Otago Regional Council

ORC NOTIFICATION RECOMMENDATION REPORT

Application No: RM25.177 & RM25.206
Prepared for: Staff Consents Panel
Prepared by: Hannah Goslin - Consultant Planner
Date: 16 September 2025

Subject: **Applications RM25.177 and RM25.206 by Queenstown Lakes District Council for various consents required to facilitate the discharge of treated wastewater to the Shotover River/Kimiākau**

1. Purpose

To report and make recommendations under sections 95A-G of the Resource Management Act 1991 (the Act) on the notification decision for the above application.

2. Background Information

Applicant: Queenstown Lakes District Council

Applicant's Agent: Claire Perkins (Landpro Ltd)

Site address or location: Shotover River delta

Legal description(s) of the site: Sec 4 SO 409393

Record of title number and owner: Department of Conservation Land

Map reference(s): NZTM 2000 E1266096 N5007045

Consent(s) sought:

RM Number	Description
RM25.206.01	Discharge permit to discharge treated wastewater to the Shotover River/Kimiākau
RM25.206.02	Land use consent to construct a rip rap outfall structure in the bed of the Shotover River/Kimiākau
RM25.206.03	Discharge permit to discharge contaminants into air associated with the discharge of treated wastewater[1]
RM25.177.01	Water permit to divert water within the bed of the Shotover River/Kimiākau to ensure the discharge of treated wastewater is always to flowing water
RM25.177.02	To disturb the bed of the Shotover River/Kimiākau for the purpose of creating and maintaining a diversion channel
RM25.177.03	Discharge permit to discharge remobilised sediment from the Shotover River/Kimiākau when constructing and maintaining the diversion channel

[1] This application was originally sought as a condition variation to an existing resource consent (RM13.215.01) during the Section 88 check for completeness it was determined that the condition variation sought was beyond the scope of the original application and would be progressed as a new discharge permit to discharge contaminants into air.

Purpose: Disposal of treated wastewater from a wastewater treatment plant to the Shotover River/Kimiākau and to establish and maintain an outfall structure and diversion channel in the Shotover River/Kimiākau

Current consents: The Applicant holds several resource consents to authorise a range of activities in the district. The following are identified as being most relevant to the proposal subject of this recommendation report:

RM Number	Description	Expiry
RM13.215.03.V2	To discharge treated wastewater to land	31/12/2031
RM2008.238.V2	To discharge treated wastewater to land for the purpose of operating the Queenstown Wastewater Treatment and Disposal System[2]	18/03/2044
RM13.215.01	To discharge contaminants to air for the purpose of operating the Queenstown Wastewater Treatment Plant	18/03/2044

Section 124 timeframes:

- This is an application for a new activity and so section 124 does not apply.

2.1 Key issues/risks

The key issues/risks with the application are:

- The impacts on surface water quality and ecology, and cultural values of the Shotover River/Kimiākau arising from the discharge of treated wastewater.
- Ensuring the proposed diversion channel can reliably and consistently achieve the target flow of 2.5 cubic metres (m^3).

2.2 Summary

I recommend these applications are processed on a **publicly notified** basis.

This is because:

- The Applicant has requested application RM25.206 be publicly notified in accordance with Section 95A(3)(a) of the RMA.
- Special circumstances exist for RM25.177

3. Description of Activity

The application made under RM25.206 is to authorise the discharge of treated wastewater from the Shotover Wastewater Treatment Plan (WWTP) to the Shotover River/Kimiākau. The WWTP currently services the communities in the Wakatipu Basin of Queenstown, Arthurs Point, Frankton, Kelvin Heights/Willow Place, Quail Rise, Shotover Country, Lake Hayes and

[2] At the time of drafting this recommendation report, this resource consent is yet to be exercised.

Arrowtown. In the short to medium term, additional wastewater flows will also be received from Jacks Point Village, Hanley Farms, Ladies Mile and an extension of the Quail Rise residential development areas.[3]

The application made under RM25.177 is to undertake riverbed disturbance works within the bed of the Shotover River/Kimiākau, to discharge remobilised bed sediment and to divert water to maintain a flowing channel for the treated wastewater discharge.

After application RM25.177 was made, the Council determined under section 91 Resource Management Act 1991 that to better understand application RM25.177, it was appropriate that the application for consent to discharge wastewater (RM25.206) be made before proceeding further. Council considered that both RM25.177 and RM25.206 should proceed through the resource consent process together.

3.1 Background to the proposal

3.1.1 Discharge of treated wastewater from the Shotover WWTP (RM25.206)

The discharge of treated wastewater via a discharge channel to the Shotover River/Kimiākau occurred until 2019[4]. Since then, discharge to the Shotover River has ceased, the Applicant has disposed of treated wastewater to land via a Dose and Drain (DAD) disposal field. Treated wastewater had ponded within the DAD, leading to unconsented discharges from the DAD and increased waterfowl presence at the site. The Applicant says it has undertaken emergency works to address the risks to aircraft caused by the presence of waterfowl. Section 1.1.4 of the Application provides an analysis of the six options considered to manage the discharge of treated wastewater. The Applicant has commenced discharging wastewater through the historic discharge channel to the Shotover River/Kimiākau on the 31 of March 2025.

Section 330 of the RMA enables emergency works and powers to take preventative or remedial action. In accordance with Section 330A(2) of the RMA, where an activity contravenes any of sections 9, 12, 13, 14 and 15 of the RMA and the adverse effects of the activity continue, then an application shall be made to the consent authority for the necessary resource consents required for the activity within 20 working days of the notification being made to the consent authority that the activity will be occurring. An application was received by the Council on 1 May 2025.

In accordance with Section 330A(3) if the application is made within the 20 working day period, the activity may continue until the application for a resource consent and any appeals have been finally determined. For the purpose of the assessment undertaken in this report, the Council does not consider it is necessary to determine whether the exercise of powers under Section 330 was valid.

The resource consent background to the WWTP and associated discharges is extensive and complex. Prior to commencing the discharge of treated wastewater to the Shotover River/Kimiākau, the Applicant was discharging treated wastewater to land and held RM13.215.03.V2 for that purpose. RM13.215.03.V2, which enables the discharge of 11,238

[3] It is understood that additional flows from these areas will occur following the upgrade of the WWTP.
[4] Previously authorised by RM13.215.02 (expired 28/02/2017) and RM13.215.04(expired 31/12/2022)

cubic metres per day of wastewater (as an annual average) and sets thresholds for nitrogen mass that will require the consent holder to implement the WWTP upgrade process. The conditions of RM13.215.03.V2 set out a three-stage plan for the upgrade of the WWTP.

RM2008.238.V2 is held by the Applicant and is yet to be given effect to.[5] This permit authorises the discharge of treated wastewater to land from the upgraded WWTP. RM2008.238.V2 sets more restrictive effluent quality limits, which require enhanced treatment of the wastewater. RM13.215.03.V2 is required to be surrendered within six months of the WWTP upgrade being commissioned. The Applicant is currently in the process of upgrading the WWTP and is in the third and final stage, which is the transition from a traditional Biological and Aerated Pond treatment process to an 'Activated Sludge Treatment' (referred to as a Modified Ludzack Ettinger (MLE) treatment train) method, and to provide for future growth through to 2048. It is understood from the application that at the date the application was lodged, approximately 80% of the wastewater is receiving treatment through the MLE treatment train, with the balance of flows still being treated within the oxidation ponds. The WWTP is currently being upgraded with a second MLE plant, which will avoid the need for raw wastewater to be treated through the oxidation plants and will provide a better-quality treated wastewater stream. This upgrade is due for completion at the end of 2025. At the time of drafting this report the majority of wastewater flow is being processed through both MLE plants with minimal flow continuing to the oxidation process. .

The application notes that in October 2024 work commenced to develop a new long-term solution to dispose of the wastewater produced at the WWTP. Optioneering for a preferred long term disposal solution is expected to commence in mid-2025 followed by preliminary design and associated Business Case in late 2025. An application for resource consent from the ORC is expected to be lodged in mid-2026. It is understood that the long-term solution will be complete and operating by mid-2030.

3.1.2 To undertake riverbed disturbance works and divert water (RM25.177)

The Shotover River/Kimiākau has naturally aggregated at the location of the WWTP outfall resulting in the main braid of the Shotover River shifting towards the true right of the braidplain extent. To ensure a flowing braid past the WWTP outfall is maintained for the purpose of improving mixing and ensure adequate dilution of the discharge, the Applicant seeks the necessary resource consents to undertake works in the bed of the Shotover River/Kimiākau to establish a diversion channel, to divert flow within the bed of the Shotover River/Kimiākau and to discharge remobilised sediment from the bed of the Shotover River/Kimiākau.

3.2 Application documents

The application was made over two separate sets of application documents. The Applicant has provided the following documentation with the application made under RM25.177:

- Form 1 Application for resource consent signed by Claire Perkins of Landpro on behalf of the Applicant dated 10 April 2025;
- Form 3 Application to divert water and Form 7 Application to discharge water or contaminants to water;

[5] The lapse date for this resource consent is December 2031

- Resource consent application and supporting information report signed by Claire Perkins of Landpro on behalf of the Applicant dated 10 April 2025; and
- Appendix A: Water quality baseline snapshot for Queenstown Wastewater Treatment Plan and Surrounds.

The Applicant has provided the following documentation with the application made under RM25.206:

- Form 1 Application for resource consent signed by Claire Perkins of Landpro on behalf of the Applicant dated 30 April 2025;
- Form 7 Application to discharge water or contaminants to water; Form 10A Application for land use consent – structures in, on or over the bed of a waterbody and Form 22 Change (variation) or cancellation of consent conditions;
- Shotover WWTP Surface water and Groundwater Assessment, Queenstown Lakes District Council prepared by Dusk Mains of GHD dated 30 April 2025 (labelled as Appendix G);
- Resource consent application to Otago Regional Council for Discharge of Treated Effluent to Kimiākau/Shotover River prepared by Claire Perkins of Landpro dated 1 May 2025;
- Appendix A: Bird survey report prepared by Dawn Palmer of Natural Solutions for Nature Ltd dated 30 April 2025;
- Appendix B: Letter titled 'Shotover Wastewater Treatment Plant- Urgent Action Required' signed by Lauren Rapley and Siobhan McDonald of Russell McVeagh on behalf of the Applicant;
- Appendix C: Shotover Wastewater Treatment Plan Treated Wastewater Discharges – Emergency Works Justification dated 27 March 2025
- Appendix D: Copies of Current Consents
- Appendix E: Graphs of WWTP effluent sampling results
- Appendix F: Shotover WWTP Draft Environmental Monitoring Plan – Short term consent prepared by Dusk Mains of GHD dated 30 April 2025
- Appendix H: Policy Assessment
- Water Quality Monitoring results have continued to be provided from the Applicant throughout the processing of this consent.
- Request for additional information for application RM25.206 by Queenstown Lakes District Council associated with the Shotover WWTP discharge of treated wastewater dated 15 May 2025.

A request for further information relating to both resource consent applications was made on 19 June 2025. The further information response dated 13 August 2025 contained the following information:

- Further information response letter signed by Claire Perkins of Landpro on behalf of the Applicant dated 13 August 2025.
- Appendix A: Water quality report dated 13 August 2025 prepared by Dusk Mains and Anthony Kirk of GHD;
- Appendix B: River Protection and Diversion report dated 13 August 2025 prepared by Ali Ghavidel, Ian Ho and Anthony Kirk of GHD;
- Appendix C: Freshwater quality memorandum dated 12 August 2025 prepared by Tanya Cook of Boffa Miskell;
- Appendix D: Draft conditions of consent for discharge;

- Appendix E: Cultural impact assessments or statement, including Queenstown Lakes District Council Cultural Impact Assessment QLDC Wastewater Treatment Plant Discharge Consent prepared by Te Ao Mārama and Cultural Position Statement endorsed by Aukaha Ltd Wai Māori representatives dated 13 August 2025 and signed by Chris Rosenbrock; and
- Appendix F: Updated policy Assessment.

Resource consent is also required from the Applicant (Queenstown Lakes District Council). That application will be made separately.

The Applicant made a request for direct referral to the Environment Court on 27 June 2025. The Council granted that request on 11 July 2025. The Council is required to prepare a report under Section 87F(3) of the RMA within 20 working days after the close of submissions.

3.3 Compliance with Current Consents

As discussed in the sections above, the resource consent background to the Shotover WWTP is extensive and complex. Investigations into incidents at the WWTP has been the highest priority investigation for the Council, and compliance monitoring is ongoing to ensure the Consent Holder (referred to throughout this report as "the Applicant") achieves compliance with current consent conditions.

Below is a summary of the compliance history over the past four years and ongoing issues relevant to resource consents held by the Applicant:

- Since February 2021, the Shotover WWTP DAD has faced compliance issues with RM13.215.03.V2. This has been due to a combination of issues in relation to the DAD's design, elevated groundwater levels and sludge binding. This has impeded infiltration of the DAD, leading to surface ponding of treated (or occasionally undertreated) wastewater and the discharge of treated (or occasionally undertreated) effluent beyond the consented DAD area.
- As a result of these non-compliances, two abatement notices and a total of 10 infringement notices have been issued (five infringement notices have been issued since January 2025).
- Following the DAD's initial failure, steady deterioration of the DAD was observed.
- On 27 May 2021, the first abatement notice and infringement notices were issued, when the discharge and ponding within and outside the DAD were fully treated and not considered an environmental or health risk. This abatement notice initially required no ponding or surface run-off of treated wastewater by 25 August 2021.
- The Applicant applied for, and ORC granted multiple extensions to the compliance due date, eventually expiring 30 November 2023.
- Ponding outside the consented area was resolved, but minor ponding within the field persisted within the discharge quality limits of RM13.215.03.V2 until December 2023.
- In December 2023, operational failures at the Shotover WWTP led to issues with wastewater quality and odour problems. As a result, an infringement notice was issued for breaches of the air discharge permit (RM13.215.01).
- During these operational plant failures, Council Enforcement Officers observed undertreated wastewater discharging from the DAD and into the Shotover Delta, with a high likelihood of it entering the Kawarau River.

- Consequently, a second abatement notice was issued in March 2024 requiring compliance with discharge quality conditions of RM13.215.03.V2.
- In August 2024, operational issues at the Shotover WWTP led to elevated nitrogen levels and solids carryover, decreasing infiltration capacity within the gravels.
- Multiple infringement notices were issued in late 2024 and January 2025 for breaches of the second abatement notice.
- Treated wastewater continued to discharge over land from the DAD[6]. In September 2024, a discharge pipe was constructed by the Consent Holder in September 2024 to control wastewater discharge from the DAD and prevent wall failure.
- Since the most recent plant operational issue in August 2024, final wastewater quality has met discharge quality limits in RM13.215.03.V2. However, increased standing water on the DAD and ponded effluent on the Shotover delta raised the risk of bird strikes.
- On 22 January 2024, the Council lodged an application to the Environment Court for an Enforcement Order to address compliance issues. The enforcement orders sought related to:
    - The performance of the WWTP, including avoiding future treatment failures and remedying and/or mitigating the effects of any such failures; and
    - The discharge of treated wastewater beyond the consented DAD.
- Between March and May 2025, Environment Court assisted mediation in relation to the enforcement orders was held.
- On 10 June 2025 the Environment Court approved the Council's application for an enforcement order. The decision sets out the actions that must be undertaken within set timeframes to avoid, remedy and/or mitigate adverse effects on the environment at the WWTP. Key actions set out in the enforcement order include:
    - Updates and procedures that need to be incorporated into the Operations and Management Manual to enhance monitoring, reporting and compliance with discharge limits ensuring the efficient operation of the WWTP. These amendments included turbidity monitoring, establishing relationships between TSS and Turbidity/UTV and operating procedures for capacity assessments;
    - Provision of an operator training plan and an operating procedure for a capacity assessment;
    - Increased sampling and monitoring requirements of final treated wastewater;
    - Repairs and improvements to the WWTP;
    - MLE upgrades;
    - Actions related to the DAD if still in use (including order 1.13 which requires the application for resource consent subject of this report);
    - The development of a long term solution for disposal of treated wastewater;
    - Costs; and
    - Order 1.21 which requires any short-term disposal solution to not attract any birds that are hazardous to aircraft or may endanger aircraft actions.

3.4 Relationship of this proposal alongside existing resource consents

The Applicant proposes that if the resource consents sought as part of this proposal are granted, then the existing resource consent that authorises the discharge of treated

[6] The flow was not always continuous and did cease for at least one period.

wastewater to land[7] will be surrendered. A condition of resource consent has been proposed to this effect in Appendix D of the Section 92RFI response. The Applicant proposes to maintain 2008.238.V2, but to not activate this resource consent while the discharge to surface water is occurring under the new resource consent sought under this process.

