Agenda for a meeting of the Waters Governance Board to be held in the Committee Rooms 1 & 2, District Office, 15 Galileo Street, Ngaruawahia on **TUESDAY, 19 JULY 2022** commencing at **10.00am**.

GJ Ion
CHIEF EXECUTIVE

TERMS OF REFERENCE AND DELEGATION

Reports to:	The Council
Chairperson:	Ms David Wright
Membership:	Mr Garth Dibley Ms Rukumoana Schaafhausen Mr Gavin Ion (Chief Executive) Ms Jackie Colliar (Board Intern)
Meeting frequency:	Six-Weekly
Quorum:	A majority of members (excluding the Board Intern)

The Waters Governance Board is a subordinate decision-making body of the Waikato District Council established under Schedule 7 of the Local Government Act 2002.

Purpose and Terms of Reference:

1. To provide governance and oversight of the development and implementation of the Council contract with Watercare Services Limited ('Watercare').
2. To ensure the activity goals are clearly established, and strategies are in place for achieving them.
3. To establish policies for strengthening the performance of the water activity including ensuring management and the contractor are proactively seeking to build the business through innovation, initiative, technology, new products and the development of its business capital.
4. To monitor the performance of management through the Chief Executive.
5. To ensure high standards of health & safety are maintained by management and Watercare and undertaking appropriate due diligence.
6. To decide on whatever steps are necessary to protect the Council's financial position and the ability to meet its debts and other obligations when they fall due, and ensuring that such steps are taken.
7. To ensure the water activity's financial statements are true and fair and otherwise conform to law.
8. To ensure the water activity adheres to high standards of ethics and corporate behavior.
9. To ensure the water activity has appropriate risk management/regulatory compliance policies in place.
10. To look to improve environmental outcomes from this activity.
11. To consider kaitiakitanga as part of decision-making.
12. To monitor and ensure Watercare are meeting their obligations.
13. To report to Council twice yearly on progress with Waters' Management.
14. To provide innovation and ideas that could improve profitability, service levels or environmental outcomes.

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15. To hold Watercare to account over the delivery of the operational and capital programmes.
16. To work with Council to agree the overall funding requirements of the business.
17. To undertake any other matters considered relevant by the Board or referred to the Board by the Council.

The Board is delegated the following powers to act:

- Agree the form of the transactional arrangement with Watercare.
- Negotiate with Watercare and recommend to Council the final, or any amended, contract value for waters management.
- Conclude the contract (after Council approval of contract value) and terms and conditions, including any amendments, with Watercare.
- Ensure that transitional contract requirements are met by Watercare and Council.
- Hold Watercare to account for their performance at all levels.
- Monitor and oversee the performance of staff and Watercare in terms of the water activity.
- Consider and ensure improvements or innovation are implemented by Watercare or through the Chief Executive as appropriate.
- Approve changes to the operation of the contract with Watercare.
- Develop strategies to improve contractual performance or to improve business practices.
- Recommend to Council infrastructure strategy and Asset Management Plans for adoption.
- Develop an annual works programme (operating and capital) and submit to council for final approval.
- Approve alterations and transfers within the programme of capital and operational works as prepared for the Long Term Plan and Annual Plan, subject to the overall scope of the programme remaining unchanged and the programme remaining within overall budget.
- Set and ensure Watercare's adherence to health and safety requirements, and wellbeing practices.
- Set and maintain standards of ethics and corporate behavior.
- Consider development opportunities for the Waters' business.
- Define and set levels of service for Waters' management now and in the future.
- Responsible for the financial performance of the contract and operation.
- Approve and/or amend existing or new contracts relating to the delivery of three waters' services and operation unless additional funding by the Council is required or the approval or amendment is inconsistent with Council Policy.
- Recommend to Council any new or additional funding requirements over and above that contained within the Long Term Plan.
- Develop plans to improve the overall resilience of the Waters' networks and allow for growth.

- Consider the impact of growth on the Waters' infrastructure.
- Implement and monitor the risk management framework for the waters' management and activity.
- Approve the annual and half yearly financial statements for the Waters' operation and provide any relevant commentary to the Council.
- Annually review the Board composition, structure and succession and make recommendations to council on these matters.
- Ensure the Waters' business delivered by Watercare provides value for the community in terms of the four wellbeings.
- Determine the approach for resource consent applications for the Waters' business, and monitor progress of those applications on behalf of the Council.
- Review and monitor existing strategic resource consents.
- Ensure that Kaitiakitanga and environmental outcomes are key decision making considerations for the Board.
- Uphold the vision and strategy of the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010.

Waikato District Council
Te Kaunihera aa Takiwaa o Waikato

Open

To	**Waters Governance Board**
Report title	**Register of Interests**
Date:	Tuesday, 19 July 2022
Report Author:	Gaylene Kanawa, Democracy Team Leader
Authorised by:	Gavin Ion, Chief Executive

1. Executive summary
Whakaraapopototanga matua

A copy of the Register of Interests is attached for the Board's information. The register will be updated following receipt of information during the year.

2. Staff recommendations
Tuutohu-aa-kaimahi

THAT the Waters Governance Board receives the Register of Interests.

3. Attachments
Ngaa taapirihanga

Register of Interests – Water Governance Board

Register of Interests – Waters Governance Board

Ruku Schaafhausen

Companies and Trusts	Te Waharoa Investments Ltd AgResearch Miro Hautupua Ltd Contact Energy Ltd Kaitaki Guardian Services Ltd
Community organisations	Equippers Trust Tindall Foundation Princes Trust New Zealand
Other appointments	Chair, Freshwater Iwi Leaders Group Board Member, Three Waters Establishment Board
Property within the District	Nil
Any other interests	Nil

Garth Dibley

Companies and Trusts	Water New Zealand – Director
Community organisations (membership)	Electricity Networks Association – member E-Charge working group – MfE member
Other appointments	Director of Smartco Infratec NZ Ltd – Chairperson
Property within the District	Yes - Tamahere
Any other interests	Nil

David Wright

Companies and Trusts	Director, David Wright Limited Trustee, Tervuren Trust Trustee, Solomon Islands Tourism Infrastructure Development Fund (Incorporated) Chair of Waimea Water Ltd Chair, Solomon Islands Airport Corporation Limited Haapa Research Limited Chair, Unrealised Potential
Community organisations	Chair, Tokelau Renewable Energy Steering Group
Other appointments	Chair, Central Air Ambulance Rescue Limited Chair, Search and Rescue Services Limited
Property within the District	Nil
Any other interests	Nil

Gavin Ion

Companies and Trusts	Trustee and Beneficiary in a family trust
Community organisations	Member Swimming Waikato Technical Panel Member Swimming New Zealand Technical Advisory Committee Chairperson Swimming Waikato Member of the Waikato Regional Sports Facility Plan Steering Group Member of Institute of Directors Member of International City Managers' Association Member of Chartered Accountants of Australia and New Zealand Member of Business Leaders Health & Safety Forum Steering Group RMA Commissioner Member of the Waikato Regional Leadership Group
Other appointments	Chief Executive, Waikato District Council Director, Waikato Local Authority Shared Services Limited Chair, Audit & Risk Committee (WLASS)
Property within the District	Nil
Any other interests	Nil

Jackie Colliar

Companies and Trusts	Te Whakakitenga O Waikato Inc Member of Te Arataura
Community organisations	Nil
Other appointments	Trustee and Chair of Taniwha Marae Trustee (Taniwha Marae Representative) – Nga Muke Development Trust Waipa District Council – Co-Governance Committee Waikato Regional Council – Co-Governance Committee Waikato River Authority Board Member Director – WEL Networks
Property within the District	Nil
Any other interests	Employee of Hamilton City Council Project Lead for the Subregional Three Waters project on behalf of Future Proof Project Manager of the Hamilton Waikato Metro Wastewater Detailed Business Case Project

Open – Information only

To	Waters Governance Board
Report title	Confirmation of Minutes
Date:	Tuesday, 7 June 2022
Report Author:	Gaylene Kanawa, Democracy Team Leader
Authorised by:	Gavin Ion, Chief Executive

1. Purpose of the report
Te Take moo te puurongo

To confirm the minutes for a meeting of Waters Governance Board held on Tuesday, 7 June 2022.

2. Staff recommendations
Tuutohu-aa-kaimahi

THAT the minutes for a meeting of the Waters Governance Board held on Tuesday, 7 June 2022 be confirmed as a true and correct record.

3. Attachments
Ngaa taapirihanga

Attachment 1 – WGB Minutes – 7 June 2022

MINUTES for a meeting of the Waters Governance Board Meeting of the Waikato District Council held in the Board Room, District Office, 15 Galileo Street, Ngaruawahia on **TUESDAY, 7 JUNE 2022** commencing at **10.02am**.

Present:

Mr D Wright (Chair) *via Audio Visual Conference*
Ms R Schaafhausen *via Audio Visual Conference*
Mr G Dibley *via Audio Visual Conference*
Mr GJ Ion (Chief Executive, Waikato District Council)
Ms J Colliar (Intern) *via Audio Visual Conference*

Attending:

Mr H Kruger (Beca)

Ms C Nutt (Waters Contract Relationship Manager)
Mr V Ramduny (Strategic Projects Manager)
Mr D Sharma (Three Waters Reform Project Manager)
Ms L Cilliers (Management Accountant)
Mr M Horsfield (Democracy Advisor)

Mr M Telfer (Watercare)
Mr A Singleton (Watercare) *via Audio Visual Conference*

APOLOGIES AND LEAVE OF ABSENCE

There were no apologies.

CONFIRMATION OF STATUS OF AGENDA ITEMS

Resolved: (Ms Schaafhausen/Mr Dibley)

THAT the agenda for a meeting of the Waters Governance Board Meeting held on Tuesday, 7 June 2022:

a. **be confirmed and all items therein be considered in open meeting with the exception of those items detailed at agenda item 7 which shall be discussed with the public excluded; and**
b. **all reports be received.**

CARRIED **WGB2206/01**

DISCLOSURES OF INTEREST

Ms Schaafhausen noted that she was a member of the Three Waters National Transition Unit.

Mr Wright noted the removal of Interim Chief Executive Officer – Horowhenua District Council, and his appointed as Chair of Unrealised Potential organisation.

ACTION: Democracy Team to update the register of interest to reflect the changes to Mr Wright's roles.

CONFIRMATION OF MINUTES

Resolved: (Mr Dibley/Ms Schaafhausen)

THAT the minutes for a meeting of the Waters Governance Board Meeting held on Tuesday, 26 April 2022 be confirmed as a true and correct record.

CARRIED **WGB2206/02**

REPORTS

Actions Register
Agenda Item 5

The Waters Contract Relationship Manager noted the following matters:

- Huntly Wastewaster Treatment Plant (WWTP) – Staff had continued to have discussions with Sleepyhead in the aim to bring forward the WWTP upgrade and renewal for resource consent. The Iwi and Community Partnerships Manager was working with mana whenua regarding engagement associated with the Waikato River.

- Discussion with Nga Muka – Nga Muka was happy for a meeting with the Waters Governance Board to go ahead. Nga Muka was wanting a transparent relationship with Council and the Board. The Board would provide potential dates to meet with Nga Muka, and it was important that Council staff develop a relationship with Nga Muka.

ACTION: Staff to find suitable dates from WGB for meeting with Nga Muka.

Resolved: (Ms Schaafhausen/Mr Ion)

THAT the Actions Register be received.

CARRIED **WGB2206/03**

Hamilton-Waikato Metropolitan Wastewater Detailed Business Cases
Agenda Item 6.1

The Waters Contract Relationship Manager noted the following matters:

- A briefing was held with the Board in April 2022, which highlighted the recommendations for the business case.
- Staff had met with project governance group for the Northern Hamilton-Waikato Wastewater detailed business case and supported the proposal.
- There had been implementation work undertaken already, such as potential land package for purchases.
- Every recommendation had been approved by the partners involved, which had helped attain approval from all stakeholders.
- There was concern regarding the ability to recoup the investment in the project where there was no asset to tag it to. The investment in the project should not be lost due to the Three Waters reform. It was also important to ensure there was a capped expenditure limit on the programme.
- The decision around the Northern Hamilton-Waikato Metropolitan Wastewater Plant will deliver better outcomes for the subregion.

Resolved: (Mr Wright/Ms Schaafhausen)

That the Waters Governance Board:

a. recommends to Waikato District Council:

i. the final Southern Hamilton-Waikato Metropolitan Wastewater Detailed Business Case;

ii. the draft Memorandum of Understanding (MoU) (as amended) in respect of Hamilton Waikato-Waipa Metropolitan Area Wastewater Projects; and

iii. Option A (centralisation of wastewater treatment at the Pukete Wastewater Treatment Plant) as the preferred option for further refinement and completion of the Northern Hamilton-Waikato Metropolitan Wastewater Detailed Business.

b. notes that:

i. a supplementary assessment (which will be completed in parallel with the Northern Hamilton-Waikato Metropolitan Wastewater DBC) will be completed to evaluate the impacts of accelerated development of the Southern Sub-Regional WWTP (i.e., more capacity earlier than assumed for the Southern Hamilton-Waikato Wastewater DBC and MoU);

ii. on completion of the Northern Hamilton-Waikato Metropolitan Wastewater DBC the relevant councils will need to integrate the findings of the Northern and Southern DBCs, including further consideration of the wastewater system investment timing and triggers, and development and implementation of the sub-regional wastewater consenting strategy; and

iii. planning and investigations to support the delivery of the Southern Hamilton-Waikato Metropolitan WWTP have commenced using allocated funding by Hamilton City Council in the 2021-2031 Long Term Plan.

CARRIED **WGB2206/04**

Three Waters Reform Project Update – June 2022
Agenda Item 6.2

The Three Waters Reform Project Manager noted the following matters:

It was noted that Ms Schaafhausen was a member of the Three Waters National Transition Unit (NTU).

- A high-level understanding of the core assets and contractual arrangements relating to the current provision of Three Waters services specific to Council was being sought.

- Council would be seeking to reclaim costs from DIA for the time spent completing this RFI (Request for Information).

- Council shareholding for the water entities would be reviewed every five (5) years. The shareholding was based on 50,000 population basis. The water entities would be prohibited from profiting from local authorities.

- The assessment panel for the better off funding packages comprises of 50% mana whenua representatives and 50% Council staff.

- The NTU was conducting a current state infrastructure assessment, with the staff platform to be rolled out and a staff transition pack that will be created. A detailed RFI will be released later this year.

- The partnership between Council and Iwi for the better off funding packages evaluation was positive, as it will become mandatory in the future.

- There was a considerable amount of work being undertaken by Council staff and Watercare to meet the requirements from the Department of Internal Affairs (DIA).

Resolved: (Mr Ion/Mr Dibley)

That the Waters Governance Board notes that the project management for water reform is ongoing.

CARRIED **WGB2206/05**

Three Waters Governance Report – May 2022
Agenda Item 6.3

Mr Telfer noted the following matters:

- Abatement Notice had been lifted from the Meremere WWTP, as it was now fully operational and compliant.

- Year to Date performance measures were achieved.

- Raglan Water filter improvements were now complete. This ensures that earthquakes and other events would not affect water quality.

- Health & Safety Incident – A subcontractor had their finger crushed due to human error. A full investigation had taken place regarding the incident. The contractor had been spoken to.

- The Impact health and safety audit had been completed as required in the Watercare contract. There had been a big shift in the health and safety numbers from 2021.

- Te Kauwhata WWTP tender had been completed, and there would be an out of cycle business case to achieve compliance in September 2022. The tender had come in and there were indications there may be some issues related to it. Alternative designs were sought from contractors before the tendering process was complete. Alternative interim solutions were being sought meet compliance in September 2022 to mitigate any issues.

  The expectation would be to get the plant upgrade compliant by the end of December. The team had a meeting this week to look at the details of the plant, which resulted in a paper that would come to the Board out of cycle. Watercare would keep Waikato Regional Council (WRC) informed regarding any risk, including a short extension of the timeframes.

