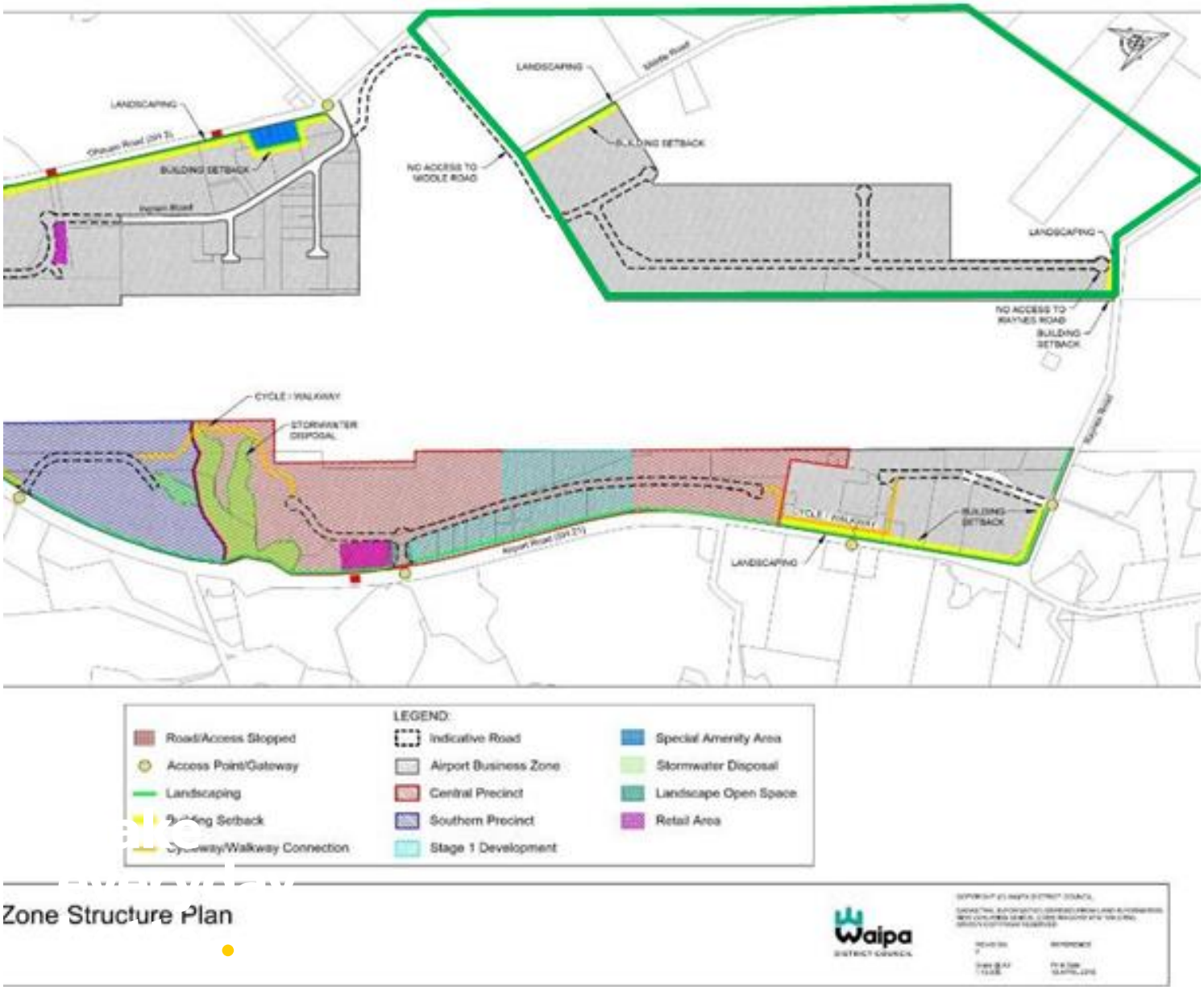
3 Waters Report Waipā PPC20

Prepared for Waipā District Council
Prepared by Beca Limited

20 February 2023



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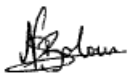
Appendices

Revision History

Revision Nº	Prepared By	Description	Date
A	Claire Scrimgeour	For review	15/02/2023
B	Claire Scrimgeour	Final	20/02/2023

Document Acceptance

Action	Name	Signed	Date
Prepared by	Claire Scrimgeour		20/02/2023
Reviewed by	Neda Bolouri		20/02/2023
Approved by			20/02/2023
on behalf of	Beca Limited		

1 QUALIFICATIONS AND EXPERIENCE

1.1 My full name is Claire Margaret Scrimgeour. I am a Principal Engineer at Beca Limited (Beca). I have been employed at Beca since 2014, prior to this I was a senior engineer at MWH NZ Limited and held roles managing water, wastewater stormwater services at Manawatu and Rangitikei District Councils. I am a member of Water New Zealand and a Member of the Institute of Public Works Engineering Australasia.