3.5 Emergency works carried out to date

The Applicant has provided a summary of the activities associated with what it says were emergency works under Section 330 Resource Management Act 1991 in Section 1.2.1 of the Application. Those activities can be summarised as:

- Between the 27 and 28 March 2025, vegetation clearance of the historic discharge channel within land owned by the Applicant was undertaken. These works were undertaken by two excavators and did not include clearance of vegetation within the final 100 metres of the channel on the land parcel owned by the Department of Conservation (DoC).
- The discharge of treated wastewater to the historic discharge channel commenced at 1:45am on the 31 March 2025.
- For approximately two days, discharge of treated wastewater to both the DAD and the discharge channel occurred. Discharge to the DAD ceased at 5:30pm on the 1 April 2025.
- There was a noticeable colour change in the water of the discharge channel once the treated wastewater from the oxidation pond was directed to the channel.
- The discharge of treated wastewater to water has been continuously occurring since commencement.

3.6 Location of the treated wastewater discharge (RM25.206)

The Shotover WWTP is located on the true right bank of the Shotover River/Kimiākau, downstream of the State Highway 6 bridge and within the Shotover Delta. The location and layout of the discharge channel and discharge point into the Shotover River/Kimiākau is shown in Figure 1:

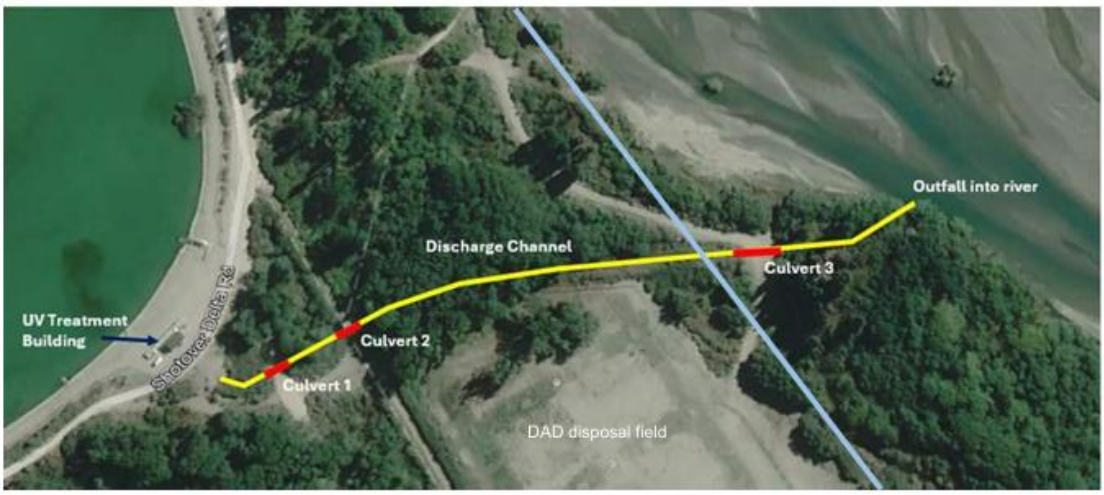

Figure 1: *Discharge channel location and layout shown in yellow. Application identifies that the designation boundary is shown in blue. Source: Application (page 19) dated 1 May 2025.*

[7] RM13.215.03.V2

3.7 Quantity of treated wastewater discharged (RM25.206)

The discharge of treated wastewater sought to be authorised under RM25.206 is proposed to be continuous (24 hours per day 7 days per week) for a duration of five years. The Stage 3 upgrades to the Shotover WWTP have been designed to accommodate growth up to 2048.

Section 2.5.2 of the Application states that the Applicant is in the process of updating future population forecasts and wastewater flow estimates that will be available in mid-2025. In the absence of these forecasts, Stage 3 expansion flow estimates have been adopted as the current growth forecast and the estimated flows for 2038 have been assumed to be the design basis for the short-term disposal solution. This is because the Applicant has observed a higher growth rate in the last couple of years. By adopting the estimated flows for 2038, more headroom is provided, should the high growth rate continue.

The Applicant has provided the following information on expected flow rates for the discharge:

- Maximum flow rate of discharge is proposed to be 400 litres per second (L/s);
- Average Dry Weather Flow (ADF) (also referred to as Annual average daily flow) is proposed to be 16,900 m^3/day;
- Peak Dry Weather Flow (PDWF) is proposed to be 19,700m^3/day; and
- Peak Wet Weather Flow (PWWF) is proposed to be 29,100m^3/day.

3.8 Quality of treated wastewater discharge (RM25.206)

The discharge sought to be authorised as part of RM25.206 consists of treated wastewater from the Shotover WWTP. As discussed above, the Applicant is currently in the process of upgrading treatment at the Shotover WWTP. The treatment process after the upgrade will differ from that before the upgrade. This upgrade accords with existing resource consents currently held by the Applicant.

The Applicant proposes that the discharge of treated wastewater after reasonable mixing (at a distance of 200 metres downstream of the point of discharge into the Shotover River/Kimiākau) shall not give rise to all or any of the follow effects:

- The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials; or
- Any conspicuous change in the colour or visual clarity; or
- Rendering of freshwater unsuitable for consumption by farm animals; or
- Any emission of objectionable odour; or
- Any significant adverse effects on aquatic life.

3.8.1 Currently to 31 December 2025

The Shotover WWTP has been operating by splitting incoming wastewater flow (80:20) to the MLE/secondary clarifier and the oxidation ponds. Effluent is then combined before it receives UV treatment prior to discharge. Flow to the oxidation ponds increases when the incoming flows are high, to prevent the secondary clarifier from becoming overloaded.

Treatment at the Shotover WWTP currently consists of inlet screens with grit removal and secondary treatment of an MLE/secondary clarifier operating in parallel with oxidation ponds before the combined effluent passes through the UV channel for disinfection.

Section 2.5.3 of the Application provides an overview of the current discharge quality and compliance with existing limits in RM13.215.03.V2. It is noted that generally the treated effluent complies well with the current limits, except where there have been process updates in November and December 2023/January 2024 and May 2024. An analysis of sampling results for key parameters is provided.

The Applicant proposes to adopt the same discharge quality standards as RM13.215.03.V2 until 31 December 2025. The only exception to this is that Carbonaceous biochemical oxygen demand ($cBOD_5$) is proposed to be measured instead of total BOD_5 as it is a more appropriate measurement of organic content in wastewater. The proposed limits are as follows in Table 1:

Table 1: Discharge quality standards. Source: RM13.215.03.V2.

Parameter (mg/L)	Annual Mean	Annual 95%tile
Carbonaceous biochemical oxygen demand ($cBOD_5$)	30	50
TSS (Total suspended solids)	30	50
TN (Total nitrogen)	23	35
E. coli in cfu/100mL	260	-

As a result of the discharge quality not complying with the necessary parameters in RM13.215.03.V2, the Applicant has reviewed the WWTP operation and maintenance programme to identify opportunities to improve reliability and performance. These are set out in Section 2.7 of the application.

3.8.2 From 1 January 2026 onwards (or when Stage 3 upgrades are fully operational)

Stage 3 upgrades to the Shotover WWTP are to be completed before 1 January 2026. At the time of drafting this report, it is understood that the Applicant is well progressed towards this upgrade and has already brought the new MLE reactor online. Key aspects of the Stage 3 upgrades include:

- The discharge requires compliance with more stringent discharge quality limits in condition (3) of 2008.238.V2. This is achieved by providing an equal split of flow to the two MLE reactors followed by two secondary clarifiers instead of the current 80:20 split between the one MLE reactor and oxidation ponds;
- Increased capacity of the WWTP. During unexpected high flows a bypass weir will be activated to divert the high flows to the new raw wastewater calamity pond. Any stored wastewater will then be pumped back into the MLE reactors when there is available capacity.

The Applicant seeks the same quality limit conditions currently contained in condition (3) of 2008.238.V2. The only exception to this is the addition of Total Ammoniacal Nitrogen as a parameter. The limits are set out in Table 2 below:

Table 2: Discharge quality standards. Source: RM2008.238.V2.

Parameter (mg/L)	Annual Mean	Annual 90%tile
Carbonaceous biochemical oxygen demand ($cBOD_5$)	10	20
TSS (Total suspended solids)	10	20
TN (Total nitrogen)	10	15
E. coli in cfu/100mL	10 (geometric mean)	100 (95^{th} percentile)
TAN (Total Ammoniacal Nitrogen)	1.5	5

In addition to the parameters listed above, the Applicant also proposed that after 31 December 2025, the exercise of the resource consent shall not result in visible discolouration of the Shotover River/Kimiākau at a distance of 200 metres or more from the point of discharge.

If a decision on this application for resource consent is made after 31 December 2025, it is only the limits in the second table above that will be sought.

The location at which all proposed limits must be met is after UV treatment at the auto sampler prior to discharge into the discharge channel.

3.9 Method of treated wastewater discharge (RM25.206)

Treated wastewater from the WWTP is proposed to be discharged from the UV channel to the discharge channel. The Applicant notes that as treated wastewater flows along the discharge channel, some may infiltrate the ground along the base and sides of the channel.

The discharge channel is approximately 270 metres in length and varies in width. The channel has a longitudinal slope varying between 0.1% to 4%. There are three concrete culverts within the channel where footpaths are located. Vegetation was well established along most sections of the channel and were cleared prior to the discharge commencing.

The Applicant has assessed the hydraulic capacity of the channel (including culverts) to understand the likely capacity of the channel to convey treated wastewater. This assessment showed that most sections of the channel (including culverts) are expected to have sufficient capacity to convey the proposed maximum flow rate of 400L/s. Some sections of the channel do not have a defined cross section to contain the flow, they are mostly located at the outlet of the existing culverts and within land manged by DoC (between chainage 180 to 210 on Figure 2). Installation of earth embankments and improving the culverts' inlet and outlet at these sections are needed to shape a defined geometry.

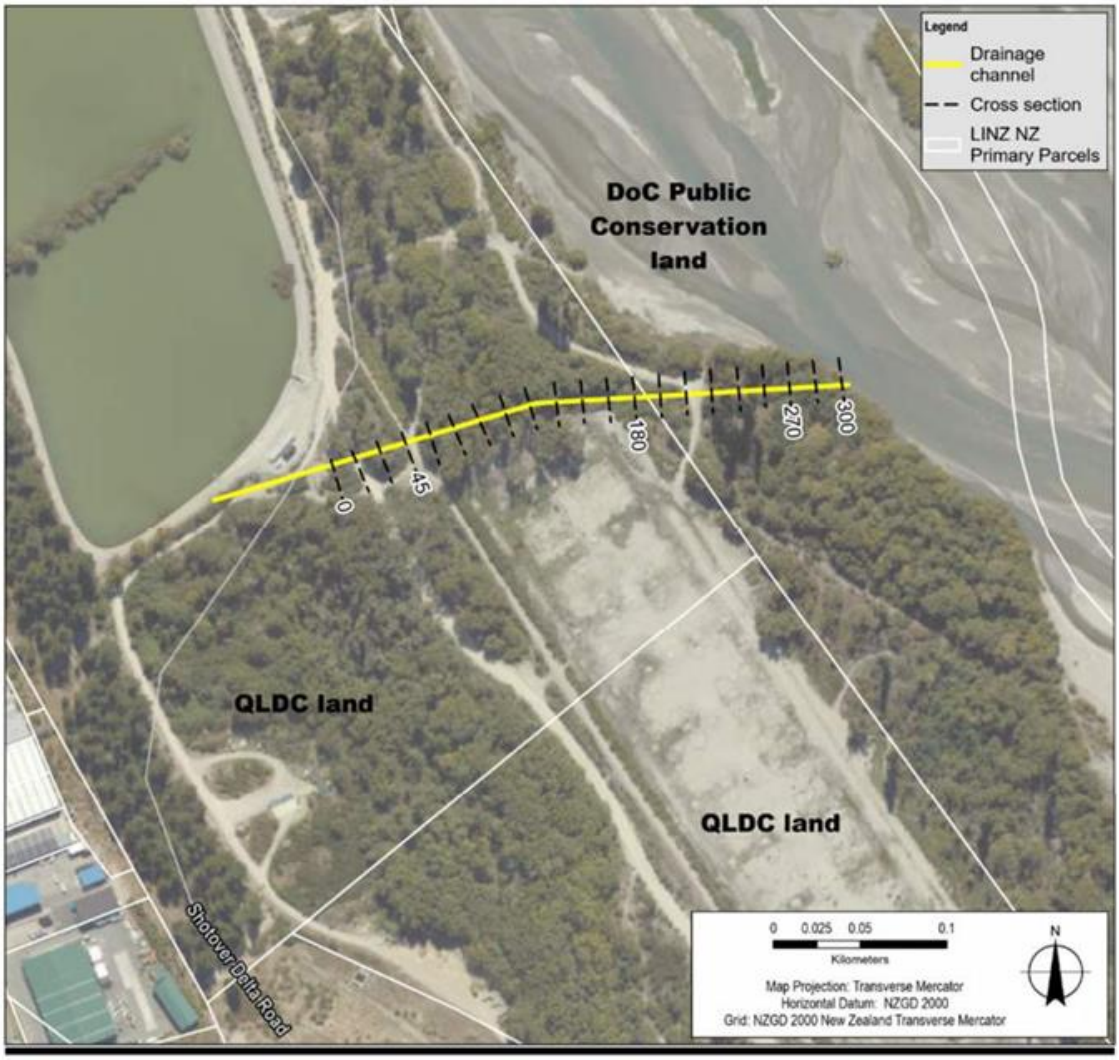

Figure 2: *Drainage channel (referred to in this report as discharge channel) and analysed cross sections for hydraulic capacity assessment. Source: Application (page 34) dated 1 May 2025.*

3.10 Operations and management manual for wastewater treatment and disposal system (RM25.206)

The Applicant has proposed to provide an Operations and Management Manual for the treatment and disposal system to ensure its operation is effective and efficient at all times. The Applicant has proposed resource consent conditions provided in Appendix D to the Section 92 RFI response that sets out the matters that must be covered by the manual. A number of these requirements already form part of the existing resource consents RM13.215.03.V2 and 2008.238.V2. A key change from the conditions of 2008.238.V2 is a proposed requirement to draft the operations and management manual in consultation with Te Ao Marama Inc and Aukaha.

3.11 Proposed sampling and monitoring regime for treated wastewater discharge (RM25.206)

The Applicant has provided a proposed sampling and monitoring regime in Appendix F to the application. Proposed resource consent conditions provided in Appendix D to the Section 92 RFI response also set out the proposed sampling and monitoring regime. It is noted that a number of these performance monitoring proposals already form part of existing resource

consents RM13.215.03.V2 and 2008.238.V2. A summary of the regime proposed for RM25.206 is provided in Figure 3:

Sampling Locations	Parameters	Minimum Frequency
Plant Flows	Locations: Plant Inlet, Clarifier Outlet, Pond 3 Pump Station Type: Electro magnetic flowmeters Flow monitoring: Daily totals and instantaneous rates	**Continuous measurements**
Discharge Flow Rate	Before MLE2 is commissioned (till end of 2025): the sum of pond 3 pump station and clarifier outlet flowmeters After MLE2 is commissioned: Clarifier Outlet flowmeter	**Continuous measurements**
WWTP Influent (for operational monitoring)	24 hour time composite samples Parameters: COD, cBOD5, TSS, Tot N, TAN, TP, Alkalinity and pH.	**Weekly**
Clarifier Effluent (for operational monitoring)	Grab Sample Parameters: cBOD5, TSS, Tot N, TAN, NO3N, TP and pH.	**Weekly**
UV Effluent (Consent Compliance Location)	24 hour time composite samples, except for E Coli (grab samples) Parameters: COD, cBOD5, TSS, Tot N, TAN, NO3N, NO2N, TP, E Coli	**Monthly**
Receiving Environment	Upstream and downstream monitoring on Kimi-ākau/Shotover River and downstream on Kawarau River (weekly). Groundwater quality monitoring at BH02, BH03, BH04 and BH06 (monthly) A draft monitoring plan is provided as Appendix F with further details of parameters and frequency at specific locations.	**Various**

Figure 3: *Summary of proposed Sampling and Monitoring Regime. Source: Application (page 38) dated 1 May 2025.*

The Applicant has proposed a condition of resource consent that Aukaha and Te Ao Marama Inc are invited to attend when monitoring is undertaken.