- Ngaruawahia DIA funding network upgrades had been completed.

- Huntly Treatment Plant had been broken into. The problem was endemic and affecting other organisations. Watercare was reviewing their fencing to restrict access from thieves.

  Council has been working with WRC on a number of wastewater issues and making good progress. It is important that Watercare support these actions by delivering results. Delays could impact on the relationship with WRC.

- Complex Water Meters – 78% of the meters had been installed, with 9% in progress. The final 5% were owners who agreed to the meter installation but had not provided signed agreement. Four properties had not engaged with Council despite repeated attempts at contact.

- Council should consider promoting communications regarding the good work that had been undertaken regarding three waters upgrades. Watercare does have a number of projects to highlight alongside Council.

Resolved: (Mr Wright/Ms Schaafhausen)

THAT the Three Waters Governance Report – May 2022 be received.

CARRIED **WGB2206/06**

Port Waikato and Onewhero Options Assessment Report
Agenda Item 6.4

Mr Kruger spoke to his report:

- There had been a change to the strategy for the schemes, including looking at community ownership or rainwater systems installed.

- Watercare would investigate more accurate costs of the upgrades. Some estimated costs had been provided.

- The report highlights the risks to the schemes, and that both schemes would require upgrade under the new drinking water regulations.

- It had been highlighted that there were increased costs now compared to the initial costs provided in December 2021. It was hard to understand why costs have changed so dramatically.

- The Board would need the full costing before approving any improvements, including what were the confirmed solutions to pricing, and what were the upgrades required in comparison to tankering.

- Costs for the partial water treatment plant (WTP) upgrade was more cost effective than decommissioning and will be adherent to the new drinking water regulations.

- 75% of the community would need to agree to decommissioning, with agreement from the Ministry of Health, which would be challenging to achieve. These aspects needed to be considerated in the process.

- If the Board were happy that decommissioning was too difficult, then Watercare could proceed to investigate costs for a partial WTP upgrade.

- The experience from the Te Akau small water scheme options process provides learnings for the assessment process for Port Waikato and Onewhero.

- Confirmed costings need to be enforced before going out to the community for consultation.

- Watercare would come back with more detailed estimates for WTP upgrade.

- Council would need to approve the capital upgrade.

ACTION: A report to come to the Board with more accurate costings for the assessment options for Port Waikato and Onewhero.

Resolved: (Mr Wright/Ms Schaafhausen)

THAT the Port Waikato and Onewhero Options Assessment Report be received.

CARRIED **WGB2206/07**

EXCLUSION OF THE PUBLIC

Agenda Item 7

Resolved: (Mr Wright/Mr Dibley)

THAT the public be excluded from the following parts of the proceedings of this meeting.

The general subject of each matter to be considered while the public is excluded, the reason for passing this resolution in relation to each matter, and the specific grounds under section 48(1) of the Local Government Official Information and Meetings Act 1987 for the passing of this resolution are as follows:

General subject of each matter to be considered	Reason for passing this resolution in relation to each matter	Ground(s) under section 48(1) for the passing of this resolution

Item number PEX 1 Confirmation of Minutes **Item PEX 2.1 Actions Register** **Item PEX 3.1 Waters Financial Results to 30 April 2022** **Item PEX 3.2 Te Kauwhata Water Association Water Take Resource Consent Renewal Progress Update #2** **Item PEX 3,3 Proposal to vary agreement due to the Three Waters Reform**	**Good reason to withhold exists under Section 6 or Section 7 Local Government Official Information and Meetings Act 1987**	**Section 48(1)(a)**

This resolution is made in reliance on section 48(1)(a) of the Local Government Official Information and Meetings Act 1987 and the particular interest or interests protected by Section 6 or Section 7 of that Act which would be prejudiced by the holding of the whole or relevant part of the proceedings of the meeting in public, as follows:

Item No.	Section	Interest
Item PEX 1 Confirmation of Minutes	**7(2)(a)**	**Refer to the previous Public Excluded reason in the agenda for this meeting.**
Item PEX 2 Actions Register	**7(2)(a)**	**Refer to the previous Public Excluded reason in the agenda for this meeting.**
Item 3.1 Waters Financial Results to 28 February 2022	**7 (2) (b) (ii)**	**To protect information that would otherwise unreasonably prejudice a person's commercial position.**
	7 (2) (h)	**To enable commercial activities to be carried out without prejudice or disadvantage.**
Item 3.2 Te Kauwhata Water Association Water Take Resource Consent Renewal Progress Update #2	**7 (2) (b) (ii)**	**To protect information that would otherwise unreasonably prejudice a person's commercial position.**
	7 (2) (c) (i)	**To protect information that is subject to an obligation of confidence and to ensure the**

Item 3.3 Proposal to Vary Agreement due to the Three Waters Reform	**7 (2) (c) (ii)** **7 (2) (i)** **7 (2) (b) (ii)** **7 (2) (J)**	**information avenue remains open, when it is in the public interest for it to do so** **To protect information that is subject to an obligation of confidence and to protect the public interest** **To enable negotiations to carry on without prejudice or disadvantage** **To protect information that would otherwise unreasonably prejudice a person's commercial position** **To prevent use of the information for improper gain or advantage.**

AND THAT Mr Telfer and Ms Singleton be permitted to remain at this meeting, after the public has been excluded, because of her knowledge of Watercare. This knowledge, which will be of assistance in relation to the matter to be discussed, is relevant to that matter because of Watercare's role and responsibility for those matters.

CARRIED **WGB2206/08**

Resolutions WGB2206/09 – WGB2206/14 are contained in the public excluded section of these minutes.

Having resumed open meeting and there being no further business the meeting was declared closed at 12:17PM.

Minutes approved and confirmed this day of 2022.

David Wright
CHAIRPERSON

Waikato District Council
Te Kaunihera aa Takiwaa o Waikato

Open – Information only

To	**Waters Governance Board**
Report title	**Actions Register**

Date:	Tuesday, 7 June 2022
Report Author:	Gavin Ion, Chief Executive

1. Purpose of the report
Te Take moo te puurongo

To update/inform the Waters Governance Board on actions following the Waters Governance Board meeting held on Tuesday, 7 June 2022.

2. Staff recommendations
Tuutohu-aa-kaimahi

THAT the Waters Governance Board receives the Actions Register to 30 June 2022.

3. Attachments
Ngaa taapirihanga

Attachment 1 – Action Register

Waters Governance Board
Actions Register

OPEN MEETING

Meeting Date	Action	To Action	When	Status
15/3/2022	Report to come to the next Water Governance Board meeting regarding the Huntly Wastewater Treatment Plant upgrade, including a cost return comparison for a temporary upgrade versus managed compliance in the short term.	Watercare	~~July 2022~~ September 2022	Discussions are underway with WRC (compliance) and Sleepyhead (bringing plant upgrade forward). Sleepyhead has shared a high-level proposal with multiple options for wastewater treatment and discharge. Recent desludging has allowed the plant to become within compliance for suspended solids although seasonality may also have an impact. Discussions with WRC have indicated they understand what we are trying to achieve and are looking for council to put forward a proposal for the consent to be renewed and the plant to be upgraded. Council and Watercare working to develop consent renewal and preliminary design.
15/3/2022	The Waters Governance Board to meet with Nga Muka on an agreed date in the near future.	J Colliar WGB	April 2022	Watercare staff have contacted Nga Muku representative requesting date of next meeting and highlighted that the Water Governance Board is seeking opportunities to strengthen haapu relations and would endeavour to send representatives if an invite was offered. The Chief Executive has spoken directly with Nga Muka about this meeting and advised the Board members accordingly. Site visit has been arranged for 10 August and a separate meeting to strengthen relationship has been requested.

Waters Governance Board
Actions Register

Meeting Date	Action	To Action	When	Status
26/4/2022	Compliance Summary Report Compliance Summary report to be provided to the Waters Governance Board quarterly.	M Telfer, Watercare	August 2022	Next quarterly presentation due in August
7/06/2022	Disclosures of Interest Democracy Team to update the register of interest to reflect the changes to Mr Wright's roles.	Democracy	July 2022	The register has been updated
7/06/2022	Port Waikato and Onewhero Options Assessment Report A report to come to the Board with more accurate costings for the assessment options for Port Waikato and Onewhero.	M Telfer, Watercare Keith Martin	September 2022	

Waikato District Council
Te Kaunihera aa Takiwaa o Waikato

Open – Information only

To	**Waters Governance Board**
Report title	**Three Waters Governance Report – June 2022**
Date:	19 July 2022
Report Author:	Carole Nutt – Waters Contract Relationship Manager
Authorised by:	Gavin Ion - Chief Executive

1. Purpose of the report
Te Take moo te puurongo

To update the Waters Governance Board of the current workstreams, key matters and metrics under the three waters operational and maintenance agreement with Watercare Serviced Ltd.

2. Executive summary
Whakaraapopototanga matua

Please refer to the Highlights and Lowlights summary section in the attached report prepared by Watercare Services Ltd.

3. Staff recommendations
Tuutohu-aa-kaimahi

That the Waters Governance Board receives the Three Waters Governance report.

4. Attachments
Ngaa taapirihanga

Attachment 1 – Waikato DC Three Waters Governance Report – June 2022

WAIKATO DC

THREE WATERS GOVERNANCE REPORT

JUNE 2022

Mathew Telfer
Operation Manager
Watercare Waikato
June 2022

1. Highlights and lowlights

- All performance measures were achieved in June, and the end-of-year results were achieved in all areas.
- The new Raglan water treatment plant raw water filter units have been installed, and wet commissioning has been completed with one of the units brought into service. The filter for the first unit has been replaced.
- The IMPAC audit was completed with a positive report provided.
- A break-in occurred on 19 May at the Huntly water treatment plant. Site security is being assessed and improved. An audit of other operations sites will also be undertaken.

2. Health and Safety

What we've seen this month

- There was zero Lost Time Injury (LTI) and 0 Restricted Duties Injury (RDI) involving Watercare employees in June.
- The focus for the month was Drug and alcohol awareness, and we continue to focus on reducing speed events.
- The IMPAC health and safety audit was completed on 13 May.
- Jon Lamont completed a Health and safety leadership walk of the Meremere wastewater plant on 17 June.

Internal Health and Safety Audit 2022

The final report from the IMPAC health and safety audit was received. The report was positive, with recommendations for improvement identified as accepted for implementation.

Critical risks

Watercare is assessing one of our critical risks (Appendix 1) each month (excludes Nov and Dec) as per the schedule below.

	Review Date		Review Date
 Working in confined spaces	May 2021	 Working with fixed plant and equipment	February 2022
 Working with mobile plant	June 2021	 Working in or near live traffic (includes road corridors, construction and operational sites)	March 2022
 Driving / using vehicles	July 2021	 Working at Height	April 2022
 Working alone or isolated	August 2021	 Working around waterbodies	May 2022
 Working with hazardous materials	September 2021	 Digging and working in excavations (includes tunnelling)	June 2022
 Working with suspended loads	October 2021	 Working with flammables or in explosive/flammable areas	July 2022
 Working with or near live energy (electrical, mechanical, pneumatic, hydraulic, etc)	January 2022		

June metrics

- There were no significant events in June

3. Operations

3.1. Production

Water

- The Huntly WTP had a security breach at 0130hrs 19th of May. Chemical storage containers were accessed by cutting padlocks with bolt cutters. A side door to the main building was levered open and, upon entry, set off the security alarm, which was relayed via SCADA to the On-Call Operator. WSL management was notified, and the Police were contacted to attend the site with the On-Call Operator. The intruders had vacated the area.

  A further inspection located stolen chemical products near the river bank where the fence had been breached. An ArmourGuard static guard was employed until daylight hours to have a presence on-site to deter further offending until the plant could be secured.

Fence repairs, container lock shrouds, and phase 1 of lighting improvements were completed the following day.

- Water quality analysers at the Raglan Water treatment plant have been mounted on a newly constructed wall to allow space for additional analysers to be mounted in a logical sequence. The first set of 10 filter cartridges since commissioning on 26 April 2022 was changed on the 7th June 2022. Filter unit #2 is in service.



- 22 June a major power failure at the Te Kauwhata Associations (TKWA) raw water pump station 1415 hrs to 2000hrs. This is a result of high voltage testing of the TKWA switch gear. The TKWA and Wel Network investigated and arranged repairs to the transformer. The Raw Water Pump Station ran on an emergency generator (1000kva) until the issue was resolved. A second emergency generator was held at the WTP overnight as a contingency. The plant was restarted at 2035hrs. The potable water supply to the community was not compromised.

Wastewater

- Very high inflows due to heavy rainfall in June and stormwater ingress. All pond levels were very high and managed on a case-by-case basis.
- The first concrete slab for the Te Kauwhata MABR upgrade work was completed early hours of 15 June 2022; the plant continues to operate during the construction works.

Scada transfer from Waikato Council to Watercare

- The Te Kauwhata scada server changed from WDC to Watercare server on 16 June.
- Huntly water plant and Raglan wastewater plant were completed on 05 July.
- Oher sites are underway and work is on track for a 3 August completion date.

3.2. Networks

- The replacement of 19/20 old year meters– Nivec Civil has completed 141 of 176 meters. The Tuakau area (except for 7 meters on George St) has been completed. The remaining seven will require more substantial remedial works than the other meters. And are scheduled to commence the first week of July. The remaining 28 meters are located in Pokeno and are scheduled for completion by mid-July.
- Backflow testing – 311 backflow devices have been tested and repaired as necessary in June. This brings the total number of backflow devices tested to 951 to date.
- RTU Upgrade Project – McKay Electrical has completed the as-built drawings for all sites. Neo has completed the electrical and control system design for SPS909 (Waikaka - Franklin). Installation at 6 Franklin sites is now complete. An issue with the SCADA screen graphics for Franklin sites has now been rectified.
- Reservoir Inspections & Cleaning – Central Districts reservoir was drained for routine maintenance in early June. The reservoir was drained online and subsequently isolated for 3 weeks while the work was carried out. No significant defects were found, and the only remedial work required was panel epoxying. The reservoir is scheduled to be back in service in the first week of July, following the Watercare SOP for reservoir disinfection. Huntly WTP reservoir is the next site to be addressed. It is expected this work will occur in late July / early August, pending contractor availability and completion of filter replacements at Huntly WTP. Customer notification has been improved for future shutdowns, although the impact to customers was minimal.
- Faults of significance – Multiple large-scale weather events occurred in June, with bouts of extremely heavy rainfall causing very elevated flow rates throughout the network. Huntly and Ngaruawahia experienced the highest volumes of rainfall. Streamline was engaged on multiple occasions to carry out emergency vacuum tinkering of waste from key pump stations. No pump station overflows occurred during the heavy weather events.

3.3. Stormwater

- Current Raglan abatement notice work is still on-going. WRC has approved the latest proposed option (a combination of pipe and open channel) for Cambrae Road, the final outstanding item on the abatement notice.
- We are awaiting feedback from WRC on the annual report.
- Stantec has commenced assisting Watercare's SW deliverables being:
    - The final assessment of the new standards is underway
- WSL is undertaking sediment and shellfish testing in the Raglan Harbour – Sampling completed – awaiting a report from T+T.

4. Planning and project delivery

4.1. Infrastructure Planning

There are several work packages underway, including.

- Southern Districts Water Network Model – Consultant engaged, model build underway
- Tuakau Water Network Model – Consultant engaged, Model build underway
- The Raglan WW model - has been finalised with WDC population data and system performance analysis completed. We are awaiting updated data from Nero PS before progressing option development.
- The Central Waikato WS model system performance assessment and the option development report were received. The scoping of projects from the options report is underway.
- Huntly Wastewater network model - Consultant engaged Data capture underway.
- Installation of permanent rain gauges in WDC's townships is completed for all six sites. The remaining task is to connect to the SCADA system progressively.
- The assessment of small water scheme will be initiated in July with a review of the two earlier assessments.

