Plant								
Resource Consent Compliance Report								
RC No.: 2008.690; Expiry Date: 26/01/2046								
Final Effluent Sample Results (YTD)								
ORC Site Name	Date	NH -N	BOD	Enterococci	pH	TSS	TN	TP
		g/m <sup>3</sup>	g/m <sup>3</sup>	cfu/ 100mL		g/m <sup>3</sup>	g/m <sup>3</sup>	g/m <sup>3</sup>
Kaka Point Oxidation Pond	9/11/2023	5.3	1.5	10	4.3	7	42.8	7.1
Kaka Point Oxidation Pond	7/12/2023	14.2	10	20	6.8	18	42.0	8.4
Kaka Point Oxidation Pond	4/01/2024	7.3	13	5	7.4	19	39.9	10.3
Kaka Point Oxidation Pond	7/02/2023	38.8	14	30	7.5	9	52.0	8.7
Kaka Point Oxidation Pond	6/03/2024	49.9	12	360	7.6	22	49.5	8.9
Kaka Point Oxidation Pond	3/04/2024	7.8	9	20	6.5	7	46.3	8.2
Kaka Point Oxidation Pond	3/05/2024	9.8	5	100	6.4	9	52.2	7.9
Kaka Point Oxidation Pond	5/06/2024	2.7	6	10	6.6	6	49.6	7.9
Kaka Point Oxidation Pond	3/07/2024	6.2	6	10	7.6	11	19.6	5.9
Kaka Point Oxidation Pond	6/08/2024	9.6	6	10	4.4	17	40.3	5.5
Kaka Point Oxidation Pond	5/09/2024	7.0	6	10	4	47	40.0	5.7
Kaka Point Oxidation Pond	9/10/2024	3.4	10	10	7	28	21.7	3.4
Consented Limit		20	12	140	6.5-9	30	30	10
9 out of 10 consecutive samples not to exceed		Non-compliant Samples		2	2	1	3	1
		Limit of non-compliant samples		1	1	1	1	1
		Compliant?		No	No	Yes	No	Yes

#### Kaka Point WWTP compliance overview:

- The Kaka Point WWTP exceeded the daily discharge limit of 120 m<sup>3</sup> on 14 days during October 2024. This was largely caused by the wet weather event in early October.
- The Kaka Point WWTP discharged partially treated effluent to the Pacific Ocean on two days during October 2024. This was largely caused by the wet weather event in early October.
- The Kaka Point WWTP complied with all discharge parameter limits during October 2024.
- The Kaka Point WWTP must remain compliant with the Total Nitrogen and pH limits for the next eight consecutive months to become fully compliant with the consented discharge limits.

Owaka WWTP	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
<u>Discharge Volume Limit:</u> 22 non-compliances in Oct 2024.								
<u>Pond Overflow:</u> Pond overflowed for eight days.								
<u>Discharge Parameters:</u> Compliant results in Oct 2024.								
<u>HSE access:</u> Concerns for samplers and operators – existing workarounds are in place.								

Owaka Wastewater Treatment Plant								
Resource Consent Compliance Report								
RC No.:2003.680; Expiry Date: 25/11/2045								
Final Effluent Sample Results 90th Percentile Compliance								
ORC Site Name	Sample Date	NH <sub>3</sub> -N	BOD <sub>5</sub>	E.coli	pH	TSS	TN	TP
		g/m <sup>3</sup>	g/m <sup>3</sup>	cfu/100mL		g/m <sup>3</sup>	g/m <sup>3</sup>	g/m <sup>3</sup>
Owaka STP Final Effluent	2/11/2023	11.2	17	110	7.3	46	16.6	4.5
Owaka STP Final Effluent	7/12/2023	6.8	10	5	7.9	17	16.8	4.8
Owaka STP Final Effluent	4/01/2024	5.6	6	30	7.1	8	9.8	6.2
Owaka STP Final Effluent	7/02/2024	5.1	17	170	7.5	45	18.0	7.1
Owaka STP Final Effluent	6/03/2024	0.5	8	10	7.9	3	18.1	6.5
Owaka STP Final Effluent	3/04/2024	15.2	23	20	7.6	33	31.0	8.1
Owaka STP Final Effluent	3/05/2024	10.4	21	60	8.3	54	19.9	3.9
Owaka STP Final Effluent	5/06/2024	1.2	3	120	7.4	6	3.2	0.3
Owaka STP Final Effluent	3/07/2024	0.1	6	440	7.3	22	2.7	0.1
Owaka STP Final Effluent	6/08/2024	0.7	16	10	7.2	33	16.0	2.2
Owaka STP Final Effluent	5/09/2024	0.2	17	10	7.5	33	9.5	1.7
Owaka STP Final Effluent	11/10/2024	0.0	4	50	7.3	20	4.3	0.5
Consented Limit		20	12	260	6.5-9	30	30	10
9 out of 10 consecutive samples not to exceed	Non-compliant Samples	0	5	1	0	5	1	0
	Limit of non-compliant samples	1	1	1	1	1	1	1
	Compliant?	Yes	No	Yes	Yes	No	Yes	Yes

#### Owaka WWTP compliance overview:

- The Owaka WWTP exceeded the daily discharge limit of 360 m<sup>3</sup> on 22 days during October 2024. This was largely caused by the wet weather event in early October.
- The Owaka WWTP discharged partially treated effluent to the Owaka River on eight days during October 2024. This was largely caused by the wet weather event in early October.
- The Owaka WWTP complied with all discharge parameter limits during October 2024.
- The Owaka WWTP must remain compliant with the BOD<sub>5</sub> and TSS limits for the next eight consecutive months to become fully compliant with the consented discharge limits.

Stirling WWTP	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
<u>Discharge Volume Limit:</u> One non-compliance in Oct 2024.								
<u>Pond Overflow:</u> Compliant.								
<u>Discharge Parameters:</u> Compliant results in Oct 2024.								
<u>HSE access:</u> Concerns for samplers and operators – existing workarounds are in place.								

Stirling Wastewater Treatment Plant								
Resource Consent Compliance Report								
RC No.: 2005.193; Expiry Date: 25/11/2045								
Final Effluent Sample Results 90th Percentile Compliance								
ORC Site Name	Date	NH -N	BOD	E. coli	pH	TSS	TN	TP
		g/m <sup>3</sup>	g/m <sup>3</sup>	cfu/100mL		g/m <sup>3</sup>	g/m <sup>3</sup>	g/m <sup>3</sup>
Stirling Oxidation Pond Final Effluent	2/11/2023	1.6	3	5	7.5	21	20.4	6.1
Stirling Oxidation Pond Final Effluent	7/12/2023	0.4	7	5	7.6	18	18.0	6.9
Stirling Oxidation Pond Final Effluent	4/01/2024	1.4	7	10	8.6	18	7.8	7.9
Stirling Oxidation Pond Final Effluent	7/02/2024	6.1	8	10	7.4	11	16.0	8.6
Stirling Oxidation Pond Final Effluent	4/03/2024	9.9	6	140	7.4	14	19.8	7.4
Stirling Oxidation Pond Final Effluent	3/04/2024	7.5	7	10	7.2	19	22.8	6.9
Stirling Oxidation Pond Final Effluent	6/05/2024	7.3	4	10	6.8	6	35.7	5.1
Stirling Oxidation Pond Final Effluent	5/06/2024	31.1	10	10	7.5	16	40.4	5.5
Stirling Oxidation Pond Final Effluent	3/07/2024	7.6	38	10	7.8	26	38.4	5.7
Stirling Oxidation Pond Final Effluent	6/08/2024	12.1	9	20	8.2	22	35.3	5.1
Stirling Oxidation Pond Final Effluent	4/09/2024	4.0	10	10	7.5	40	32.7	5.4
Stirling Oxidation Pond Final Effluent	11/10/2024	11.0	6	10	7.4	13	25.5	4.6
Consented Limit		20	12	260	6.5-9	30	30	10
9 out of 10 consecutive samples not to exceed	Non-compliant Samples	1	1	0	0	1	5	0
	Limit of non-compliant samples	1	1	1	1	1	1	1
	Compliant?	Yes	Yes	Yes	Yes	Yes	No	Yes

### Stirling WWTP compliance overview:

- The Stirling WWTP exceeded the daily discharge limit of 140 m<sup>3</sup> on one day during October 2024. This was largely caused by the wet weather event in early October.
- The Stirling WWTP complied with all discharge parameter limits during October 2024.
- The Stirling WWTP must remain compliant with the Total Nitrogen limit for the next eight consecutive months to become fully compliant with the consented discharge limits.

Lawrence WWTP	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
Discharge Volume Limit: Six non-compliances in Oct 2024.								
Dissolved Oxygen: Compliant average.								
Pond Overflow: Compliant.								
Discharge Parameters: Compliant results in Oct 2024.								

Lawrence Wastewater Treatment Plant Resource Consent Compliance Report RC No.: 2008.308; Expiry Date: 21/01/2046 Final Effluent Sample Results (YTD)								
ORC Site Name	Sample Date	NH -N	BOD	E.coli	pH	TSS	TN	TP
		g/m <sup>3</sup>	g/m <sup>3</sup>	cfu/100mL		g/m <sup>3</sup>	g/m <sup>3</sup>	g/m <sup>3</sup>
Lawrence Oxidation Pond Final Effluent	2/11/2023	20.2	38	10	7.2	30	27.3	8.1
Lawrence Oxidation Pond Final Effluent	7/12/2023	18.0	22	10	7.9	14	35.0	8.3
Lawrence Oxidation Pond Final Effluent	4/01/2024	18.1	12	20	7.1	20	36.8	6.9
Lawrence Oxidation Pond Final Effluent	7/02/2024	15.6	19	10	7.4	53	28.1	9.2
Lawrence Oxidation Pond Final Effluent	6/03/2024	1.5	12	10	7.2	16	41.7	7.2
Lawrence Oxidation Pond Final Effluent	4/04/2024	0.9	12	10	7.7	15	32.2	7.2
Lawrence Oxidation Pond Final Effluent	6/05/2024	18.9	8	10	7.2	11	43.0	6.1
Lawrence Oxidation Pond Final Effluent	5/06/2024	10.2	9	10	6.4	6	37.9	5.0
Lawrence Oxidation Pond Final Effluent	3/07/2024	5.5	6	10	9.8	9	22.0	4.8
Lawrence Oxidation Pond Final Effluent	5/08/2024	5.0	9	90	6.9	13	28.7	4.4
Lawrence Oxidation Pond Final Effluent	5/09/2024	2.3	13	10	7.4	16	22.8	4.0
Lawrence Oxidation Pond Final Effluent	9/10/2024	6.9	6	10	6.8	9	23.1	3.7
Consented Limit		20	12	260	6.5-9	30	30	10
9 out of 10 consecutive samples not to exceed	Non-compliant Samples	0	2	0	2	1	5	0
	Limit of non-compliant samples	1	1	1	1	1	1	1
	Compliant?	Yes	No	Yes	No	Yes	No	Yes

#### Lawrence WWTP compliance overview:

- The Lawrence WWTP exceeded the daily discharge limit of 250 m<sup>3</sup> on six days during October 2024. This was largely caused by the wet weather event in early October.
- The Lawrence WWTP complied with all discharge parameter limits during October 2024.
- The Lawrence WWTP must remain compliant with the Total Nitrogen limit for the next five consecutive months and the pH limit for the next six consecutive months to become fully compliant with the consented discharge limits.