The Applicant notes that there is no receiving environment monitoring carried out in the Shotover River/Kimiākau under the current consent to discharge through the DAD. The Applicant has proposed resource consent conditions requiring submission of a Receiving Environment Monitoring Plan (REMP) within one month of RM25.206 commencing. The purpose of the REMP is to monitor the effects of the discharge on surface water quality and instream ecology of the Shotover River/Kimiākau and Kawarau River and nearby groundwater quality.

The REMP is proposed to include:

- Sampling locations. At a minimum this is proposed to comprise of one upstream and one downstream location 200 metres from the point of discharge into the Shotover River/Kimiākau;
- Sampling methods;
- Sampling frequency. At a minimum this is proposed to be monthly for surface water quality samples and six monthly for instream ecological surveys; and
- Sampling parameters.

The Applicant proposes to provide the REMP and any subsequent updates to Aukaha and Te Ao Marama Inc.

In terms of reporting these results to the ORC the Applicant proposes to:

- Report daily discharge volumes for the previous calendar month within two weeks at the end of each calendar month;
- Provide weekly sampling results within two weeks of results being received from the laboratory; and
- Provide REMP analytical sampling results within two weeks of results being received from the laboratory alongside readings of the 24-hour wastewater discharge volume for the day of sampling.

In addition to the monitoring regime set out above, the Applicant also proposes to undertake a visual inspection of the discharge channel and outfall to ensure there is no erosion or scour as a result of the treated wastewater discharge.

3.12 Annual reporting of treated wastewater discharge (RM25.206)

Similar to the conditions of RM13.215.03.V2 and 2008.238.V2, the Applicant proposes to provide an annual report to the Council providing a summary of compliance with a range of consenting requirements including:

- The quality and quantity of treated wastewater discharged;
- Summaries of the year's monitoring results in the context of the previous year's results;
- A summary of trends in receiving environment monitoring, any areas of concern and outlining any changes to the system or operation to mitigate concerns;
- Summary of compliance with conditions of resource consent, any complaints received and any corrective actions undertaken.

A copy of the annual report is proposed to be provided to Aukaha and Te Ao Marama Inc.

3.13 Discharge of contaminants into air associated with the discharge of treated wastewater (RM25.206)

The Applicant currently holds a discharge permit to authorise the discharge of contaminants into air for the purpose of operating the WWTP. This permit expires on 18 March 2044.[8] Initially, the Applicant sought this aspect of the proposal to be pursued as a variation to the existing discharge permit. It was determined that the proposal was beyond the scope of the existing permit and would need to proceed as a new resource consent application.

The Applicant seeks to discharge contaminants into air associated with the discharge of treated wastewater to the Shotover River/Kimiākau. Odours expected from the WWTP is expected by the Applicant to have a 'musty', 'earthy' or 'algae-like' character. Any odours associated with the outfall are expected by the Applicant to be detectable within 50 metres of the discharge point.

[8] RM13.215.01

It is proposed to manage discharges into air in the same way that discharges are managed under the existing resource consent.[9] At a high level, discharges into air are proposed to be managed as follows:

- That there is no discharge of odour that is noxious, dangerous, offensive or objectionable to the extent that it causes an adverse effect beyond the boundary of the site.
- The Applicant is required to adopt the best practicable options (BPOs) to prevent or minimise odour discharged from the site;
- The discharges must occur in accordance with an Odour Management Plan that is peer reviewed by a suitably qualified air quality specialist and sets out:
    - A description of the potential sources of odour;
    - A plan showing the legal boundaries of the site;
    - Any BPOs to prevent or minimise odour discharges from the site;
    - Methods and procedures to minimise odour from the site;
    - Methods for recording and responding to complaints;
    - Assignment of responsibilities for implementing and updating the Odour Management Plan;
- The Odour Management Plan must be subject to an annual review.
- An Odour Performance Review Report must be submitted three years following the commencement of the discharge and every three years thereafter.
- Walkover surveys to determine odours at the boundary of the site must be undertaken following any upgrade works or in the event a complaint is received.
- A Reference Group must be set up to facilitate consultation between the Consent Holder, stakeholder and iwi representatives. The Reference Group is to be provided monitoring reports for review and to discuss any issues associated with the performance of the site and make recommendations.

3.14 Works in the bed of the Shotover River/Kimiākau to construct an outfall structure from the discharge channel (RM25.206)

The Applicant proposes to construct an outfall structure to facilitate the discharge of treated wastewater into the Shotover River/Kimiākau. It is intended that these works minimise scour of the riverbed at the point of discharge and ensure the discharge channel outfall does not erode or become unstable. The original application document states that detailed design is yet to occur, but the Applicant proposes to armour the riverbank up to 6 metres long and 2 metres in height with large locally sourced boulders.

The Section 92 RFI response provides some additional design details for the outlet structure noting that it is likely to comprise of cascading gabion walls, gabion baskets and a riprap basin in front of the diversion channel. Figure 4 provides a cross section of the proposed outfall structure and diversion channel.

[9] RM13.215.01

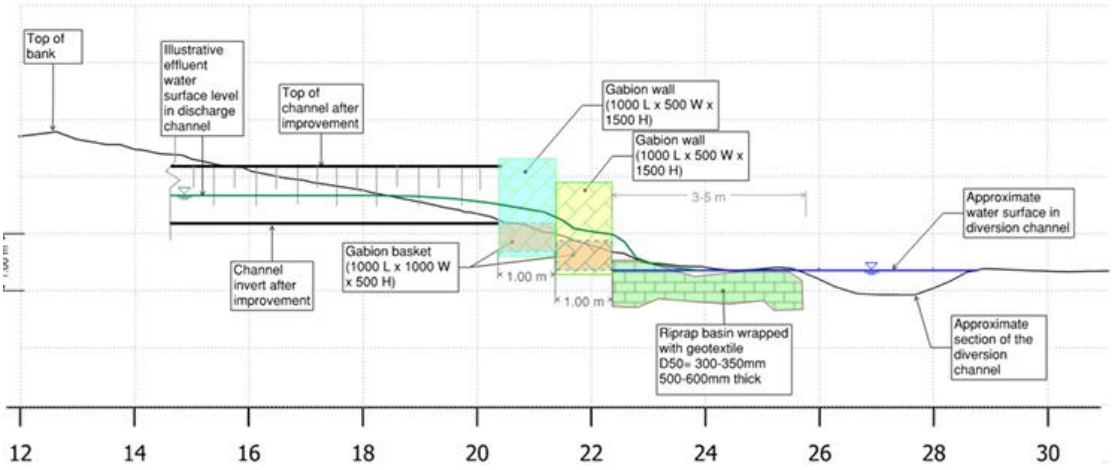

Figure 4: *Cross section of proposed erosion protection and diversion channel. Source: Page 73 of Section 92 RFI Response dated 13 August 2025.*

Earthworks requirements include:

- Clearance of approximately 30 to 40m^2 of vegetation on the riverbank;
- Excavation and reshaping the side slopes of the riverbank for the discharge channel erosion protection with an approximate footprint of 4 metres x 4 metres and height of 2 metres with a batter slope of 1:3 with a total volume of 10m^3 on either side of the discharge channel for construction of the proposed river protection system (total of 20m^3 over 35m^2); and
- Excavation of 5 metres x 5 metres footprint to the depth of 700 millimetres (approx. 18m^3) in the riverbed in front of the gabion outlet to install the riprap basin.

The Applicant proposes to extend the riprap apron parallel to the riverbed for 3 to 4 metres to create a smooth diversion (sought to be authorised via RM25.177) from the braid to the mixing basin in front of the discharge channel.

The total proposed footprint of these works is expected to be approximately 120 – 150m^2.

The Applicant states that the selection of the preferred method will depend on the site conditions and constructability considerations and will be determined during the detailed design stage.

In addition, localised earthworks are required on a section of the discharge channel to enable additional conveyance capacity for treated wastewater. This is expected to involve minor increases in the height of the channel walls upstream of culvert three over a length of approximately 30 metres.

The Applicant notes a preference to undertake these works at times of low flow to minimise works undertaken in flowing water. However, this will be dependant on when the works are necessary. The Section 92 RFI response further notes that no dewatering or fish salvage will be required. It is also noted that any works required in wet areas or areas with flow will be isolated via sheet piling and/or erosion and sediment control measures.

The Applicant states that there may be exotic vegetation requiring removal at the location of the outfall. Achieving access to the site may also require some vegetation removal, however existing access to the riverbed is already available in close proximity.

The Applicant proposes to undertake works in a manner that ensures bed disturbance will be limited to the extent necessary to undertake the works. and that fish passage will be provided for. Any damage to banks, including riparian vegetation as a result of the works is proposed to be reinstated within one month. Machinery used to undertake works will not be operated from the wet bed of the river and accidental discovery protocol is proposed to be adopted. Hours of work will be limited to Monday to Friday 7:00am to 7:00pm and will not take place on public holidays. Public access to the area of works will be prevented, however access to the river will be maintained with signage directing avoidance of the works area.

The total duration of these works is expected to be between six to eight weeks, with works in the bed of the river will be less than 10 hours. The Applicant has proffered recommended consent conditions that require detailed design plans and a Construction Management Plan to be submitted to the Council.

3.15 Works in the bed of the Shotover River/Kimiākau to construct and maintain a diversion channel (RM25.177)

The Applicant has provided a high level design of the proposed diversion channel to inform this stage of the process. It is acknowledged by the Applicant that further detailed design will follow and, at the time of works, further details of the river morphology, bathometric data and flow measurements will confirm the adequacy of the proposed dimensions and configuration.

Given the dynamic nature of the braidplain, the Applicant proposes a zone within which the proposed riverbed disturbance works will be undertaken. The purpose of the works in the bed of the Shotover River/Kimiākau are to facilitate the diversion of water to ensure the discharge of treated wastewater is to a consistently flowing braid of the River enabling dilution and sufficient mixing downstream of the zone of reasonable mixing. The Applicant proposes works within the bed to facilitate the following:

- A diversion flow target of 2.5m^3/s within the diversion channel to dilute the discharge of treated wastewater; and
- A minimum flow of 1m^3/s in the adjacent flowing braid to achieve sufficient mixing downstream of the reasonable mixing zone. The zone of reasonable mixing has been calculated by the Applicant as 200 metres downstream of the discharge point in the Shotover River/Kimiākau.

The indicative diversion and flow maintenance zone is depicted in Figure 5 below. All works described above are proposed to occur within the identified zone:

Figure 5: *Approximate zone of potential diversion and flow maintenance. Source: Page 75 of Section 92 RFI Response, dated 13 August 2025.*

The Section 92 RFI Response states that the proposed diversion channel will:

- Commence approximately 300 metres upstream of the discharge location and may extend up to approximately 200 metres downstream.
- Require disturbance of up to 1,000m^3 of bed material for the initial works over an area of approximately 750m^2.
- Be trapezoidal in shape with a bottom width of 1 metre battered at 1:2.
- Be of sufficient depth to provide for a water depth of approximately 600 mm at the upstream end of the diversion channel to deliver approximately 2.5m^3/s. Water depth at the downstream extent of the diversion channel is expected to be slightly more than one metre.

The Applicant states that if the target flow rate of approximately 2.5m^3/s is unable to be achieved, deepening and widening of the diversion channel may be required in addition to local reshaping of the adjacent braid to allow more flow to spread towards the treated wastewater discharge point.

The Section 92 RFI Response states that the works associated with the adjacent braid will:

- Be of a minor nature and localised, only occurring within the true right of the flowing braid;
- Lower the righthand side of the braid by 300 to 400 millimetres
- Most likely occur during low flow conditions and when the braiding pattern realigns the nearby braid away from the diversion channel.

Figures 4 and 6 provide approximate schematics and cross sections of the proposed diversion channel and how it is proposed to intersect with the proposed discharge channel outfall structure:

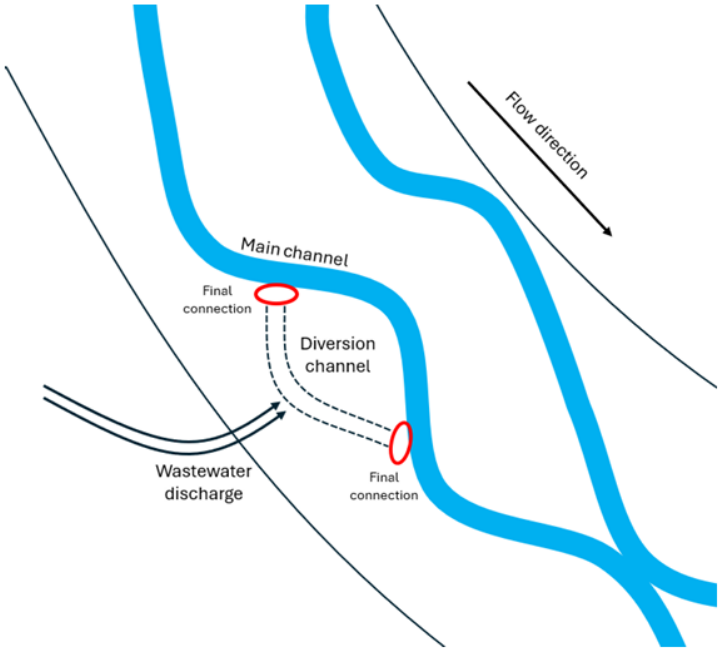

Figure 6: *Approximate Schematic of proposed diversion works. Source: Page 6 of AEE dated 10 April 2025.*

The Section 92 RFI response notes that works to construct the braid will involve excavating a shallow diversion channel from the nearby braid, starting approximately 310 metres upstream and tying back into the existing level downstream of the discharge channel. Reshaping of the nearby braid's cross section is anticipated to further enhance the spread of the flow towards the outlet structure to provide for the desired flow rate to dilute treated wastewater.

The Section 92 RFI response proposes the following construction methodology:

- Access will be from Shotover Delta Rd, Queenstown Trail, and via multiple tracks to the river;
- Machinery requirements will be kept to a minimum and include two 15 tonne excavators, one truck, two utes, and standard hand tools for earthworks;
- Works will be completed within the dry riverbed during low flows to minimise works in flowing water.

Excavated gravels are proposed to be left in-situ, adjacent to the excavated channel and re-contoured to tie in with the surrounding gravel area. However, the Applicant notes that they are open to removing excavated material if that is beneficial.

Riverbed works are expected to be completed within six to eight weeks.

At this stage the quantity of works required to maintain the target flow rate and any ongoing maintenance or re-creation of the channel is unknown as it will be determined by the movement of gravel within the bed. The Applicant notes that between 2000 and 2013 there were four recorded instances of diversion works taking place to enable continued operation of the discharge outlet. As stated above, the Section 92 RFI response states that if, during low-flow conditions, the target flow rate is not achieved, then deepening and widening of the diversion channel may be required alongside local reshaping of the nearby braid to encourage additional flow to spread towards the dilution basin.

The Section 92 RFI response notes that further assessment and mitigation measures will be addressed by more detailed survey, hydrometric measurements and adjusting the geometry of the diversion system during the detailed design.

The Section 92 RFI response sets out a series of recommended next steps to prepare for detailed design. These include:

- Conducting detailed morphological and hydraulic surveys of the river near the discharge point to understand variability in flow and channel locations;
- Undertake flow measurements upstream and downstream of the discharge location to better assess dilution potential and adjust the design if needed;
- Undertake soil and substrate testing in the riverbank along the proposed diversion channel and outlet structure to validate the protection design, riprap sizing and slope stability; and
- Proceed to detailed engineering design, including construction staging, adaptive management plan (e.g. planned maintenance and reinstatement after flood events) and monitoring requirements.

The Applicant proposes to undertake bed disturbance works at all times of the year to ensure the diversion channel is effective at providing for flow past the discharge point. To avoid disturbing nesting birds during the period of 1 August to 31 January each year (breeding and laying period for nesting birds) the Applicant has proposed resource consent conditions requiring the time period to be avoided (bed disturbance works to not occur) unless an exemption is granted. The assessment criteria for an exemption is a survey undertaken by a suitably qualified and independent ornithologist/ecologist of all areas to be disturbed and a 100-metre radius of the surrounding site to identify any potential bird nesting sites (including the diversion works area and access routes). In the event works cease for more than 72 hours, the site must be resurveyed.

A report documenting the findings of the survey and recommendations for works must be provided to the Department of Conservation for approval prior to works. In addition to this requirement, the Applicant also proposes a condition for vehicles and machinery to not operate within 100 metres of birds that are breeding, nesting or rearing their young in the bed of the river.

The Applicant proposes to undertake works with an accidental discovery protocol in place and has agreed to include a pounamu discovery condition.

