Technical Memorandum – Fast-track Application

Waikanae North Development Limited Urban Subdivision Development

Date: 20 July 2026

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Discipline/expertise: Water supply and wastewater servicing, hydraulic modelling, pump station and rising main infrastructure, development engineering standards, and network capacity assessment

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Introduction

This memo responds to a request for comment from the expert panel assessing Waikanae North Development Limited's ("WNDL") substantive application to undertake an urban subdivision development at 169-171 Peka Peka Road, Kāpiti, under the Fast-track Approvals Act 2024 (the Act).

This memo provides comments on water supply and wastewater servicing matters, including network capacity, hydraulic modelling, pump station and rising main infrastructure, firefighting supply, backflow prevention, constructability and resilience, to manage infrastructure effects.

Pre-lodgement feedback on the draft application

Pre-lodgement feedback identified that further technical information was required before Council could confirm whether the proposed development can be appropriately serviced. A key issue raised was the scale of the proposal, and cumulative growth in the Waikanae North catchment, which requires updated water and wastewater modelling, with the modelling to be undertaken by Council's nominated modeller at the developer's cost. Other key issues raised included:

- The proposed internal water network requires hydraulic modelling to confirm pressures, pipe sizing, firefighting flows, and the impact of the development on the wider Council network.
- The wastewater modelling previously completed in 2022 assumed approximately 1,000 residential lots. The current proposal is understood to have increased to

approximately 1,200 lots and must now be assessed with cumulative flows from other consented or proposed developments in the Waikanae North wastewater catchment.

- The earlier wastewater modelling identified upgrades to Waikanae Pond Pump Station and Rauparaha Pump Station. Further assessment is required because these upgrades may also trigger the need to upgrade the existing rising main (through a duplicate rising main) between Waikanae Pond Pump Station and Rauparaha Pump Station.
- The application material should be corrected where it states or implies that Council has secured a reservoir site or will deliver reservoir design and construction to match the pace of the development. Council is tracking toward reservoir commissioning within the Long-term Plan timeframe, currently identified as 2033, but a site has not yet been acquired, and design cannot commence until a site is secured.
- The Landlink scheme plan reference to a 375 ID watermain does not align with Council's current planning, which is based on a 355 OD main along old SH1 to service and fill the proposed reservoir.

Review of application (and regulatory assessment)

The application material has been reviewed against Council's servicing expectations, relevant development standards, and known capacity constraints in the Waikanae North water and wastewater networks. The matters below require resolution through further technical assessment, amended design information, and enforceable consent conditions.

Water supply matters	**Wastewater matters**
Water Hydraulic modelling is required to confirm the proposed internal network, pipe sizing, pressure range, firefighting capacity, and impact on the wider network. Design pressures should be maintained between 250 kPa and 800 kPa. The modelling will be completed by KCDC's consultant, and it will be at developer's cost.	The wastewater modelling assessment completed in 2022 for this development assumed 1000 residential lots in high density scenario however the number of lots has increased to 1200 and few other developments have been consented in Waikanae North WW catchment; we need to revisit the model taking cumulative flow from all the developments in this catchment. The previous model assessment recommended upgrade of Waikanae Pond pump stations and Rauparaha PS however the upgrade of these PS might require the upgrade of existing rising main (From Waikanae Pond PS to Rauparaha PS) which needs to be included in new model assessment. Can obtain a new quote from WW Hydraulic Modeler, the modelling will be completed by KCDC's consultant, and it will be at developer's cost.
Specific design details are required for any watermain crossings of wetlands,	The proposed development cannot not be serviced for wastewater until the duplicate