Tapanui WWTP	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
<u>Discharge Volume Limit</u> 31 non-compliances in Oct 2024.								
<u>Pond Overflow</u> Pond overflowed for 20 days.								
<u>Discharge Parameters</u> Compliant results in Oct 2024.								

Tapanui Wastewater Treatment Plant								
Resource Consent Compliance Report								
RC No.2005.246; Expiry Date: 25/11/2045								
Final Effluent Sample Results 90th% Compliance (YTD)								
ORC Site Name	Date	NH -N	BOD	E.coli	pH	TSS	TN	TP
		g/m3	g/m3	cfu/100mL		g/m3	g/m3	g/m3
Tapanui STP Final Effluent	2/11/2023	2.2	9	5	6.7	3	29.1	3.7
Tapanui STP Final Effluent	4/12/2023	4.3	3	5	6.3	3	33.9	3.1
Tapanui STP Final Effluent	4/01/2024	11.1	11	5	6.8	7	25.7	5.3
Tapanui STP Final Effluent	7/02/2024	9.0	10	5	6.9	12	23.4	5.0
Tapanui STP Final Effluent	6/03/2024	12.8	20	90	7.2	15	28.4	4.5
Tapanui STP Final Effluent	5/04/2024	8.0	11	10	6.8	18	20.0	4.5
Tapanui STP Final Effluent	6/05/2024	13.4	10	10	7.6	28	25.1	3.9
Tapanui STP Final Effluent	7/06/2024	3.0	2	10	7.1	6	25.3	2.9
Tapanui STP Final Effluent	5/07/2024	11.7	10	35000	7.2	26	19.5	2.3
Tapanui STP Final Effluent	5/08/2024	10.5	53	60	7.2	86	21.1	2.6
Tapanui STP Final Effluent	6/09/2024	11.1	59	250	7.1	27	16.9	2.2
Tapanui STP Final Effluent	16/10/2024	0.3	6	10	7.1	6	10.5	1.3
Consented Limit		20	12	260	6.5-9	30	30	10
9 out of 10 consecutive samples not to exceed	Non-compliant Samples		0	3	1	0	0	0
	Limit of non-compliant samples		1	1	1	1	1	1
	Compliant?		Yes	No	Yes	Yes	Yes	Yes

#### Tapanui WWTP compliance overview:

- The Tapanui WWTP exceeded the daily discharge limit on 31 days during October 2024. This was largely caused by the wet weather event in early October. The treatment plant is susceptible to wet weather and regularly breaches the 465 m<sup>3</sup> daily discharge limit.
- The Tapanui WWTP discharged partially treated effluent to the Pomahaka River on 20 days during October 2024. This was largely caused by the wet weather event in early October.
- The Tapanui WWTP complied with all discharge parameter limits during October 2024.
- The Tapanui WWTP must remain compliant with the BOD<sub>5</sub> limit for the next eight consecutive months to become fully compliant with the consented discharge limits.
- Tapanui had a Biofiltro bed replacement in August 2024.

## Appendix A: Drinking Water Quality Assurance Rules Technical Details

Section 4.10.1.1 of the DWQARs details the requirements that must be met to provide assurance that bacteria in the water has been adequately disinfected with chlorine. The following rules make up the requirements set out by Section 4.10.1.1:

- Rule T3.2 requires the treated water to achieve a chlorine C.t. value of at least 15 min.mg/L for 95% of the day. The C.t. value is determined by the residual chlorine (mg/L) in the final water and the T10 contact time (Rule T3.4). A low result in either of these values will result in a non-compliant C.t. value.
- Rule T3.4 requires a T<sub>10</sub> disinfectant contact time of at least 5 minutes to be demonstrated. The T10 contact time is determined by the water level in the contact tanks (%) and the flow rate (l/s) of water through those tanks. A low reservoir level or high flow rate can result in a non-compliant T<sub>10</sub> contact time. The continuous monitoring report takes the lowest T10 value from each 24-hour period.
- Rule T3.3 requires the residual chlorine in the final water to remain above 0.2 mg/L for 95% of the day.
- Rule T3.5 requires the turbidity in the final water to remain below 1.0 NTU for 95% of the day.
- Rule T3.6 requires the turbidity in the final water to remain below 2.0 NTU.

Section 4.10.1.4 of the DWQARs details the requirements that must be met to provide assurance that bacteria in the water has been adequately disinfected with Ultraviolet (UV) Light. The following rules make up the requirements set out by Section 4.10.1.4:

- Rule T3.16 requires an applied UV dose of greater than 40 mJ/cm<sup>2</sup> be achieved for 95% of the day.
- Rule T3.17 requires an applied UV dose of not less than 40 mJ/cm<sup>2</sup> be achieved for any consecutive 15-minute period.
- A reduction in UV dose is caused by low lamp intensity, fouling of the lamps, poor quality water, and high flow rate (l/s) through the UV unit.

Section 4.10.2.5 to 4.10.2.7 of the DWQARs details the requirements that must be met to provide assurance that protozoa in the water has been adequately removed by the coagulation, flocculation, sedimentation, and filtration process. The following rules make up the requirements set out by Section 4.10.2.5:

- Rule T3.39 requires the turbidity in the final water to remain below 0.3 NTU for 95% of the day.
- Rule T3.40 requires the turbidity in the final water to not exceed 0.5 NTU for any consecutive 15-minute period.
- The maximum credit achieved through compliance with Section 4.10.2.5 is 3-log.

The following rules make up the requirements set out by Section 4.10.2.6:

- Rule T3.43 requires the turbidity in the final water to remain below 0.15 NTU for 95% of the day.

- Rule T3.44 requires the turbidity in the final water to not exceed 0.5 NTU for any consecutive 15-minute period.
- The maximum credit achieved through compliance with Section 4.10.2.6 is 3.5-log.

The following rules make up the requirements set out by Section 4.10.2.7:

- Rule T3.47 requires the turbidity in the final water to remain below 0.1 NTU for 95% of the day.
- Rule T3.48 requires the turbidity in the final water to not exceed 0.3 NTU for any consecutive 15-minute period.
- The maximum credit achieved through compliance with Section 4.10.2.6 is 4-log.
- Turbidity levels are susceptible to weather events that cause changes to the raw water quality, and over or under dosing of the coagulant.

Section 4.10.2.13 of the DWQARs details the requirements that must be met to provide assurance that protozoa in the water has been adequately removed by the UV disinfection. The following rules make up the requirements set out by Section 4.10.2.13:

- Rule T3.86 requires the applied UV dose to meet or exceed that required to achieve the claimed log credit for 95% of the day.
- Rule T3.87 requires an applied UV dose of not less than that required to achieve the claimed log credit for any consecutive 15-minute period.
- A reduction in UV dose is caused by low lamp intensity, fouling of the UV lamps, poor water quality, and high flow rate through the UV unit.
- Rule T3.89 requires the UV Transmission (UVT) to meet or exceed 95% of the UVT for which the reactor has been certified for at least 95% of the day.
- Rule T3.90 requires the UVT of not less than 80% of the lowest UVT for which the reactor has been certified for any consecutive 15-minute period.
- A reduction in UVT is caused by an increase in organics and dissolved compounds in the water passing through the UV unit.

Rules T3.92 and T3.93 requires the monitoring of identified Treatment Chemical Determinands that are introduced into the drinking water supply during the treatment process. Aluminium is used at most WTPs as a coagulant and must be monitored in accordance with Table 33 and Table 34 of the DWQARs.

Distribution Rule D3.19 requires the chlorine residual in the water distributed to the networks to remain above 0.2 mg/L in 85% of the analysed samples. The FAC must remain above 0.1 mg/L in every analysed sample.

Distribution Rule D3.29 requires the monitoring of *E. coli* and total coliforms in the distribution networks according to the frequency set out in Table 39 of the DWQARs. The Maximum Allowable Value (MAV) for *E. coli* is <1 CFU/100ml.

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## Infrastructure Strategy & Operations Committee

### Item for INFORMATION

<b>Report</b>	Infrastructure Strategy & Delivery Update
<b>Meeting Date</b>	21 November 2024
<b>Item Number</b>	5
<b>Prepared By</b>	Donna McArthur – Head of Infrastructure Strategy & Delivery
<b>File Reference</b>	920346

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#### REPORT SUMMARY

The report details items from the Infrastructure Strategy & Delivery Team for information and discussion.

#### RECOMMENDATIONS

1. That the Infrastructure Strategy & Operations Committee receives the 'Infrastructure Strategy & Delivery Update' report, dated 21 November 2024.

#### REPORT

##### 1. Asset Management - THREE WATERS

###### 1.1 Wastewater – Initial Land Treatment Investigations and Next Steps

Driven by evolving regulations, rising costs, and a growing focus on environmental protection, the Clutha District Council (CDC) is reviewing its wastewater management practices for various communities. One potential option being explored is land-based discharge.

To evaluate this option, an environmental engineering consultant was engaged in early December 2022 to develop a report on potential disposal options. Building on this initial work, further investigations in 2023 focused on identifying suitable land treatment areas within a 10 km radius of all 11 existing CDC wastewater treatment plants.