3.16 Discharge of remobilised sediment resulting from works in the bed of the Shotover River/Kimiākau to construct and maintain a diversion channel (RM25.177)

Construction of the diversion channel structure is proposed to occur under low flow conditions, enabling works to be undertaken outside of the river bed channels. The Applicant expects that works will be of short duration.

Any sediment discharged is expected to comprise of only bed sediments and will be limited to a first flush mobilisation of residual sediments immediately following works. The Applicant does not expect there to be any ongoing sediment discharges relating to construction works or the diversion structure itself.

3.17 Diversion of water within the bed of the Shotover River/Kimiākau to ensure the discharge of treated wastewater sought to be authorised under RM25.206 is always to flowing water (RM25.177)

The Applicant proposes to divert water within the Shotover River/Kimiākau to ensure the discharge of treated wastewater is always to flowing water to facilitate dilution of the discharge. The proposed diversion will be via the diversion channel established in the bed of the River.

A diversion flow target of 2.5m^3/s is sought which represents approximately 10% of the total River flow and less than 20% of the Mean Annual Low Flow of the Shotover River/Kimiākau.

The Applicant also seeks to maintain a minimum flow of 1m^3/s within an adjacent braid to assist with achieving sufficient mixing downstream of the reasonable mixing zone.

3.18 Proposed Durations

An expiry date of 31 December 2030 is sought by the Applicant for all applications associated with RM25.206 and RM25.177.

This means the duration sought for all applications is five years.

3.19 Description of the Environment

A description of the site and surrounding environment is provided in the application for RM25.206 from Section 3 and within the Shotover WWTP Surface water and Groundwater Assessment (prepared by GHD) dated 30 April 2025. To inform the Surface and Groundwater Assessment undertaken by GHD, site investigations were undertaken to characterise the geological, hydrological and surface water environment in the vicinity of the site and to assess the influence of wastewater discharges on the receiving environment. Site investigations undertaken included:

- The installation of 21 groundwater monitoring wells;
- Groundwater level monitoring of two new monitoring wells and two existing monitoring wells (IH3 and BP01);
- Groundwater quality sampling;
- Hydraulic testing of aquifer conductivity;
- Test pitting across the delta; and
- Surface water sampling in the Shotover River/Kimiākau and Kawarau River pre and post the discharge to surface water commencing.

A description of the site and surrounding environment is also provided in the application for RM25.177 from page 9 of that document.

The description of the environment from both documents is adopted for the purposes of this report. Key details of the environment are as follows:

3.19.1 Location and site description

- The Shotover WWTP is located on the Shotover River/Kimiākau delta to the south of the State Highway 6 bridge over the Shotover River.
- The site, including the Shotover/Kimiākau and Kawarau Rivers, are major tributaries of the Clutha River/Mata-Au and are within the Clutha Mata-Au Freshwater Management Unit and the Dunstan Rohe.
- The Shotover River/Kimiākau converges with the Kawarau River at a 90 degree angle approximately 1.2 kilometres from the upgradient extent of the proposed diversion zone.
- There are no specific archaeological or cultural sites identified when auditing the site on Otago Maps. It is understood from the application that at a local level the Shotover River/Kimiākau and Kawarau River are recognised wāhi tupuna in particular through their use as ara tawhito (traditional travel routes - especially as a route towards the West Coast/Tai Poutini for pounamu), mahika kai (food gathering) and by Māori miners.
- Based on information provided in the application, the Department of Conservation (DoC) appears to administer the area of the Shotover/Kimiākau riverbed within the extent of the discharge and discharge channel outlet location as shown on Figure 7.
- Topography of the site is generally flat and most of the area surrounding the discharge channel is vegetated with exotic species including willow, poplar and sumac. In the location of the discharge channel outlet, the Applicant notes that vegetation consists mainly of willow.
- The river bed to the north, east and south of the discharge channel outlet consists of fluvial gravels and is free of vegetation.
- To describe recreational users of the Shotover River/Kimiākau and the Kawarau River the Applicant refers to a summary provided in the report for existing resource consent 2008.238.V2. This identifies that both rivers are used extensively for recreation, including fishing, jet boating, whitewater rafting, river surfing and bungee jumping. Recreational uses are generally highest during the summer months by tourists. Commercial jet boats regularly travel up and down the lower Shotover River/Kimiākau and pass the site at least every half hour. The Queenstown Twin Rivers Trail intersects the discharge channel and is located on the landward side of the DAD. This trail is often used by cyclists and walkers.
- The Clutha River/Mata-Au is identified as one of the most insensitively used trout fisheries in New Zealand.
- The nearest dwellings to the discharge channel location are over 500 metres northeast of the outfall. The nearest commercial properties are located approximately 500 metres to the west of the proposed outfall.

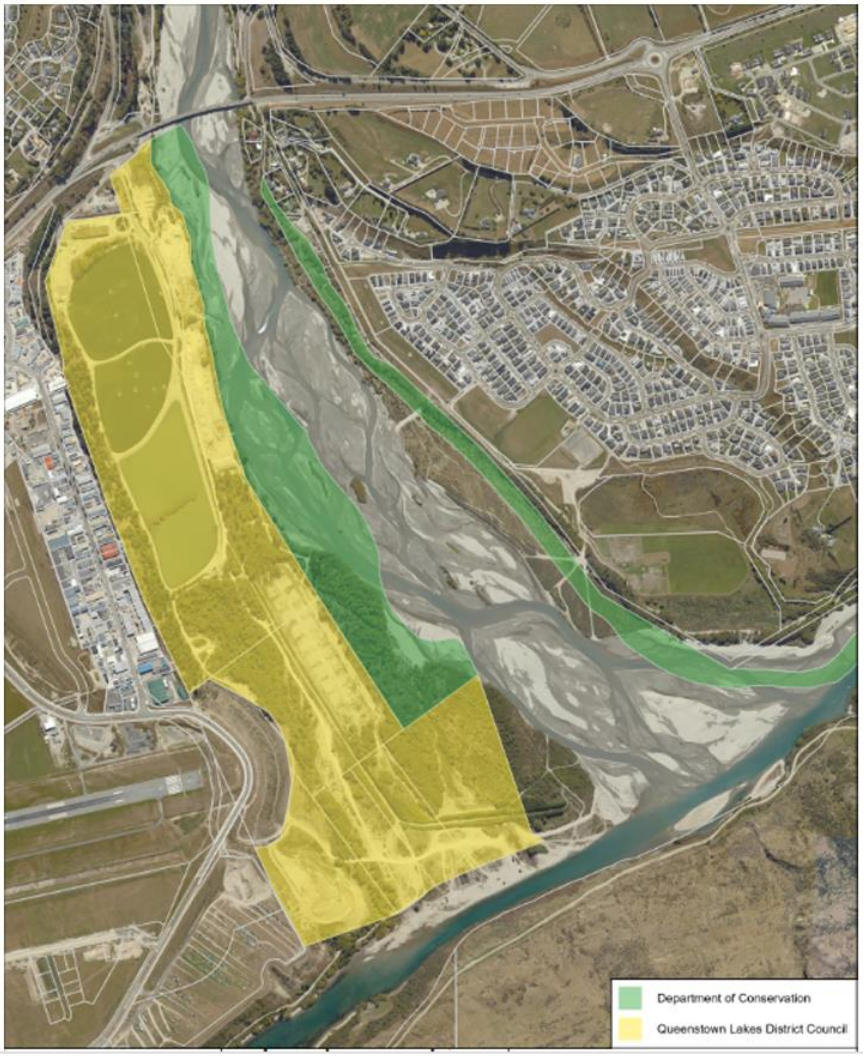

Figure 7: *Landownership/administration within the Shotover River/Kimiākau delta and adjacent WWTP area. Unmarked riverbed between the DoC land parcels is crown owned riverbed managed by LINZ. Source: Page 40 of application dated 1 May 2025.*

3.19.2 Climate

- The Applicant has provided a summary of climate data sourced from NIWA. This information shows that rainfall in Queenstown is relatively high with variation year to year.

- A wind rose generated from wind data collected at Queenstown Airport's metrological station is provided in the application. This shows that winds predominantly come from the north to northeast direction, with lower but still significant frequencies from the southwest. Most windspeeds fall between 3 to 7.5 metres per second, with occasional higher speeds observed from the northeast.

3.19.3 Surface Water

- The Clutha River/Mata-Au catchment is characterised by high alpine rainfall, with low rainfall and high evaporation rates in the semi-arid valleys of Central Otago and high erosion within some extents of the catchment.

- The section of the Shotover River/Kimiākau where the discharge is located is characterised by several active braided channels and high flood frequency resulting in highly disturbed river habitat. Downstream of the discharge, the Shotover River/Kimiākau forms a delta at the confluence with the Kawarau River.

- The Shotover River/Kimiākau converges with the Kawarau River at a 90 degree angle approximately 1 kilometre downstream of the discharge.

- The Applicant states that during high flows the Shotover River/Kimiākau can restrict the downstream flow of the Kawarau River, increasing the risk of flooding around the Lake Whakatipu shoreline. During such events the delta acts as a floodplain, causing significant sediment deposits into the delta and resulting in the natural re-routing of the braided river channels.

- The active channel/s of the Lower Shotover River/Kimiākau is approximately 650 metres in width. A further 700 metre width of the delta is covered in established vegetation and the Applicant's WWTP infrastructure.

- The Shotover River/Kimiākau responds rapidly to rainfall while the Kawarau River responds less to floods given the buffering effect of Lake Wakatipu.

- To address potential flood risks to upstream communities, an engineered rock wall (training line) was constructed in 2011 to train the flow of the Shotover River/Kimiākau to reduce flow restriction effects in the Kawarau River during high flow events. The Applicant notes that this has permanently altered the hydrology of the river during flood conditions. The training line constrains the river to ~50% of its natural width.

- The Applicant has provided a summary of flow statistics from NIWA in the application for both the Shotover River/Kimiākau and the Kawarau River as follows:

River	Mean flow (m^3/s)	Median flow (m^3/s)	Mean annual low flow (MALF) (m^3/s)
Kawarau River	232.8	179.1	71.2
Shotover River/Kimiākau	56.5	43.4	18.1

3.19.4 Geology

- Groundwater and surface water are highly connected within the Shotover River/Kimiākau delta area. The water table within the delta is relatively shallow with water levels observed in test pits at approximately 0.5 to 1.0 metres below ground level.
- It is considered that the direction of groundwater flow across the delta could be generally to the southeast, towards the Kawarau River.
- A summary of the geology and hydrology of the Shotover River/Kimiākau is provided in Appendix G to the application. This summary notes that:
    - The Shotover/Kimiākau Delta has been subject to several investigations which have confirmed the geology of the underlying delta is predominantly a sandy

fine to coarse gravel with some cobbles. Gravel is underlain by a layer of fine sand, at least at the Kawarau River extent of the delta.
    - Hydraulic testing within the delta was considered to show very high horizontal conductivity in the sandy gravel layers, while fine sand deposits had much lower permeability, likely due to silt content. This contrast in permeability of materials could significantly influence groundwater flow direction, depending on where the materials are present.
- The Applicant notes that the discharge channel was constructed in 2010 and was inspected prior to the discharge occurring. It was observed that fine sediment and debris had accumulated at the channel base, ranging in thickness from 0.1 to 0.2 metres. Exposed soils in the channel walls were observed to comprise of fine to medium sand, with fine to coarse gravel.
- Groundwater monitoring was undertaken in wells up and downgradient of the discharge channel. Based on this the Applicant has determined depth to groundwater beneath the discharge channel to be approximately 2 metres below the base of the channel.
- in newly installed wells up and downgradient if the discharge channel
- There are a number of monitoring bores associated with the WWTP. Monitoring of groundwater levels in the nearest boreholes since the discharge commenced indicates that the any soakage from the discharge channel does not appear to be notably influencing groundwater levels in these wells.

3.19.5 Surface water quality

Wider catchment surface water quality

- The Applicant provided an overview of the state of the environment monitoring for the Shotover River/Kimiākau and the Kawarau River sourced from LAWA[10] as follows:

Site	Parameter	State (as per the National Policy Statement for Freshwater Management 2020 attribute bands)
Shotover at Bowens Park	*E.coli*	Not assessed
	Clarity	D
	Ammoniacal Nitrogen	A
	Nitrate Nitrogen	A
	Dissolved Reactive Phosphorus	A
Kawarau at Chards Road	*E.coli*	A
	Clarity	D
	Ammoniacal Nitrogen	A
	Nitrate Nitrogen	A
	Dissolved Reactive Phosphorus	A

- Based on LAWA:

[10] Land Air Water Aotearoa

  - Water quality in the Shotover River/Kimiākau at the Bowens Peak site is excellent, other than high turbidity due to glacial melt. Monitored parameters are shown to be in the best 25% of all sites except for clarity and total phosphorus, which are shown to be in the worst 25% and worst 50% of all sites respectively.
  - Water quality in the Kawarau River at Chards Road is excellent, other than the influence of the Shotover River/Kimiākau on clarity. Monitored parameters are shown to be in the best 25% of all sites except for clarity which is in the worst 50% of all sites.
- The Applicant has provided, and is continuing to provide, a large amount of water quality monitoring information.

3.19.6 Surface water ecology

- Biological monitoring of river health has been required as part of the Shotover WWTP's consent monitoring programme in 2013, 2015 and 2016. The Applicant notes that 2013 monitoring showed 'fair' to 'excellent' water quality and/or habitat quality at the monitoring sites downstream of the discharge outlet, with overall stream community health described as 'good' to 'excellent' via QMCI scores. The 2015 investigation reflected similar results while the 2016 investigation concluded that the dynamic nature of the riverbed had a larger impact on benthic communities than the discharge from the WWTP.
- The Applicant provides summarised results of ecological monitoring undertaken in 2024. This identifies:
  - Several species of caddisfly, midges, mayflies, stonefly and flies in the Shotover River/Kimiākau. Macroinvertebrate taxonomic diversity and abundance of the river has been generally low from 2010 – 2022. Downstream of the historical WWTP discharge, macroinvertebrates were more abundant than upstream with a higher diversity of Chironomids (midge larvae), and dipteran and caddisfly larvae;
  - Didymo being present at all Kawarau River sites. With respect to the Shotover River/Kimiākau a desktop review suggests that didymo may be more prevalent in the Shotover River/Kimiākau upstream of the WWTP discharge point;
  - Sparse patches of phytoplankton in low flow channels adjacent to the historical WWTP discharge point;
  - Periphyton cover in the Shotover River
- The Shotover River/Kimiākau and Kawarau River have been found to provide habitat for a range of native and endemic fish species as follows:
  - Longfin eels (at risk – declining);
  - Upland and common bullies (not threatened);
  - Kōaro (at risk declining);
  - Brown and rainbow trout.
- A 2024 assessment found the value of freshwater fish species present near the WWTP was assessed as high due to the presence of 'at risk' species.

3.19.7 Groundwater quality

- The site is not located within the Whakatipu Basin Aquifer as delineated on Map C4 of the RPW, but the boundary of the aquifer follows the northern bank of the Shotover River/Kimiākau and intersects stretches of the Kawarau River downstream of the confluence with the Shotover River/Kimiākau.

- It is understood that the Applicant abstracts groundwater from a series of bores on the true left bank of the river (opposite bank of the river to the discharge), approximately 500m upstream of the discharge channel.
- The Applicant has provided a summary of groundwater quality in the receiving environment in Appendix G to the application. Groundwater sampling comprised of one round of samples taken up and downgradient of the discharge channel, approximately one week after the discharge channel became operational (8 April 2025). The following provides a brief summary of the groundwater quality monitoring results obtained during the 8 April 2025 monitoring round:
    - The influence of treated wastewater becomes increasingly evident in groundwater moving to the southeast when comparing up and downgradient sampling results, in particular:
        - Increasing relative proportion of sodium, potassium and chloride in groundwater, and increasing electrical conductivity, with this demonstrating a transition away from the natural minerology of the area, towards an influence with greater dissolved solids;
        - Increasing nitrogen concentrations, with a notable increase in downgradient samples when compared to upgradient samples;
        - A shift to low dissolved oxygen and reducing conditions moving towards downgradient wells reflecting notable presence or influence of organic material/compounds and microbiological activity;
        - The presence of nitrogen as ammoniacal-N, supported by reducing conditions in groundwater, also reflects a source with high ammoniacal-N rather than a nitrate-N dominated source;
        - Total Coliforms and *E. coli* are elevated in downgradient wells, however these microbiological contaminants were also detected upgradient of the discharge channel.
    - The Applicant highlights that concentrations of ammoniacal-N in groundwater measured in downgradient wells were greater than those measured in the treated wastewater being discharged and highlights that the results from the most-downgradient well (BH04, adjacent to the DAD) are likely due to longer term discharges from the DAD and oxidation ponds and not the discharge channel.