Internally staff worked on/with:

- Continuing work with Watercare's Auckland staff on the Infor asset management system.
- Preparation for Asset revaluation.
- Continuation of implementation of Infor IPS asset management system.
- Rangiriri WW Pump station in legal road study
- TKWA water take discussions

Business cases

- Te Kauwhata WWTP upgrade project is in the tender evaluation process. A paper will be submitted in July to the Water Governance Board once that process concludes.
- We are developing the Tuakau Pokeno pipeline upgrade recommendation based on the workshop held with the WDC team. A paper will be submitted in July to the Water Governance Board once that process concludes.

4.2. Development and growth

- Further discussions with WDC and Washer Rd Horotiu Developer revolving around WW pump station are required to service the area.
- On-going discussion with Pokeno & Tuakau business land developers.
- Discussion has commenced with the Council on the servicing of WW and WS for Ohinewai.
- Regular catch-ups continue with the WDC Growth team.
- Te Kowhai WS and WW servicing strategy commenced

4.3. Project delivery

- Ngāruawāhia Pipeline: The upgrade across the Waikato River Bridge will be complete with a final tie-in and reinstatement planned in July. Commencement of Stage 2, starting at the treatment plant to the railway, is underway.

- The POAL WWPS – The wet-well and storm tanks have been installed. The services are currently being installed.
- The new Swan Road sewer is complete, and the project is being closed.
- Te Kauwhata Reservoir preload remains until the settlement completes. Only minor works can progress at this stage; construction of the new access and service diversions are planned for June and July.
- Tuakau to Pokeno Pipeline. A revised board paper has been submitted. The project will restart once the initial stages of work are approved.

4.4. Network Renewals

- Water Network Renewals are well underway. The Raglan-bulk main installation has completed the drilling works. The manifold and tie-in works are being completed and ready for tie-in works.
- The first stage of the Tuakau Dominion has been installed and is being tested to be ready for commissioning.
- Te Kauwhata water main renewals have commenced with utility mapping and route planning. The first sections will be installed in July.

4.5. Pond Desludging

- Desludging works at Ngāruawāhia WWTP are complete, and the project is being closed.

4.6. Treatment plant Upgrades

- Raglan WTP Upgrade – The commissioning is complete, the new filters are in service, and the project is closed.
- Ngaruawahia WTP Upgrade – The installation of the new UV treatment system has commenced. The UV system is on-site, and the pipework installation is being planned. The installation of the new run-to-waste system will follow. The containerised UV treatment unit has been delivered to the filter site, ready for installation.

- Whangamarino WTP 4.5MLD Upgrade –The BAC filter isolation and tie-in are complete, and media installation and commissioning are planned for August. The new Meremere and Te Kauwhata pumps are being installed and commissioned.

Whangamarino WTP – Upgraded Meremere and Te Kauwhata Network Supply Pumps

- The first of two slab pours are complete at the Te Kauwhata WWTP. The installation of the service culvert is planned for mid-July; construction will then demobilize. A board paper has been submitted, and the project will restart once the next stages of work are approved.

5. Compliance

5.1. May updates

- All May drinking water monthly reports demonstrated compliance.
- The tasks identified from the *Draft Drinking Water Quality Assurance Rules* gap analysis are on-going. The SCADA infrastructure upgrade will contribute toward data resilience with post-reservoir compliance analysers identified as at-risk and requiring further review. The May Water NZ Backflow webinar with Taumata Arowai clarified backflow requirements and actions for the Watercare team.
- Taumata Arowai report that the *Drinking Water Quality Assurance Rules* are likely to be finalised in June and released to the public in mid-July, with an expected implementation date of November 2022.
- All May compliance reports for Wastewater were to be submitted to Waikato Regional Council during the second week of June 2022 with relevant notes, updates, and other resource consent reporting requirements as scheduled.
- Lutra has been commissioned to create digital registers of all water take and wastewater discharge resource consents with monitoring and reporting requirements to enable a systematic approach to compliance management and as a first step toward Infrastructure Data implementation.

- Registered drinking water populations continue to be reviewed. Data from Stats NZ at meshblock level is the method described by Taumata Arowai, and this approach is being investigated to compare to water demand management figures.
- Sample tap replacements are on-going with Network Operations identifying suitable replacement sites.
- Zone boundaries for some WDC supplies have been identified as requiring review as part of the sample point locations review.
- An action plan for reviewing drinking water safety plans has been developed to update the plans to meet the Water Services Act 2021 and Taumata Arowai's requirements for November 2022 submission.
- Raglan WTP cartridge filtration validation documents and installation notes have been provided by the commissioning contractor and adequately demonstrate compliance, subject to commissioning testing.
- An audit of turbidimeter compliance analysers calibration and verification frequencies has been completed for the Production Team. Some exceedances were identified, but overall frequencies were in compliance.

5.2. Abatement notices

- The Raglan stormwater Discharge Consent has an Abatement Notice for the 2018/2019 compliance period highlighting non-compliances. See above section 4.3 Stormwater for the latest works update.

6. Customer

6.1. Complex Water meter installation project

- For seven properties, Council has decided to take action using schedule 12 of the Local Government Act 2002 – Conditions of constructing or undertaking works on private land without the owner's consent for the properties concerned.
- 119 of the customers are moving to consumption charging on1 July 2022

Complex Water Meter installation progress	Count of Property ID	%
Council Action LGA - Schedule 12 - Works to carried within Private Boundary	7	4%
Delayed installation as neighbouring properties for Section 12 action	15	9%
With Contractors	3	2%
Meters Installed	151	86%
Grand Total		100%

6.2. Backflow Preventor Device Testing

- 311 Backflow tests were completed in June.

	Tested	Passed	Failed	To test
Percentage Done	24%	95%	5%	76%
Count Done	951	903	48	2,944

7. Strategic resource consents.

Raglan WWTP resource consent application preparation

- The May project update offered by Zoom allowed further details to be shared on treatment plant optioneering. The key advice was that:
    - sequence batch reactor (SBR) investigations are underway;
    - An interim upgrade solution is being developed to address the consistent non-compliant total suspended solid levels (TSS) caused by algae spread in warmer months.
- Regional Council representatives were present, and they will await further detail as options progress.
- The update provided an opportunity to outline challenges and successes with land securement, where all recognise that finer detail of discussions involving private owners doesn't need to be covered. The slide below provides the approach to project selection hierarchy for land securement methods. There is still an opportunity to achieve the preferred option with a particular landowner (purchase). The advancement of this opportunity is continuing with the support of Council Strategic Property Manager.

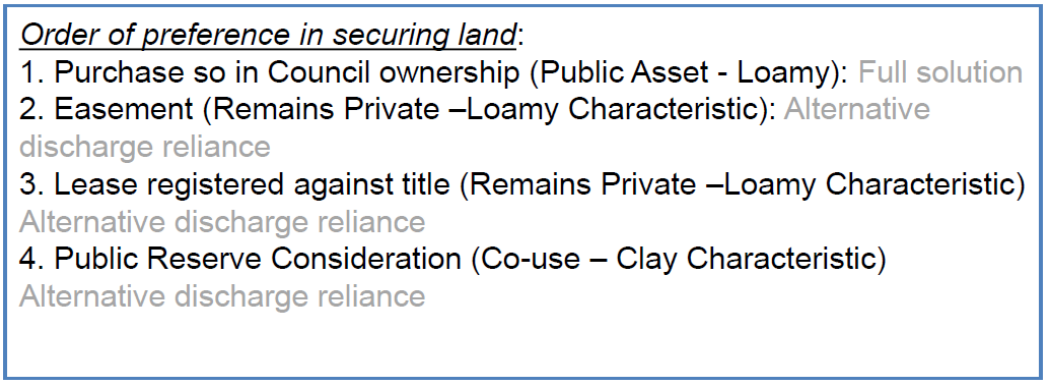


Image: Raglan Community e-meeting slide

Te Kawhata WWTP resource consent application preparation

- There was an opportunity to present preliminary discharge optioneering at the May Te Kauwhata Wastewater Consultation Group (TKWCG) online meeting. The slide below highlighted discharge options that were short-listed at the time of the prior resource consent application preparation process.
- It was stressed that there is merit in revisiting past optioneering, and considering how the step-up in treatment quality may influence acceptability and preference. Key options highlighted were Options 6 and 7, which create land discharge methods (high-rate discharge) and locations near the Awa.
- Dialogue touched on the appropriate criteria that short-listed options should follow. It was apparent that presentation of the 'best' land option and the 'best' alternative option (i.e. co-mixing of within a river tributary and discharge to flow) should occur, with necessary accompanying detail. Early technical investigations and expert appointments are being progressed on this basis.

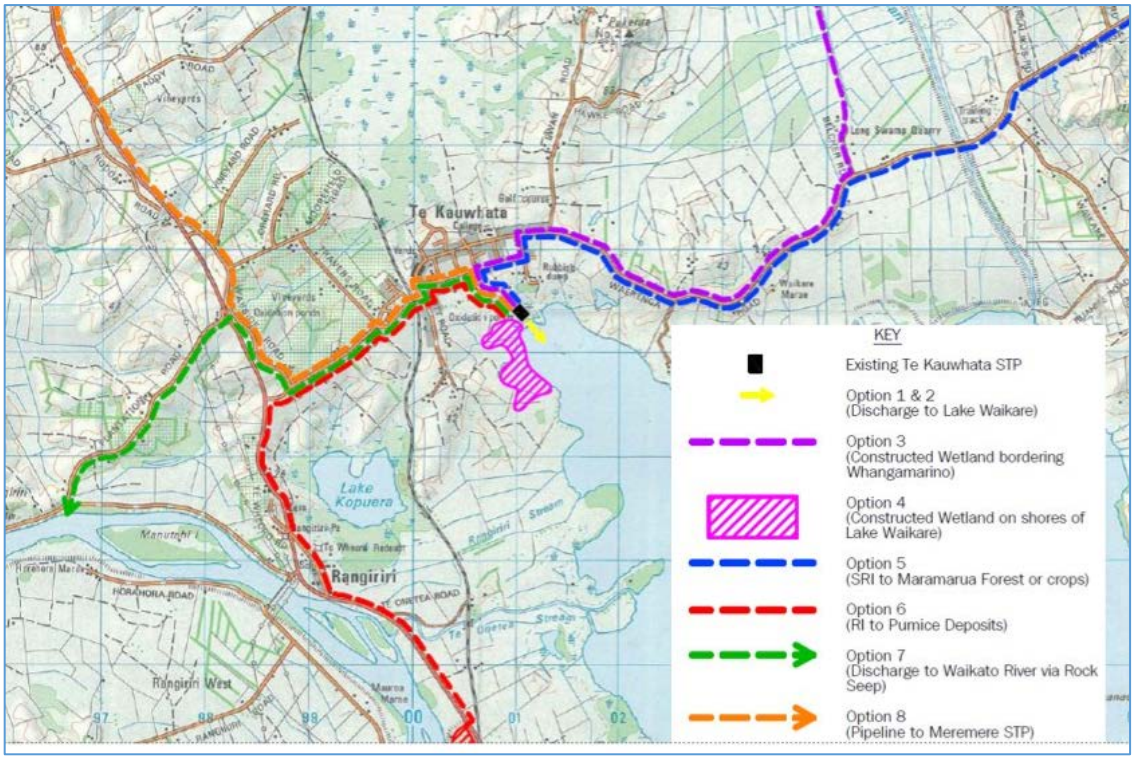


Image: 2012 Short listed Discharge Options

8. Key performance indicators

KPI – description	**Results**	**Target 2021/2022**
		Water
The extent to which the Council's drinking water supply complies with Part 4 of the drinking water standards (bacteria compliance criteria).	18	18
The extent to which the Council's drinking water supply complies with Part 5 of the drinking water standards (bacteria compliance criteria).	15	15
Attendance for urgent call-outs: from the time that Council receives a notification to the time that service personnel reaches the site.	May - 44 Year to date - 42	≤ 60 mins
Resolution of urgent call-outs: from the time that Council receives a notification to the time that service personnel confirms resolution of the fault or interruption.	May – 49 Year to date - 93	≤ 120 mins
Attendance for non-urgent call-outs: from the time that Council receives a notification to the time that service personnel reaches the site	May – 1 Year to date - 1	≤ 3 days

Resolution of non-urgent call-outs: from the time that Council receives a notification to the time that service personnel confirms resolution of the fault or interruption.	May – 1 Year to date - 1	< 3 days
The total number of complaints related to Water services received by Council (expressed per 1000 connections to the networked reticulation system):	May – 0.65 Year to date Result -14.09	≤ 22/1000
		Wastewater
The number of dry weather sewage overflows from Council's system (expressed per 1000 sewage connections to that sewage system.) - Non-sensitive receiving environments	May – 0.09 Year to date Result – 2	≤ 2/1000
The number of dry weather sewage overflows from Council's system (expressed per 1000 sewage connections to that sewage system.) - Sensitive receiving environments	May – 0.00 Year to date Result – 0.17	≤ 2/1000
Attendance time: from the time that Council receives a notification to the time that service personnel reaches the site.	May – 61 Year to date Result – 46	≤ 60 mins
Resolution time: from the time that Council receives a notification to the time that service personnel confirms resolution of the blockage or other fault.	May – 377 Year to date Result – 130	≤ 240 mins
The total number of complaints received by Council about any of the following (expressed per 1000 connections to the sewage system):	May – 0.52 Year to date Result – 6.55	≤ 10/1000
		Stormwater
The number of Stormwater flood/blockage events that affected habitable floors (expressed per 1000 connections):	May – 0 Year to date Result – 0	< 5
The total number of complaints received by Council about the performance of the stormwater system (expressed per 1000 connections):	May – 0.07 Year to date Result – 0.42	< 1.25
Level of compliance, number of the following, Abatement, infringement notices, enforcement orders or convictions	2020/21 - 0 (1 existing Abatement from 2018/19)	0

		Health and Safety
Safety: Lost time injury frequency rate (LTIFR) per million hours worked	1.78	≤ 5
Safety: Total recordable injury frequency rate (TRIFR) per million hours worked	1.78	≤ 20
Safety: 100% of Notifiable (or serious non-notifiable) Events reported to WDC within 2 hours of the occurrence	100% No events YTD	100%
Safety: 100% of Notifiable Event reports supplied to WDC within 21 business days	100% No events YTD	100%
Safety – the percentage of complaints resolved within ten working days	100%	95%
Safety- Health and safety Audit programme and action plan completed (6 monthly and then annually)	100%	1
Safety - All site emergency plans to be drilled six-monthly as per drill schedule	100%	> 100%
Safety - Monthly Health and safety meeting held with all workers	1	> 90%
Safety-Critical risk audit to be conducted by HSW BP Bi-monthly	100%	1
Safety -Actions required to be closed within one month	100%	> 90%

Open – Information only

To	**Waters Governance Board**
Report title	**Health and Safety Audit - 2022**
Date:	19 July 2022
Report Author:	Carole Nutt – Waters Contract Relationship Manager
Authorised by:	Gavin Ion - Chief Executive

1. Purpose of the report
Te Take moo te puurongo

To update the Waters Governance Board of the outcome of the health and safety review of the Agreement for Operation and Maintenance of Water, Wastewater and Stormwater Services with Watercare.

2. Executive summary
Whakaraapopototanga matua

In line with clause 16.1(d) of the Agreement for Operation and Maintenance of Water, Wastewater and Stormwater Services, council requested Watercare engage New Zealand's leading provider of health and safety solutions IMPAC Services to undertake the annual safety audit to assess Watercare's (and any relevant subcontractor's) compliance with Health and Safety Legislation and best practice.

Targeted focus areas were agreed covering safety culture within Watercare, contractor and sub-contractor management, the use of personal protective equipment/clothing, the management of critical risk activities regarding hazardous substances and the use of vehicles, plant and machinery. The audit was carried out in May 2022 and Impac Services Limited's report with findings and recommendations is attached.