1.2 I have a Bachelor's degree from Massey University (Chemical Technology (Honours)).

1.3. I have over 20 years of experience in the fields of water, wastewater stormwater planning and management. My experience in relation to this project involves:

1.3.1. Technical role and project manager for the "Waikato Metro Wastewater Business Case - Southern" (Beca, 2020-2021)

1.3.2. Technical role and project manager for "Waipā Three Waters Master Plan (Beca 2020)

1.3.3 Review of Waipā 3 Waters Asset Management Plans (Beca 2021)

1.3.4. Undertaking planning assessments for other Councils in the Waikato Region including Ngaruawahia Structure Plan Water and Wastewater Assessment (Beca, 2023)

2 PURPOSE OF REPORT

2.1. The purpose of this report is to summarise my technical review and assessment of various technical submissions for the Airport Northern Precinct Private Plan Change 20 (PPC20). My review provides recommendations in relation to wastewater, water and stormwater (Three waters) management associated with PPC 20.

3 SUMMARY OF REVIEW

3.1. Introduction

Titanium Park Limited and Rukuhia Properties Limited have collectively lodged a private plan change request to the Waipā District Plan (WDP), identified as Private Plan Change 20 (PPC20). PPC20 seeks to:

- Rezone approximately 89ha of land to the northwest of the Airport, from Rural to Airport Business Zone (refer Figure 1).
- Amend the Airport Business Structure Plan contained in Appendix S10 of the Waipā District Plan.
- Amend the Airport Business Zone (Titanium Park) provisions contained in section 10 of the Waipā District Plan.
- Amend the infrastructure, Hazards, Development and Subdivision provisions contained in section 15 of the Waipā District Plan.
- Amend the Assessment Criteria and information requirements contained within section 21 of the Waipā District Plan.

Figure 1 - Area for PPC 20

The relevant three waters matters pertaining to the proposal are assessed and described in the following sections.

3.2 Integrated Three Waters Management

Best practice three waters management is to develop an integrated catchment management approach. The Airport Northern Precinct is a large portion of the local catchment for stormwater in particular. Development of a more integrated approach with a guiding document such as a catchment management plan (CMP) for 3 waters would provide better integration with WDC, surrounding land owners and Waka Kotahi. Waipā District Council (WDC) have a programme to develop CMPs for the main urban areas and urban growth cells.

CMPs allow identification of effective public and private water sensitive techniques for catchments and site specific development. CMPs are important when dealing with large scale land use changes or intensification of land uses with the potential to negatively impact on infrastructure capacity and the receiving environment. They are particularly effective when there are a number of parties involved and allow consideration at a larger scale of climate change impacts and environmental enhancements consistent with Te Ture Whaimana.

Future requirements of the new wastewater entity being set up to manage three waters in the wider region are still unknown but will be developed by July 2024 (refer Water Services Entity Act 2022).

3.3 Stormwater Management

The stormwater flows are proposed to be managed within the development to ensure that there is no peak flow increase downstream of the development. The key features proposed are:

- On-lot stormwater can be managed on site for water quality and 10-year storms, via soakage where possible (and with the addition of proprietary pre-treatment systems on lots, if necessary, prior to soakage).
- Road catchments can be managed via roadside soakage swales for treatment and conveyance of the 10-year storm.
- 10-year road catchments can be directed to the proposed infiltration and attenuation basins and soaked to ground.
- 100-year storm flows can be directed overland to the proposed infiltration and attenuation basins. The proposed basins can be designed for the 10-year conveyance and discharge to ground of the road catchments and attenuation of the 100-year volume.

The dry industry and retail development types proposed are unlikely to be at high risk of impacting stormwater quality. The Waipā Stormwater Bylaw 2019 has provision for maintenance of on-site systems and pollution prevention plans for high risk industries to protect water quality.