3.19.8 Resource Consents

- Based on an audit undertaken using Otago Maps, there are no water permits authorising the abstraction of water from the Shotover River/Kimiākau downstream of the discharge.
- The nearest authorised water permit to abstract water from the Kawarau River downstream of the site is located near Cromwell approximately 40 kilometres downstream of the site (2009.068).
- The Applicant also notes that there may be potable water supplies from the Shotover River/Kimiākau and/or the Kawarau River that are not identified on Otago Maps as they are undertaken as permitted activities in accordance with the RPW.
- According to Otago Maps there are a number of resource consents identified within the Shotover River/Kimiākau. These are set out in Table 3:

Table 3: *Resource consents identified within the Shotover River/Kimiākau*

RM Number	Consent Holder	Description	Location	Expiry
RM2008.594	Queenstown Lakes District Council	To disturb the bed of the Shotover River and Kawarau River for the purpose of extracting gravel to maintain a target bed contour	The Shotover River between approximately 600 metres downstream of the State Highway 6 Shotover River Bridge and confluence with the Kawarau River	17/1/2046
RM16.164.01	Queenstown Hardfill Management Company Limited	To disturb the bed of the Shotover River for the purpose of gravel extraction		1/3/2027
RM16.353.01	Queenstown Gravel Supplies Limited	To disturb the bed of the Shotover River for the purpose of gravel extraction		1/3/2027
RM17.311.01	Fulton Hogan Limited – Alexandra	To disturb the bed of the Shotover River for the purpose of extracting up to 150,00 cubic metres of gravel per year		30/11/2027
RM2008.591	Otago Regional Council, Manager Engineering	To discharge contaminants, namely sediment, to land in a manner that may enter water, and to water, for the purpose of placing and maintaining a training line structure or training line/rock revetment structure.	The Shotover River, between approximately 1 and 2 kilometres downstream of the State Highway 6 Shotover River Bridge, Queenstown Lakes District	19/1/2046
RM2008.598	Otago Regional Council, Manager Engineering	To discharge contaminants, namely sediment, to the Shotover River and Kawarau River for the purpose of extracting gravel	The Shotover River, between approximately 600 metres downstream of the State Highway 6 Shotover River bridge and the Shotover River confluence with the Kawarau River, Queenstown Lakes District	17/1/2046

3.19.9 Recognised values listed in the Regional Plan: Water for Otago

The Regional Plan: Water for Otago (RPW) outlines the natural and human use values of various watercourses throughout the Otago Region in **Schedule 1A**. The Shotover/Kimiākau and Kawarau River are identified in this schedule. The Shotover River is identified for the following natural and ecosystem values:

- Large water body supporting high numbers of particular species, or habitat variety, which can provide for diverse life cycle requirements of a particular species, or a range of species.
- Bed composition of importance to resident biota – gravel, boulder, sand and rock.
- Absence of aquatic pest plants identified in the Pest Plant Management Strategy for the Otago Region.
- Presence of a significant range of indigenous waterfowl
- Presence of indigenous waterfowl threatened with extinction
- Presence of riparian vegetation of significance to aquatic habitats.
- Presence of indigenous waterfowl threatened with extinction.

The Kawarau River is identified for the following natural and ecosystem values:

- Large water body supporting high numbers of particular species, or habitat variety, which can provide for diverse life cycle requirements of a particular species, or a range of species.
- Bed composition of importance to resident biota – gravel and rock.
- Absence of aquatic pest plants identified in the Pest Plant Management Strategy for the Otago Region.
- Presence of significant fish spawning areas for trout and salmon.
- Presence of significant areas for development of juvenile trout and salmon.
- Presence of indigenous fish species threatened with extinction.
- Significant presence of trout, salmon and eel.
- Presence of indigenous waterfowl threatened with extinction.
- Presence of a significant range of indigenous invertebrates.
- Presence of indigenous invertebrates threatened with extinction.
- Presence of significant indigenous aquatic vegetation.
- Regionally significant presence of gamebirds.
- Also note outstanding natural features/landscapes, significant indigenous vegetation etc and areas with a high degree of naturalness.

Schedule 1AA of the RPW identifies Otago resident native freshwater fish and their threat status. The Kawarau River is known to provide significant habitat for kōaro and habitat for eels, salmon and trout, which are within this schedule. Given that the Shotover River/Kimiākau is a key tributary to the Kawarau River it is considered likely that these species are also present in the Shotover River/Kimiākau.

The Applicant refers to NIWA's Freshwater Fish Spawning and Migration Periods (2014) publication and notes that:

- Salmonid (including salmon, brown trout and rainbow trout) spawning months extend from March to September each year; and
- Koaro spawning months extend from April to August.

Schedule 1B of the RPW identifies rivers where the water taken is used for public water supply purposes. There are no Schedule 1B values listed for the Shotover/Kimiākau or Kawarau Rivers.

Schedule 1C identifies registered historic places. The following historic places are listed for the Shotover River/Kimiākau:

- Oxenbridge Tunnel;
- Arthurs Point;
- Queenstown; and
- Edith Cavell Bridge.

The following historic places are listed for the Kawarau River:

- Kawarau Falls bridge and dam;
- Frankton;
- Queenstown;
- Kawarau Gorge Suspension Bridge;
- State Highway 6; and
- Gibbston.

Schedule 1D of the RPW identifies the spiritual and cultural beliefs, values and uses associated with water bodies of significance to Kāi Tahu. The Shotover River/Kimiākau is identified as having the following values:

- **Kaitiakitanga:** the exercise of guardianship by Kai Tahu, including the ethic of stewardship.
- **Mauri:** life force.
- **Waahi taoka:** treasured resource; values, sites and resources that are valued.
- **Mahika kai:** places where food is procured or produced.
- **Kohanga:** important nursery/spawning areas for native fisheries and/or breeding grounds for birds.
- **Trails:** sites and water bodies which formed part of traditional routes, including tauraka waka (landing place for canoes); and
- **Cultural materials:** water bodies that are sources of traditional weaving materials (such as raupo and paru) and rongoa (medicines).

The Kawarau River is identified as having the following values:

- **Kaitiakitanga:** the exercise of guardianship by Kai Tahu, including the ethic of stewardship.
- **Mauri:** life force.
- **Waahi taoka:** treasured resource; values, sites and resources that are valued.
- **Trails:** sites and water bodies which formed part of traditional routes, including tauraka waka (landing place for canoes); and
- **Cultural materials:** water bodies that are sources of traditional weaving materials (such as raupo and paru) and rongoa (medicines).

Schedule 3A identifies the uses of groundwater from particular aquifers in Otago. The Whakatipu Basin Aquifer is not recognised in Schedule 3A.

Schedule 3B identifies the location of groundwater takes for the purpose of community water supply. There are no Schedule 3B community water supply takes located in close proximity to the discharge.

Schedule 9 identifies regionally significant wetlands and wetland management areas. The nearest Regionally Significant Wetland is the Shotover River Confluence Swamp located northeast of the Shotover/Kimiākau and Kawarau River confluence and approximately 550 metres from the discharge location.

The site is not within a Nitrogen Sensitive Zone identified in Planning Maps H.

3.19.10 Regionally Significant Wetlands

The nearest Regionally Significant Wetland is the Shotover River Confluence Swamp located northeast of the Shotover/Kimiākau and Kawarau River confluence.

3.19.11 Water Conservation (Kawarau) Order 1997

Both the Kawarau and Shotover/Kimiākau Rivers are protected by the Water Conservation (Kawarau) Order 1997. The outstanding characteristics of the Shotover River/Kimiākau identified in the Order include:

- Wild and scenic characteristics;
- Natural characteristics, in particular the high natural sediment load and active delta at confluence with the Kawarau River;
- Scientific value, in particular the high natural sediment load and active delta at confluence with the Kawarau River;
- Recreational purposes, in particular rafting, kayaking and jetboating; and
- Historical purposes in particular gold mining.

The outstanding characteristics of the Kawarau River mainstem from Scrubby Stream to Lake Wakatipu Control Gates identified in the Order include:

- Wild and scenic characteristics;
- Natural characteristics, in particular the return flow in the upper section when the Shotover River is in high flood;
- Scientific value, in particular the return flow in the upper section when the Shotover River/Kimiākau is in high flood; and
- Recreational purposes, in particular rafting, jetboating and kayaking.

3.20 Site Visit

A site visit was not carried out as there was considered to be sufficient photographic evidence, plans and aerial mapping information to understand the nature of the site at this stage of the process. A site visit will be undertaken following a notification decision being made.

4. Status of the Application

4.1 Existing environment

When processing a resource consent regard must be had as to what constitutes the "environment" to inform the assessment of the effects. This includes existing use rights, existing activities carried out under existing consents and resource consents which have

been granted where it appears those consents will be implemented. It also includes the future state of the environment as it might be modified by carrying out permitted activities.

The existing environment does not include the environment as it might be modified by implementing future resource consent applications (because these are too speculative). The 'environment' upon which effects should be assessed is therefore the existing and reasonably foreseeable future environment.

For the purpose of assessing the effects of this proposal, I consider the existing environment includes the environment as it is modified by implementing existing resource consents that the Applicant already holds, including the effects authorised by the existing resource consent to discharge treated wastewater to the DAD and progression to a full upgrade of the WWTP (Stage 3) which is required to be operational by 31 December 2025. While the activities sought to be authorised through this process are occurring currently, this process seeks to retrospectively authorise those activities. It would be nonsensical for a decision considering whether an activity should be retrospectively authorised to treat that activity as part of the existing environment. Based on this, I do not consider the existing environment includes the environment as it is modified by the activities, specifically the discharge of treated wastewater to water, already taking place and subject of the application made under RM25.206.

I consider any information obtained from the activities occurring (such as ongoing surface water quality monitoring) can be used to establish the actual and potential environmental effects of the proposal. This can be continually updated as these applications progress.

4.2 Bed extent of the Shotover River/Kimiākau

The Applicant has applied for a land use consent to disturb the bed of the Shotover River/Kimiākau. To determine the extent of the bed of the Shotover River/Kimiākau (and the locational extent of the resource consents to place an outfall structure on the bed), the Applicant has referred to the findings of the High Court in *Dewhirst Land Co Ltd v Canterbury Regional Council* (CRC).

The Applicant has identified the nearest discernible/reasonable bank to be a sudden change in topography and the abrupt presence of mature trees. Based on this, it is considered that some of the discharge channel is not within the bed of the Shotover River/Kimiākau, and it is likely just the outlet from the discharge channel to the bed of the Shotover River/Kimiākau that requires resource consent as works in the bed. For the purpose of this notification recommendation report, I agree that some of the discharge channel is in the riverbed and some is beyond the riverbed. The planning implications of this are discussed in the assessment of the Regional Plan: Water below.

4.3 Regional Plan: Water for Otago

The Regional Plan: Water for Otago (RPW) is the operative plan managing land and water in the region. The RPW promotes the sustainable management of Otago's water resources. It sets policies, methods and rules to address the use, development and protection of Otago's freshwater resources, including the beds and margins of water bodies. The RPW was notified in 1998 and became operative on 1 January 2004 and has been subject to a series of plan changes between 2006 and 2022.

Plan Change 8 (Discharge management) (PC8) to the RPW was made fully operative on 3 September 2022 and was introduced to strengthen the management of activities that result

in discharges of contaminants to water that are known to contribute to water quality issues with an aim to improve water quality in the region. PC8 introduced new policy direction relevant to decision-making on wastewater discharges (alongside other discharges). These policies do not impact on the status of the application and will be considered in the substantive recommendation report.

The discharge of treated wastewater to surface water, works in the bed to install the proposed outfall structure and diversion channel, the diversion of water and discharge of sediment are relevant for consideration under the RPW and are assessed below.

4.3.1 Discharge of treated wastewater to surface water or onto or into land in circumstances where it may enter water (RM25.206)

Chapter 12 of the RPW sets out rules relevant to Water Take, Use and Management. Rules relevant to the discharge of human sewerage are contained in Section 12.A. Rule 12.A.2.1 of the RPW states:

*Except as provided for by Rules 12.A.1.1 to 12.A.1.4, the discharge of human sewage to water, or onto or into land in circumstances where it may enter water, is a **discretionary** activity (refer12.A.2).*

The permitted activity rules at 12.A.1.1 to 12.A.1.4 do not apply. Given this, the discharge must be considered a **discretionary** activity and resource consent is required.

In addition to human sewerage, the treated wastewater discharge will also include contaminants from industrial and trade premises. Rule 12.B.4.1 of the RPW states:

*The discharge of water (excluding stormwater) or any contaminant from an industrial or trade premises or a consented dam to water or to land is a **discretionary** activity, unless it is permitted by Rule 12.B.1.6, 12.B.1.7, 12.B.1.10 or 12.B.1.11*

Rules 12.B.1.6, 12.B.1.7, 12.B.1.10 or 12.B.1.11 do not permit the discharge of water containing human sewage from an industrial and trade premise to water. Given this the discharge must be considered a **discretionary** activity and resource consent is required.

Overall the discharge of treated wastewater to surface water must be considered a **discretionary** activity under the RPW.

4.3.2 To construct a riprap outfall protection structure in the bed of a river (RM25.206)

Chapter 13 of the RPW contains rules related to land use on lake or river beds or regionally significant wetlands. Chapter 13.2 contains rules relevant to the erection or placement of a structure. Structure is defined in the RPW and means "*any building, equipment, device, or other facility made by people and which is fixed to land; and includes any raft*."

The Applicant has assessed that Rule 13.2.1.4 of the RPW provides the permitted activity criteria for the erection or placement of an outfall structure that is fixed in, on, or under the bed of a lake or river. The Applicant considers that condition (a) of Rule 13.2.1.4 is unable to be met because the outfall structure will be larger than 2 square metres. Due to this non-compliance, the Applicant considers they require a resource consent for a discretionary activity under Rule 13.2.3.1.

Based on the description of the proposed activity provided by the Applicant and details available at this stage, I agree that the placement of cascading gabion baskets and riprap at the outfall of the discharge channel to be the placement of a structure. This is because the fixing of gabion boxes will create a building or facility which is fixed to the land. Based on this, I agree with the assessment provided by the Applicant and consider the activity requires resource consent as a **discretionary** activity under the RPW.

The Applicant has also assessed that earthworks required to build up the height of the discharge channel immediately upstream of Culvert 3 are not covered by any other permitted activity rules and the alteration of the bed would therefore be considered a discretionary activity under Rule 13.5.3.1 of the RPW. I agree with the assessment provided by the Applicant and consider the activity requires resource consent as a **discretionary** activity under the RPW.

4.3.3 To construct a diversion channel in the bed of a river (RM25.177)

The Applicant has assessed that the works to construct and maintain the diversion channel in the bed of the river cannot be undertaken in accordance with permitted activity Rules 13.5.1.1-13.5.1.5; 13.5.1.8A – B and resource consent is required for a discretionary activity in accordance with Rule 13.5.3.1.

Rule 13.5.3.1 applies to the alteration of the bed of any lake or river as a discretionary activity where Rules 13.5.1.1 to 13.5.2.1 do not apply. Rules 13.5.1.1 to 13.5.2.1 do not apply. I agree with the assessment provided by the Applicant and consider the activity requires resource consent as a **discretionary** activity under the RPW.

4.3.4 To discharge sediment to water as a result of undertaking works to construct the diversion channel in the bed of a river (RM25.177)

The Applicant considers that the discharge of sediment that may occur as a result of the first release of water through the diversion channel, instream works or ongoing maintenance requires resource consent as a discretionary activity in accordance with Rule 12.C.3.2.

Rule 12.C.3.2 provides a direct discretionary activity status for the discharge of water or any contaminant to water if rules 12.C.3.2(a) to (c) do not apply. I agree with the assessment provided by the Applicant and consider the activity requires resource consent as a **discretionary** activity under the RPW.

4.3.5 Diversion of water (RM25.177)

The Applicant has assessed the proposed diversion of water requires resource consent as a discretionary activity under Rule 12.3.4.1(i) because the upstream catchment exceeds 50 hectares so the activity is not permitted by 12.3.2.

I agree with the assessment undertaken by the Applicant and consider the proposed diversion requires resource consent as a **discretionary** activity under the RPW.

4.4 Regional Plan: Air for Otago

The Regional Plan: Air for Otago (RPA) is the operative plan for managing the air resource in Otago. The RPA seeks to promote the sustainable management of the region's air resource

and contains objectives, policies and rules intended to achieve this. The RPA was made operative on 1 January 2003 and has been subject to two plan changes and one amendment.

The discharge of contaminants and odour to air is relevant for assessment under the RPA.