3. Staff recommendations
Tuutohu-aa-kaimahi

That the Waters Governance Board

a. receives the report;

b. notes that recommendations in the Impac Services report and requests staff to ensure the implementation of these recommendations with Watercare.

4. Discussion
Matapaki

Please refer to the attached 'Health & Safety Review Watercare for Waikato District Council' report for the outcome of the audit including recommendations to further strengthen health and safety.

Council has discussed the recommendations outlined in the report with Watercare and Watercare are committed to implementing.

5. Next steps
Ahu whakamua

Council staff will continue to monitor the implementation progress of the recommendations outlined in the IMPAC Services.

6. Attachments
Ngaa taapirihanga

Attachment 1 – Health & Safety Review Watercare for Waikato District Council

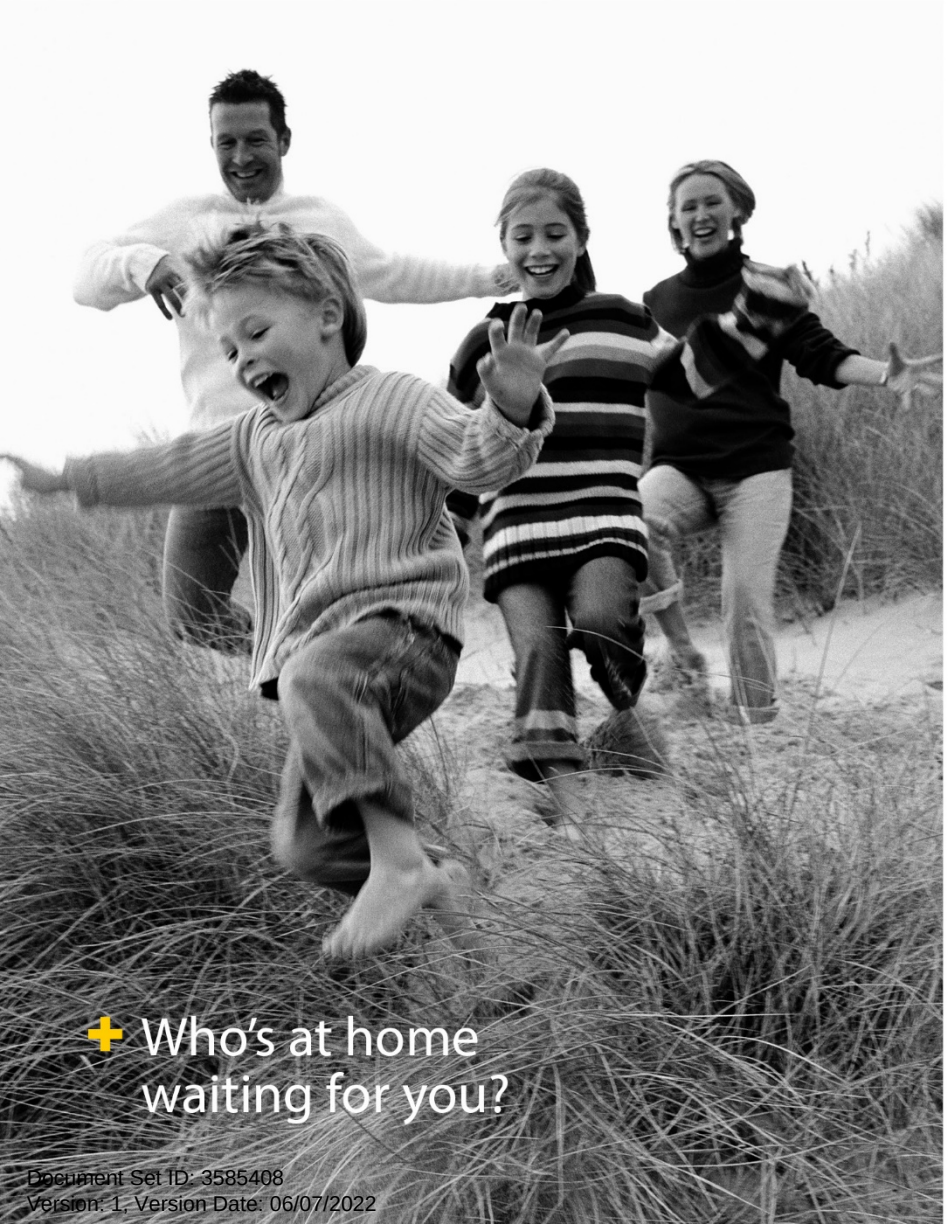
+IMPAC CONSULTING
Focusing H&S investment on what matters

Watercare
An Auckland Council Organisation

HEALTH & SAFETY REVIEW

WATERCARE

FOR WAIKATO DISTRICT COUNCIL



CLIENT NAME:
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DATE:

FINAL 31 May 2022

PEER REVIEW:
Lance Hiscoe
Consulting Lead – IMPAC

+IMPAC
Less risk, safe people, better business

Contents

Acknowledgements

IMPAC would like to acknowledge the valuable assistance and help of Watercare Waikato for collating a wide range of health and safety documentation for the review.

Report limitations or disclaimer

This report has been prepared by IMPAC Services Ltd using our experience and professional judgment. This report is based on the information provided to us by the client during our engagement. Impac does not accept any responsibility for the accuracy or completeness of the information supplied.

1. EXECUTIVE SUMMARY

Watercare Auckland, contracted to Waikato District Council asked Impac, a risk and safety management consultancy, to conduct a task specific review on how health and safety is managed across its operations. The review centred on the Waikato District Council and Watercare Auckland agreement and how it is implemented throughout the organisation.

Waikato District Council has, as per the agreement requested Watercare to conduct a targeted audit of the Watercare safety management system focusing on their safety culture within Watercare, Contractor and sub-contractor management, Management and use of Personal Protective Equipment/clothing, the management of critical risk activities, and the use and management of vehicles, plant and machinery. Throughout the audit it was noted that Watercare has an excellent attitude towards safety of their workforce and that of the general public. The systems and processes in place are well utilized and Watercare continually look to addressing any gaps within their systems to maintain continual improvement. However, several points were noted during the assessment and should be addressed.

A. Safety Culture, Watercare has a mature approach towards the safety of employees and their service providers workers. There is a good inspection process with the results being shared amongst workers through appropriate office and site meetings. Additionally, Watercare conducts regular audits and assessments of their system to highlight where there is room for improvement and any issues noted they act on the recommendation accordingly.

B. Contractor and Sub-Contractor Management, Watercare has an excellent approach towards managing their contractors at all levels with conducting internal approval and assessment process to having contractors undertake Prequalification or Totika assessments by an approved external organisation.

C. Personal Protective Equipment, Watercare has an acceptable process of managing the issue, maintenance and replacement of Personal Protective Equipment and Clothing. But it was noted that the appropriate section within a submitted JSA did not identify the correct PPE/C that the contractor should be using. This may have been an oversight through the JSA approval process, however, it should have been identified and rectified prior to allowing the work to commence.

D. Critical Risk Activities, Watercare has in place an acceptable process of managing their critical risks. However, with other documentation reviewed throughout this assessment the last recorded review of documents was in 2017. Watercare may have, through document control, have updated versions but this was not clearly evident or checked as part of the requirements of this assessment.

E. Vehicles, Plant and Machinery, Watercare ensures that vehicles, plant and machinery are regularly checked and maintained. However, this is completed by external organisations who maintain records which Watercare have access to, but no evidence was available to fully support that Watercare oversees this process. Road going vehicles are inspected at the WOF/COF annual assessment and issue of appropriate road licence. There is no evidence to show that road vehicles are inspected by the driver prior to the vehicle being used. Watercare does not have in place a suitable assessment process, where operators do not require an approved licence, to show competency.

Recommendation 1: Watercare should complete the review of the HSMP and formally accept and publish the document.

Recommendation 2: Watercare should consider having in place, for formal scheduled meetings, an agenda, minutes and action plan. The agenda/minutes should have an agenda item to record offline discussions of a H&S nature (on-site verbal talks that cannot be rectified at the time).

Recommendation 3: Watercare should consider having all inspections/observations whether formal or informal walkthroughs of sites recorded in iCare..

Recommendation 4: Watercare should ensure that safety analysis documentation provided by contractors are fit for purpose in the use of appropriate safety equipment or clothing.

Recommendation 5: As Watercare is a critical service company they should have in place appropriate process, procedures or work instructions in the management of epidemic or pandemic response. This will also be coupled with the appropriate risk assessments.

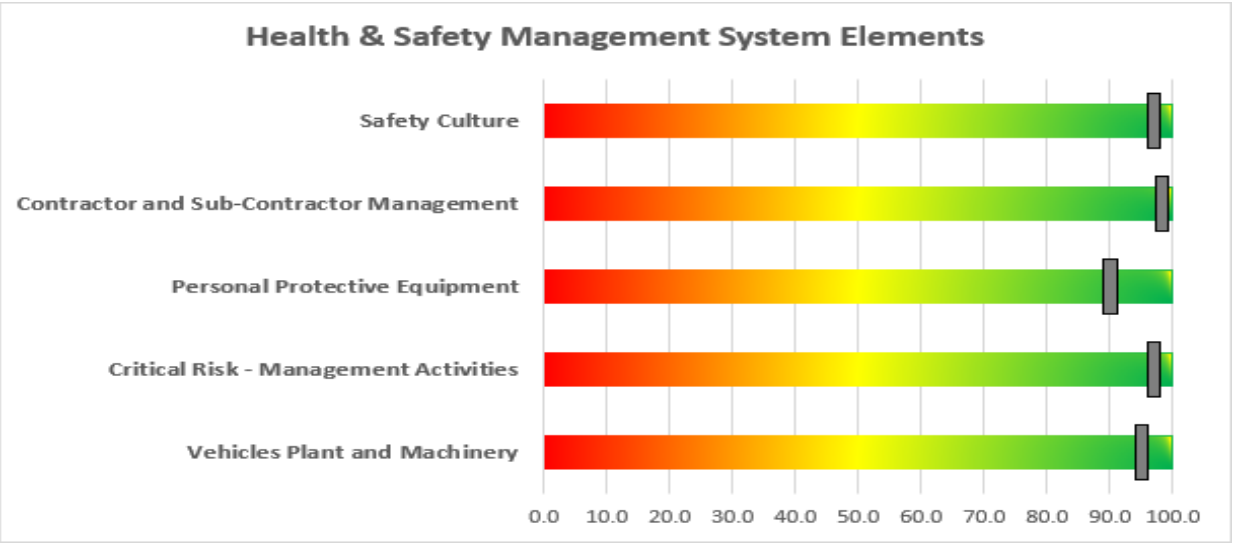
Recommendation 6: Watercare should consider putting in place an internal based competency procedure to ensure all appropriate workers have received the necessary guidance in the use of the plant or machinery to a standard acceptable to Watercare.

Recommendation 7: Watercare should consider developing and implementing a regular inspection of all their fleet/plant equipment. Especially for those vehicles that have multiple users

See the recommendations within each element question in section 2 of this report.

In making judgement statements about Watercare's health and safety status, comparison is made against what would be considered good practice for an organisation of a similar size and complexity, dealing with the same or a similar range of hazards and risks.

Each of the required elements were assessed and was scored in accordance with the question set for the specific area. The table below shows where Watercare (Waikato), selected elements, Health and Safety Management System sits.



The assessor would appreciate it if the senior management could pass on his thanks to all those who participated, or made themselves available, during the audit. It was pleasing to see a strong safety culture emerging and this is not just a top-down process but across all work activity and all workers have the authority to stop work if they deem it unsafe.

1.1 THE REVIEW TEAM

The review was carried out and reported by Danny Lochery, Senior Consultant, IMPAC Services. The peer review was carried out by Lance Hiscoe, Lead Consultant, IMPAC Services.

1.2 METHODOLOGY

The review was carried out as follows:

1. A review of the current Watercare Health and Safety Framework documentation in relation to the schedule.

2. Discussion with staff

4. Preparation of a Health and Safety assessment report setting out IMPAC's findings and recommendations.

2. SUMMARY OF FINDINGS

2.1 SAFETY CULTURE

Score 97%

Questions

Active promotion and support to the health and wellbeing, both physical and mental, of the Watercare team. — Very Good

Comment
Watercare actively encourage reporting of events and hazards. Issues can be raised by any employee, embedded contractors and other contractors. Reporting can be via the safety committee or line manager. Watercare has a safety of the month programme (which was viewed and reported upon on the previous assessment (2021). A review of the Watercare HSMP covers aspects of wellbeing for physical and mental issues. However, the document provided was a DRAFT version only, and last review date was July 2021.

Recommendation: Watercare should complete the review of the HSMP and formally accept and publish the document.

Communication to Contractors and Subcontractors of the Watercare culture of being informed, of continuous learning, of being flexible when needed, of reporting all incidents and new hazards and of responding in a just manner when incidents occur. — Excellent

Comment
Watercare has a process where sub-contractors have the authority to talk direct to Watercare about their safety concerns and Watercare will highlight this with their principal contractor to resolve any issue immediately or via appropriate project management meetings.

Does the organisation conduct an internal audit of their system, at least annually? — Excellent

Comment
Watercare have had several audits of their system including an ACC audit and a Waikatro District Council specifically targeted assessment in 2021.

Process for the consistent application of just culture decision making with respect to behavioural consequence management. — Excellent

Comment
Watercare has an open and frank process for dealing with decision making and remain transparent in their work application. Involvement at all levels is encouraged.

Process in place to recognise, reinforce, and reward innovation, initiatives and desired behaviours. — Excellent

Comment
Watercare commend actions by their workforce with award schemes in place, for individuals or teams.

Support the development and maintenance of a positive safety culture, which includes pursuing Council's Zero Harm vision set out in Attachment 5 of the Waikato Waters. Agreement Health and Safety Framework. — Excellent

Comment
Watercare actively pursue a safety culture through committees, management meetings and safety of the month topic. They also have in place a wellbeing programme for stress and a counselling process.

Section Comments and Recommendations

Watercare has an acceptable process for managing all aspects of health safety and wellbeing. Whilst reviewing the evidence submitted by Watercare it was noted that the Watercare H&S Committee do not confirm the review of organisation risks. It may be beneficial to Watercare that that the appropriate risk owners have completed the risks they are responsible for within the appropriate time frame dependent on the risk scorning level.

Recommendation 1: Watercare should complete the review of the HSMP and formally accept and publish the document.

2.2 CONTRACTOR AND SUB CONTRACTOR MANAGEMENT

Score 93%

Questions

During selection of contractors and subcontractors, define the Contractor and Subcontractor management process that shall be used including pre-qualification, induction, supervision, inspection, auditing and review of performance. — Excellent

Comment
Watercare have a registered supplier list which have gone through their RFP process. On completion part of the Watercare requirements are that their sub-contractors are Prequalified by an approved external source. The Totika assessment process is also widely used.

Engage regularly with Project Managers and Project Engineers throughout the construction phases. — Very Good

Comment
There is a system in place to manage meetings with contractors. However most are usually verbal and not recorded. Watercare have in place the recording of scheduled meetings but no evidence of this has been provided.

Recommendation: Watercare should consider having in place, for formal scheduled meetings, an agenda, minutes and action plan. The agenda/minutes should have an agenda item to record offline discussions of a health & safety nature (on-site verbal talks that cannot be rectified at the time).

Ensure conflicting operational and construction activities are identified and eliminated or minimised. — Excellent

Comment
Watercare has a process for managing work activity on site to ensure contractors receive induction onto site and provide information on hazards and areas of work. Where there is common areas, this is managed between both parties. (PCBUs).

Ensure contracts have a health and safety plan for contracted work and KPIs are monitored and reported. — Very Good

Comment
Recent site specific provided and is to an acceptable level.

Ensure that contracted workers have been inducted and properly trained before working on a Watercare operational site. — Excellent

Comment
Completed to an acceptable level. Evidential documents provided.