Stormwater devices selected that may ultimately become public assets should be designed as per Regional Infrastructure Technical Specifications (RITS) requirements and may require regional consents. The regional stormwater discharge consents may require development of a CMP. The future water entity infrastructure requirements will supersede RITS. WDC would require vested assets and areas added to their comprehensive stormwater consent to be accompanied by provision of data including CMP, Operations and Maintenance manuals, asset data and confirmation that standalone stormwater consent conditions have been satisfied.

The preliminary geotechnical report indicates that the site is suitable for limited soakage to the ground. More detailed site investigations and modelling is planned. There is potential for ecological corridors to also have a use for stormwater management.

I agree that a combination of methods within the site will be able to appropriately manage stormwater from future industrial/business development of the site, however, future surrounding activities in the catchment will also need to be considered. WDC requirement is for proprietary devices if soakage is to be installed within road corridors. Based on the information currently available, there is not considered to be any barriers to engineering a stormwater management solution that adheres to the District Plan, RITS and Regional Plan requirements and that this will need to be addressed through investigations, detailed design and modelling.

3.4 Wastewater

The long term plan for the wastewater service for the area to the south of Hamilton is for a new wastewater treatment plant (WWTP) to service the wider Airport area, Matangi and parts of south Hamilton. The agreed approach is recorded in a Memorandum of Understanding (MoU) between the project partners which include WDC and Hamilton City Council.

Currently the other Airport Precincts use a mixture of on-site systems and reticulated systems that terminate at storage chambers. These chambers are periodically pumped out and transported by truck to Cambridge WWTP. This method is only suitable for dry industry.

I agree that for the short-medium term it is not efficient for the Northern Precinct to connect to the existing wastewater infrastructure in the other Airport Precincts. Tankering could be used for a short period until

wastewater volumes are suitable for a standalone WWTP with land discharge of treated wastewater if the new Southern WWTP is not yet available.

The disposal field for any standalone WWTP should be located in an area with good drainage and would be subject to a resource consent process for the discharge to land and air as required which would address any effects. A trench system may not be suitable for a discharge of this scale with a more conservative application rate process such as drip irrigation indicating that a 3-5 hectare size may be required for the ultimate development disposal area.

A standalone WWTP would be very sensitive to excessive flows or loads which could be generated by wet industry so a restriction will be required on flows generated on each lot. A covenant approach (with consent notice) such as proposed for the water supply may achieve this outcome or alternatively a rule restricting development to dry industry.

It is noted that if a standalone WWTP is to be vested in WDC then the WWTP and associated disposal field would need to be constructed to a municipal standard to be agreed with WDC or Entity responsible. The MOU for wastewater treatment covers required effluent quality and other aspects to be achieved by the WWTP as a minimum. The site would be required to be designated for wastewater treatment and all regional discharge consents obtained.

The standalone WWTP is expandable as the Northern Precinct is developed, hence treatment ‘cells' are only added onto the system as and when required. There is potential for some components of the WWTP to be reused or adapted for use for pumping to the new Southern WWTP. A conveyance route from the Northern Precinct to the Southern WWTP will also need to be defined during the detail design stage for the wastewater infrastructure provision. This conveyance system will need to consider the existing areas of the wider Airport precinct presently on septic tanks that could connect in future.

3.5 Water Supply

The bulk water to Titanium Park is currently supplied under agreement with WDC from their Pukerimu Scheme. It is proposed that the Northern Precinct can be supplied from the existing Titanium Park water network with the intention to ultimately ring main all precincts together, refer Figure 2.

It is proposed that the Northern Precinct would initially be supplied by a single supply line to its own reservoir and pump station, potentially on the elevated area within the Hub. This provides a lower resilience compared with a ring main supply, however, there are not likely to be essential services located within the development.

The original water supply agreement to the Airport Zone was based on 3 m^3/Ha/day, which equates to a total daily demand for the entire airport zone (including the Northern Precinct) of 744 m^3/day. This exceeds current agreed supply limit with WDC of 600 m^3/day. Infrastructure upgrades in the Pukerimu scheme are planned once triggers are met to allow the 600 m^3/day to be provided (as per current agreement).

Covenants are currently used to control water use in the occupied sites in the wider Airport Zone along with monitoring of use via water meters. Demand restrictions such as a covenant (with consent notice) or alternatively a rule restricting development to dry industry will be required to manage demand to within the current agreed limit or a future increased limit negotiated with WDC. Increasing the daily water limit for the Airport precinct may require further infrastructure upgrades in the Pukerimu scheme, further capacity at the Parallel Road Water Treatment Plant and additional allocation for water take from the Waikato River.