4.4.1 To discharge contaminants into air (RM25.206)

Chapter 16 of the RPA sets out rules relevant to the discharge of contaminants to air. The Applicant has noted that the existing air discharge permit was unable to meet permitted activity Rule 16.3.7.1 due to exceeding the BOD_5 limit. Given this, the activity must be assessed as a discretionary activity in accordance with Rule 16.3.7.3.

I agree with the assessment provided by the Applicant and consider an air discharge permit is required as a **discretionary** activity.

4.1 Permitted Activity Rules

The Applicant has provided an assessment of the disturbance of the bed associated with the placement of the outfall structure sought as part of RM25.206 against the following permitted activity rule in the RPW as summarised below:

- Rule 13.5.1.1 which provides for the disturbance of the bed and resulting discharge or deposition of bed material associated with the placement of a structure on the bed of a river.

I agree with the Applicant that the bed disturbance associated with the placement of the structure (consisting of gabion boxes and rip rap) is likely to meet the permitted activity conditions of Rule 13.5.1.1 of the RPW.

The Applicant has provided an assessment of the discharge of dust into air associated with the riverbed works proposed as part of RM25.177 against the following permitted activity rule in the RPA as summarised below:

- Rule 16.3.13.1 which provides for the discharge of contaminants to air from any outdoor general engineering activity.

I agree with the Applicant that the discharge of dust into air is likely to meet the permitted activity conditions of Rule 16.3.13.1 of the RPA and no resource consent is required because it is associated with building and construction.

Based on the information I have available at this stage, I agree with the assessment provided by the Applicant.

4.5 Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (NES-F)

The NES-F contains provisions to regulate activities that pose risks to the health of freshwater and freshwater ecosystems. The regulations came into force on 3 September 2020.

The Applicant has provided an assessment of the NES-F in the application conclusion that it is not applicable to the proposal due to:

- The closest known natural wetland is the Shotover River Confluence Swamp approximately 250 metres from the discharge to water; and
- The proposal does not seek to install or construct structures that may impact on fish passage.

I agree with the Applicant's assessment and do not consider the NES-F is relevant for assessment.

4.6 Resource Management (National Environmental Standards for Air Quality) Regulations 2004 (NES-AQ)

The NES-AQ came into effect in 2004 and were amended in 2011. The purpose of this NES is to set a guaranteed minimum level of health protection for New Zealanders. The NES-AQ manages a number of contaminant discharges, including PM10, NO2, CO, Ozone and SO2.

The Applicant has provided an assessment of the NES-AQ in the Application documents concluding that it is not applicable.

The prohibition on discharges from certain activities in Regulation 4 of the NES is not relevant, as the Applicant does not propose undertaking any of the prohibited activities.

The site is not within a Gazetted Airshed, so Regulations 17, 20 and 21 which manage the discharge of particulate matter, carbon monoxide, nitrogen oxides, and sulphur dioxide are not applicable to the proposal.

I agree with the Applicant's assessment and do not consider the NES-AQ is relevant for assessment.

4.7 Discharge channel improvement works

The Applicant notes that the discharge channel requires maintenance and upgrading to ensure it is fit for purpose. Such works required may involve dredging, re-shaping, widening or deepening the discharge channel.

As set out above, the bed of the Shotover River/Kimiākau has been determined by identifying the nearest discernible/reasonable bank. In accordance with Section 13 of the RMA:

> *(1) No person may, in relation to the bed of any lake or river,—*
>
> *(a) use, erect, reconstruct, place, alter, extend, remove, or demolish any structure or part of any structure in, on, under, or over the bed; or*
>
> *(b) excavate, drill, tunnel, or otherwise disturb the bed; or*
>
> *(c) introduce or plant any plant or any part of any plant (whether exotic or indigenous) in, on, or under the bed; or*
>
> *(d) deposit any substance in, on, or under the bed; or*
>
> *(e) reclaim or drain the bed—*

unless expressly allowed by a national environmental standard, a rule in a regional plan as well as a rule in a proposed regional plan for the same region (if there is one), or a resource consent.

Some of the discharge channel falls within the bed of the Shotover River.

The proposed works within the bed of the Shotover River/Kimiākau to construct an outfall are not expressly allowed by a National Environmental Standard or a rule in a regional plan, therefore a resource consent (land use consent) is required.

Activities within the extent of the discharge channel outside of the bed of the Shotover River/Kimiākau is managed by Section 9 of the RMA which states:

> *"(1) No person may use land in a manner that contravenes a national environmental standard unless the use—*
>
> *(a) is expressly allowed by a resource consent; or*
>
> *(b) is allowed by section 10; or*
>
> *(c) is an activity allowed by section 10A; or*
>
> *(d) is an activity allowed by section 20A.*
>
> *(2) No person may use land in a manner that contravenes a regional rule unless the use—*
>
> *(a) is expressly allowed by a resource consent; or*
>
> *(b) is an activity allowed by section 20A…"*

There are no national environmental standards or regional rules in the RPW that places controls on the use of land to undertake the activities as proposed by the Applicant. Based on this, the use of land for dredging, re-shaping, widening or deepening the discharge channel outside of the bed of the river can occur without resource consent from the Otago Regional Council.

4.8 Summary

The activity statuses achieved under the regional plans are summarised in Table 4 below:

Table 4: *Summary of activity statuses achieved under relevant regional plans.*

Proposed Activity	Regional Plan	
	RPW	RPA
Discharge of human effluent to water or onto or into land in circumstances where it may enter water (RM25.206)	Discretionary (Rule 12.A.2.1)	N/A
Discharge of water (excluding stormwater) or any contaminant from an industrial or trade premises (RM25.206	Discretionary (Rule 12.B.4.1)	N/A

To place structures (outfall protection structure) in the bed of a river (RM25.206)	Discretionary (Rule 13.2.3.1)	N/A
To alter the bed of a river (discharge channel) (RM25.206)	Discretionary (Rule 13.5.3.1)	N/A
To discharge contaminants into air (RM25.206)	N/A	Discretionary (Rule 16.3.7.3)
To alter the bed of a river (diversion channel) (RM25.177)	Discretionary (Rule 13.5.3.1)	N/A
To discharge sediment to water as a result of altering the bed of a river (diversion channel) (RM25.177)	Discretionary (Rule 12.C.3.2)	N/A
To divert water (RM25.177)	Discretionary (Rule 12.3.4.1(i))	N/A

4.9 Bundling

Where more than one activity is proposed, and those activities are inextricably linked, best practice is that the activity statuses are bundled and the most restrictive activity status applies to the entire proposal. In this case, two separate resource consent applications have been made, but I consider both applications to be inextricably linked. This is because the activities sought to be authorised under RM25.177 are a mitigation measure for the activities seeking to be authorised under RM25.206. I consider it is unlikely that the exercise of RM25.206 would be able to occur as sought without the activities sought to be authorised by RM25.177 also occurring. I also consider that RM25.177 would not be exercised if RM25.206 were not granted. All resource consents across both applications are required as discretionary activities and I consider bundling to achieve an overall **discretionary** activity status to be appropriate.

5. Assessment of Adverse Environmental Effects

An assessment of effects for the activities sought to be authorised by RM25.206 is provided in Section 5 of that application, and was subsequently updated by the information provided in the Section 92 RFI response.

An assessment of effects for the activities sought to be authorised by RM25.177 is provided in Section 5 of that application, and was subsequently updated by the information provided in the Section 92 RFI response.

All assessments stated above are adopted for the purposes of this report. Key details from the Applicant's assessment are outlined below, as it relates to understanding the scale of effects. As outlined above, uncertainty remains regarding the detailed design, construction, and future maintenance or rebuilding of the proposed diversion channel within the riverbed. Accordingly, the assessment set out below has been undertaken conservatively, that is, on the basis of the greatest potential effects that could arise from this aspect of the proposal.

I note that the activity status for the proposal has been bundled to discretionary. This means that there is no limitation on the effects that can be considered by the Council[11].

In auditing the Applicant's assessment of adverse environmental effects, I have relied on advice from the following technical experts:

- Dr Michael Greer, Surface water quality and aquatic ecology
- Mr John Iseli, Air quality
- Mr Tim Baker, Groundwater and hydrology;
- Dr Jack McConchie, Fluvial geomorphology and river engineering;
- Mr Philip Shoebridge, Engineering; and
- Mr Philip Shaw, Avifauna.

The advice from the experts listed above is referred to throughout the assessment undertaken below.

5.1 Effects on surface water quality and aquatic ecology

The discharge of treated wastewater to surface water can adversely effect the surface water quality and aquatic ecology of the Shotover River/Kimiākau and other waterbodies that it contributes to. The placement of material or a structure in the bed of a river can also cause adverse effects on surface water quality and aquatic ecology as can the diversion of water within the bed. I have undertaken an assessment of each activity and the potential effects on surface water quality and ecology in the sub-sections below. I have relied on the advice from Dr Greer in undertaking this audit.

5.1.1 Arising from the discharge of treated wastewater to the Shotover River/Kimiākau (RM25.206)

The discharge of treated wastewater to surface water has the potential to impact on the quality of water in the river. Currently, treated wastewater is discharged to a pool with limited mixing in the river. The Applicant expects that mixing will be improved once the diversion channel is excavated within the riverbed to connect the discharge with the main braid (sought as part of RM25.177). Given this reliance on RM25.177 to mitigate the effects arising from the treated wastewater discharge to surface water under RM25.206, the audit below is undertaken both on the basis of the proposed diversion sought as part of RM25.177 occurring as proposed and without the proposed diversion. This audit is also undertaken on the basis of the existing discharge quality limits proposed in the recommended conditions provided as part of the Section 92 RFI response being achieved.

The Applicant has provided a substantial amount of technical information to inform the assessment undertaken of this effect. Technical information was provided in the original application and supplemented with additional technical information contained in the Section 92 RFI response. In undertaking an audit of the Applicant's assessment I have relied on the technical advice of Dr Greer.

[11] Although the matters that can be considered more broadly are limited to the responsibilities and functions of the regional council prescribed in Section 30 of the RMA.

The Applicant's assessment provides an overview of the water quality and ecological monitoring undertaken when treated wastewater was previously discharged to the River (2017 – 2019). The Applicant refers to this as an indication of the effects that could be expected from the current discharge. Dr Greer considers the availability of the historic ecological monitoring data in particular provides a good indication of the environmental risks associated with the application. Dr Greer's observations are that the monitoring undertaken when treated wastewater was previously discharged to the River does not provide evidence that significant adverse effects on aquatic life are certain to occur as a result of the treated wastewater discharge. It is also important to note that monitoring was undertaken when the quality of the treated wastewater discharged was poorer than the discharge quality limits required to be achieved in the proposed consent conditions.

Without the diversion of 2.5m^3 of water

The Applicant has provided an assessment of initial water quality results in their application which are reflective of seasonal low flow conditions. A summary of the findings of these results are provided in Section 5.3.2 of the original application. This assessment acknowledges that limited dilution was achieved under the very low flow conditions at the time of the initial discharge. Increases in river flow as a response to rain events demonstrated that greater dilution was able to be achieved with small increases in river levels. Dr Greer's advice is that without the constant diversion of 2.5m^3 of water, the predicted increases in ammoniacal nitrogen; nitrate nitrogen; five day carbonaceous biochemical oxygen demand and dissolved reactive phosphorus concentrations after reasonable mixing (200 metres downstream of the point of discharge to the River) will all be significantly greater than what would likely occur if the diversion is achieved (as assessed in the subsection below). Dr Greer expects the impact of these increases will include:

- The RPW limit for ammoniacal nitrogen in Schedule 15 being exceeded;
- A significant increase in ammonia toxicity risk (although not to the extent indicative of significant adverse effects);
- An increase in nitrate toxicity risk and potentially causing the Shotover River to degrade from an A-band attribute state under the National Policy Statement for Freshwater 2020 (NPSFM) to a B-band attribute state; and
- A greater risk of periphyton blooms.

With the diversion of 2.5m^3 of water

The diversion is sought by the Applicant to increase available mixing and dilution of the discharge in the River. In terms of effects arising as a result of the discharge with the impact of the diversion. Dr Greer's advice on the basis of the information provided is as follows:

- There will be significant increases in ammoniacal nitrogen; nitrate nitrogen; five day carbonaceous biochemical oxygen demand and dissolved reactive phosphorus concentrations after reasonable mixing (200 metres downstream of the point of discharge to the River). These increases are likely to result in the RPW limit for dissolved reactive phosphorus and nitrate not being met.
- Increased ammoniacal nitrogen concentrations will raise the risk of ammonia toxicity effects compared to upstream conditions. Concentrations will exceed the level that should be maintained to protect high conservation/ecological value systems in the Shotover River and cause a shift from an A-band state to a B-band state under the

NPSFM. Dr Greer highlights that previous ecological monitoring does not suggest that this increase is likely to generate a statistically detectable degradation of ecological communities.

- Nitrate nitrogen concentrations are not expected to be increased by the treated wastewater discharge to the extent that the risk of nitrate toxicity effects on aquatic life is increased.
- While increased nitrate nitrogen and dissolved reactive phosphorus concentrations pose an increased risk of nuisance periphyton (algal) blooms, previous ecological monitoring conducted when the wastewater was previously discharged to the River does not provide evidence that such blooms are likely to occur.
- The increase in carbonaceous biochemical oxygen demand is unlikely to be sufficient to increase the risk of heterotrophic growths (sewage fungus). This is similarly supported by previous ecological monitoring.

Based on Dr Greer's advice, the proposed discharge is likely to result in significant increases for a range of water quality parameters in the River as set out above. The absence of the diversion will cause those impacts to be more severe. I consider the existing environment is also an important consideration. The Applicant already holds resource consents that authorise the discharge of treated wastewater to the DAD, meaning that a contaminant load within the catchment is already authorised to occur. The impact of this application is that the contaminant load is shifted to being directly discharged to surface water. I consider this requires further investigation as the process continues.

As set out in Dr Greer's and Dr McConchie's advice, I also consider a key issue associated with evaluating the impacts of the discharge with the diversion is ensuring it can reliably and continuously achieve the necessary flow. Flow data referred to by Dr Greer suggests that the diversion may not be able to provide the full 2.5m^3 design flow required for >20% of the time, and this could be significantly greater due to the gravel build-up in the diversion channel or shifts in the River following high flows.

5.1.2 Arising from the placement of a structure on the bed of the Shotover River/Kimiākau (RM25.206 and RM25.177)

The Applicant proposes to place structures in the bed of the river associated with the construction of an outfall structure and to construct the diversion channel. The specifics of these structures and a summary of the proposed construction methodology is set out in the earlier sections of this report.

Disturbance of the bed associated with placement of the outfall structure

The Applicant considers the potential effects arising from disturbance of the bed associated with the proposed outfall structure on freshwater ecology to be very low. This is because:

- The footprint of bed disturbance is small and in the immediate vicinity of the outfall structure and will be of short duration;
- Works will be completed at times of low river flows and the discharge will be controlled as required to ensure the majority of disturbance works are undertaken in dry conditions;

- All erosion and sediment control measures will be implemented in accordance with best practice guidance[12]; and
- Once works are completed, the structures will reduce erosion locally and have the potential to provide a stable refuge for freshwater fauna in periods of high flow.

Dr Greer agrees with the assessment of this effect provided by the Applicant.

Disturbance of the bed associated with construction of the diversion channel

The Applicant considers any surface water quality or aquatic ecology effects arising from the construction of the proposed diversion channel will be less than minor as:

- Works will be completed in the 'dry' to the extent possible to minimise time spent in flowing water;
- All erosion and sediment control measures will be implemented in accordance with best practice guidance[13];
- Spill kits will be present onsite and refuelling of machinery will be undertaken at least 20 metres from flowing water; and
- All machinery and vehicles used will be well maintained and washed prior to undertaking works.

While the instream works may occur during the fish spawning season, the temporary localised nature of the works is not expected to significantly adversely affect fish spawning processes or habitat.

The Applicant has also volunteered conditions that require fish passage to not be impeded by the proposed works and for any fish that may become stranded in isolated channels or pools to be relocated to other parts of the river under the supervision of a qualified freshwater ecologist.

As mentioned in the earlier sections, the Applicant has noted that that further technical work is required to confirm the adequacy of proposed dimensions and configuration of the proposed diversion channel. Given the dynamic environment of the River, the diversion channel will likely require ongoing maintenance and reestablishment to ensure that it is sufficient to provide for the diversion required to dilute treated wastewater at the downstream extent of the reasonable mixing zone. At this stage, the frequency of such works occurring is unknown.