Provide health and safety leadership by doing regular safety observations and having conversations with contractors. Respond to issues raised by contractors and their workers, supervisors and other managers.	Very Good

Comment
These are conducted by an external approved supplier and reports are to an acceptable level. However, it was noted during the assessment, issues are verbally discussed on site and in most cases are dealt with immediately. Where issues that cannot be resolved may be missed and corrective actions not followed through that could have the potential to cause harm. Watercare has a system where inspections or observations can be recorded (iCare) but it is the view of the assessor that it is not being fully utilised by Watercare.

Recommendation: Watercare should consider having all inspections/observations whether formal or informal walkthroughs of sites recorded in iCare.

Regularly provide feedback to Waters Business Manager on health and safety risks / issues arising within contracted work.	Excellent

Comment
WDC and Watercare have monthly meetings to discuss all aspects of related work including health and safety.

Site and workplace inspections are formalised, documented and closed out.	Excellent

Comment
Formal Inspections or walkthroughs are recorded in iCare. However, informal or passing walks may not be included in the inspection database.

How does the organisation manage safety through the design process.	Excellent

Comment
Watercare has an acceptable process for managing safety through design with acceptance of an SiD report and register, both sighted.

Section Comments and Recommendations

Watercare has an acceptable system to manage their contractors but there was limited evidence of formal on-site meetings or inspections/walkthroughs being recorded with follow up and close out of actions raised. Watercare has an acceptable process of onboarding contractors through their RFP system including the use of the Totika Prequalification process.

Recommendation 2: Watercare should consider having in place, for formal scheduled meetings, an agenda, minutes and action plan. The agenda/minutes should have an agenda item to record offline discussions of a H&S nature (on-site verbal talks that cannot be rectified at the time).

Recommendation 3: Watercare should consider having all inspections/observations whether formal or informal walkthroughs of sites recorded in iCare.

2.3 PERSONAL PROTECTIVE EQUIPMENT

Score 90%

Questions

Appropriate action taken if an employee, contractor or subcontractor is not using appropriate PPE. Excellent

Comment
Watercare have a system where specific basic PPE and PPC is required on all work sites. Where this is not being adhered too then work is stopped until rectified and works at all levels of the organisation.

Appropriate signage that it is clean, clear, and concise and presented in a manner that is clearly understood by all workers installed where PPE required. Excellent

Comment
Evidence provided and viewed of various locations for PPE or PPC and appears to be maintained well.

Contractors and Subcontractors provide PPE that meets the relevant standards to their workers and appropriate signage installed. Excellent

Comment
As per previous question signs are shown for Watercare and their contractor sites.

Minimum PPE requirements defined as part of standard operating procedures or other relevant documentation. Good

Comment
Appropriate documentation supplied by contractors. However, it was noted in one safety analysis supplied that work activity was electrical work. No mention was made regarding appropriate safety clothing / electrical gloves, or safety equipment, intrinsically safe tools.

Recommendation: Watercare should ensure that safety analysis documentation provided by contractors are fit for purpose in the use of appropriate safety equipment or clothing.

PPE that meets the relevant standards provided to all workers. Excellent

Comment
Watercare has a procedure for the management selection and issue of all PPE. However, it was noted that the document was issued in 2017 with no revision history.

Process in place to recognise when a task may require specialised PPE or assessment thereof. Good

Comment
Watercare JSA process has appropriate information to consider where specialist PPE / C is required and a JSA reviewed appeared to be fit for purpose. However, as mentioned previously a safety document viewed only provided details of generic PPE. It is the view of the assessor that this document should have been reviewed and the correct PPE / C included.

Staff trained in what PPE is required and that staff take responsibility for the correct use of. Excellent

Comment
Watercare has an acceptable process for training and issue of appropriate PPE.

Training documented and easy to locate. Excellent

Comment
Training in the use of PPE is well documented and staff have access to the documents on-line.

Section Comments and Recommendations

Watercare has an acceptable process to manage the issue and replacement of PPE/C including the training and maintenance. However, it was noted that the overriding document was issued in 2017. Consideration should be given to reviewing the document to ensure it remains fit for purpose.

Recommendation 4: Watercare should ensure that safety analysis documentation provided by contractors are fit for purpose in the use of appropriate safety equipment or clothing.

2.4 CRITICAL RISK MANAGEMENT ACTIVITIES

Score 96%

Questions

Appropriate processes must be in place to ensure activities involving the use or handling of hazardous substances are identified and controls are in place as per the Health and Safety at Work (Hazardous Substance) Regulations 2017. Very Good

Comment
Hazardous substance register was viewed and found to be fit for purpose. An exposure to hazardous chemicals was sighted and also fit for purpose. Buat as previously mentioned with other documents this was dated May 2017. As with other documents this needs to be reviewed via their document control procedure.

Documented emergency response procedures must be in place, appropriate resources must be made available, and workers must be properly trained. Excellent

Comment
A sample of safety data sheets were viewed and were in date. These documents have the appropriate emergency response to the chemical. The SDS are retained at office level and copies provided to the respective sites where they are stored in an approved location to provide the emergency services with the information as required. Staff are provided guidance and training on hazardous chemicals as required and the SDS emergency procedure is the key element for the training.

Hazardous Substances PPE is fit-for-purpose and worn by workers. Excellent

Comment
PPE is noted as part of the SDS and trained staff are provided with the correct PPE for the work activity involving hazardous chemicals. Additional PPE/C is available at sites.

Information (Safety Data Sheets), instructions and labelling for hazardous substances must be available and effective. Excellent

Comment
As part of the register and located at emergency boxes on site. Several SDS were sighted and were in date.

Personnel handling hazardous substances must be trained and competent. Excellent

Comment
Staff trained, evidence on training matrix.

Section Comments and Recommendations

Watercare have a process in place for handling all hazardous substances and is fit for purpose. However it was noted that the procedures in place are dated 2017. Watercare should review their documents via document control and update as required.

Watercare should also review the Huntly Water Treatment Plant Emergency Procedure supplied as evidence, this was a DRAFT document only.

It was noted that the Safety Management Plan was a DRAFT version only (previously mentioned). Whilst reviewing the document it was noted that when published the document will be, in the main fit for purpose. However, following the issues over the last few years it is an appropriate time to include in the wellness section of the document aspects on how Watercare responds to Epidemic or Pandemic events.

Recommendation 5: As Watercare is a critical service company they should have in place appropriate process, procedures, or work instructions in the management of epidemic or pandemic response. This will also be coupled with appropriate risk assessments.

2.5 USE OF VEHICLES, PLANT AND MACHINERY

Score 83%

Questions

Appropriate competency-based training in the use of vehicles, plant and machinery. Good

Comment
Road going vehicles no issue. Where plant machinery does not have a process for operators to be licenced Watercare does not have a system to ensure that the operator has received appropriate information (competency) in the operation of plant or machinery. Individuals should be signed off by approved supervisor/manager.

Recommendation: Watercare should consider putting in place an internal based competency procedure to ensure all appropriate workers have received the necessary guidance in the use of the plant or machinery to a standard acceptable to Watercare.

Appropriate standard operating procedures developed and readily available for vehicles, plant and machinery. Excellent

Comment
A number of SOPs reviewed through the assessment process and found to be fit for purpose.

Plant and machinery are inspected and maintained in good working order, and at a minimum in accordance with manufactures recommendations. Very Good

Records of the inspections and maintenance must be maintained.

Comment
Yes, but not formally checked. Road vehicles no check sheets but vehicle documentation is managed by an external supplier WOF/COF etc and servicing. No daily/weekly or monthly checks. Issues that arise is immediately noted to the fleet manager.

Recommendation: Watercare should consider putting in place a regular inspection of all their fleet/plant equipment. Especially for those vehicles that have multiple users.

Staff operating vehicles, plant and machinery have the required qualifications for the vehicle or machinery they are operating. Very Good

Comment
Yes, where required via a legal requirement process. However, as noted previously where competency training only is required, Watercare does not have a system in place via their training procedure or matrix.

Staff training/licence register in place for both completed and future due. Very Good

Comment
As part of the training matrix, but no information held on competency-based training only.

Vehicles have appropriate WOF, COF, etc. Excellent

Comment
Yes, externally managed - E Road. Including servicing for road going vehicles.

Section Comments and Recommendations

Watercare have an acceptable process of managing the maintenance of their equipment. No evidence to show operators have the desired competency to operate plant or machinery. With regards to road vehicles these are externally managed via E Road. No routine inspections are conducted on road vehicles.

Recommendation 6: Watercare should consider putting in place an internal based competency procedure to ensure all appropriate workers have received appropriate guidance in the use of the plant or machinery to a standard acceptable to Watercare.

Recommendation 7: Watercare should consider putting in place a regular inspection of all their fleet/plant equipment. Especially for those vehicles that have multiple users.

3. DOCUMENTS REVIEWED

Document
001 - HSW Management Plan 2022
Gap Analysis RAG Chart Creator Watercare 2022
002 - Application of 'just' Culture 2021-22
005 - SCREENSHOT - Internal Audit of WSL Systems
007 - WSL's Innovation & continuous improvement process
008 - COVID-19 Incident People leaders pack
004 -Toolbox ENERGY UNDERGROUND SERVICES 04-2022
007 - WSL's Innovation & continuous improvement process
009 - SCREENSHOT - Staff Accreditation Example
010 - ICare Close Call Example Report
012 - People Engagement Covid-19 Catch Up Meetings
014 - Health and Safety Meetings 2022.
015 - General Workplace Audit SAMPLE
018 - AEP Audit - Waikato
Contractor Induction module Ngaruawahia WTP site information
001 - Contractor Induction Register
002 - Managing contractors and access to workplaces V4
003 - WDC HSW Improvement Committee Minutes03-2022
004 - Request For Proposal (Pre Engagement)
001 - SAMPLE McKay Job-Risk-Assessment
003 - Networks PPE register
004 - Production PPE Record
005 - PPE Procedure POLICY 2017 v.01
006 - SOP Chamber entry
007 - Photographic Evidence of Hazard and PPE Signage
009 - Training Matrix
010 - Treatment Record
Chlorine gas SDS

Aluminium Sulphate
003 - Hazardous Substance Inventory
004 -HSW4150 - Exposure to Chemicals Key Requirement
007 - Operation of a WDC Stihl concrete saw or ICS concrete chainsaw
009 - MSA Calibration cert
011 - Toolbox - Confined Spaces and Explosive atmospheres
013 - Toolbox - PPE Heat and Hydration (January 2022)
014 - Totika - Enterprise risk report
015 - Huntly WTP Emergency Procedures Manual
Driver and Vehicle Information Screenshots
Forklift Safety Check Sheet
Jimmy F Licence
hs_pre-qualification assessment
04713 Project Risk Register
04713 Project Management Plan PMP (CMP)
04713 Method Statement
04713 Company Risk Register
SC 03.202.6a Request for Tender Non Price Response (based on NZS 3910 2013)
Site-Safety-Inspection-Report Ngaruawahia Bridge 14042022 (38)
7366_POAL Pumping station Monthly H and S Statistics Apr 2022
CT7354 - Minutes From Progress Meeting 8 - 31 March 2022
202010009 Safety in Design report. Reviewed
Appendix A_SiD register reviewed

4. PEOPLE SPOKEN TO

Gil Miers: Production Manager
Robert Ball: Networks Manager
Peter Crabb: Project Manager
Mathew Telfer: Operations Manager
Rhiannan Rollitt: Process Engineer Wastewater
Paula Luijken: Heath, Safety, and Wellbeing Business Partner
William Lawless: Heath, Safety, and Wellbeing Coach (Operations South)
Giselle Parker-Ross: Business Administrator

Waikato District Council
Te Kaunihera aa Takiwaa o Waikato

Open

To	**Water Governance Board**
Report title	**Te Kauwhata Wastewater Treatment Plant Upgrade and Recommendations**
Date:	19 July 2022
Report Author:	Keith Martin, Waters Manager
Authorised by:	Gavin Ion, Chief Executive

1. Purpose of the report
Te Take moo te puurongo

To ask the Water Governance Board (WGB) to approve one of the options proposed for the Te Kauwhata Wastewater Treatment Plant (WWTP) upgrade.

This report highlights to the WGB that the WWTP upgrade can be completed with the funding solution provided but alerts the WGB that Council can't deliver the correctly sized WWTP within that funding solution.

The report assesses the risks of not delivering an upgraded WWTP plant and the need to further upgrade later if Council proceeds with this option.

2. Executive summary
Whakaraapopototanga matua

This report requests approval to recommend to Council the upgrade of the Te Kauwhata WWTP and change request.

In 2018, Council submitted a Detailed Business Case (DBC) to the Housing Infrastructure Fund (HIF) which is managed and maintained by the Ministry of Business Innovation and Employment (MBIE). The DBC request was to support the funding of the growth element of the Te Kauwhata Wastewater Treatment plant. The growth element was represented by Lakeside Development and new lots identified in the sub regional plan.

Te Kauwhata was recognised as a growth node and on this basis, Council sought and was successful in obtaining HIF funding to accelerate and support growth in the area based on the DBC.

HIF detailed business case		
Project	**Total Cost**	**Costs sought from HIF**
Wastewater Treatment Plant MBR plant in Te Kauwhata	$39.1 million	$21.5 million
Wastewater pump station and conveyance Te Kauwhata with discharge to land / river		
Water treatment plant upgrade & reservoirs	$19.3 million	$16.5 million
Local road infrastructure upgrades	$13.8 million	No application
Total cost	$72.2 million	$38 million

At the time the Business Case was developed, the project construction cost estimates were completed using risk based 69 percentile (P69) expected costs in 2018 dollars.

Watercare have recently tendered the supply, construction, and commissioning of Te Kauwhata WWTP. Watercare have selected two complying tenders whose solutions can be delivered within budget and whose process design is aligned with consent and technology load limits. All tenders could not provide the DBC proposed treatment capacity volume limits with the proposed budget constraint. This means the wastewater treatment plant upgrade will need further upgrading if it is to meet future population growth expectations. If Council upgrades the plant now, it is expected that the plant will require upgrading again between 2025 and 2031.

Delaying the upgrade of the plant has reputational, compliance, regulation, and prosecution risk.

- The existing plant has an abatement notice served by Waikato Regional Council (WRC) and an agreement with WRC that the WWTP treated effluent discharge will be compliant by December 2022.

- Council has a Developer Agreement with Lakeside that agrees to provide additional wastewater capacity to the developer by December 2022.
- Council has agreements with Iwi that the treated effluent discharge into the lake will be improved and that the discharge will eventually be removed entirely.
- Councils HIF agreement is based on higher treatment volumes than the current technical solution can accommodate.

Watercare recommends that a total of $24.29M be approved to complete the Te Kauwhata Wastewater Treatment Plant (WWTP) Upgrade to cater for flows of 1.5 Megalitres per day (MLPD), releasing a further $7.85M of allocated LTP funding. The upgrade remains within budget and the process design is aligned with consent and technology load limits and their preferred option allows for further upgrade as part of the design.

3. Staff recommendations
Tuutohu-aa-kaimahi

That the Water Governance Board recommends to Council:

a. approves a reduction to the Te Kauwhata Wastewater Treatment Plant design capacity, subject to receiving support for the project scope change from the Ministry of Housing and Urban Development; and

b. endorses the Te Kauwhata Wastewater Treatment Plant upgrade option 2, which is the dual lane MABR/MBR, and providing recommendation (a) is achieved that Watercare awards the tender to the successful company; and

c. any budget for this project, not spent along with costs not forecast in 2022/2023, be moved or phased to future budgets.

4. Background
Koorero whaimaarama

The original WWTP was upgraded in 2006 from basic oxidation ponds to an enhanced aerated pond system using 'Aquamats'. The submerged mats provide surface area for the growth of microorganisms to treat the wastewater. Treated wastewater then flows through planted wetlands and a rock filter in a continuous manner to Lake Waikare, via a small tributary that runs adjacent to the site.