This report has been presented to the council and the local Runanga. Recent announcements by the government regarding set discharge standards for small to medium wastewater discharges may significantly alter the direction and cost of this work. However, we intend to continue our engagement process to work through this and refine the potential costs.

Following initial discussions with council and Runanga, the next steps involve comprehensive engagement. This includes:

- Iwi and councillor engagement: Collaborative planning workshops will be held after an initial technical briefing, ensuring cultural considerations are integrated throughout the process.
- Detailed investigations: Working with consultants, potential land treatment zones will be further refined, with engineering studies and cost estimates developed.

## **1.2 CDC Development Engineering Code of Practice**

To improve efficiency and consistency across the Clutha District and the Otago/Southland regions, CDC is collaborating with neighbouring councils to develop a unified engineering code of practice. This collaborative approach will streamline processes for CDC, service providers, and contractors.

In recent months, CDC has engaged in discussions with neighbouring councils to identify areas for improving efficiency and promoting consistency. These conversations have highlighted shared challenges, areas for improvement, and opportunities for joint efforts.

Currently, CDC is working closely with Dunedin City Council, Invercargill City Council, and Southland District Council, and with their agreement, we aim to adopt their existing documents and make the necessary additions that are relevant to our district. This approach avoids reinventing the wheel and ensures a more efficient process, leading to improved management of the development, construction and regulatory environments for all parties involved.

## **1.3 CDC 3-Waters Asset Data Standard**

To improve the quality and consistency of asset data, the 3-Waters Asset Management Team are developing a dedicated data standard. Currently, no formal standard exists, leading to variations in the data currently being provided by maintenance and capital project contractors. This standard aims to create clear guidelines and templates on data requirements to ensure accurate and complete asset records, enabling more informed decisions regarding renewals, budgeting, and long-term planning.

The 3-Waters Asset Management Team is leading this development, with the document currently in draft form. Once completed, the standard will undergo review and approval to ensure it meets CDC's strategic needs for maintaining its assets.

## **1.4 CDC As-Built Specification**

CDC is developing an As-Built Specification to standardise the information received from contractors upon project completion. Without a formalised standard, CDC has had to rely on varying levels of detail provided by contractors, supplemented by unofficial requirements. This new specification will set consistent expectations for as-built documentation on both capital and operational projects.

The document, currently under development by the 3-Waters Asset Management Team, will be implemented following review and approval. This specification will provide a consistent framework for capturing essential project data, ensuring completeness and accuracy for ongoing asset management and future planning.

### **1.5 Clutha District Water Supply Schemes Strategy**

This strategy is being developed to investigate the feasibility of amalgamating a number of water supplies. The goal is to improve overall water system resilience, and potentially postpone costly upgrades at individual treatment plants and amalgamation which could reduce the number of plants and consents needed.

The proposal focuses on four potential connections:

- Richardson South and North: Connecting these schemes to either the Whitelea Road Water Treatment Plant (with a capacity upgrade) or the Balclutha plant, allowing the Puerua Water Treatment Plant to be decommissioned or operate at a reduced capacity.
- Kaitangata: Connecting Kaitangata to either the Stirling plant (with an upgrade) or routing water through Stirling and then Balclutha (with a Balclutha plant upgrade). This would eliminate the need for a separate, recently tendered (2023) \$3,000,000 upgrade to the Kaitangata intake and improve network resilience.

The next steps outlined in the report involve using existing water network models to determine the necessary pipeline upgrades for each connection scenario. Additionally, the report proposes estimating the capacity increase required at the water treatment plants to handle the additional demand. Finally, high-level cost estimates will be developed based on recent CDC water treatment plant upgrade projects.

### **1.6 Asset Management Information System (AMIS)**

The 3-Waters Asset Management Team and IT are exploring alternatives to our existing Asset Management Information System (AMIS) to enhance value and functionality. We are currently using Univerus Assets (formerly AssetFinda/Univerus).

Council staff attended a demonstration of Thinkproject Asset & Work Manager (formerly RAMM) and are consulting with other councils about their experiences with this system. Additionally, the team is evaluating other potential systems as part of the review process.

A cost/benefit analysis and report will be prepared to guide our decision-making and developed based on recent CDC water treatment plant upgrade projects.

### **1.7 Catchment Protection Policy/Strategy (Forestry)**

The 3-Waters Asset Management Team is developing a comprehensive Forestry Catchment Protection Strategy/Policy. Currently, our protections are limited to those



stated in the bylaw and the district plan, which are not actively enforced. Increased forestry activities can negatively impact the quality of source water, making it more challenging to treat for drinking. This new strategy aims to establish clear and enforceable guidelines to restrict forestry conversion near source water supplies. The policy will be based on specific criteria to ensure the protection and sustainability of our water sources, improving our ability to manage and safeguard these areas effectively. By implementing this strategy, we will proactively address potential risks to our water catchments and promote long-term environmental stewardship.

## **2. Asset Management – ROADING**

### **2.1 Asset Management Data Standards – Asset and Management (AWM formerly known as RAMM)**

The council's database for managing and maintaining its roading assets, RAMM (Roading Asset Maintenance Management) is currently undergoing a standardisation upgrade to stay up to date with NZTA Waka Kotahi's requirements. Data migration will happen during the week of 18 to 22 November 2024.

### **2.2 Land Transport Programme 2024/2027 – Final NZTA Budget Approvals**

Final budget approvals for Clutha's 2024/2027 Land Transport Programme have been released by the NZTA Waka Kotahi, with the Council advised at its meeting on 12 September 2024. A follow-up report was presented to the Council and accepted at the meeting held on 23 October 2024. The reduced NZTA funding has led to projects being deferred and others being prioritised over others.

## **3. Asset Management – FACILITIES & WASTE**

### **3.1 Climate Change Actions**

The Facilities and Waste Team has started implementing actions prescribed in the council's climate change strategy. The actions are in two broad categories:

#### **a. Measure and Reducing Emissions**

For actions that fall under Facilities, Solid Waste and Fleet domains, the team is developing emissions measurement KPIs to track council's emissions. This will also help to accurately measure the impact of emission reduction strategies implemented in the future. Measuring the emissions will assist to identify opportunities to reduce emissions.

#### **b. Developing Resilience**

This starts with identifying assets vulnerable to the effects of climate change. We are currently mapping flood prone infrastructure as shown below. This is ongoing work, with more sites still to be mapped and further analysis required to model the level of risk associated with each site. This involves modelling the likelihood and impact of flooding for each site. The model will then inform the appropriate strategy to develop resilience for each site.

