

Delmore Fast-Track

04/05/2026 – Auckland Council Response

Annexure 17:

Water Treatment

1.0 APPLICATION DESCRIPTION

Application and property details

Fast-Track project name: Delmore Fast-Track

Fast-Track application number: FTAA-2512-1164

2.0 Technical Specialist Memo – Water

To: Dylan Pope – Lead Planner & Carly Hinde - PPL

From: Patrick O’Riordan

Qualifications
& Relevant
Experience:

I hold the qualification(s) of: Beng (Hons) Mechanical and Manufacturing, BA. Mathematics and a PGDip in Clean Technology Management and have 16 years of experience in process, mechanical, water & wastewater engineering. I am a full member of Engineering New Zealand and Water New Zealand. I am a Chartered Professional Engineer (CPEng.) My practice areas are Environmental engineering and Water engineering. I have prepared expert evidence and technical assessments for resource consent applications, plan changes, and fast-track applications and have appeared as an expert witness before consent authorities.

Preparation in
Accordance
with the Code
of Conduct:

I confirm that I have read the Environment Court Practice Note 2023 – Code of Conduct for Expert Witnesses ([Code](#)), and have complied with it in the preparation of this memorandum. I also agree to follow the Code when participating in any subsequent processes, such as expert conferencing, directed by the Panel. I confirm that the opinions I have expressed are within my area of expertise and are my own, except where I have stated that I am relying on the work or evidence of others, which I have specified.

Signature:

Date: 17 April 2026

3.0 Executive Summary / Principal Issues

Water

In relation to water supply, the proposal also provides for a private on-site potable water servicing strategy in circumstances where connection to Watercare's public water network is not presently available or assured. Option 1 is based on four groundwater bores abstracting from the Orewa Waitemata aquifer, feeding a water treatment plant and on-site storage / reservoir infrastructure.

Stage 1 would be serviced by bores PB1 and PB2 via a raw water collection tank, treatment plant and booster system pressurising the Stage 1 reticulation. Stage 2 would be serviced by bores PB3 and PB4, with treated water pumped to elevated reservoirs from which the network would be gravity fed. The supporting drawings show a 400 m³ raw water collection tank, a 1,600 m³ treated water storage tank for Stage 1, and two 565 m³ Stage 2 reservoirs with provision for a third if required.

Apex states that the potable water treatment plant is required irrespective of the wastewater option and is initially sized for Stage 1, with modular expansion for later stages. The treatment process is described as either cartridge filtration and UV disinfection, or multi-media filtration and UV disinfection, with chemical dosing and online monitoring to produce potable water complying with the Drinking Water Standards for New Zealand. The Stage 1 average and peak daily demands are stated as 321 m³/day and 642 m³/day respectively, increasing to 692 m³/day and 1,385 m³/day for Stage 2.

The applicant also relies on demand reduction measures, including greywater recycling and rainwater harvesting, to reduce pressure on the bore supply. Firefighting has been addressed at a concept level, with Appendix 27 stating the Stage 1 booster arrangement is intended to provide adequate firefighting pressures, and Apex stating reservoir sizing has taken account of firewater requirements. The principal issue for assessment is therefore whether the proposed water supply, treatment process, storage and private reticulation arrangements have been sufficiently demonstrated to provide a reliable and resilient potable and firefighting supply.

4.0 Documents Reviewed

The following documents have been reviewed in preparing this memorandum:

- Appendix 27 McKenzie & Co, *Water, Wastewater and Utility Infrastructure Report Rev G, dated 22 December 2025.*
- Appendix 28 McKenzie & Co, *Water, Wastewater and Utilities Drawings Rev B, dated 22 December 2025*
- Appendix 29 – *Water and Wastewater Design Report.* Apex Water Limited dated 25 November 2025.
- Appendix 44 – *Proposed Consent Conditions.* December 2025.
- WAT60456696 (*Groundwater take*)
- LUC60456730 (*Land use Consent*)
- LUC60456721 (*Land use Consent*)

5.0 Additional Reasons for Consent Not included in AEE / Incorrect Reasons for Consent

None identified

6.0 Specialist Assessment

Summary

Water Supply

- 6.1. The proposal relates to the treatment of water for potable supply to the residential development.
- 6.2. Water shall be extracted from a series of bores on site. The abstraction consent is not part of this application, and therefore the effects of this activity are not covered in this assessment.
- 6.3. The Council groundwater specialist has advised that the bore is likely to provide the volume of water required without adverse effects on the aquifer.
- 6.4. Reticulation of the water shall be done in accordance with the WSL code of practice for potable water.
- 6.5. Hazardous substances associated with operation of the Water Treatment Plant will need to be stored and transferred correctly. This can be mitigated through appropriate design of the chemical handling and storage equipment which will require HSNO Certification.
- 6.6. The waste stream from the water treatment plant needs to be quantified, and the discharge of this waste stream confirmed.

7.0 Section 67 Information Gap

Water

Description of Missing Information

- 7.1. The Water take consent has been granted, however there is no water quality data for design of the treatment plant. The sample used is from 2016, from a bore located outside of the property.
- 7.2. The application does not provide a water balance sufficient to demonstrate how the water shall be supplied reliably to the development during increased use periods, which will typically coincide with drought conditions. Water harvesting is mentioned but not detailed.
- 7.3. A “Hydroloop” system is also referred to, however the figure of 30-40% water re-use is not tested, nor detailed as to how this would be integrated into the overall water supply for the development. Is this going to be a condition for developing dwellings on the site?
- 7.4. There is likely to be a waste stream from the water treatment plant, while this is likely to be small when compared to the wastewater from the balance of the development, can this please be quantified and its management confirmed?