drainage channels, stormwater culverts, streams, waterways or reserves, including mechanical protection where pipelines pass below invert level.	Waikanae wastewater rising main from Rauparaha Pump Station to Paraparaumu Wastewater Treatment Plant, the Waikanae Pond and Rauparaha pump station upgrades, and any required rising main upgrade between those stations are commissioned.
The pipe sizing shown on scheme plans seems larger than it is required to achieve pressure and fire flows, however this will be further confirmed through water modelling assessment. The design pressure shall be between 250 kPa and 800 kPa (25m to 80m).	As highlighted in infrastructure report that certain sections of wastewater main will be laid at significant depth, i.e., below groundwater table which has potential I&I risk. The wastewater design flow should use a peak factor of **five** in accordance with NZS 4404:2010, particularly given the proposed pipe depths, high groundwater conditions, and associated infiltration and inflow risk, so please revise the report and adopt peak factor as **five** for design flow.
Long sections for the watermain network are required at detailed design stage, including crossing details, minimum cover, and construction methodology where directional drilling or other trenchless methods are proposed.	Please mention the number of storage tanks required for Western Wastewater pump station, without taking wet well storage into consideration, I believe you need 3, 17m long 2.1m diameter concrete pipes. Please run a calculation and mention it in your revised infrastructure report. This will change upon using peak factor five as per NZS 4404:2010. Council prefer to see synthetic tanks (plastic) rather than concrete pipes being used for raw sewer storage in an area with high groundwater table. This can be reviewed during detail-design stage.
The location of fire hydrants to comply with SNZ PAS 4509:2008 will be reviewed at the detailed design. As per firefighting code, the first hydrant should be within 135m of hardstand area of dwelling and second hydrant at 270m.	The feasibility and sizing of the internal WW network connections and the internal sizing of the wastewater pipeline is required. The dynamic hydraulic design shall confirm the sizing of the WW-main inside the development. Long sections for the wastewater main network are required at detailed design stage, including crossing details, minimum cover, and construction methodology where directional drilling or other trenchless methods are proposed.
Backflow prevention must be addressed for commercial, industrial and municipal activities. High-risk activities involving chemical or biological processes should	Please provide preliminary design for both wastewater pump stations proposed. The design report shall include an assessment of proposed rising-mains as well.

include reduced pressure zone backflow protection.	
The network should minimise water age through linked or looped mains and avoid dead ends where practicable. Water mains should not be located within private property.	Pump stations must be designed in accordance with WSA 04 Sewage Pumping Station Code of Australia, version 2.1 (2005), including publicly owned land, secure fencing, truck access, turning ability, odour control and corrosion protection. Pump stations shall be located on separate publicly owned land and be fully fenced with drive-on access for a medium sized truck as defined in Austroads (with turning ability). Please confirm it complies with the requirements above. The Odour issues and corrosion of the concrete can be mitigated through odour filter i.e., MCberns and protective lining of wet well. Can you please provide detailed information/ design report of bio-filter odour bed treatment system.
The water mains to be vested to council shall not be laid within private property.	The water & wastewater services shall be designed to resist the effects of peat & liquefaction, seismic hazards, lateral spreading, soil instability, slope failure, ponding, flood events etc. Please confirm that the effects mentioned above have been taken into consideration for water main, wastewater main, pump stations, storage tanks design.
Principal mains serving commercial and industrial areas should be at least DN150 and provided on both sides of the road where required by Council standards.	The access chambers on emergency storage tanks of main wastewater pump station shall be two at both end not one. This could be revised at detailed design if applicant is happy with this requirement.
All crossing of waterways or reserves shall be specific designs to suit KCDC's requirement. Crossing shall, as far as practicable, be at right angles to the waterway or reserve. When the pipeline is placed under the invert level of a waterway, mechanical protection by encasement is required.	The internal wastewater network, pump stations, rising mains and emergency storage requirements require dynamic hydraulic design and preliminary design reporting, including total head, pump duty, staged pump capacity, and future upgrade requirements.
Watermains constructed from metallic materials should generally not be located close to high-voltage transmission lines	The applicant has assumed 10l/s pump capacity for first few stages, upon the completion of full development, the pump capacity will need an upgrade therefore the