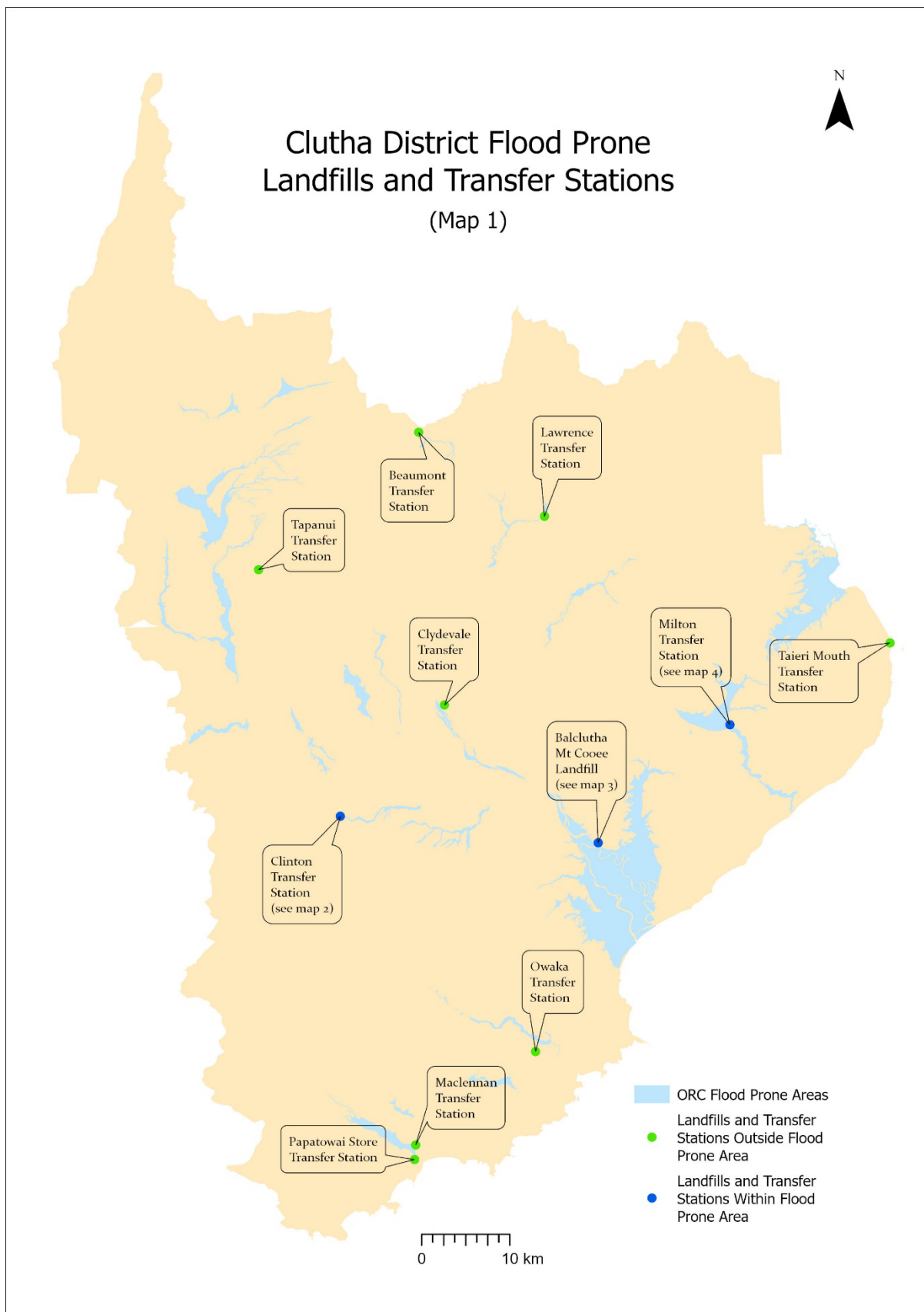


Figure 1. Solid Waste Assets Flood Risk Mapping

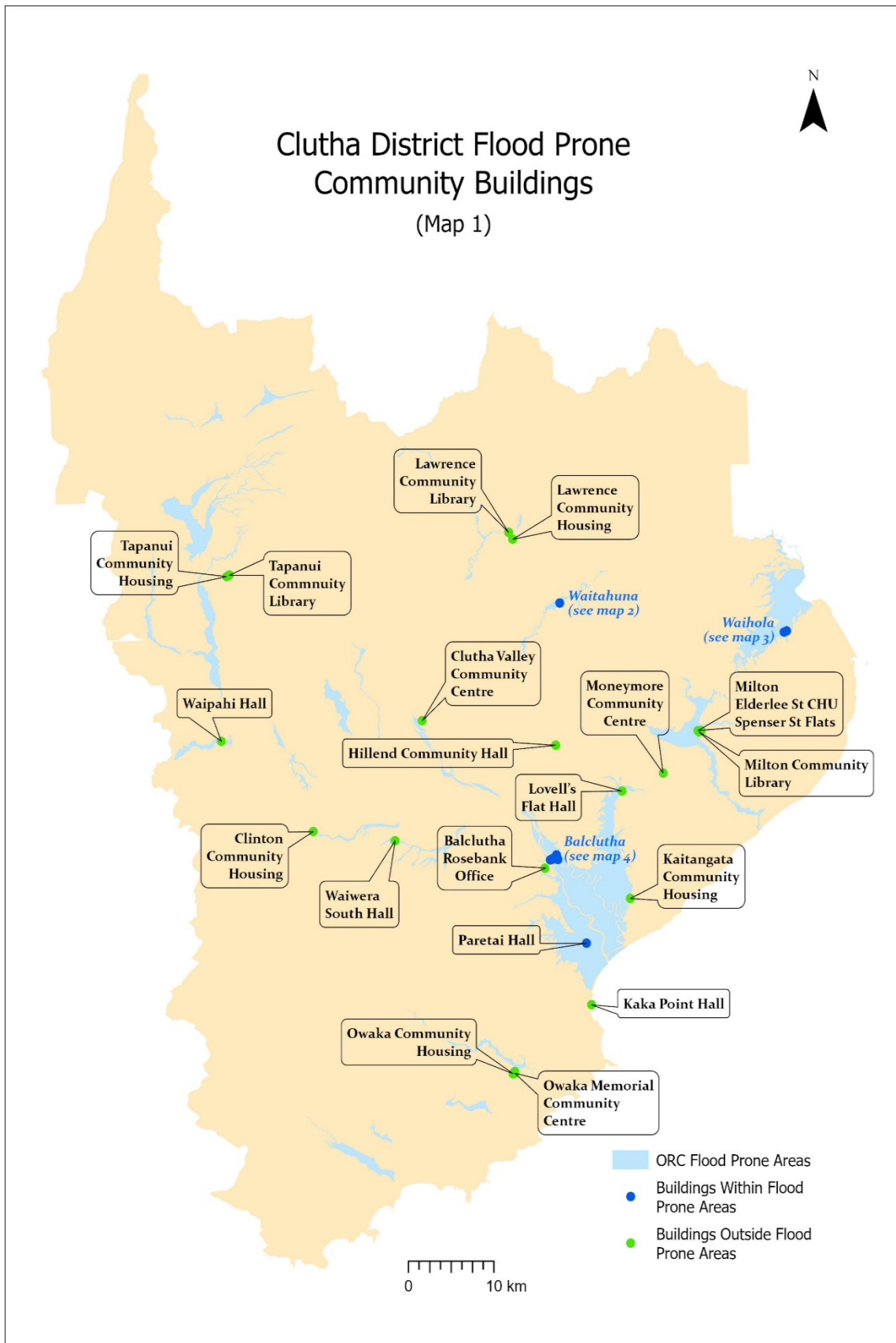


Figure 2. Council Facilities Flood Risk Mapping

## 3.2 Solid Waste Asset Management

### 3.2.1 Mt Cooee New Landfill and Transfer Station

Leach & Co have produced a report providing advice on possible construction techniques for the new landfill and transfer station. The report provides estimated timelines and costs for the project. The project team is now reviewing the report and incorporating input from the operations team for scoping.

### 3.3 Fleet

We have been finalising the new vehicle memo, which is now ready for final approval. This memo outlines our planned vehicle acquisitions, reflecting extensive research and careful planning to ensure alignment with our fleet management strategy. In developing this final version, we conducted a detailed analysis of current and future fleet requirements, engaged with key stakeholders, and evaluated various vehicle models for suitability and cost-effectiveness. The process has been thorough and strategic, ensuring that the recommendations are well-founded and meet the operational needs of our teams efficiently.

## 4. Solid Waste

### 4.1 Project 500022,500023, 500021 Mt Cooee – Upgrades, Construct Cell 1 & Cap Existing Cell

We are working with the Asset Team on the ORC consent application to continue operating a landfill and develop a Refuse Transfer Station and Resource Recovery Park at Mt Cooee (see section 3.3.1). We are also currently working with the support of Leach and Co. For early contractor engagement advice to expedite the process to allow a seamless transition to the new landfill cells and Refuse Transfer Station. We are currently working with the CDC Operations Team to obtain any operational needs for the Refuse Transfer Station. The next stage is to find a suitable clay within the district for the construction of the 1<sup>st</sup> cell. The estimation of the volume of the clay is 10,170 m<sup>3</sup>.

## 5. Capital Projects – Roading

### 5.1 Contract 858 – Reseal and Pre-Seal Repairs

The contract was awarded to Fulton Hogan. Year 2 is off to a great start, with 90% of 32km of the pre-seal repair works completed and 75% of 32km of the reseal completed to date.

Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
300044	300010	Re-seal Year 2	\$2,400,000	\$470,491	\$1,929,509	\$1,929,509	\$0
300035*	300010	Pre-seal Repair Year 2	\$300,000	\$300,000	\$300,000	\$0	\$0
<b>Totals</b>			<b>\$2,700,000</b>	<b>\$770,491</b>	<b>\$1,929,509</b>	<b>\$1,929,509</b>	<b>\$0</b>

## 6. Capital Projects – 3-Waters

### 6.1 Milton WTP – Capacity Increase and Iron and Manganese Removal Options Assessment

- Professional services engagement for delivery of redefined scope was awarded to Fluent Solutions 21/10/2024.
- The kick-off meeting was held on the 18/10 2024.
- The site meeting was held on 30/10/2024.
- Further information and sampling requests have been received following the site meeting. Hence an extension for completion of Stage 1 has been altered from 4/11/2024 to 18/11/2024. But this will be subject to the consultant receiving all the information requested.
- Waiting for 3 Waters Operations – water supply division to provide responses for specific RFI's and confirm sampling schedules for within the Milton WTP.
- The 3 Waters Compliance Engineering team have provided responses to some queries raised as per email correspondence via email dated 4/11/2024.

Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
350118	351064	Milton Mn & Fe Reduction Project	\$1,500,000	\$780	\$1,499,220	\$1,500,000	\$0
<b>Totals</b>			<b>\$1,500,000</b>	<b>\$780</b>	<b>\$1,499,220</b>	<b>\$1,500,000</b>	<b>\$0</b>

### 6.2 Contract 842 – Hub Pump Station

- The streetlights have been delivered and in NES storage. NES will install the streetlight at the state highway, awaiting the traffic management plan.
- The isolation cabinet has been installed and the old switchboards have been removed.



*Stormwater Small Switchboard*



Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
400090	400080	Hub Pump Station / Underground cabling	\$1,896,000	\$1,739,319	\$156,681	\$30,000	\$0
<b>Totals</b>			<b>\$1,896,000</b>	<b>\$1,739,319</b>	<b>\$156,681</b>	<b>\$30,000</b>	<b>\$0</b>

### 6.3 Contract 846 – Sewerage Treatment Plant Upgrade (Balclutha, Clinton, Waihola, Heriot & Kaitangata) – Contractor: Marshall Projects Ltd

- Heriot/Kaitangata Waste Water Treatment Plant: The project is complete and under the defect's liability period. There is no definite end date for the Final Completion at this stage as all the defects are required to be remediated. The operation team is investigating the defects and working with the contractor for remediation.
- Clinton Waste Water Treatment Plant: This plant is also fully commissioned and in operation. We are finalising the defects list and working with the CDC Operation Team for the contractor to remediate before the issue of the Practical Completion Certificate. The defects are aimed to be remediated by the end of this year. However, the contractor is focusing on getting Balclutha WWTP commissioned first before remediating the minor defects at Clinton.



*UV at Clinton Waste Water Treatment Plant.*

- Waihola Waste Water Treatment Plant: The final stage is working on the screening backwater supply. However, the work is delayed due to the water level in the wetlands (due to the recent flood event). See below (hex covers are floating on the gantry due to the rising level of the pond). The plant is 95% commissioned and we are finalising a defects list for the contractor to remediate before the issue of the Practical Completion Certificate. The work will be resumed until the wetland water level is low. The defects are aimed to be remediated by the end of this year. However, the contractor is focusing on getting Balclutha WWTP commissioned first before remediating the minor defects at Waihola.





*Hexcover on the gantry at Waihola WWTP*

- Balclutha Waste Water Treatment Plant:**  
 The inlet screen tank and the waterline are installed, and ready to be connected to the screen for its backwash system (see below). The next stage is to continue the electrical work and recirculation pumps and finish off the screen work. It is aimed to be fully commissioned before end of this year.



*Inlet screen tank setting for Balclutha WWTP Inlet*



*Screen waterline to setting Balclutha WWTP inlet*

Job Code	Project Code	Description	Total Budget	Cost to Date (work completed)	Available Budget Left (carry forward 24/25)	Forecast Spend (under C846 only)	Variation
400023	400028	Clinton Sewage Treatment Plant Upgrade	\$1,548,021*	\$1,286,285*	\$262,008	\$38,898	\$0
400101	400083	Kaitangata and Heriot Sewerage TP Upgrade	\$572,010	\$572,010	\$0	\$0	\$0

400024	400029	Waihola Sewage Treatment Plant Upgrade	\$1,150,855	\$1,043,876	\$106,980	\$6,287	\$0
400022	400027	Balclutha Sewage Treatment Plant Upgrade	\$3,162,215	\$2,582,505	\$579,710	\$218,661	\$0
<b>Totals</b>			<b>\$5,684,871</b>	<b>\$4,725,438</b>	<b>\$959,433</b>	<b>\$324,702</b>	<b>\$0</b>

\*Total budget and cost to date are associated with the works from FY 2019. The allocated budget for this FY is \$392,971  
Note: The Cost to Date includes contingency.