In terms of the ecological effects arising from the proposed bed disturbance works, Dr Greer's advice generally agrees with the assessment undertaken by the Applicant that there will likely be less than minor effects on aquatic ecology, based on the mitigation measures proposed to be adopted.

[12] Contained in Auckland Council Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region (2015-005).
[13] Contained in Auckland Council Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region (2015-005).

Discharge of sediment associated with construction of the diversion channel
The Applicant identifies that potential sources of sediment discharged to the River resulting from works will be limited to the first flush of loose material when the diversion commences. This is expected to be of a short duration and would naturally be suspended in a high flow event. Based on adherence to the range of construction methodology measures as set out in the assessment above, the Applicant considers the effects associated with the discharge of sediment are likely to be less than minor.

Dr Greer's advice generally aligns with the Applicant's assessment of this effect.

Based on the advice from Dr Greer, I consider the effects on water quality and aquatic ecology arising from the proposed disturbance of the bed and discharge of sediment associated with the construction of the diversion channel are likely to be less than minor.

5.1.3 Arising from the diversion of water within the bed of the Shotover River/Kimiākau (RM25.177)

The diversion of water in the bed of a river can cause adverse effects on aquatic ecosystems, particularly habitat availability and suitability within the impacted extent of the bed. The Applicant proposed a year-round diversion at a maximum of 2.5m^3/s to reduce the visible impacts of the treated wastewater discharge under very low flow conditions.

The Applicant does not consider the diversion will have any discernible effect on hydrology of the River during moderate to high flows. Based on this, minimal effects on ecological values are expected by the Applicant during moderate to high flows in the River.

Dr Greer's advice agrees with the Applicant's assessment that at moderate and high flows there will be minimal impact on the hydrology of the main braid due to the low volume of the diversion (referred to in Dr Greer's advice as a 'take') relative to the Mean Annual Low Flow (MALF).

The proposed diversion is expected to be most noticeable during and preceding naturally occurring low flow periods. The Applicant states that the Shotover River naturally experiences low flows, but these appear to be for short periods of time with flashes/higher flow events being relatively frequent. The Applicant considers the following effects can occur within the 430 metre length of the reach of the River adjacent to the diversion channel during low and very low flow conditions:

- Slight reduction in the wetted width and total wetted area of the main channel and a reduction in depth in areas that remain wet. This could lead to changes in water velocity and habitat availability for macroinvertebrates and fish;
- Warmer water temperatures and increased periphyton growth in the main channel for short periods between high flow events; and
- Slight increase in the frequency and duration of low flow events.

The Applicant notes that the magnitude and duration of potential changes to hydrology and subsequent effects on ecology due to the diversion cannot be determined by the information available at this time. However, it is expected that changes to community composition will be similar to those that naturally occur in any given year in response to lower flows. The Applicant expects that the 'low-flow' macroinvertebrate composition (and the habitat compositions driving these) will be 'reset' following a flood event. It is considered possible

that 'low-flow conditions' will be brought on earlier and occur for a longer period of time until the next fresh resets the river system.

Dr Greer's advice agrees with the Applicant's assessment that there may be a slight reduction in the wetted width and total wetted area of the main channel and a reduction in areas that remain wet. Dr Greer goes on to state that, in his opinion, there are likely to be negligible impacts on habitat availability at the river reach scale, given the offsetting effects of habitat creation in the diversion channel.

Based on the advice of Dr Greer, I consider the impacts on surface water quality and aquatic ecology arising from the diversion of water are unlikely to be more than minor.

5.2 Effects on human health arising from the discharge of treated wastewater to the Shotover River/Kimiākau (RM25.206)

Adverse effects on human health can arise from both contact recreation and food gathering when people are exposed to water that has been contaminated with faecal sources. The Water Conservation (Kawarau) Order (WCO) 1997 requires that certain outstanding values are recognised and protected. Of relevance to this effect, the use of water for bathing is identified as a value that requires recognition and protection.

The Applicant has provided an assessment of effects on human and public health. This assessment focuses on *E.coli* as the measure of health risk. Dr Greer's advice is that *E.coli* is a poor indicator of health risk from wastewater and a Quantitative Microbial Risk Assessment (QMRA) is required. The Applicant has provided an assessment in the Section 92 RFI response noting that the RPW post dates the WCO and the requirements of the WCO are incorporated into the direction and provisions of the RPW. I consider this effect requires further consideration as the process continues.

To prevent human contact with treated wastewater in the discharge channel, the Applicant proposes to install permanent fencing and signage. Signage is also installed immediately downstream of the outfall on the river banks. This is considered to be sufficient to prevent human contact with the discharge within and immediately exiting the discharge channel.

5.3 Effects on geomorphology, flow variability and flood carrying capacity of the Shotover River/Kimiākau (RM25.206 and RM25.177)

The discharge of treated wastewater proposed could impact on the geomorphology, flow variability and flood carrying capacity of the Shotover River/Kimiākau. The placement of a structure on the bed of the Shotover River/Kimiākau and diversion of water may alter the bed of the river causing geomorphological, flow variability and flood carrying capacity effects. I have undertaken an assessment of each activity and the potential effects on geomorphology, flow variability and flood carrying capacity in the sub-sections below. I have relied on the advice of Mr Baker and Dr McConchie when undertaking this assessment.

5.3.1 Arising from the discharge of treated wastewater to the Shotover River/Kimiākau (RM25.206)

The Applicant considers the proposed discharge will not have a measurable influence on river flow, river level or the extent of the braided river channel. Overall, potential effects on river hydrology are expected by the Applicant to be negligible.

Mr Baker has reviewed the Applicant's assessments and provided a technical memorandum[14] on the effects of the proposed discharge on the hydrological functioning of the river. Mr Baker considers the effects from the proposed discharge to be relatively minor and manageable given the maximum flow rate of 400L/s is approximately 2% of the MALF of the Shotover River and <1% of the Kawarau River MALF. Given this, it is considered that from a flow and capacity perspective, the discharge will have no effect.

5.3.2 Arising from the placement of a discharge outfall structure and diversion channel on the bed of the Shotover River/Kimiākau (RM25.206 and RM25.177)

The placement of the structures in the bed of the river can cause impacts on river geomorphology, flow variability and flood carrying capacity. To support the assessments undertaken here, I have relied on the technical advice of Mr Baker and Dr McConchie.

Placement of an outfall structure on the bed
The Applicant considers there will be no change in the hydrology of the river as a result of the minor riverbank works associated with the outfall structure. This is because the proposed design features comprising of gabions and rip rap are designed to integrate with the dynamic characteristics of the braided river. The structures are considered to prevent localised scouring, protecting both the channel structure and riverbank and allow adaptation as needed following major flood events.

Mr Baker has reviewed the Applicant's proposal and assessments and consider they are appropriate from a hydrological and geomorphological perspective.

Placement of the diversion channel on the bed
The Applicant considers that the design of the diversion channel generally mimics a river braid, and over time, movement of the river gravels is expected to provide a more natural form and likely establishment of the channel as a natural braid. Movement of minor braids within the broader riverbed is an ongoing occurrence, with gravel extraction activities by third parties already promoting localised river braid movement and entrainment of braids. To accommodate the dynamic nature of the river and achieve the necessary targets for dilution, the Applicant considers that the location of the diversion channel and its extent will need to change over time (this is the reason for a diversion zone being proposed instead of an exact location). The channel will also require periodic reinstatement and maintenance works due to the nature of the braided river.

In this context, the diversion channel, and any maintenance works, are not expected to result in changes to the river morphology or hydrology that are out of character with the current river environment. Overall, the Applicant considers that the potential adverse effects associated with the proposed diversion channel are limited to the potential ecological effects discussed in the earlier sections of this report.

As acknowledged in the sections above, the design of the proposed diversion channel is high level at this stage. Dr McConchie highlights the conceptual nature of the design provided at

[14] Dated 10 June 2025

this stage of the process and considers that there is limited quantitative data provided. The Applicant has acknowledged that further detailed design is required, including further details of river morphology, bathometric data and flow measurements to confirm the adequacy of the proposed dimensions and configuration.

Dr McConchie's advice considers that the proposed design represents a practical and low-impact solution to temporarily discharge treated wastewater while long term upgrades are implemented. Dr McConchie considers that the current level of uncertainty needs to be balanced by a suite of recommended consent conditions that ensure performance of the final system and ensure any potential effects are monitored. A number of recommendations are made by Dr McConchie that should be included as recommended conditions of resource consents.

The advice from Dr McConchie also notes that there is considerable uncertainty regarding the performance of the proposed system during larger floods in the River. There is limited information on how often such events would likely occur, timeframes for reinstating the channel or what is intended to occur to ensure adequate dilution of the treated wastewater discharge while the channel is being reinstated. These concerns are similar to those of Dr Greer, given the importance of the diversion and diversion channel when assessing the significance of effects arising from the treated wastewater discharge.

Based on the advice of Dr McConchie, at this stage, I do not consider the proposed riverbed disturbance works associated with the placement of the diversion channel are likely to result in adverse effects that are more than minor.

5.3.3 Arising from the diversion of water within the bed of the Shotover River/Kimiākau (RM25.177)

The Applicant has provided a high-level assessment of this effect in the Section 92 RFI response. The Applicant is proposing to divert up to 2.5m^3/s at all times of the year to ensure sufficient dilution of treated wastewater at the downstream extent of the zone of reasonable mixing (defined as 200 metres downstream of the discharge point). The Applicant also proposes to undertake in-river works to ensure a minimum flow of 1m^3/s is flowing in the adjacent braid. The Applicant highlights that the proposed diversion is non-consumptive (stays within the river system) and constitutes less than 20% of the river's MALF.

The ecological assessment supporting the proposed diversion notes that the potential changes to hydrology due to the diversion cannot be determined by the information available at this time. It is considered possible that 'low-flow conditions' will be brought on earlier and occur for a longer period of time until the next fresh resets the river system.

The Applicant does not anticipate adverse effects on the Council's training line as the works are not in close proximity to the asset.

The effects on the flow variability and hydrology as a result of the diversion are considered by Mr Baker to be relatively minor.

5.4 Effects on avifauna within the Shotover River/Kimiākau (RM25.206 and RM25.177)

The bed disturbance activities proposed have the potential to influence avifauna at the site and have impacts on feeding, roosting or breeding behaviours. The Applicant has provided an assessment of effects relating to the proposed works associated with the diversion channel and the outfall on avifauna. I have audited the Applicant's assessments in the subsections below and have relied on the advice of Mr Shaw when undertaking this audit.

Placement of the diversion channel on the bed (RM25.177)

The Applicant identifies potential effects on nesting birds to be the key terrestrial ecology risk associated with the proposed diversion works. The breeding and egg-laying period is reported by the Applicant to be from August to March (approximately) with the core months understood to be August through to January). To avoid disturbing nesting birds through the core period the Applicant has proposed a condition that requires access and disturbance to the riverbed to be avoided between from 1 August to 31 January each year, unless an exemption is granted by the Department of Conservation.

Granting of an exemption requires a suitably qualified and independent ornithologist/ecologist to undertake a survey of the works area and a 100 metre radius surrounding the site (including access routes and the diversion works area) to identify any potential bird nesting sites. The survey must be taken 72 hours prior to works commencing and be submitted to the Department of Conservation. The survey is required to provide recommendations that must be adhered to throughout the works.

Based on adherence to this exemption process, the Applicant considers the proposal will have a less than minor effect on avifauna.

Mr Shaw considers the approach to minimise impacts during the breeding season, when impacts are expected to be greatest, is a reasonable approach. Mr Shaw has reviewed the exemption approach proposed by the Applicant and considers the measures to be pragmatic and should sufficiently mitigate the potential impacts.

Overall, Mr Shaw agrees with the assessment undertaken by the Applicant and conclusions made, but considers the presence of machinery just prior to breeding season may prevent birds that had intended to breed in that area from establishing nests. Mr Shaw's advice is that the project's duration will determine how significant the residual risk is. As set out in the preceding sections of this report, the Applicant acknowledges that the effects of maintaining and/or reinstating the diversion channel is unknown at this stage as it will depend on the nature of the river over time.

Based on the advice from Mr Shaw, at this time, I do not consider placement of the diversion channel on the riverbed will result in impacts on avifauna that are more than minor.

Placement of an outfall structure on the bed (RM25.206)

The Applicant considers the effects on avifauna arising from the discharge of treated wastewater to be less than minor. This is based on the advice of Ms Dawn Palmer who considers that the works, provided they do not extend into the open riverbed or create more open water habitats, will not impact waterfowl, terns, gulls and waders. The Applicant proposes to adopt a condition of resource consent that requires design plans and installation

methodology for the outfall structure to be developed in consultation with an avifauna specialist.

Mr Shaw agrees with the advice of Ms Palmer. It is noted by Mr Shaw that Ms Palmer has collected sufficient data from the site and surrounds over many years to make a considered assessment of effects.

5.5 Effects on recreational users of the Shotover River/Kimiākau (RM25.206 and RM25.177)

The human health effects associated with the proposed discharge of treated wastewater are assessed in the above sections. This assessment is limited to the effects on recreational users of the Shotover River and riparian margins as a result of the proposed placement of the outfall structure, diversion channel and the proposed diversion of water. The Applicant considers that, overall, the impacts on recreation users of the River will be less than minor. I have undertaken an audit of the Applicant's assessment within each subsection below.

Associated with the discharge channel structure
The Applicant considers the key risk to recreational users outside of the riverbed is where the Queenstown trail passes over the discharge channel. The Applicant has installed safety fencing on either side of the discharge channel and signage to alert recreational users to its presence.

Associated with the placement of the diversion channel and diversion of water
The Applicant states that given the localised nature of the proposed diversion (~400 metres) there are unlikely to be any adverse effects on those who use the river for recreation such as jetboating and kayaking as sufficient flow will remain in the adjacent reach for recreational purposes.

As set out in the assessments above, the impacts on flow variability and hydrology as a result of the proposed diversion of water are considered to be relatively minor.

At this stage there is limited information to determine the level of effects likely as a result of the placement of the diversion channel and diversion of water on recreational users. Given works are proposed to be constrained to a zone of the river bed, I do not consider the subject proposal will preclude other uses of the river. Given this and that the flow variability and hydrology impacts as a result of the diversion are considered by Mr Baker to be relatively minor, I do not consider the impacts from placement of the diversion channel and associated diversion of water on recreational users are likely to be more than minor.

5.6 Effects on gravel extraction activities in the Shotover River/Kimiākau (RM25.177)

As set out in the description of the affected environment above, there are a number of resource consents that authorise the abstraction of gravel from the bed of the river upstream of the proposed diversion channel zone. It is anticipated that the works to establish, maintain and re-establish the proposed diversion channel over time may have some impact on the gravel extractor operations in the River.

The Applicant identifies the presence of gravel extraction operations in the delta area and notes that other extractor works would be expected to stay away from the area due to health and safety reasons. It is considered that the impact on other gravel extraction operations would be less than minor.

I consider there is some uncertainty associated with determining the scale and nature of these impacts at this time, given the frequency of works required to maintain and re-establish the diversion channel following high flows or debris build up is unable to be determined. For the reasons stated with respect to recreational impacts above, I do not consider the impacts arising from placement of the diversion channel and the associated diversion of water on gravel extraction activities are likely to be more than minor.

5.7 Effects on groundwater levels, flows and quality arising from the discharge of treated wastewater to the Shotover River/Kimiākau (RM25.206)

As treated wastewater flows along the discharge channel some may infiltrate to ground along the base and sites of the channel. This has potential to result in:

- Changes in groundwater levels, including mounding effects adjacent to and downgradient of the channel; and
- Groundwater quality effects due to wastewater seepage to ground.

I have undertaken an audit of the Applicant's assessment under the subheadings below and have relied on the advice of Mr Baker when undertaking this audit.

Effects on groundwater levels and flows associated with the discharge of treated wastewater
The Applicant considers that effects on groundwater levels and flows will be less than minor. This is due to sand gravels underlying the discharge channel being highly permeable and allowing high rates of horizontal flow. This means that any treated wastewater discharged to land is expected to move laterally away with any groundwater effects being negligible.

Mr Baker agrees with the Applicant's assessment and notes that levels will only be impacted in the immediate vicinity of the discharge channel and will likely be masked by the natural variability in groundwater levels.

Effects on groundwater quality associated with the discharge of treated wastewater
The Applicant considers that any ongoing effects on groundwater quality are likely to be negligible and undoubtedly less than minor. The assessment provided by the Applicant shows that groundwater downgradient of the discharge has been heavily influenced by the WWTP and disposal to land via the DAD. The discharge method to water is likely to result in improvements in groundwater quality both within the vicinity of the discharge channel and the wider delta given the reduced volume of treated wastewater being discharged to land

In relation to impacts on groundwater quality upgradient of the discharge channel, the Applicant considers the hydrological regime of the site and surrounds limits the potential effects to the delta area and the immediate river environment.