The existing WWTP is non-compliant and is subject to an Abatement Notice. Formal proceedings to enforce the abatement notice by the WRC have commenced. An agreement was reached with WRC to hold further action following a commitment to complete the significant plant upgrade by the end of 2022. The Waikato District Council also signed a memorandum of understanding with the community that discharges from the plant to Lake Waikare would cease in 2023. The treatment plant consent expires in 2028.

In 2018, a Business Case was approved for the construction of an on-site wastewater treatment plant (MBR) in Te Kauwhata discharging via a 5.3km rising main to a suitable land contact point near SH1 and Waikato River (cost: $39,000,000). The Business Case required HIF Funding to provide the financing of the growth component. A HIF Funding application was made and subsequently approved.

To improve discharge outcomes, an Ultraviolet (UV) Upgrade has recently been completed and has reduced E. Coli levels. The pumped UV is now operational and is incorporated in the final plant upgrade.

The next upgrade (Phase 2) installs a new treatment system that delivers a high-quality filtered effluent. The enabling works and procurement of key items are underway; the ground improvements and concrete foundation slab are complete, and four membrane aerated biofilm reactor (MABR) tanks are on-site.

The tender has been submitted to market for the supply, installation and commissioning and now awaits award. The basis of this paper is to seek approval to enable the tender to be awarded.

5. Discussion and analysis
Taataritanga me ngaa tohutohu

Council is still committed to upgrading the WWTP but needs to resolve the following issues to be able to proceed.

Council needs to resolve the following:

1. CAPEX Assumptions
2. HIF Funding approval
3. Agreements

CAPEX assumptions

Funding allocated ($M)	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	Total
Te Kauwhata HIF Funding AMP Code: 1WW10651, OG0001081	13.52	21.84	-	-	-	-	-	-	35.36
TK Treatment Plant Process Improvements AMP Code:DIA OG0001184	0.40	0.64	-	-	-	-	-	-	1.04
UV Treatment System	0.39	0.65	-	-	-	-	-	-	1.04
MABR/MBR	0.79	6.51	9.78	7.20	-	-	-	-	24.29
Pump Station	-	-	-	0.79	0.85	1.74	0.35	-	3.73
Conveyance	-	-	-	1.56	1.67	3.43	0.69	-	7.35
Balance available (+/-)	12.74	15.32	-9.78	-9.56	-2.52	-5.16	-1.03	-	0.00

Whilst a conforming plant can be delivered within budget, the proposed plant cannot deliver the intended scope of treatment for 2.25 megalitres per day.

When comparing the Business Case against the tendered outcomes it is noted that cost estimates provided for within the DBC used P69. Given P69 was used (and approved by DIA when the HIF Business Case was approved) the confidence level for price indication was only moderate. This modelling has since been interrupted by the impacts of the Covid19 Pandemic (not anticipated in 2018) and the 4 years that have passed.

The geology of the site is difficult and enabling works required to support the MABR/MBR WWTP foundations have been extensive. The change in technology from an MBR to an MABR/MBR considered the poor geology on site. An MBR requires a tank that supports 5 metres wastewater in which average foundation loads deliver 60kPa including the tank structure. Given our knowledge of the site, it was highly unlikely that the geology would accommodate this weight. An MABR/MBR solution was then proposed as the MABR/MBR consists of small 3-meter diameter tanks that are supported on a floating concrete foundation.

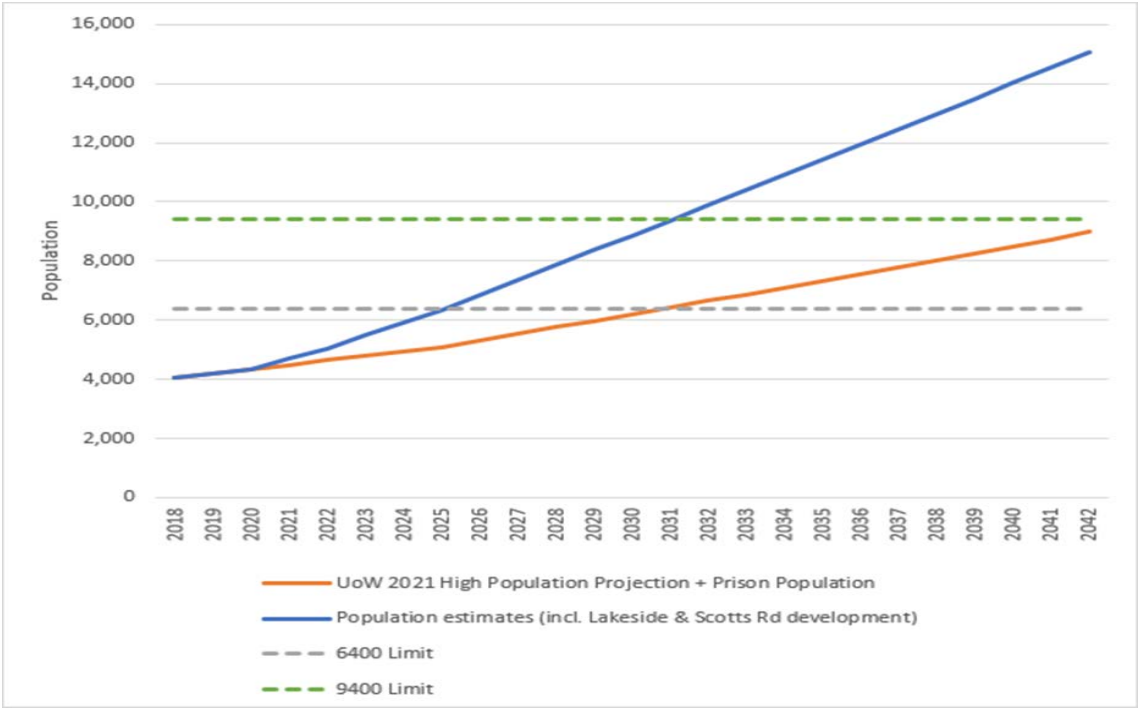
HIF Funding approval

The HIF funding provides for 2,790 lots and a WWTP capacity greater than the recommended tendered wastewater treatment plant design can provide within the funding solution available. A scope change or amended business case may be required to be submitted to MHUD to amend the HIF Funding agreement. Given the Council has already drawn down on the HIF funding, Council staff will need to engage with MBIE to determine their tolerance for change and deviation away from the original assumptions.

Assumption changes

- MBR vs MABR (noting this technology change has not impacted on the capacity of the plant)
- Timing changes due to establishment of Watercare contract, covid, sale of land to Kainga Ora
- Double-bunking of the prison taking up capacity
- P69 basis vs P95 due to timeliness required for DBC (plus cost)

Council has tested the timing assumptions of population and development schedules to understand if this upgrade proceeds when the new WWTP may have to be upgraded again.



The focus is the blue line which is an estimate of the growth of Te Kauwhata where land capacity release has been higher than the household projection. The orange line is the University of Waikato 2018 (high) projection plus the Springhill prison population.

Initial indications are that this upgrade will reach capacity somewhere between 2025 and 2031.

Should Council elect to proceed with building the MABR/MBR WWTP, Council will need to seek approval for the reduction in scope as part of the HIF Funding agreement.

If MHUD decline an application to amend the detailed business case, Council may be put in a position to refund the drawdowns received so far and fund the WWTP upgrade using its own debt facilities.

Given the agreement by all parties to utilise price certainty at P69 and the unanticipated impact of Covid19 on supply chain logistics and cost of materials, Council believe there may be some sympathy by MHUD for Councils position.

Agreements and Development Contributions

Development Principles (high level) is based on the key principles that:

1. growth is to fund growth; and

2. growth does not financially contribute to any backlog Level of Service (e.g. compliance issues) or Renewal costs. This is funded by ratepayers receiving the service.

Existing Development Agreements have been negotiated based on the original growth projections.

If Council is required to upgrade the MABR/MBR WWTP again soon (within ten years) the costs will need to be provided for by future developers. Development contributions set within existing Development Agreements are difficult to amend at a later stage. The Lakeside Development Agreement does not include the ability to reprice.

The impacts on revenue (development contributions) from the agreement are reflected in the Financial Case. The HIF fund is intended to support growth infrastructure in the first instance and be repaid from developer contributions. These are generally paid upon the issue of title. The Development Contributions in Te Kauwhata are currently $58,138 of which $47,326 are related to three waters ($31,126 for water and $16,200 for wastewater).

Should Council be required to fund an additional upgrade to the MABR/MBR WWTP to increase capacity to match future population, the Development Contributions model for the Te Kauwhata area will need to be amended.

5.1 Options
Ngaa koowhiringa

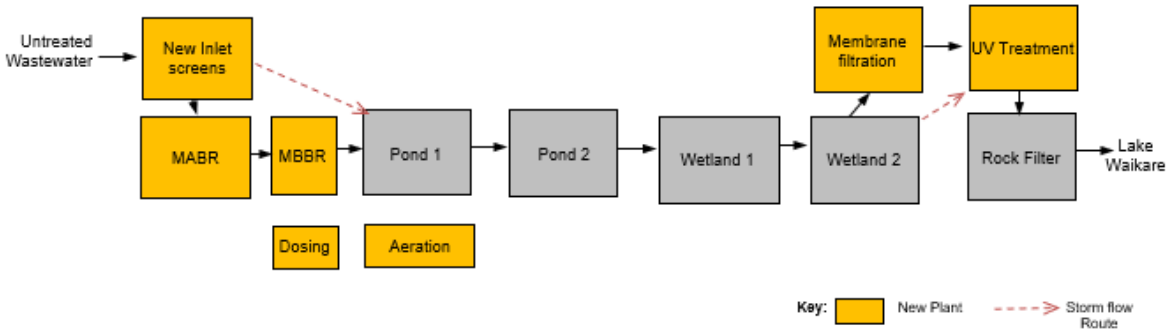
Staff have concluded that there are two reasonable and viable options for the Water Governance Board to consider. This assessment reflects the level of significance (see paragraph 6.1), to meet compliance obligations, to honour Developer Agreement contractual obligations around timing, to ensure we maintain Iwi/Hapu relationships, to enable the growth aspirations of the area to continue and supporting community wellbeing.

Do nothing and reconsider has not been proposed due to the reputational risk to Council. The potential impact this position would have on the relationship with key Stakeholders such as WRC, IWI/Hapu and the Development Community could be widespread and far reaching.

Option 1 - MABR biofilm:

The installation of an MABR biofilm with membrane filtration (MF).

The main MABR biofilm with membrane filtration (MF) process areas are indicated below.



The MABR Biofilm process delivers:

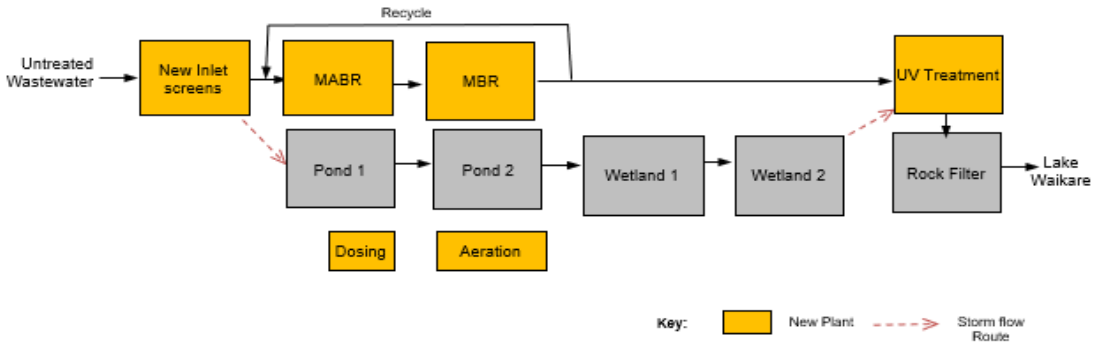
Process Performance	MABR Biofilm
Population	***4580***
MABR + MBBR	
Average dry weather flow	***1100 m3/d (12.7 L/s)***
Peak hydraulic capacity	***5200 m3/d (60 L/s)***
Membrane Filtration	
Average dry weather flow	***1100 m3/d (12.7 L/s)***
Peak hydraulic capacity	***1500 m3/d (17.4 L/s) ****

*** Membrane Filtration sets the maximum flow of 1100 m3/d (12.7 L/s) of full treatment.**

Continued use of the existing oxidation ponds and wetlands for the primary treated flow represents a risk to the final effluent quality. Both are retaining high biosolids levels and a refresh is due, which is an action coupled to the biosolids strategy, a separate project.

Option 2 - MABR/MBR:

An MABR system treating secondary effluent is common and proven. A close-coupled MABR/MBR operates conventionally, and the MBR replaces the MBBR and MF. The main process areas are indicated below.



The MABR/MBR offers improved performance, reduced process risk, and simplified operation.

The MABR/MBR process delivers:

Process Performance	MABR/MBR Single Lane	MABR/MBR Dual Lane
Population	**4580**	**6400**
Average dry weather flow	*1100 m^3/d (12.7 L/s)*	*1500 m^3/d (17.4 L/s)*
Peak hydraulic capacity	*2600 m^3/d (30 L/s)*	***5200 m^3/d (60 L/s)***

Additionally, the supplier of option two technology has provided both a process guarantee and a value-add solution.

The supplier would provide Council with additional temporary treatment via containerised Ultra Filtration (UF) treatment plant. The benefit of installing a temporary UF treatment plant during the construction phase of the MABR/MBR will provide certainty on meeting compliance outcomes prior to completion of the plant and within the agreed timeframe set by WRC.

The construction period is expected to end September 2023 and WRC has set a December 2022 deadline for compliance. The addition of a containerised UF plant during the construction of the MABR/MBR WWTP will enable treated wastewater to be within discharge charge consent limits enabling compliance whilst the permanent plant is being built.

Staff recommend option 2, the dual lane MABR/MB. The option provides greatest wastewater treatment capacity and considers the need for future upgrades without the need to disrupt the treatment process whilst those upgrade works are being completed. This option provides council with a belts and braces approach whilst minimising the impacts on compliance, environment, and operations during future upgrade disruption.

The recommended solution delivers discharge consent compliance, capacity, operational flexibility, improved storm performance, and reduced compliance risk during wet weather events. Additionally, a dual-lane system can utilise the existing ponds during storm events and is expandable by adding more lanes, which provides for future growth and plant expansion. This is an important consideration especially considering both WWTP options cannot provide for the planned future 2,048 population of 7,489.

5.2 Financial considerations
Whaiwhakaaro puutea

In June 2021, the Waters Governance Board approved $11.54 million for the WWTP upgrade interim MABR including significant enabling works and in November 2021, $4.90 million to enable installation of an ultrafiltration process unit to allow the plant to continue lawful operation and discharges under the WRC statutory frameworks with respect to total suspended solids. Combined this makes up $16.4 million already approved under the overall capital programme. In addition, a further $1.04 million funding was secured under the three waters stimulus funding grant for ultraviolet disinfection that has been installed and commissioned.

The proposal to build the MABR/MBR WWTP can be delivered within the existing budget allocation, although the plant cannot meet the entire treatment capacity of the HIF Agreement in terms of megalitres treated. Agreement to amend scope will need to be agreed to by Ministry of Housing and Urban Development.

The assumptions provided for in the business case are currently being analysed compared to the tendered outcomes. A verbal overview will be provided by Watercare at the WGB meeting to enable cost comparison against pricing assumptions to be fully understood.

5.3 Legal considerations
Whaiwhakaaro-aa-ture

Staff confirm that the proposal complies with the Council's legal and policy requirements.

5.4 Strategy and policy considerations
Whaiwhakaaro whakamaaherehere kaupapa here

The staff recommendation is consistent within the Long-Term Plan (LTP) but only in terms of plant value. Whilst the staff recommendation is to continue with the WWTP upgrade, Council will be required to provide additional funding in the next LTP to increase capacity should development programmes exceed projected timelines. To stay compliant within the discharge consent as growth and lot uptake occurs, a third treatment lane can be added to accommodate the expected population used in the DBC.