or related facilities without specific design assessment.	cost to upgrade the pump station in future shall be borne by developer through development agreement. The fund including inflation % to replace pump in future shall be paid upfront to KCDC.
How will firefighting compliance be met for the development at 105 Paetawa Road?	The applicant must provide an on-site wastewater disposal design report for the seven lots at 105 Paetawa Road, confirm Greater Wellington Regional Council consent status for onsite wastewater disposal.
The specific details (if Any) of watermain main crossing proposed wetland areas, drainage channels, stormwater culverts, streams are required. All services must be designed to resist site-specific hazards, including peat, liquefaction, seismic effects, lateral spreading, soil instability, slope failure, ponding and flood events.	Flow meters must be installed on the rising mains from both proposed wastewater pump stations. The applicant must confirm that the proposed HDPE SDR17 PN10 pressure main is suitable, particularly where directional drilling is proposed for installation, and applicant should assess whether a higher-pressure rating is required.
	Is the proposed HDPE SDR17 PN10 pipe robust enough as pressure main especially when it will be installed through directional drilling? Will PN12 suits better for this scope? What is the total head needed to pump the WW from main pump station?
	For directional drilling, following details including location of access pits and exit pits shall be submitted to KCDC for approval: Clearances from services and obstructions The depth at which the pipeline is to be laid to ensure minimum cover is maintained, long section plans. The pipe support and ground compaction. How pipes will be protected from damage during construction. Any assessed risk to abutting surface and underground structures. Appropriate marking tape or detection tape shall be installed at the top of the embedment zone to aid future location of pipe.
	A CCTV assessment is required for the existing 525 mm wastewater trunk main from discharge manhole KWWN001460 to Waikanae Pond Pump Station to confirm that

	the trunk main is in sound condition to receive additional flows from proposed development.
	Emergency storage tank sizing must be recalculated using the required design flow, with consideration given to synthetic storage tanks rather than concrete pipes due to high groundwater conditions. Access chambers should be provided at both ends of emergency storage tanks.
	Specific details are required for wastewater main and rising main crossings of wetlands, drainage channels, stormwater culverts and streams, and all services must comply with minimum clearance requirements in NZS 4404:2010 Tables 5.6 and 6.4.
Quality assurance plans should be prepared to confirm that water infrastructure is constructed in accordance with the approved design and applicable Council standards.	Quality assurance plans should be prepared to confirm that wastewater infrastructure is constructed in accordance with the approved design and applicable Council standards.

Post-lodgement work with the applicant

A meeting was held with the WNDL Applicant team on 06/07/2026 to discuss a range of engineering matters, including the above. It is noted that the Applicant expressed agreement to undertaking the required water hydraulic modelling and wastewater modelling, as requested, as part of the detailed engineering design phase. The Applicant also agreed with many of the above comments made. On this basis, suitably worded conditions of consent are anticipated to be included in the proposed consent conditions. Council will provide detailed feedback on these conditions once they are circulated.

An exception to this is the Project now including a 7-lot development of 105 Paetawa Road which is a new aspect to the lodged substantive application. This aspect of the proposal has not yet demonstrated that each of these allotments are able to cater for on-site water supply, on-site wastewater disposal, and fire-fighting water supply associated with a dwelling on each lot. This information is required in order to assess whether the location of these lots is appropriate (in relation to nearby sensitive features) and have been appropriately sized.

Outstanding matters

Council is not yet able to confirm that the development can be fully serviced by public water and wastewater infrastructure. The following matters remain outstanding and should be resolved before conditions are finalised or any approval enables connection to Council networks.

- Written agreement from the Applicant to Council procuring the required water and wastewater hydraulic modelling at the developer’s cost.

- Provision of revised infrastructure reports that address the updated wastewater design flow, peak factor, pump station design basis, storage sizing, rising main design, network clearances, and constructability information.
- Confirmation that wastewater servicing for the development is dependent on the commissioning of the duplicate Waikanae wastewater rising main and associated pump station and rising main upgrades.
- Development of draft consent conditions that prevent premature connection to constrained wastewater infrastructure and require detailed design certification before construction.
- Where staged pump capacity is proposed, require a development agreement or equivalent mechanism to secure the full cost of future pump upgrades, including inflation allowance, before vesting or connection.
- Council cannot confirm that future Council-funded water reservoir works will align with the applicant's preferred development programme.

Proposed conditions

Council's feedback will be provided on the proposed consent conditions when the updated set is received, as per Minute 1 from the Expert Panel.

Other matters (if relevant)

The Applicant should be advised that Council's Long-term Plan infrastructure programme and development-led staging are separate matters. Council cannot confirm that future Council-funded water reservoir works will align with the applicant's preferred development programme, and the applicant should not rely on that assumption in the application material. Any infrastructure delivered by the developer for vesting in Council must be designed to Council standards, independently certified where required, and subject to Council acceptance before commissioning or vesting.