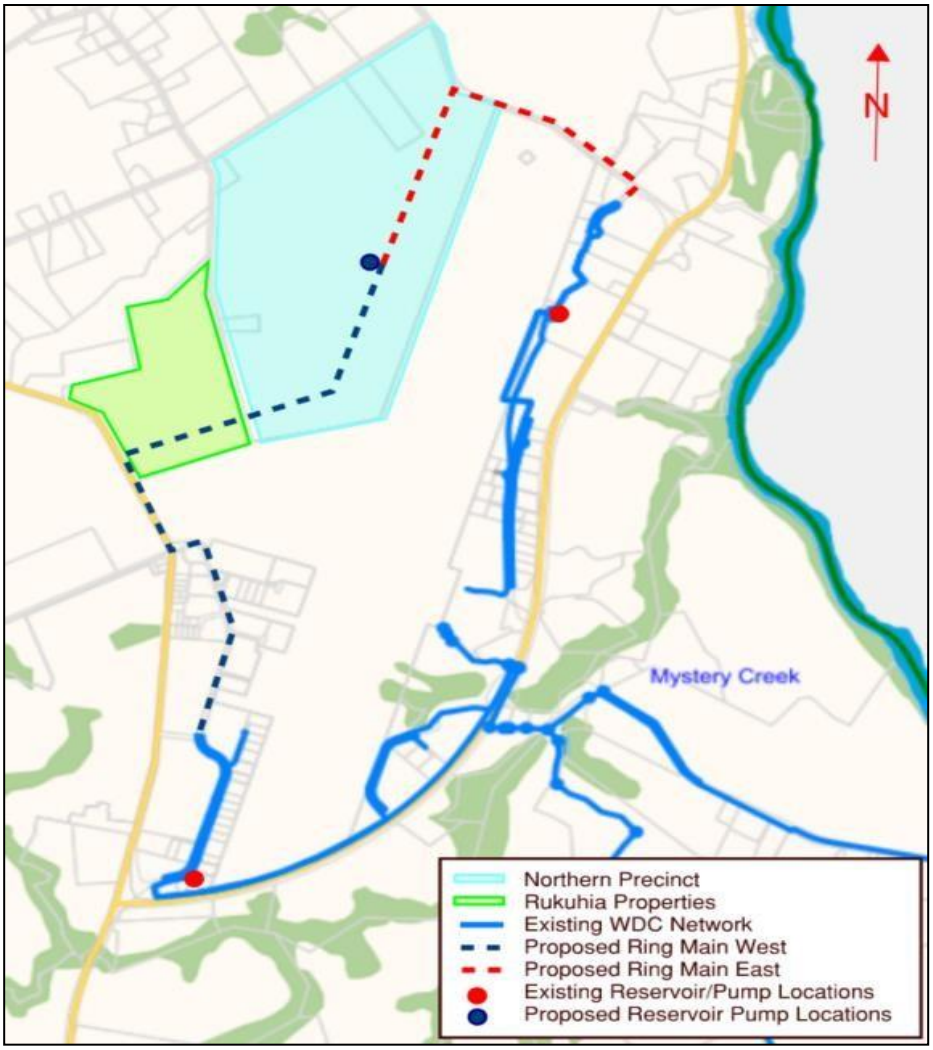


Figure 2 - Existing and Proposed Water supply

It is proposed that the development will be reticulated to meet an FW3 level of service for firefighting. This means the Northern Precinct will need to include dedicated fire water storage of 180 m^3. This can be stored within the potable water supply reservoir. That would result in a combined storage of 978 m^3 for the Northern Precinct development. Hydraulic modelling of the full water reticulation should be carried out as part of the detailed design process to confirm locations of reservoirs and booster pumpstations and the possibility of combined storage within the full development. It is noted that the current WDC Water Supply Bylaw provides for FW2 supply at the property boundary and developments requiring higher draw demands are managed via on site means.

3.6 Submissions

Submissions have been reviewed and technical comments can be found in Appendix A.