5.5 Maaori and cultural considerations
Whaiwhakaaro Maaori me oona tikanga

Lake Waikare and Whangamarino wetland have multiple important values (cultural, ecological, recreational, and economic) and interests to a variety of stakeholders. Local hapū describe them as the lungs and kidneys of the lower Waikato River. Whangamarino wetland supports significant populations of rare native animals and plants and is recognised as a wetland of international significance under the RAMSAR Convention. RAMSAR is the only international convention on an ecosystem type and formally recognises the value of wetland sites around the world. New Zealand has six RAMSAR sites, including the Whangamarino wetland.

5.6 Climate response and resilience considerations
Whaiwhakaaro-aa-taiao

The decisions sought by, and matters covered in, this report are consistent with the Council's Climate Response and Resilience Policy and Climate Action Plan.

Lake Waikare also provides habitat for a range of native animals. A wide range of stakeholders have expressed their concerns about poor lake water quality and the impact of increasing sediment and nutrient loads to the lake and wetland.

Therefore, it is critical that in addressing the growth and infrastructure related issues in Te Kauwhata, due importance is given to the lake and wetland discharge.

5.7 Risks
Tuuraru

This project carries significant Reputational Risk.

WRC have issued Council with an abatement notice but have elected not to take punitive action based on commitments made and Council's demonstration that it will resolve the issue.

Council has provided confidence to WRC in its past actions. Meremere WWTP upgrade delivered significant improvement in respect to Te Ture Whaimana and a compliant wastewater discharge.

Te Kauwhata WWTP is the next significant milestone where we are committed to provide a compliant treat effluent discharge by December 2022. As part of the upgrade considerations, we have a temporary solution proposed that will deliver compliant Treated wastewater effluent whilst the upgraded plant is constructed and commissioned by September 2023. Failure to deliver a compliant treated effluent discharge by December 2022 will place the WRC in a difficult position. Council is likely to face punitive action including fines. Should WRC's relationship with Council become more tenuous, this could hinder bringing forward the Huntly WWTP upgrade to support Ohinewai.

Our relationship with Iwi Hapu is also dependant on the outcome of the Te Kauwhata WWTP upgrade. Council has made significant undertakings to ensure we provide for the betterment of the lake and a commitment to cease discharging into the lake. Failure of Council to meet undertakings with Iwi will also cause tensions to rise and will not assist with future engagement with Iwi is respect to the Ngaruawahia WWTP and the Huntly WWTP. Mana Whenua are signalling to Council that the Te Kauwhata wastewater treatment plant and the Huntly Wastewater treatment plant discharges are one in the same, given that Nga Muka, Waahi Whaanui & Te Riu interests are impacted by both plants.

Council has committed through Development Agreements that additional capacity to the WWTP will be provided. This capacity enables sections to be released and the developer's schedule to be completed. Failure to provide capacity may cause developers to become litigious or ask Council to meet additional costs.

Compliance risk with discharge consent is low on the basis that the proposed WWTP upgrade will provide discharge consent compliance, however as Te Kauwhata property uptake occurs and population increases with housing development, the closer we will get to the plants' treatment capacity. The closer we get to the plants' treatment capacity, the closer we will get to the maximum discharge consent treatment parameters the plant is capable of complying with. An additional upgrade will be required in future years (probably between 2025 and 2031) to accommodate the growth should the MABR/MBR treatment plant capacity be fully utilised. Significance and engagement assessment Aromatawai paahekoheko

5.8 Significance

Te Hiranga

The decisions and matters of this report are assessed as of low significance, in accordance with the Council's Significance and Engagement Policy.

5.9 Engagement
Te Whakatuutakitaki

Highest level of engagement	Inform ✓	Consult ✓	Involve ✓	Collaborate ✓	Empower ☐
Tick the appropriate box/boxes and specify what it involves by providing a brief explanation of the tools which will be used to engage (refer to the project engagement plan if applicable).	*Significant engagement has been undertaken with Nga Muka previously, indirectly through the TKWCG of which Nga Muka is a member and directly with Nga Muka. Keith Martin, Waters Manager has meet with Nga Muka Development Trust along with Stephen Howard and the Waters Governance Board is planning to meet with interested IWI/Hapu alongside Nga Muka in August. The WGB meeting with Iwi/Hapu will include a site visit to both TK WWTP and to the new Meremere WWTP.* *During the engagements, Nga Muka as mana whenua of Lake Waikare raised concerns in respect to the water quality impact on the lake. Historical context and issues Nga Muka have not had resolved are;* *1. Nga Muka marae opposed the wastewater from the Springhill Prison being pumped to the Te Kauwhata wastewater treatment plant.* *2. That corner of Te Kauwhata has been subjected to multiple insults with a legacy landfill site, wastewater treatment plant, adjacent industrial site and a legacy Maori housing estate.* *3. That no objections were raised when the Corrections department subsequently instituted double bunking which combined with the residential development in Te Kauwhata added significant volume of wastewater resulting in the predicted non compliance of the treatment plant in its discharge to Lake Waikare.* *4. Nga Muka engagement on the Te Kauwhata wastewater plant monitoring including compliance breaches was via the Te Kauwhata wastewater treatment consultation group TWWCG. Nga Muka finds it interesting that some members of the TWWCG made up of the co-appellants to the Springhill Prison inclusion to the aged Te Kauwhata wastewater treatment plant and the noncompliance status since 2013.* *5. That engagement went silent between 2018 to 2020.* *6. During that silent period Waikato Tainui tribal authority worked with COUNCIL to (a) secure a wastewater management contract with Watercare and (b) establish the Water Governance Board (WGB).* *7. Nga Muka and Matahuru Marae lodged a complaint about the exclusion in those decisions directly in a meeting with the WGB in 2020 to convey our concerns and were promised transparency in future engagement.*				

State below which external stakeholders have been or will be engaged with:

Planned	In Progress	Complete	
☐	☐	✓	Internal
☐	✓	☐	Community Boards/Community Committees
☐	✓	☐	Waikato-Tainui/Local iwi and hapuu
☐	✓	☐	Affected Communities
☐	☐	☐	Affected Businesses
☐	✓	☐	Other :Lakeside Development

6. Next steps
Ahu whakamua

Upon the Water Governance Board approval of the recommendations, the next steps will be:

1. Council staff to seek HIF scope change approval from MHUD
2. In parallel to the above action, a report will be provided to Council for approval based upon WGB recommendations
3. Watercare to Award WWTP contract upon Council Approval and HIF scope change approval

7. Confirmation of statutory compliance
Te Whakatuuturutanga aa-ture

As required by the Local Government Act 2002, staff confirm the following:

The report fits with Council's role and Water Governance Board Terms of Reference and Delegations. *Refer to the Governance Structure*	Recommendation to Council required
The report contains sufficient information about all reasonably practicable options identified and assessed in terms of their advantages and disadvantages (*Section 5.1)*.	Confirmed

Staff assessment of the level of significance of the issues in the report after consideration of the Council's Significance and Engagement Policy (*Section 6.1)*.	Low
The report contains adequate consideration of the views and preferences of affected and interested persons taking account of any proposed or previous community engagement and assessed level of significance (*Section 6.2)*.	Confirmed
The report considers impact on Maaori (*Section 5.5*)	Confirmed
The report and recommendations are consistent with Council's plans and policies (*Section 5.4)*.	Confirmed
The report and recommendations comply with Council's legal duties and responsibilities (*Section 5.3)*.	Confirmed

8. Attachments
Ngaa taapirihanga

Attachment 1 –Detailed Business Case April 2018 (Public Document)

Attachment 2 – Watercare- Te Kauwhata WWTP - Contract Approval and Change request V2

Attachment 3 – Appendix F- 3.0 HIF concept design report- Onsite - MBR option Concept Design- Beca

Te Kauwhata Consolidated Detailed Business Case

Housing Infrastructure Fund

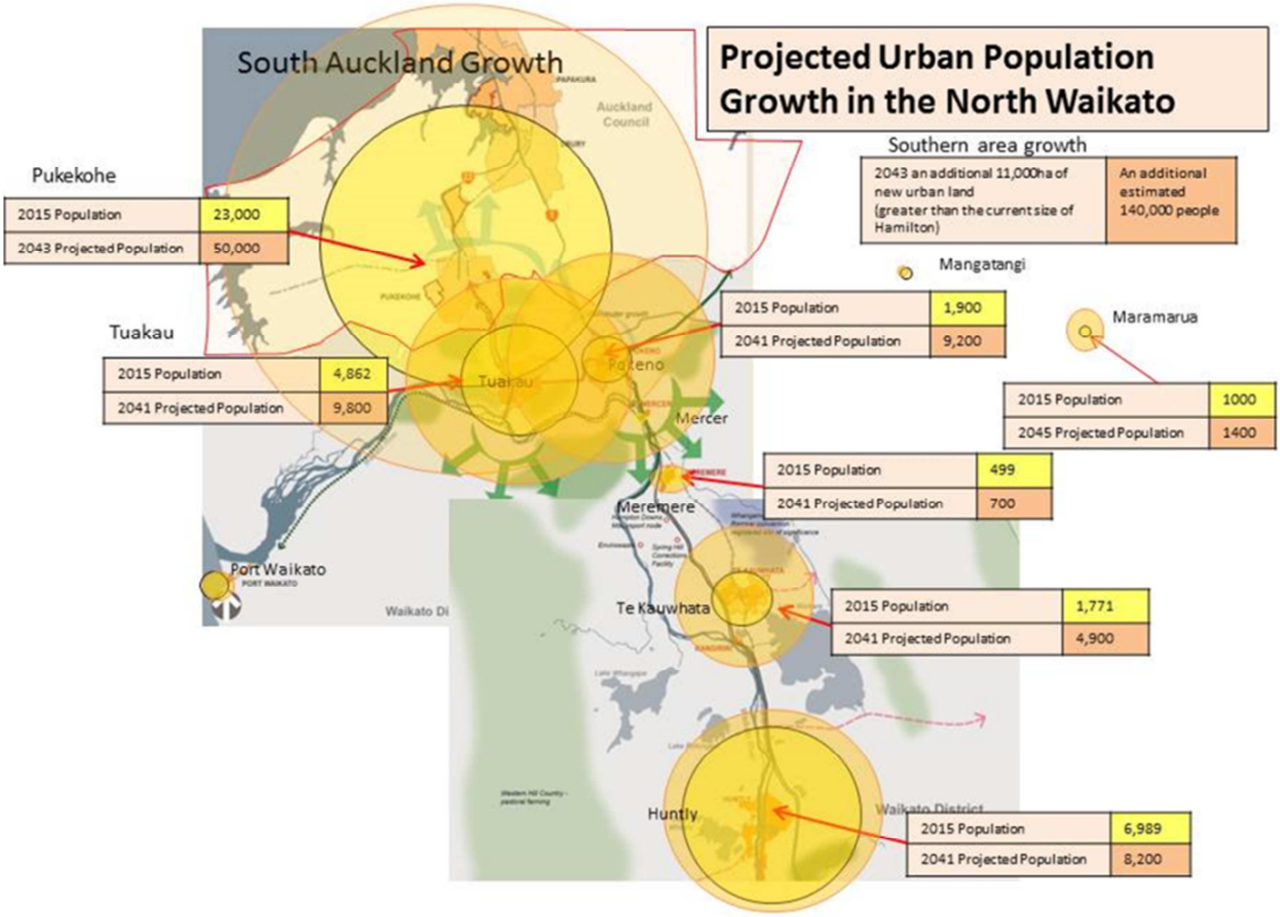
April 2018

Waikato DISTRICT COUNCIL
Te Kaunihera aa Takiwaa o Waikato

EXECUTIVE SUMMARY

This business case proposes accelerated infrastructure development in Te Kauwhata to enable the construction of more houses sooner.

The rate of supply and challenges that New Zealand councils face in funding and providing infrastructure to meet growth challenges has resulted in the establishment of the $1 billion Housing Infrastructure Fund (HIF) which is managed and maintained by the Ministry of Business Innovation and Employment (MBIE). This is interest free funding for up to ten years to build the infrastructure required to support development designed to ease the current housing crisis in major centres in New Zealand.



Te Kauwhata is part of an urban conurbation together with Pokeno, Tuakau, Pukekohe and Manukau. This north Waikato / south Auckland sub region is recognised and supported by regional stakeholders as a growth area in its own right and has emerged due to the functional social and economic linkages that exist between these towns, significantly supported by existing transport infrastructure.

However, the sub-region faces two major challenges to support future growth:

- Lack of housing availability and lack of affordable housing in the north Waikato and wider Auckland region; and
- Current local government funding and revenue risk limit the programme for infrastructure upgrades which can bring forward provisions and infrastructure for new housing.

The challenges above are compounded due to the following issues:

- The population of Te Kauwhata is projected to grow from 1,770 in 2016 to 10,898 by 2045. Te Kauwhata cannot provide for further development in support of proposed growth without addressing significant infrastructure constraints in **wastewater, water supply, and roading.**
- There is very limited capacity in Te Kauwhata's reticulated water treatment plant and its wastewater treatment plant to serve any residential development beyond that which is planned for through the Te Kauwhata Structure Plan. There is also an urgent need to maintain and upgrade the existing wastewater treatment plant to accommodate the first three years of growth while the new wastewater treatment solution is confirmed and constructed.
- Waikato District Council has increasing costs and environmental hurdles associated with growth in Te Kauwhata. Of utmost importance are the significant constraints of discharging treated wastewater in the neighbouring Lake Waikare and Whangamarino wetland.

Lake Waikare and Whangamarino wetland have multiple important values (cultural, ecological, recreational and economic) and interests to a variety of stakeholders. Local hapū describe them as the lungs and kidneys of the lower Waikato River. Whangamarino wetland supports significant populations of rare native animals and plants, and is recognised as a wetland of international significance under the RAMSAR Convention. Ramsar is the only international convention on an ecosystem type and formally recognises the value of wetland sites around the world. New Zealand has six Ramsar sites, including the Whangamarino wetland in Te Kauwhata .

EXECUTIVE SUMMARY

Lake Waikare also provides habitat for a range of native animals. A wide range of stakeholders have expressed their concerns about poor lake water quality and the impact of increasing sediment and nutrient loads to the lake and wetland.

Therefore, it is critical that in addressing the growth and infrastructure related issues in Te Kauwhata, due importance is given to the lake and wetland discharge.

In the indicative business case phase, Council has been successful in bidding for $37 million from the $1 billion Housing Infrastructure Fund. Council's bid was predicated on supporting growth in Te Kauwhata which will bring about 2790 residential units on stream (subject to private plan change outcomes) over ten years from initiation. HIF funding is to be provided to support Te Kauwhata's development through waste water solutions, water supply and storage, and roading investment support. This business case requests additional contingency to bring the requested HIF funding to $38 million. Total HIF programme costs amount to estimated $72 million. Additional funding will come from the 2018 Long Term Plan.

WDC has prepared a Detailed Business Case (DBC) for accessing funding from HIF. The DBC has followed the Treasury Better Business case Model. The project is governed by a Steering Group (including the representatives from Ministry of Business, Innovation and Employment (MBIE) and NZ Transport Agency (NZTA)), supported by a Project Team and Project Control group.