#### 6.4 Contract 849 - Milton to Waihola Pipeline

- The Milton Waihola Water Supply Scheme is now operational. The remaining work on this project is security fencing and driveway construction for Milburn Pump Station. There are some defects still being corrected.

Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
350061		Milton Waihola Water Supply Scheme	\$5,976,882	\$5,502,215	\$474,666	\$474,666	\$0
<b>Totals</b>			<b>\$5,976,882</b>	<b>\$5,502,215</b>	<b>\$474,666</b>		<b>\$0</b>

#### 6.5 Balmoral/Tuapeka Rural Water Scheme & Lawrence New Supply

- This project has been split into 2 contracts:
  - Contract 850 – Installation of the pipeline; contractor - Southern Trenching Ltd
  - Contract 865 – Construction of the pump stations, treatment plant and bores; contractor - Cowley Electrical Dairy and Pumps

#### JOB-STATUS SUMMARY

##### Progress

##### 1) Contract 850 – Pipe Installation

Only the pipe section into Lawrence is still to be completed:

- Approximately 200m of DN180 PE pipe is to be laid from the top (south end) of Whitehaven Street to Thurso Street in Lawrence; to make the final connection.
- Installation of the Pressure Reducing Valves (PRVs) at the top of Whitehaven Street.
- Completion of documentation e.g. as-builts.

The outstanding work can be completed when the PRVs arrive. Construction is expected to start in October 2024 and the expected completion of the pipeline is by the end of November 2024.

## 2) Contract 865 – Pump Station Installation

### Borefield

- Pipework and ducting are currently being installed between bores. Completion is expected by the end of October 2024.
- Pricing received for the borehead and electrical installation. All pricing is now received for the Borefield.
- The new borefield will include an extension to the Pomahaka-Clydevale treatment building where the new switchboard will be installed.
- The pumping testing indicated the three Greenfield bores reached the overall scheme target flow of 120 L/s, with each bore reaching 70 L/s during testing, however, 50 L/s peak operational flow for each bore is recommended.
- Water quality results from Well 1 show it is suitable to supply water to the scheme. Water quality results for Wells 2 and 3 were not taken at the correct time (during flow testing) and need to be re-tested by the drilling contractor. Re-test is expected to happen in the month of October.



**Photo 1 – Well 1**

### Treatment Plant

- Civil works underway
- Building design underway
- UV units ordered
- Transformer ordered
- Reservoir design received and amendments proposed
- All pricing received





**Photo 2** – Work underway on the WTP site

### Lower Greenfield Pump Station (Greenfield Road)

- Complete by the end of September
- Tank installed
- Building constructed
- Switchboard in place
- Transformer installed
- All underground pipes installed
- Aboveground pipework in progress (90% complete)
- A connection to the transformer from the power poles (including easement) is required before powering up the pump station.



**Photo 3** – Lower Greenfield Pump Station – pumps and pipework installed.

#### Upper Greenfield Pump Station (Greenfield Road/Cairn Road corner)

- Complete by the end of September
- Tank installed
- Building constructed
- Switchboard in place
- Transformer installed
- All underground pipes installed
- Aboveground pipework in progress (95% complete)



**Photo 4** – Upper Greenfield Pump Station – progress on the pipework

#### Cairn Road Pump Station (Waitahuna West Road / Cairn Road)

- Building constructed
- Switchboard installed
- Aboveground pipe in progress (80% complete)
- Transformer still to be installed



**Photo 5** – Cairn Road Pump Station – Progress on Pipework

#### **Planned Activities for Next Period (to end of October 2024).**

- All Pump Stations complete
- Well pipework installed but not wellheads
- WTP building design complete
- Civil works and underground pipework for the Treatment Plant complete

#### **Project Risks**

- Financial risk: the ongoing chlorine residual study may affect our financial situation. If we only require one chlorine booster pump, there's no risk. However, if the study indicates a need for multiple pumps, it could lead to additional financial costs.
- Programme risk: the final program for the WTP installation is still to be received.
- Water quality: final water quality tests are still to be received.
- Transformer delivery times: the current program is okay.

#### **Health & Safety**

- No incidents to report
- All visitors are to be inducted onto the site before entering.
- Health and Safety Audits completed on a fortnightly basis by the Contractor
- Traffic management in place at all sites.



### Environmental Management

- No environmental issues found or reported
- No contaminated land found

### Financial

**Note:** All figures below are GST-exclusive.

Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
360201	361156	Balmoral/Tuapeka Rural Water Scheme & Lawrence New Supply	\$25,243,000	\$19,319,675	\$5,923,625	\$5,923,625	\$0

### **6.6 Contract 863 – Reservoir Civil Construction – North Bruce, Puerua, Lawrence and Moa Flat**

- Puerua – Reservoir cut-in is scheduled for the 14 November and performance of rising water main pumps will be observed.
- North Bruce – Tasman tank completed the column installation. Filling was stopped due to leakage observed. Tasman Tanks was engaged for a rectification plan and schedule, internally we are targeting the week of the 11 November. In parallel concluding an internally discussion on the cut-in methodology, it was identified the cut-in would be preferable on the inlet of the old tanks versus the outlet. For change to occur we have engaged our professional service panel (Beca) to provide an engineered solution. We anticipate.
- Moa Flat – 3,000KL Tank installation was successfully constructed. Concluding an internal discussion held on the 15 October on the cut-in methodology, it was recommended to install an actuator on the inlet line to ensure backwash can be achieved on the plant. We are in process of obtaining quotes and a variation will be submitted to proceed.

Job Code	Project Code	Description	Budget	Cost Date	to	Available Budget	Forecast Spend	Variance
360205	361121	Puerua Reservoir	\$846,000	\$553,124		\$292,876	\$292,876	0
360204	361113	North Bruce	\$787,000	\$747,929		\$39,071	\$44,335	-5,264.78
360125	361049	Moa Flat	\$1,157,000	\$964,915		192,085	\$192,085	0*
<b>Totals</b>			<b>\$2,790,000</b>	<b>\$2,265,969</b>		<b>\$524,031</b>	<b>\$529,296</b>	

\*Anticipated Variation (Actuator)

Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
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360205	361121	Puerua Reservoir	\$846,000	\$553,124	\$292,876	\$292,876	0
360204	361113	North Bruce	\$787,000	\$747,929	\$39,071	\$44,335	-5,264.78
360125	361049	Moa Flat	\$1,157,000	\$964,915	192,085	\$192,085	0
<b>Totals</b>			<b>\$2,790,000</b>	<b>\$2,265,969</b>	<b>\$524,031</b>	<b>\$529,296</b>	

## 7 Capital Projects – Other

### 7.1 Taylor Park Cabins

- The four cabins currently located at Taylor Park are sold and are disconnected from the existing service connections. The Code of Compliance Certificate of the superstructure of four cabins is issued. We are currently working on the reinstatement options for the Taylor Park campground.
- Four cabins at OCF (Cabin 5-8) are close to be finished (90%) and ready for the final inspection by end of the November 2024
- Revenue from the sales of the first 3 cabins (excl. GST) has been received and is reflected in the financial table below.
- A staff report will be prepared for councillors which will provide options for the future of the additional six cabins, four of which are now nearing completion at Otago Corrections Facility.

Job Code	Project Code	Description	Budget	Revenue Received	Cost to Date	Available Budget	Forecast Spend	Variance
670008	670007	Taylor Park Cabins	N/A		\$798,434	N/A	\$401,566	\$1,200,000
<b>Totals</b>			<b>N/A</b>	<b>\$198,261</b>	<b>\$792,184</b>	<b>N/A</b>	<b>\$407,815</b>	<b>-\$1,001,739</b>

The remaining forecast expenditure is for the outstanding material/construction costs of the remaining 6 cabins

### 7.2 Contract 845 - Milton Mainstreet Underground Utilities

- In October, stage 3 of the underground power cable installation along the East Side of Union Street. Concurrently, the Ø63 rider main was installed within the same trench, with all required separations maintained between the utilities. The progress was notable, with the project advancing and is ahead of schedule.



*Inside property connection with power cable installed under crusher dust and warning tape on Union Street.*

- On the last section of duct installation across Abercrombie Street, an unexpected blue stone culvert was uncovered. As the trenching was deeper than the existing culvert, water began to fill the trench. Work was immediately halted, and both the Heritage Properties team, Engineers Rep and CDC representatives were called to assess the situation.



*Abercrombie St. - Blue stone Culvert Pre 1900 Feature*

- After discussion and recommendation from the Heritage Properties we submitted a new design comprising of the remedial action to the stone culvert without further disturbance. After consultation with the relevant authority an agreement on the appropriate course of action was reached and work resumed. Majority of works on the initial contract is near closure with testing to be undertaken.



Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
450044	450045*	Stormwater	\$3,852,000	\$3,805,806	\$46,194	\$139,382	-\$93,188
400107	400084*	Foul Sewer	\$580,000	\$831,534	-251,534	\$94,701	-\$346,235
350124	351087*	Water	\$556,000	\$516,172	\$39,828	\$132,940	-\$93,112
310003	310002**	Streetscape costs including undergrounding	\$5,000,000	\$1,747,575	\$3,252,425	\$430,790	\$2,821,635
<b>Totals</b>			<b>\$9,988,000</b>	<b>\$6,901,77</b>	<b>\$3,086,914</b>	<b>\$797,814</b>	<b>\$0</b>

\*3 Waters urban budgets will be utilised for job code overspending

\*\* Includes undergrounding budget

- Separable Portion A (Stormwater Pipeline Extension)** – The scope involved replacing the Ø225 earthenware pipe with a Ø300 UPVC pipeline, extending from the Abercrombie Street manhole to the Cowper Street manhole. A total of 128 meters of Ø300 UPVC stormwater pipe was successfully installed, along with 5 x stormwater lateral connections and a mud tank connection.