Mr Baker's advice considers that shallow groundwater is heavily impacted by the WWTP and DAD discharge. Mr Baker agrees that ceasing the DAD discharge to the river may result in groundwater quality improvements at the site and surrounds.

5.8 Effects on air quality arising from the discharge of treated wastewater to the Shotover River/Kimiākau (RM25.206)

An air discharge permit is required to authorise the discharge of contaminants into air from the discharge of treated wastewater. In this case the contaminant of concern is the discharge of odour from treated wastewater as it traverses the discharge channel and enters the River. This audit is supported by the advice of Mr Iseli.

The Applicant has undertaken a qualitative assessment of the effects associated with the discharge of odour in accordance with the Ministry for the Environment's *Good Practice Guide for Assessing and Managing Odour* (2016). A FIDOL[15] assessment has been undertaken. The purpose of this assessment is to characterise the potential for offsite odour effects, taking into account the level of treatment, nature of the surrounding environment and metrological conditions. The Applicant has provided a FIDOL assessment at Page 79 of the original application (dated May 2025). Overall, this assessment considers the discharge is unlikely to cause offensive or objectionable effects given:

- The relatively low frequency of light winds experienced at the site which could cause effects; and
- The distance to nearest sensitive receptors (the nearest dwelling is located over 500 metres northeast of the outfall and nearest commercial properties located approximately 500 metres to the west of the outfall).

The Applicant has also addressed cumulative odour effects that may arise as a result of discharges from the WWTP and the discharge channel in their assessment. This assessment concludes the risk of cumulative effects to be low. This is due to the potential odour from the WWTP would not typically coincide with odour from the outfall due to differing emissions strengths, wind conditions and spatial separation. The frequency or duration of odours is not expected to increase as odours from the outfall are unlikely to be observed at off-site locations. Overall, any odour from the WWTP is expected to dominate the odour character, if detected, with the contribution from the outfall location being negligible in comparison.

The Applicant considers that any odour effects from the discharge of treated wastewater sought to be authorised in this process and cumulatively with the existing WWTP discharge are likely to be less than minor.

Mr Iseli has reviewed the Applicant's assessment and considers their assessment to be sufficiently robust given the scale and significance of the discharge to air from the outfall and drain. Mr Iseli considers that the FIDOL assessment has been undertaken in accordance with standard practice and is reasonable and supported by the information provided.

Mr Iseli's advice notes that transient recreational users of the River and riverbed could experience some odour on brief occasions. But given the standard of wastewater treatment, this is expected to be an earthy/musty type odour of low intensity. Mr Iseli considers odour impacts on these parties are likely to be less than minor.

[15] Frequency, Intensity, Duration, Offensiveness Location

Mr Iseli's advice agrees with the conclusions made by the Applicant that the odour effects from the discharge of treated wastewater sought to be authorised in this process, and cumulatively with any discharges from the WWTP, are likely to be less than minor.

Mr Iseli agrees that a number of mitigation measures proposed by the Applicant (such as implementation of an Odour Management Plan and a complaints record) should form part of any recommended conditions of resource consent.

5.9 Effects on Cultural Values

The discharge of treated wastewater to water and riverbed disturbance works impact cultural values including Kaitiakitanga, Hauora, mauri, ki uta ki tai and Mahika/mahinga kai. The Applicant acknowledges that any discharge of treated wastewater is culturally offensive as it will diminish the mauri of the awa tupuna, threaten the Ki Uta Ki Tai philosophy, and impact on the ability of tangata whenua to exercise culture and traditions, including mahika kai practices.

The Applicant provided an assessment of effects on cultural values for each of the applications addressed in this report.

In relation to the application lodged under RM25.177 to establish the diversion channel, divert water and discharge sediment, the Applicant proposes to undertake works with an accidental discovery protocol in place and has agreed to include a pounamu discovery condition which is consistent with recently granted gravel extraction consents in the region.

In relation to the application lodged under RM25.206 to discharge treated wastewater, discharge contaminants to air and undertake works in the bed to construct an outfall, the Applicant considers effects on cultural values are likely to be more than minor.

Both application documents acknowledge that Aukaha and Te Ao Marama Inc (TAMI) are best placed to assess cultural effects and, at that stage, noted that engagement was underway with each organisation and Ngāi Tahu and is continuing. The Section 92 RFI response provides a Short Form Cultural Impact Assessment from TAMI on behalf of Nga Rūnanga ki Murihiku and a Cultural Position Statement endorsed by Aukaha Ltd Wai Māori representatives. I have briefly summarised each document below:

Short Form Cultural Impact Assessment from TAMI on behalf of Nga Rūnanga ki Murihiku
This assessment acknowledges that the Applicant is working closely with TAMI and other experts to work through the complexities of the application and subsequent short-term solution as well as the future long-term solution. The assessment identifies the potential risks of the proposal that are to be avoided to ensure the sustainability of the whenua and wai. This statement also identifies measures which may be able to assist the Applicant to reduce or mitigate risks including a number of consent conditions. TAMI state that they wish to see draft consent conditions that are reflective of the recommendations made in the assessment. I consider the proposed conditions provided with the Section 92 RFI response address a number of these recommendations.

Cultural Position Statement endorsed by Aukaha Ltd Wai Māori representatives
This statement notes that the direct discharge of human waste to natural water, almost regardless of the extent of treatment is considered abhorrent by manu whenua. Wastewater

which is classified as wai-kino (polluted water) should not be mixed with other categories of water. Instead, natural mixing of wastewater through land, or a similar environment that provides a natural buffer or transition zone is supported by mana whenua. To reiterate, the wastewater leaving a treatment plant is considered tapu (prohibited, restricted, forbidden, to be approached with caution). Treatment through natural processes in the land to reach a state of being noa (free from extensions of tapu, ordinary, unrestricted) is the preferred option.

5.10 Consideration of Alternative

The Applicant has provided a substantial assessment of alternative disposal options in the original application at Section 8.1.3.3. This assessment ultimately determines the solution pursued under RM25.206 to achieve the key success criteria identified.

6. Notification and Written Approvals

6.1 Section 95A Public Notification

A consent authority must follow the set out in this section, in the order given, to determine whether to publicly notify an application for a resource consent. Both consent applications have been considered together as they have been bundled.[16]

Step 1: Is public notification mandatory as per questions (a) – (c) below?

Has the Applicant requested that the application be publicly notified? **Yes, in relation to RM25.206. Application RM25.177 has been bundled with RM25.206. RM25.177 must be notified together with the application it has been bundled with (RM25.206).**

(a) Is public notification required by Section 95C? **No**
Has further information been requested and not provided within the deadline set by Council? **No**
Has the Applicant refused to provide further information? **No**
Has the Council notified the Applicant that it wants to commission a report but the Applicant does not respond before the deadline to Council's request? **No**
Has the Applicant refused to agree to the Council commissioning a report? **No**

(b) Has the application been made jointly with an application to exchange recreation reserve land under section 15AA of the Reserves Act 1977? **No**

Public notification is required by Step 1. There is no need to consider subsequent steps. In the event the decision maker does not agree that public notification is required under Step 1, I have undertaken an assessment of the subsequent steps of Section 95 below.

Step 2: Is public notification precluded as per questions (a) – (b) below?

(a) Is public notification precluded by a rule in the plan or a NES? **No**

(b) Is the application for one or more of the following activities but no other activities**:**

(i) A controlled activity? **No**

(ii) *[repealed]*

[16] Urban Auckland, Society for the Protection of Auckland City and Waterfront Inc v Auckland Council [2015] NZHC 1382, [2015] NZRMA 235

(iia) A restricted discretionary, discretionary or non-complying activity but only if the activity is a boundary activity? **No**

(iii) *[repealed]*

Step 3: Does the application meet either of the criteria in (a) or (b) below?

(a) Is the application for a resource consent for one or more activities, and any of those activities is subject to a rule or national environmental standard that requires public notification? No

(b) Will the activity have or be likely to have adverse effects on the environment that are more than minor in accordance with Section 95D? No

The adverse environmental effects on the environment from the proposal are discussed in elsewhere of this report. Based on this review, when considering all applications together I consider there is potential for impacts that are more than minor in particular effects on surface water quality and cultural values (discounting the site and adjacent sites), and accepting some uncertainties with respect to design, implementation and mitigations still exist.

Step 4: Do special circumstances exist in relation to the application that warrant the application being publicly notified? Yes

As I understand it, 'special circumstances' are circumstances that are "outside the common run of things which are exceptional, abnormal or unusual, but less than extraordinary or unique". It is not sufficient that special circumstances exist, they must exist in such a way that warrants public notification. While public interest in a proposal can be a contributing factor to this assessment, it is not determinative on its own. Making a determination on whether special circumstances exist is a factual position that is based on expertise and judgment.[17]

I consider there has been significant public interest in the proposal as a whole. This is demonstrated through considerable and sustained local and national media coverage and a protest against the intention to rely on section 330 of the RMA to discharge treated wastewater to the river. The media coverage and public interest is likely to continue as the applications progress. The Council has received multiple LGOIMA requests for official information and the Council's consents and compliance webpage has received almost 2,000 views since the discharge commenced.[18]

There are high risk elements involved in the application. The effects of the discharge would increase if the diversion channel was not adequate or functional.

The receiving waterway is subject to a Water Conservation Order, which recognises its values[19], and is in an area frequented by the public, including tourists. Finally, while the effects on the owners or occupiers of the land and adjacent land must be disregarded, the peculiar circumstance in this situation is that the site is publicly owned, receives a high level

[17] Environmental Law Initiative v Canterbury Regional Council [2024] NZHC 612 [20 March 2024].
[18] https://www.orc.govt.nz/consents-and-compliance/compliance/shotover-wastewater-treatment-plant/
[19] Set out above and in the Order itself

of use, including for public recreation and tourism, and is valued for those purposes.

In my view, none of these circumstances on their own would be sufficient to meet the threshold for special circumstances. However, it is the combination of the circumstances described above that elevates the proposal beyond the "common run of things" to the extent that it is an unusual situation.

Accordingly, I consider that special circumstances exist that warrant public notification of the activities sought.

As required by Regulation 10 of the Resource Management (Forms, Fees, and Procedure) Regulations 2003, direct notice will be served upon the following persons:

(a) every person who the consent authority decides is an affected person under section 95B of the Act in relation to the activity that is the subject of the application or review:
(b) every person, other than the Applicant, who the consent authority knows is an owner or occupier of land to which the application or review relates:
(c) the regional council or territorial authority for the region or district to which the application or review relates:
(d) any other iwi authorities, local authorities, persons with a relevant statutory acknowledgement, persons, or bodies that the consent authority considers should have notice of the application or review:
(e) the Minister of Conservation, if the application or review relates to an activity in a coastal marine area or on land that adjoins a coastal marine area:
(f) the Minister of Fisheries, the Minister of Conservation, and the relevant Fish and Game Council, if an application relates to fish farming (as defined in the Fisheries Act 1996) other than in the coastal marine area:
(g) Heritage New Zealand Pouhere Taonga, if the application or review—
    (i) relates to land that is subject to a heritage order or a requirement for a heritage order or that is otherwise identified in the plan or proposed plan as having heritage value; or
    (ii) affects any historic place, historic area, wāhi tūpuna, wahi tapu, or wahi tapu area entered on the New Zealand Heritage List/Rārangi Kōrero under the Heritage New Zealand Pouhere Taonga Act 2014:
(h) a protected customary rights group that, in the opinion of the consent authority, may be adversely affected by the grant of a resource consent or the review of consent conditions:
(ha) a customary marine title group that, in the opinion of the consent authority, may be adversely affected by the grant of a resource consent for an accommodated activity:
(i) Transpower New Zealand, if the application or review may affect the national grid.

On this basis, I recommend that the following direct notifications are made:

- Aukaha Limited on behalf of Runaka
- Te Ao Marama Inc on behalf of Runaka
- Ngai Tahu Group Management Ltd
- Te Runanga Moeraki Inc
- Te Runanga Otakou
- Hokonui Runanga Inc Soc
- Kati Huirapa Runanga ki Puketeraki
- South Otago Ngai Tahu Runanga Inc

- Queenstown Lakes District Council
- Central Otago District Council
- Clutha District Council
- Department of Conservation
- Otago Fish and Game Council
- Public Health South
- Land Information New Zealand
- Maritime Safety Inspector
- NZ Transport Agency
- South Island Eel Management Committee
- Otago Conservation Board
- Shotover Jet/Ngai Tahu Tourism
- KJet
- The following consent holders:
    - RM2008.594 – QLDC
    - RM16.164.01 – Queenstown Hardfill Management Company Limited
    - RM16.353.01 – Queenstown Gravel Supplies Limited
    - RM17.311.01 – Fulton Hogan Limited – Alexandra
- Queenstown Airport Ltd
- Remarkables Park Ltd
- Aotearoa Water Action Incorporated
- Royal Forest and Bird Protection Society
- Queenstown Lakes Community Action

7. NOTIFICATION RECOMMENDATION:

In accordance with the notification steps set out above, it is recommended that applications RM25.206 and RM25.177 proceed on a **publicly notified** basis.

Name: Hannah Goslin
Title: Consultant Consents Planner
Date: 16 September 2025

Signature: 

Otago Regional Council

DECISION ON NOTIFICATION

Sections 95A to 95G of the Resource Management Act 1991

Date: 18 September 2025

Application Nos: **RM25.177 and RM25.206**

Subject: ***Decision on notification of resource consent application under delegated authority***

Decision under Delegated Authority

The Otago Regional Council decides that these resource consent applications are to be processed on a **publicly notified** basis in accordance with sections 95A to 95G of the Resource Management Act 1991.

The resource consent applications are also to be **directly notified** to the parties listed on pages 54 and 55 of the Notification Recommendation Report.

The above decisions adopt the recommendations and reasons outlined in Ms Goslin's Notification Recommendation Report in relation to these applications. I have considered the information provided, and the reasons and recommendations in that Report. I agree with those reasons and recommendations and I adopt them.

In particular, I agree with Ms Goslin that RM25.177 and RM25.206 should both be publicly notified because as stated by her in section 4.9 of this Report "*In this case, two separate resource consent applications have been made, but I consider both applications to be inextricably linked. This is because the activities sought to be authorised under RM25.177 are a mitigation measure for the activities seeking to be authorised under RM25.206. I consider it is unlikely that the exercise of RM25.206 would be able to occur as sought without the activities sought to be authorised by RM25.177 also occurring. I also consider that RM25.177 would not be exercised if RM25.206 were not granted*."

In the alternative, as does Ms Goslin, I consider that RM25.177 and RM25.206 should both be publicly notified because 'special circumstances' exist for the proposal as a whole, for the reasons outlined by her under Step 4 on pages 53 and 54 of this Report.

In that regard I observe there are other relevant matters pertaining to a conclusion on whether or not 'special circumstances' exist including:

- ORC has decided that both RM25.177 and RM25.206 should proceed through the resource consent process together;
- To accommodate the dynamic nature of the Shotover River/Kimiākau and achieve the necessary targets for dilution, the Applicant considers that the location of the diversion channel and its extent will need to change over time (that is the reason for a diversion zone being proposed instead of an exact location);

- The Applicant has acknowledged that further detailed design of the diversion channel is required and that is dependent on the Applicant obtaining further details on river morphology, bathometric data and river flows;
- The magnitude and duration of potential changes to hydrology and subsequent effects on ecology due to the diversion cannot be determined by the information available at this time;
- If the diversion target flow rate of approximately 2.5m^3/s is unable to be achieved, deepening and widening of the diversion channel may be required in addition to local reshaping of the adjacent braid to allow more flow to spread towards the treated wastewater discharge point;
- Given the dynamic environment of the Shotover River/Kimiākau, the diversion channel will likely require ongoing maintenance and reestablishment. The quantity of the works required to maintain the target diversion flow rate is unknown as it will be determined by the movement of gravel within the bed; and
- ORC's peer review found that there is considerable uncertainty regarding the performance of the proposed system during larger floods in the Shotover River/Kimiākau and there is limited information on how often such events would likely occur and what the timeframes would be for reinstating the channel.

The above matters clearly indicate that there is uncertainty regarding both the exact nature of the activities sought to be authorised and some of the effects of those activities. That uncertainty adds weight to a conclusion that 'special circumstances' exist in this case for the proposal as a whole.

This decision is made under delegated authority by:

……..…
Robert van Voorthuysen
Independent hearings commissioner
18 September 2025