A

Appendix A – Submission Technical Commentary

Submitter	Topic	Plan Change Reference / District Plan Provision	Support / Oppose / In Part	My Submission is (Summary):	Decision Requested	Technical commentary
Middle/Narrows Focus Group	Stormwater management / groundwater	All	Oppose	Land in this area is subject to a high-water table and is serviced by a variety of ditches, some flowing to the river via adjacent properties. There needs to be a plan for retention of water to moderate flows for the increased surface water anticipated.	Developers coordinate with neighbours regarding stormwater flows.	This will be considered during the modelling and detailed design stage. An integrated catchment management approach is recommended.
James Douglas Snowball and Marie Anne Snowball	Stormwater management / groundwater	All	Oppose	It is noticeable already with what has been developed at the northern end that the water table levels on our properties are rising dramatically and this has not been factored in.	Council to reject the proposal.	This will be considered during the modelling and detailed design stage. An integrated catchment management approach is recommended.
Joan and Robin Cuff with L&M McDowell	Stormwater Management	All	Oppose	Stormwater solutions do not consider wider catchment (comprehensive stormwater) and effect of future Waka Kotahi Road works (overlay shows this will compromise proposed solution) and other developments in wider catchment.	Require specific outcomes from Waka Kotahi's new Highway works as a condition of Northern Precinct Expansion.	This will be considered during the modelling and detailed design stage. An integrated catchment management approach is recommended.

Submitter	Topic	Plan Change Reference / District Plan Provision	Support / Oppose / In Part	My Submission is (Summary):	Decision Requested	Technical commentary
CW Hickey	Water Quality	All	Oppose	Sewage and industrial waste disposal. Our drinking water supply for our dwelling is from groundwater. The aquifer supplying our house is in the likely downstream area for this industrial development. The very large number of proposed industrial sites will be highly likely to contaminate groundwater and surface waters with chemicals and microbial contaminants unless full reticulated treatment systems are in place. Surface waters are also at very high risk from untreated stormwater runoff.	Only undertake development if fully reticulated wastewater and stormwater treatment systems can be provided.	Reticulated wastewater is proposed. Industrial lot stormwater quality controlled via Waipā Stormwater Bylaw. On-lot treatment of stormwater is proposed where industrial activity requires. At the detailed design stage, treatment requirements for peak flows would also be considered. Regional consents for the stormwater discharge will be required.
Hamilton City Council	Stormwater	All	Support in part	Te Ture Whaimana is the primary direction setting document of the Waikato. As such, HCC support the inclusion of low impact urban design principles into this plan change which support the health and wellbeing of the Waikato River, its tributaries and catchment.	Planning provisions which manage the effects of stormwater and wastewater on the Waikato River and give effect to Te Ture Whaimana.	This will be considered during the modelling and detailed design stage. An integrated catchment management approach is recommended.

Submitter	Topic	Plan Change Reference / District Plan Provision	Support / Oppose / In Part	My Submission is (Summary):	Decision Requested	Technical commentary
James Douglas Snowball and Marie Anne Snowball	Wastewater disposal	All	Oppose	There is no sewerage treatment plant supplied by the developer.	Council to reject the proposal.	The developer proposes to provide a standalone WWTP if the Southern WWTP is not available and tankering to Cambridge WWTP is not feasible.
Hamilton City Council	Wastewater	All	Support in part	The Northern Precinct must be serviced by a public wastewater solution	Strengthen the plan provisions	Development proposed to be serviced by public wastewater solution once Southern WWTP available.
Hamilton City Council Tabby Tiger Ltd Salvador and Maryline Morales	Zone Extent				Expansions to zone extent	Several submitters have requested expanded zone extent but have not provided information to be able to evaluate the implication on three waters activities. Water supply and wastewater disposal in particular are not likely to have spare capacity in the short to medium term.

Submitter	Topic	Plan Change Reference / District Plan Provision	Support / Oppose / In Part	My Submission is (Summary):	Decision Requested	Technical commentary
Fire and Emergency NZ	Firefighting water supply	15.4.2.87	Oppose	Fire and Emergency oppose the private plan change request given unsatisfactory levels of firefighting infrastructure in some instances. There does not appear to be a requirement in the Waipā District Plan or the proposed plan change provisions that requires subdivision and development in the Business Airport Zone to provide a firefighting water supply in accordance with SNZ PAS 4509:2008. Support of the plan change is possible if a satisfactory framework of provisions requiring firefighting water supply are incorporated into the plan change.	See submission	FW3 Fire standard proposed to be provided. The infrastructure upgrades required to achieve this for the ultimate development will be determined at the detailed design stage including upgrades to the Pukerimu scheme. Detailed design will confirm whether any on-site means are required to deliver FW3.