Milton Union Street – Machinery used on the Stormwater Pipeline Extension.

**Separable Portion D (Footpath Reinstatement)** – Was awarded and will commence latter January 2025

### 7.3 Contract 880 – Milton Community Pool/Library Hub Project

The Special Consultation Process has now ended, and there were 620 submissions in total. A public hearing will be conducted on 7 November 2024, where members of the public are entitled to raise their positive/negative feedback in regard to the project. A final decision on the fate of this proposed project will occur during a Council meeting on 5 December 2024.

Job Code	Project Code	Description	Total Budget	Cost to Date	Available Budget	Forecast Spend	Variance
570011	570007	Milton Pool	\$13,979,690	\$578,906	\$13,400,784	\$14,831,664	-\$1,430,880
560010	560019	Milton Library	\$4,000,293	\$168,807	\$3,831,486	\$3,845,311	-\$13,825
<b>Totals</b>			<b>\$17,979,983</b>	<b>\$747,713</b>	<b>\$17,232,270</b>	<b>\$18,676,975</b>	<b>-\$1,444,705</b>

#### 7.4 Contract 883 – Mt Cooe Leachate Pump Station and Owaka Wastewater Pump Station

##### Mt Cooe:

- Isaac's have finished shaping up the leachate pond.
- Isaac's will just tidy up the site, put topsoil and grass seeds and they will be finished with all the site work.



*New leachate Pond Levels*





*Mt Coeee Recent Photo*

**Owaka:**

- Isaac's have finished the installation of the plinths and the new switchboard.
- Isaac's finished the installation of the concrete pad and fences.
- Isaac's will fix the fence and tidy up the site and they will be finished with all the site work.



*Owaka New Fence*





*Owaka Culvert*

Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
400091	400082	Owaka Wastewater Pump Station Renewal	\$1,669,520	\$1,424,233.69	\$245,286.31	\$245,286.31	\$0
500011	500009	Mt Coovee Wastewater Pump Station & Leachate Pond Renewal	\$1,940,000	\$750,415	\$1,189,585	\$200,000	\$0
<b>Totals</b>			<b>\$3,609,520</b>	<b>\$1,917,280.69</b>	<b>\$1,486,297.31</b>	<b>\$695,286.31</b>	

### 7.5 Balclutha Pool Filter Replacement Project

- Additional improvements of the filtration system, a vacuum transfer and sodium bisulphate mixing tank is on track for mid-December. The installation will not affect the day-to-day running of the public pool.



*Balclutha Centennial Swimming Pool Perlite Filters*

Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
570015	570011	Balclutha Filter Replacement	\$500,000	\$210,000	\$290,000	\$290,000	\$0
<b>Totals</b>			<b>\$500,000</b>	<b>\$210,000</b>	<b>\$290,000</b>	<b>\$290,000</b>	

## 14. Projects in Design Phase

### 14.1 Contract 892 – Milton-Tokoiti Water Network Extension

- Fluent Solution was commissioned to engineer a water network extension to provide adequate potable water for firefighting, expansion of transitional resource area and the Tokoiti network. The concept design and tender documents are being finalized. The project will go out for tender in March 2025.

Job Code	Project Code	Description	Budget 24/25	Cost to Date	Available Budget	Forecast Spend	Variance
350104	351085	Milton-Tokoiti Water Network E	\$615,000	\$42,235	\$572,765	TBD	0

### 14.2 Project No. 400064 – Connecting Stirling to Balclutha Sewer Network

Project is in investigation stage to convey the sewer from Stirling to Balclutha network.

Job Code	Project Code	Description	Budget 24/25	Cost to Date	Available Budget	Forecast Spend	Variance
400105	400064	Connecting Stirling to Balclutha Sewer Network	\$500,000	\$0	\$500,000	TBD	0

### 14.4 Project No. 362016 – Mt Mistake Pump Station Replacement

The site assessment was carried out from ground level and considered the overall condition of the building, and all assets contained inside, the deterioration of a pump station building and switchboard over time is a matter of concern. Additional quotations are in progress of been obtained to proceed awarding the work targeted for later November.



*Mt Mistake Pump Station Exterior*



*Mt Mistake Pump Station Interior*



Job Code	Project Code	Description	Budget 24/25	Cost to Date	Available Budget	Forecast Spend	Variance
	362016	Mt Mistake Pump Station Replacement	Not loaded on Ozone.	\$0	\$100,000		0

#### 14.5 351064 - Milton Manganese and Iron Reduction Project

Following decision to conduct a further study towards a specific treatment process (Potassium Permanganate) to address the Mn and Fe Levels detected at the Milton Water Supply network, RFP was sent to professional services consultants for delivery of redefined scope. Offer of services was received and evaluated, the works was awarded to Fluent Solutions 21/10/2024.

The kick-off meeting was held on the 18/10 2024, confirming the scope and further information required for the project. The site meeting was held on 30/10/2024 and further information and sampling requests have been received with a request for an extension for completion of Stage 1 from 4/11/2024 to 18/11/2024 being tabled. The project team are working on the responses and confirming sampling schedules for within Milton WTP in the week starting 11 November.

Job Code	Project Code	Description	Budget 24/25	Cost to Date	Available Budget	Forecast Spend	Variance
350118	351064	Milton Mn & Fe Reduction Project	\$1,500,000	\$35,240.25	\$1,464,759.75	\$200,000	0

#### 14.6 351050-Balclutha WTP Intake Upgrade Project

This project has been recommenced following decision on preferred option to pursue further in the detailed design phase. Amendments to the design has been referred to Stantec the professional services consultant previously engaged for this project on the 17/10. A site meeting was held on the 21/10 to confirm scope for detailed design phase. Stantec to submit a new offer of services (OOS) based on the redefined detailed design scope. Proposed OOS has been received, reviewed and conveyed to Stantec for finalisation prior to submission. The internal stakeholders will finalise the concept plan for detailed design work on the 11 November 2024. Design phase is due on the 20 December 2024.

Next step is to approve the OOS

Job Code	Project Code	Description	Budget 24/25	Cost to Date 24/25	Available Budget	Forecast Spend	Variance
350086	351050	Balclutha WTP Intake Upgrade	617,465	0	\$617,465	\$600,000	0

#### 14.7 450033 – Balclutha Stormwater Renewal Project

RFP submissions due 11 October 2024. GHD services have been reinstated to continue with the detailed design work for 6 weeks from the 14 October - 22 November. Preferred alignment option through private properties has been confirmed with the design team. Ongoing communications with GHD design team regarding progress of detailed design work.

Job Code	Project Code	Description	Budget 24/25	Cost to Date 24/25	Available Budget	Forecast Spend	Variance
450037	450033	Balclutha SW Main Renewal*	\$477,202	\$12,968.23	\$464,233.77	\$400,000.00	0

\* Initial allocated budget \$572,202, \$95,000 reallocated for Milton Main Street Utilities/ SW main renewal project.

#### 14.8 450042 – Lawrence Hospital Creek Improvements Project.

Defining scope of physical works required for Hospital Creek improvements using the outcomes in the Stantec report 2020 on Hospital Creek assessment. A site meeting is scheduled on the 13 November with a community rep/ local contractor who is familiar with upgrade works on Hospital Creek, to confirm the physical works scope.

Job Code	Project Code	Description	Budget 24/25	Cost to Date 24/25	Available Budget	Forecast Spend	Variance
450043	450042	Lawrence Hospital Creek Improvements	\$250,000	0	\$250,000	\$50,000	0

#### 14.9 450043 – Lawrence Stormwater Main Renewal Project

This project is in design phase and the works has been awarded to Terramark Ltd on the 21 October 2024. Duration for design work and tender documentation is 5 weeks. Due date is the 27 November 2024. Scheduled topo level survey has been completed.

Job Code	Project Code	Description	Budget 24/25	Cost to Date 24/25	Available Budget	Forecast Spend	Variance
450049	450043	Lawrence Hospital Creek Improvements*	\$136,000	0	\$136,000	\$20,000	0

\*Funds reallocated from the Kaitangata SW and watermain renewal projects to make up with the negative variance.

#### 14.10 351060 – AC Milton Watermain Renewal Project

Urgent works has been identified on Union Street Milton, due to NZTA scheduled asphalt works by end of November 2024. Two packages have been prepared, urgent and non-urgent works to meet the set deadline provided.

Andrew Haulage provided a price to deliver the works under the current Contract 845 with two separable portions B and C for additional scope. Completion dates set on the 22 November 2024 and 20 December 2024 for sep-B and sep-C respectively. Progress for works is 70% for sep-B and 20% for sep-C.

**Table 1: Separable Portion B Financial**

Job Code	Project Code	Description	Budget 24/25	Cost to Date 24/25	Available Budget	Forecast Spend	Variance
350026	351008	Milton Pipeline Renewals	\$355,066	0	\$60,000	\$60,000	0
350104	351085	Milton-Tokoiti Water Network Extension*	\$788,660	0	\$105,000	\$105,000	0

\* Funds reallocated from 351085 and 351008 to 351060

**Table 2: Separable Portion C Financials**

Job Code	Project Code	Description	Budget 24/25	Cost to Date 24/25	Available Budget	Forecast Spend	Variance
351029	351060	Milton AC Mains Renewal	\$100,000	0	\$100,000	\$100,000	0
350089	351059	Milton Concrete Pipeline Renewals*	\$100,000	0	\$100,000	\$100,000	0
351030	351048	Balclutha AC main renewals*	\$100,000	0	\$31,660	\$31,660	0

\* Funds reallocated from 351048 and 351059 to 351060

#### 14.11 Contract 888- Tank Farm Reservoir Project.

- The open tender for tank procurement was published on the Government Electronic Tenders Service (GETS) on 23 October 2024, with a closing date of 21 November 2024.
- Four of the eleven sites require finalised land agreements. Discussions with the Rural Water Committee Chairman and the respective landowners are ongoing assisting in secure these agreements.
- The civil and plumbing contract will be awarded through an open tender process, subject to the completion of landowner agreements. The tender is expected to be published on GETS by fourth week of November