- 7.5. The application material indicates that the proposed reticulation network and treatment plant are to remain in private ownership of a private infrastructure company that will seek network operator status. However, the application does not clearly identify the proposed legal entity that will own the water and wastewater assets, nor does it explain whether ownership and governance will sit with a network utility operator, body corporate, incorporated society, or another structure. Please refer to suggested condition below.
- 7.6. The application also does not clearly allocate long-term responsibility for operation, maintenance, renewal, compliance, auditing, customer interface, charging/revenue collection, emergency response, and asset replacement across the proposed private water and wastewater systems. The supporting material refers variously to a private infrastructure company, a utility company, Apex as operator, and the owner of the plants carrying out audits, but without a single clear governance and responsibility framework. Please refer to suggested condition below.

8.0 Proposed Conditions

Applicant Proposed Conditions

The consent holder must construct the on-site water treatment infrastructure in general accordance with the “Delmore Water and Wastewater Treatment Plant Design Report” prepared by Apex and approved under Condition 1.

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Agreed

Groundwater for domestic supply shall be taken and treated in accordance with the relevant conditions of the groundwater take consent referenced under consent number WAT60456696.

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Agreed

NEW Requested Additional Conditions

Private Utility Ownership and Governance Plan

Prior to the commencement of operation of any private water supply or wastewater reticulation, treatment plant, reservoir, bore, pump station, or associated private utility infrastructure authorised by this consent, the consent holder shall submit to Council for certification a Private Utility Ownership and Governance Plan.

The plan shall identify:

- the legal entity that will own the infrastructure;
- the party responsible for operation, maintenance, renewal, compliance monitoring, emergency response, customer interface and complaints management;

Suggested condition addressing point 7.5 and 7.6 above.

- the intended pathway and timeframe for obtaining any required network operator status, registrations, or approvals from the relevant regulator(s);
- the arrangements for long-term funding and asset management; and
- contingency arrangements if the nominated owner or operator ceases to act.

No operation of the private potable water supply system shall commence until the consent holder has provided to Council evidence that all approvals, registrations, and operator requirements required by the relevant drinking water regulator, including Taumata Arowai where applicable, have been obtained.

Hazardous Substances – Water Treatment Plant

Prior to the commencement of operation of the water treatment plant, the consent holder shall submit to Council for certification a Hazardous Substances Storage and Management Plan for the water treatment plant and associated potable water infrastructure.

Water Supply Management Plan

Prior to commissioning of the on-site potable water supply system, the consent holder must submit to Council for certification a Water Supply Management Plan prepared by a suitably qualified water engineer and drinking-water specialist.

The Plan should include:

- source description and bore construction details;
- sustainable yield assessment;
- peak day, average day, and seasonal demand calculations for each stage and full build-out;
- treatment process description and design capacity;
- storage volumes for operational, emergency and fire-fighting purposes;
- backup power and critical spares;
- network layout and pressure management;
- monitoring, sampling, reporting and incident response procedures;
- water conservation and demand management measures;
- triggers for restricting use, staging occupation, or augmenting supply;
- operation, maintenance and asset renewal responsibilities.

Suggested condition addressing point 6.5 above

Demonstrated Source Capacity

Prior to the issue of section 224(c) certification for any subdivision stage, and prior to occupation of any dwelling within that stage, the consent holder must provide certification from a suitably qualified hydrogeologist and water engineer confirming that:

- the groundwater take authorised for the development is sufficient to service that stage and all previously completed stages;
- adequate residual capacity remains for later stages consistent with the approved staging plan; and
- the abstraction regime will not compromise the long-term sustainable yield of the source or any minimum performance requirements specified in the groundwater take consent.

Prior to occupation of more than a specified threshold number of dwellings, **such as 250, 500, 1,000, and 1,300** dwellings, the consent holder must submit an updated **Water Security Assessment** demonstrating that the source, treatment plant, storage, pumps, and reticulation have sufficient capacity for the occupied dwellings plus the next stage, under:

- average demand,
- peak day demand,
- summer demand,
- drought conditions,
- plant outage contingency,
- and fire-flow requirements where applicable.

Compliance with Taumata Arowai drinking water requirements

The consent holder must ensure that all water supplied for human consumption from the development complies at all times with the applicable requirements of the Water Services Act 2021, the Drinking Water Standards for New Zealand, and the Drinking Water Quality Assurance Rules issued or administered by Taumata Arowai, including any amendments or replacements in force from time to time.

Water efficiency and demand management

To improve sustainability, require all dwellings to incorporate water-efficiency measures, such as:

- low-flow fixtures,
- maximum flow-rate fittings,
- efficient appliances,
- leak detection provisions,
- and potentially rainwater tanks for non-potable uses where appropriate.

A useful condition would require the consent holder to demonstrate that projected per-dwelling potable demand assumptions used in the design are enforceable through design standards or consent notices.

Drought and low-yield response plan

The Water Supply Management Plan should include staged drought triggers and mandatory responses, such as:

- non-essential use restrictions,
- irrigation bans,
- leak detection and repair,
- temporary reduction in construction water take,
- use of supplementary tanker supply,
- and a halt on occupation of further dwellings until security of supply is restored.

Minimum treated water storage

The consent holder must provide treated potable water storage sufficient to meet:

- at least 24 hours of average day demand for occupied dwellings,
- emergency reserve,
- and any required fire-fighting storage, with the exact volumes certified by a suitably qualified water engineer prior to commissioning.