*30m3 New Plastic Tank Farm Reservoir*

Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
350085	351022	Waihola Reservoir renewals programme	\$651,873	\$235,141	\$416,732	\$416,732	\$0
360133	361063	Richardson Oakleigh Road Reservoir assessment and renewals	\$551,975	\$43,668	\$508,307	\$508,307	\$0
360221	361143	Tuapeka East Breakneck Reservoir upgrade	\$543,907	\$9,265	\$534,642	\$534,642	\$0
360220	361142	Tuapeka West Main (Cockleshell) Reservoir upgrade	\$489,493	\$11,961	\$477,532	\$477,532	\$0
350099	351023	Kaka Point Reservoir renewals programme	\$488,653	\$13,945	\$474,708	\$474,708	\$0
350100	351066	Owaka Reservoir upgrade	\$476,725	\$8,509	\$468,216	\$468,216	\$0
360219	361139	Mt Stuart Reservoir upgrade	\$442,721	\$9,873	\$432,848	\$432,848	\$0

360211	361090	Pomahaka Main Reservoir upgrade	\$441,524	\$12,568	\$428,956	\$428,956	\$0
360222	361146	Wangaloa Reservoir upgrade	\$440,414	\$14,779	\$425,635	\$425,635	\$0
360214	361097	Glenkenich Main Reservoir upgrade	\$216,468	0	\$216,468	\$216,468	\$0
360262	361140	Tuapeka West Heathcote Reservoir upgrade	\$93,695	0	\$93,695	\$93,695	\$0
<b>Totals</b>			<b>\$4,837,448</b>	<b>\$359,709</b>	<b>\$4,477,739</b>	<b>\$4,477,739</b>	

#### 14.12 Contract 868 : Clydevale Bore Security Project

- On 1 November, the Draft Clydevale Borefield Options Assessment Report was received from Beca. The report presents two potential options and recommended the second option as the more cost-effective solution. Below are the two options,

##### Option 1

- Upgrade Bore 4 pump, bore head and VSD.
- Drill 2 new bores to replace older Bores 1, 2 and 3 (targeting flow rates comparable to Bore 4)
- Total expected estimate (excl. GST) (Excluding Design fees, Client costs, planning & consenting, property & access) - \$1,300,000

##### Option 2

- Upgrade and raise bore heads of Bores 2 & 3 above ground to meet the Sanitary Bore Head Requirements of the Drinking Water Quality Assurance Rules
- Drill 1 new bore to replace Bore 1
- Total expected estimate (excl. GST) (Excluding Design fees, Client costs, planning & consenting, property & access) - \$690,000

- Discussions with the operations team and the Rural Water Committee are ongoing to confirm the recommended option and the budget required to complete this project. Currently, the budget carry-forward for this year is \$111,706.
- Based on the provided option and available budget, it is foreseen that additional funding will be required. This matter will be raised with the RWS committee.





*Clydevale WTP Bore No.4*

Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
360212	361092	Clydevale Bore Security Improvements	\$111,706	\$38,294	\$73,412	\$73,412	\$0
<b>Totals</b>			<b>\$111,706</b>	<b>\$38,294</b>	<b>\$73,412</b>	<b>\$73,412</b>	

### 14.13 Milton (Milburn) WTP upgrade to 5,000 m<sup>3</sup>/day

Beca has provided a report on increasing the capacity of the Milton Water Treatment Plant (WTP) from 3 MLD (million liters per day) to 5 MLD.

Report includes,

- Water intake
- Pre-Filtration
- Coagulation and Flocculation assement
- Expansion of Membrane Filtration
- Treated Water Pump and capacity

The proposed recommendations and associated costs to upgrade the Milton WTP capacity from 3 MLD to 5 MLD are approximately \$4.5 million. We are currently exploring alternative options to achieve this capacity increase.



*Milton WTP Membrane Unit No.1*

Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
350117	351061	Milton (Milburn) WTP upgrade to 5,000 m3/day	\$109,308 (year 2024-25)	\$0	\$109,308	\$109,308	\$0
<b>Totals</b>			<b>\$111,706</b>	<b>\$38,294</b>	<b>\$73,412</b>	<b>\$73,412</b>	

#### 14.14 Project 30013 – Structures Component replacements (Category 215)

- The report “2022/2023 Bridge and Other Structure Inspections” issued in July 2023 identified the below list which included various types of work on 28 different bridges under work category 215.
- The repair works in 18 out of the 28 bridges require design works, Our Roads & bridges Consultant (Beca) is currently inspecting these 18 bridges to assess, verify and prioritize the works. the design stage is planned to start in December 2024.
- The repair works in the remaining 10 bridges will be carried out under our general maintenance programme.



Bridge No	Road Name	Repair Description
157	Fleming Road	New abutments (over 2 years)
157	Fleming Road	Replace timber running boards and reseal the deck.
454	Mitchells Flat Road	New Abutments
245	Bridge No 245 (Cullen Access)	Timber deck replacement. Re-coat protective painting system.
395	Park Hill Road	New steel beams and timber deck
451	Waipori Road	New steel beams and timber deck
480	Cowan Road	New steel beams and timber deck
480	Cowan Road	Timber kerb snapped at DS side replace 200x150 6m long
68	Toko Mouth Road	Install concrete head wall and wing walls to repair the grout in loose stone walls (5)
378	Moa Flat Road	Replace the damaged handrails with new handrails
212	The Bonnett	Add and tighten new C clips fixing the spiking piece to the steel beams as the existing are loose due to shrinkage of timber. Some are up to 5mm gap, this will allow the deck to vibrate when vehicles cross
347	Roxburgh Street	Deck joints deteriorated, water leaking through joints and some debris built up at abutments. Replace the joints seal.
19	Coast Road	Jack up the bridge concrete deck. Replace rubber bearing and drop the deck. Reinststate approaches.
273	Greenfield Road (West)	Repair both aprons as they are starting to break up.
312	Papatowai Highway	Install gabion baskets at both banks on the U/S of the abutments approx. 10m long 2 tiers high on RB and 6m long on LB
221	Hunt Road (Catlins)	Drive UC adjacent to the U/S RB wingwall as the cracks open up again after previous repair wingwall seems moving away from the abutment
182	Kaka Point Road	Base of wingwall exposed place rock riprap approx. 12 cubes
231	Tahakopa Valley Road	Replace concrete kerb block broken at U/S RB corner

189	Kaka Point Road	D/S LB wingwall suspended due to ground settlement, carry out repair similar to U/S RB wingwall with additional concrete and riprap
86	Winslade Road	Repair the broken wires in the DS handrails
103	Rongahere Road	U/S TR gabion at wing wall lost all of its stone replace (5)
372	Wilden Runs Road	Install gabion baskets at U/S TL bank and wingwall to stop river scouring.
249	Fleming Road (Waiwera)	D/S T/R handrail post lost support bolt corroded Reinstall.
220	Hunt Road (Catlins)	U/S T/L scouring from road run off (4) add gabions and riprap
331	Switzers Road	One section guardrail damaged on D/S LB 4m long replace
470	Gabriels Gully Road	Scouring under LB abutment top up Rock riprap
470	Gabriels Gully Road	Gabions at U/S RB wingwall tilted. Top up rock riprap at the base
187	Port Molyneux Road	U/S and D/S bottom gabion has lost most of its stone and making the 2nd layer bulge. Refill gabion or replace. [5]
75	North Branch Road	Replace 200x100 2m long kerb piece broken at U/S LB corner
166	Fleming Road (Waiwera)	D/S TL hold bolt NUTs rusty clean and paint. [5]
28	Storer Road	Repair the broken sight rail 150x30 3m long at South end

*Table 1 Bridges location & repair works description*

Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
300047	300013	215 - Structures component replacements	\$ 741,000	--	\$ 741,000	TBC	

#### 14.15 Project 30063 – Bridges Renewals (category 216)

- The project's objective is to replace 10 road bridges (as listed in *Table 1* below) over the coming 3 years to open our road network to 50MAX and HPMV vehicles.

<b>Bridge #</b>	<b>Location</b>	<b>Ward</b>	<b>Span* (m)</b>	<b>Lanes</b>
121	Taumata Road	Clinton	6	1
134	Hillfoot road	Clinton	7	1
147	Slopedown Road	Catlins	9	1
173	Waitepeka Road	Balclutha	8	2
223	Katea Road	Catlins	5	1
443	Chapman Road	Lawrence/Tuapeka	9	1
386	Franklin road	West Otago	2	2
453	Mitchells Flat Road	Lawrence/Tuapeka	3	2
466	Corkscrew Road	Lawrence/Tuapeka	3	1
475	Mitchells Flat Road	Lawrence/Tuapeka	4	1

*Table 1 Bridges location & description*

**Project’s Delivery Strategy:**

- Carry out the surveying and soil investigation works.
- Develop a standardized “Specimen Design” applicable for the 10 Bridges.
- Publish a Design & Build tender for the 1<sup>st</sup> package (3 bridges; 121, 134, 147).
- Publish a Design & Build tender for the 2<sup>nd</sup> package (5 bridges) and then the 3<sup>rd</sup> package (2 bridges) over the next 2 years.

**Progress Update:**

- Surveying and soil investigation physical works completed for package 1 and reports are underway, physical works ongoing for 2 bridges in package 2 (Bridges 173, 223).
- Design and Tender Documents for package 1 are underway and planned for completion in January 2025.
- The Tender of package 1 is planned to be published on GETS by February 2025.



Bridge 121 – Taumata Road - Clinton



Bridge 134- Hillfoot Road - Clinton



Bridge 147 – Slopedown Road - Catlins

Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
300084	300063	216 - Bridges renewals	\$ 2,124,000	\$ 65,292.90	\$ 2,058,707.10	TBC	

### 15. Project – Water Supply Pipelines Renewals (Lawrence, Tapanui, Glenkenich, Richardson and Balmoral)

- The table below summarizes the scope of work in each location in terms of priority. However, the final scope of work will be identified after developing a detailed cost estimate against the available budget.

Project No.	Location	Scope of Work
351007, 351071	Lawrence	<ul style="list-style-type: none"> <li>• Replace or cancel (based on design outcome) 786m of 100mm AC main on SH8.</li> <li>• Replace 115m of 80mm AC main supplying the school on Harrington St.</li> <li>• Replace 249m of 80mm AC main on Colonsay Street.</li> </ul>
351010, 351068	Tapanui	<ul style="list-style-type: none"> <li>• Replace 465m of 100mm AC main on Warwick Street.</li> <li>• Replace 800m of 100mm AC main around Cumberland Place and Somerset Street (Option 2).</li> </ul>
362020	Balmoral 2	<ul style="list-style-type: none"> <li>• Replace 964m of 150mm AC main on Hillend Road (from Coe Rd to Gordon track).</li> </ul>
361024	Glenkenich	<ul style="list-style-type: none"> <li>• Replace 832m of 150mm AC main between Donald Road and McPhail Road</li> </ul>
361165	Richardson	<ul style="list-style-type: none"> <li>• Replace 4,144m of 65/80mm PVC between Clifton Road and Kaihiku Road</li> </ul>

*Table 1 location & Scope of Work*

#### Project's Delivery Strategy:

- Carry out any required site surveys, modeling, design calculations.
- Prepare a method statement, H&S guidelines, testing & commissioning plan for the 5 locations.
- Finalise the scope of work based on cost and budget analysis.
- Prepare separate tender packages (Measure & Value Contract) for the 5 locations.
- Carry out the work and hand it over to operations and asset management teams.

**Project Progress:**

- Surveying works completed.
- Design and Tender Documents are underway and planned for completion by end of November.
- The Tender of package 1 is planned to be published on GETS by November 2024.

Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
350025	351007	Lawrence pipeline renewals programme	\$ 64,119	-	\$ 64,119	TBC	
350027	351010	Tapanui pipeline renewals programme	\$ 179,532	-	\$ 179,532	TBC	
350101	351068	Tapanui AC pipeline Renewals	\$ 359,065	-	\$ 359,065	TBC	
350120	351071	Lawrence AC Pipeline Renewals	\$ 474,478	-	\$ 474,478	TBC	
360167	361024	Glenkenich pipeline renewals	\$ 136,620	-	\$ 136,620	TBC	
360249	361165	Richardson Upgrades/Renewals for Pipelines	\$ 250,000	-	\$ 250,000	TBC	
NA	362020	Balmoral 2 AC Main Renewals	\$ 150,000	-	\$ 150,000	TBC	
		<b>Total</b>	<b>\$ 1,613,814</b>		<b>\$ 1,613,814</b>		

**14.16 Project – Water Plant Backwash Treatment System (Tapanui, Milton, Kaitangata)**

- The backwash of the three plants is currently discharging to the water stream. Due to compliance requirements with ORC (Otago Regional Council) discharge consents, we need to find an alternative solution. We are also looking to assess the existing backwash systems condition and capacity and carry out any upgrades / refurbishments that might be required in each plant.
- The budget allocated for FY 2025 is for scoping and engineering works (\$ 100,000 each), the budget for carrying out the works is allocated for FY 2026 (\$ 500,000 each).

**Project's Delivery Strategy:**

- Carry out any required site surveys, assessments, studies and modeling.
- Carry out the Design Works.
- Finalize the Scope of Work based on cost and budget analysis.



- Prepare separate tender packages for the 3 locations.
- Carry out the Works and hand it over to operations and asset management teams.

#### Project Progress:

- Communication with ORC is underway to obtain clarity on the most viable solution before moving forward with design.
- Working with our operations team on the scope of works for required upgrades in Kaitangata water plant.

Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
NA	352007	Kaitangata Backwash treatment System	\$ 100,000	--	\$ 100,000	TBC	
NA	352008	Tapanui backwash treatment system	\$ 100,000	--	\$ 100,000	TBC	
NA	352009	Milton Backwash Treatment System	\$ 100,000	--	\$ 100,000	TBC	
			\$ 300,000	--	\$ 300,000	TBC	

#### 14.17 Project 400030 – Balclutha Pump Station Renewals

##### The project's Scope is:

- Reinstate 3 wastewater pump stations (Gormack St, Gypsy St and Koau).
- Raise the platform of Gormack Pump Station 1.5 meters above existing level as it's currently exposed to floods and stormwater.
- Assess and advise on the structural safety / integrity of the wet wells of the 3 pump stations (Gormack St, Gypsy St and Koau).
- Replace 1 pump in Gormack, St. Andrew and Gypsy stations.
- Replace all worn-out valves / fittings / meters ...etc. of the 3 pump stations (Gormack St, Gypsy St and Koau).

##### Project Progress:

- Assessment completed by consultant (GHD).
- Design and Tender Documents for Gormack PS are underway and planned for completion by end of November.
- The Tender of Gormack PS is planned to be published on GETS by November 2024.
- Depending on the tender outcome and the budget, we will decide when to start on Gypsy and Koau stations.



**Gormack St Pump Station**



**Location:**

- 65 Gormack St

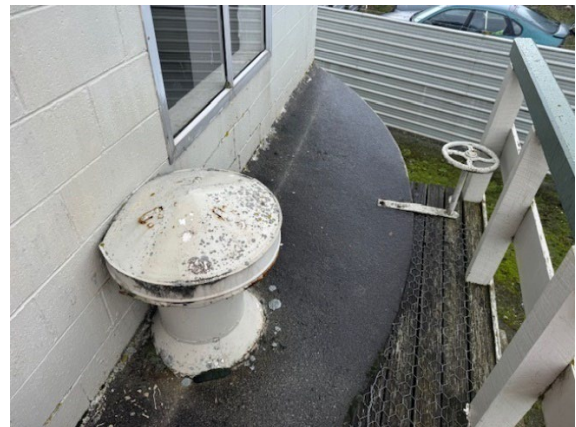
**Gypsy Pump Station**



Location:

- Gypsy St. - Hasborough Place, Opposite ORC driveway

**Koau Pump Station**



Location:

- Koau - 2 High Street just before the railway tracks heading to Owaka

Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
400048	400030	Balclutha Pump Station Renewals	\$ 147,566	--	\$ 147,566	TBC	

#### 14.18 Project 640042 Housing Unit Maintenance Component Replacement Programme

Housing Unit Maintenance Component Replacement Programme was approved in 2024 - 34 Long Term Plan Projects List by the council. There is \$400k allocated in 24/25, \$408k in 25/26 and \$416.8k in 26/27. It is intended for the community housing unit maintenance programme. The total budget for this project is \$1.22 million.

From the financial year 2024 to 2027, it was decided to focus on Naish Courts Community Housing Units (15 units), Waihola Community Housing Units (5 units) and Owaka Community Housing Units (6 units). As these three Community Housing sites require the most attention for renewal works.

It is proposed that the replacement of the Windows Installation Programme for Naish Courts Community Housing Units be commenced prior to the major construction work (while waiting for the designs and building consents at the current stage). The reason for this is that some units are currently not compliant with the Healthy Homes Standards as advised by our consultant, Betta Property Compliance. This will bring them up to standard as soon as possible. No design and no building consent is required for this prior project. The contractor can commence the construction during the golden summer period as well. There is adequate funding and resources this 24/25 financial year for the Windows Installation Programme.



Figure 1. Naish Courts Community Housing Units (64 Charlotte Street, Balclutha)





Figure 2. Waihola Community Housing Units (9 Nore Street, Waihola).



Figure 3. Owaka Community Housing Units (13 Burns Street, Owaka).

Job Code	Project Code	Description	Budget	Cost to Date	Available Budget	Forecast Spend	Variance
400048	640042	Housing Unit Maintenance Component Replacement Programme	\$ 400,000	\$8,358.94	\$391,641.06	\$165,000	\$0

## 15. Tender updates

The table below summarizes the status of the procurement for the physical works for the projects:

Project No.	Project Name	Estimated Tender Date	Actual Tender calling date	PM	Status
Various project nos.	Tank Procurement (122 +/- 15%)	Oct-24	23 Oct 2024	Krunal	On track
Various project nos.	Farm tank construction (11 sites)	Oct-24		Krunal	Delayed <sup>1</sup>
450043	Lawrence SW Renewal	Oct-24		John	Delayed <sup>2</sup>
310004	Balclutha Streetscape - Clutha Hub Car Park	Oct-24		Dredd	Delayed <sup>3</sup>
362016	Mt Mistake Pump Station Replacement	Award Oct 2024		Kuben	Delayed <sup>4</sup>
300013	215 - Structures component replacements	Nov-24		Ahmed	Delayed (Jan 2025) <sup>5</sup>
351007, 351010, 351068, 351071, 361024, 361165, 362020	Pipeline Renewals (5 tenders for 5 Locations)	Nov-24		Ahmed	On track

<sup>1</sup> Delays due to finalisation of tank layout and land agreement with landowners

<sup>2</sup> Delays due to further study and budget allocation to include the scope needed to achieve the project objective

<sup>3</sup> Delays due redesign to comply with the District Plan requirements

<sup>4</sup> Award delayed due to additional scope requested (pump upgrade)

<sup>5</sup> Moved to Jan 2025 to include the needed pre-work investigations to firm up the scope

Project No.	Project Name	Estimated Tender Date	Actual Tender calling date	PM	Status
400030, 402010	Balclutha Pump station	Nov-24		Ahmed	On track
300037	Footpath Kerb and Channel	Nov-24		Dambar	C845 <sup>6</sup> (MSQA-Dambar)
310002	Milton Main Street/Streetscape Project	Nov-24		Dambar	On track
351050	Balclutha WTP - Intake upgrade and Installation of Johnson Screen + Air backwash	Dec-24		John	On track
640042	Housing unit maintenance and component replacement programme	Jan 2025		Hebe	On track
450033	Balclutha Stormwater Network Renewal	Jan 2025		John	On track
300063	216 - Bridges renewals	Feb-25		Ahmed	On track
351085	Milton-Tokoiti Water Network Extension	Mar-25		Kuben	On track
352007, 352008, 352009	Backwash treatment system (tenders for 3 Locations)	Apr-25		Ahmed	On track

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<sup>6</sup> Awarded as a variation under Contract 845



<b>Project No.</b>	<b>Project Name</b>	<b>Estimated Tender Date</b>	<b>Actual Tender calling date</b>	<b>PM</b>	<b>Status</b>
400064	Connecting Stirling to Balclutha Sewer Network	Under review		Kuben	On track
500022, 500023, 500021	Projects relating to Mt Cooe	Under review		Hebe	On track
450035	Kaitangata SW Renewal	Nov-24		John	DEFERRED <sup>7</sup>

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<sup>7</sup> Budget re-allocated to other projects