The project has been divided into two phases:

- Phase 1: Concept/Preliminary Design and costing to inform the DBC and match the DBC deadline (to Better Business Case standards) and Calculation of Developer Contributions
- Phase 2: Detail Design (tender ready documents), with a proviso to have early contractors' involvement

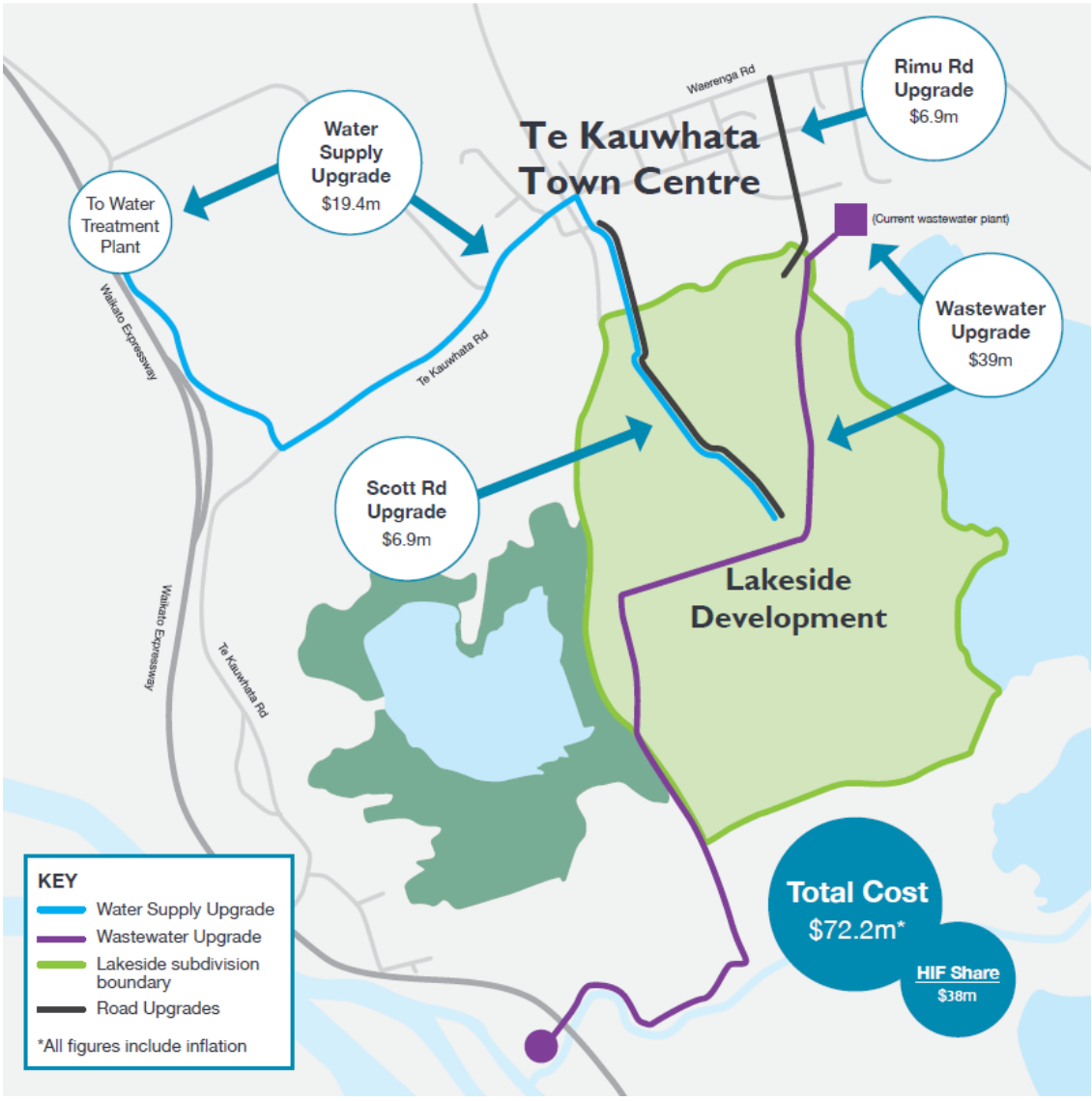
Through Phase 1, options for a wastewater solution, water supply and upgrading of roading infrastructure have been identified. The DBC utilises findings from Phase 1 to recommend funding for preferred options in providing solutions for wastewater, water supply and storage, and roading. Due to complex Lake Waikare discharge constraints, the wastewater solution options were also put through a 'consentability and affordability lens' as part of the rigorous Multi Criteria Analysis to finalise the preferred option.

Two wastewater treatment technology options, Membrane Bioreactor (MBR) and conventional Biological Nutrient Removal (BNR) with clarifiers, were assessed and both considered anticipated increased future consent requirements for discharges – especially given the precedence set by the Watercare discharge consent outcomes (using MBR). MBR was preferred over BNR due to better effluent quality output, smaller footprint and potentially smaller ground improvement costs, and importantly the higher likelihood of obtaining consent for the preferred option. The MBR was taken forward to complete the concept design.

The proposed infrastructure projects comply with the HIF assessment criteria, and propose to deliver the following infrastructure improvements:

- **Wastewater:** Construction of an on-site wastewater treatment plant (MBR) in Te Kauwhata discharging via a 5.3km rising main to a suitable land contact point near SH1 and Waikato River. (cost: $39,000,000)
- **Reticulated water:** Construct a new reticulated water treatment plant and pump station and new reservoirs. Upgrade or build main trunk reticulation (water conveyance) infrastructure (cost: $19,400,000).
- **Transport:** Upgrades to Scott Road, Rimu Road, and the Waerenga Road-Rimu Road intersection and pedestrian / cyclist improvements in Te Kauwhata. This includes planning the design of Te Kauwhata Road to improve frontage development and walking / cycling connectivity (cost $13,800,000). For reasons associated with the funding structures of the HIF, WDC have excluded the preferred transport option from the HIF funding application, and funded through mechanisms outside of HIF.

(Note: All costs include inflation)



EXECUTIVE SUMMARY

The requested HIF funding will provide the following benefits:

- Bring forward the construction of 1,190 houses by 3 to 5 years than scheduled in the WDC Long Term Plan. These 1,190 dwellings are already planned within the Te Kauwhata Structure Plan, however the infrastructure upgrades outlined in this DBC will allow for these dwellings to be delivered earlier.
- Facilitate an additional 1,600 households within the Lakeside Development proposed by Winton Partners. This development is not currently programmed and will be facilitated by infrastructure funding under the HIF. Lakeside Development is subject to a successful Plan Change to the Waikato District Plan. Decisions are due April 2018, with an appeal period to follow.
- Provide a proportion of housing that will be more affordable given the differential in market conditions when compared to the south Auckland / north Waikato conurbation growth cell.
- The HIF investment into a wastewater infrastructure solution in Te Kauwhata enables us to remove all of the existing wastewater, and reduce other pollutants that are going into Lake Waikare and the Whangamarino wetland.
- Over the long term, the proposed conversion from dairy farm to residential dwellings by the Lakeside Development will provide a reduction in nutrient loads to Lake Waikare and downstream-receiving environments, supporting the concept of "betterment" used to assess effects. This is because the main sources of nutrients (urine spotting and fertiliser) are removed by ceasing dairy farming. The resulting improved lake water quality is consistent with the National Policy Statement for Freshwater Management.
- The concept of "betterment" will also be achieved during the development stage. The proviso to this is that there is a reduction in sediment and nutrient leaching during development than there is from the current dairy farm. This will be achieved with appropriate Waikato Regional and District Council guidelines in place to mitigate erosion.
- The proposed preferred wastewater solution for the Lakeside Development (Membrane Bioreactor, MBR wastewater system) will provide a reduction in all contaminant loads and/or concentrations (nutrients, sediment, metal and organic toxicants, microbial pathogens) compared with the current Te Kauwhata wastewater treatment plant.

Houses Constructed without HIF	Houses Constructed with HIF
The housing development outlined within the Te Kauwhata Structure Plan will continue at the original timeframes: • **283** constructed between **2020-2022** • **169** constructed between **2021-2024** • **738** constructed between **2022-2029**	The housing development outlined within the Te Kauwhata Structure Plan will continue under an earlier timeframe and the development of an additional 1600 households under Lakeside Development (2,790 households total). • **283** constructed between **2017-2020** • **169** constructed between **2018-2022** • **738** constructed between **2019-2027** • **1600** constructed between **2018-2027**

Economic Case

The economic case indicates that the replacement and upgrade of the three infrastructure projects will realise both project-specific benefits and wider economic benefits which over a 40-year analysis period, assuming a 6% discount rate, exceed the net present costs of the project. This is true even when certain sensitives are considered around variable discount rates, capital costs and occupancy uptake.

The net increase in expenditure as a result of the project over the 40 year period is $1105 M, which generates an additional 314 jobs during the construction phase, and 123 jobs within retail and business in Te Kauwhata.

If the Lakeside Development progresses, but does not start construction until 2025 and takes significantly longer construction timeframes, the benefits reduce. But it should still be noted that the early provision of the households will generate significantly more regional income sooner allowing the region to develop, grow and expand as a prominent regional community with affordable housing.

The construction of an additional 1600 households, along with the increase in population within the region will lead to an increase in retail and commercial expenditure, which in turn improves both employment and income. The economic model therefore considers both project specific benefits and wider economic benefits.

The results of an Economic Cost Benefit Analysis (at 6% discount rate) suggest the project specific benefits alone are greater than the total infrastructure costs, giving a Net Present Value of $28.8 M and Benefit Cost Ratio of 1.74.

For more details on the Economic Case, please go to Appendix 1.

Financial Case

WDC are requesting a HIF loan totalling $38 million over 10 years. This portion would align directly with the growth related costs of the infrastructure and would reduce the water and wastewater development contribution levies to $8,473 per lot.

This Developer Contribution income would be used to repay the HIF loan as the projects and development progresses.

The total infrastructure programme for Te Kauwhata is $72.2 million, with the HIF loan benefits passed on via interest-free development contribution levies. This ensures government investment is focused on the overall objective of bringing more houses to market sooner.

Project construction cost estimates have been completed using risk based 69 percentile (P69) expected costs in 2018 dollars and include contingencies for known or unknown risks that are likely to occur during implementation.

EXECUTIVE SUMMARY

Construction spend is front loaded with water and wastewater infrastructure planned for completion by the end of year 3 (noting that the actual financial years may differ to that in the LTP dependant on wastewater discharge consent timing and private plan change outcomes).

With a mix of replacement and improvements to existing network infrastructure a moderate decrease in overall maintenance and operational costs is expected as such this should not be a major consideration in the acceptance of the business case.

The HIF interest-free loan is expected to reduce interest costs by approximately $18 million over the ten year period.

Council will repay the HIF loan via development contributions and maintain infrastructure through rates generated from the housing provided by the Lakeside and other Te Kauwhata structure plan development and where required district wide rating growth.

The majority of the capital expenditure is programmed in the first three/four years of the LTP, with HIF loan drawdowns taken over the first four years.

HIF loans will be recognised at present value on the balance sheet on day one, with the present value discount recognised as non-operating income which will effectively be released across the life of the loan. This is the agreed approach from the HIF accounting working party.

For more details on the Financial Case, please go to Appendix 2.

<table>
<tr><th colspan="3">HIF Te Kauwhata Funding</th></tr>
<tr><th>Project:</th><th>Total Cost</th><th>Costs sought from HIF</th></tr>
<tr><td>Wastewater Treatment MBR plant in Te Kauwhata</td><td rowspan="2">$39.1 million</td><td rowspan="2">$21.5 million</td></tr>
<tr><td>Wastewater pump station and conveyance Te Kauwhata with discharge to land / river</td></tr>
<tr><td>Water treatment plant upgrade & reservoirs</td><td>$19.3 million</td><td>$16.5 million</td></tr>
<tr><td>Local road infrastructure upgrades</td><td>$13.8 million</td><td>No application</td></tr>
<tr><td>Total cost</td><td>$72.2 million</td><td>$38 million</td></tr>
</table>

Note: Costs include inflation

Commercial Case

The financial case confirms that the proposed projects are commercially viable for council and that the associated debt funding arrangements are appropriate (within suitable council debt headroom), and that technical accounting issues can be managed.

The proposed consenting and procurement strategy proposed are appropriate to engage with stakeholders and the market respectively.

WDC has a robust implementation strategy to facilitate development, enabled by HIF funding. WDC has developed a detailed construction and phasing sequence that provides for early delivery of stage one development and then enable the longer term role out of stages and infrastructure across Te Kauwhata.

Early delivery of stage one of the Lakeside Development will be possible with the advancement of interim works on the existing wastewater plant to provide the necessary capacity to service the initial 400 lots of stage one of Lakeside development.

WDC's preferred approach to procurement is to use the Waikato Local Authority Shared Services (LASS) Professional Services Panel (PSP) to select engineering design consultants to develop the detailed design and construction drawings for the roading, water and wastewater infrastructure.

The infrastructure necessary to enable to 2,790 new dwellings in Te Kauwhata will be designed and constructed over approximately 4 years from funding approval.

WDC's procurement processes and guidelines provide guidance on how to ensure that goods or services are delivered on time, at the agreed cost and to the specified requirements and that the service is being delivered as agreed, to the required level of performance and quality.

For more details on the Commercial Case go to Appendix 3.

Management Case

The management case confirms that the programme is deliverable within the proposed timeframes, and to the required quality standards.

It established that WDC has the ability and frameworks in place to effectively manage governance, risk management, communications and stakeholder management, benefits realisation and quality assurance.

A four-tiered governance structure has been developed to support quick decision making and provide robust management and governance of the infrastructure projects in line with WDC's established project management quality system.

Key implementation risks have been identified, evaluated and recorded in accordance with WDC's risk management policy and framework. WDC has an appropriate and effective risk management

process in place to manage the financial and commercial, project and technical risks associated with the programme.

Given the scale and complexity of the projects being procured, this will be managed using WDC's large scale procurement policy standards.

Stakeholders have been identified on programme and project-specific levels, noting the differing interest areas and level of engagement necessary to reach agreement on key decisions or alignment on key points.

Project	Est. Construction Start Date	Est. Construction Finish Date
Interim capacity improvements to Wastewater Treatment plant (for stage one 400 lots)	Q4 2018	Q2 2019
Wastewater - Treatment	Q2 2019	Q4 2021
Roading Works	Q3 2019	Q4 2020
Potable Water - Conveyance	Q2 2020	Q4 2021
Potable Water - Treatment	Q3 2020	Q4 2021
Wastewater - Conveyance	Q3 2020	Q1 2022

For more details on the Management Case go to Appendix 4.

Why Te Kauwhata?

The **North Waikato Integrated Growth Management Programme Business Case** (NWPBC) has been undertaken in conjunction with the New Zealand Transport Agency (NZ Transport Agency), Waikato District Council (WDC), Waikato Regional Council, Auckland Transport, Auckland Council and Hamilton City Council to identify the long term (30-year) land use patterns and respective infrastructure requirements to meet the needs of the community. The NWPBC outlined the final settlement pattern for the Waikato, Hamilton and Waipa Districts, to meet the strategic planning requirements of the National Policy Statement on Urban Development (NPS-UDC), and informs this DBC.

- Te Kauwhata has been identified within the NWPBC as a prioritised township identified for growth and is anticipated to require at least another 2,889 dwellings within a 10-year timeframe.
- The NWPBC identifies and confirms Te Kauwhata's potential to accommodate a share of the anticipated regional residential growth, however;
- Te Kauwhata cannot provide for identified growth and further development without addressing the infrastructure constraints outlined in this case AND advancing the identified preferred projects (previously outside the Long Term Plan (LTP) period) for delivery in the next 10-year period.

In order to address these issues and help manage growth in the sub-region through integrated land use and infrastructure planning, FutureProof was created.

FutureProof is a 50-year growth management strategy and implementation partnership between WDC, Hamilton City Council, Waipa District Council and the Waikato Regional Council. The NZ Transport Agency and Tangata Whenua are key stakeholders.

Significant growth pressures are being placed on north Waikato which the FutureProof Strategy seeks to address by encouraging development in targeted towns that can be efficiently serviced by infrastructure.

- Future Proof recognises the strong inter-relationship between north Waikato and Auckland and growth displacement from Auckland into North Waikato. FutureProof has chosen Te Kauwhata township as a key growth node to accommodate growth and overspill from Auckland and Hamilton. Te Kauwhata is confirmed as a recognised growth cell in the current FutureProof Strategy and in the updated strategy. Future Proof anticipates Te Kauwhata will grow as a result of growth in Pokeno and will offer lower median house prices into the market.
- Future Proof confirms Te Kauwhata as a logical employment catchment for hubs in the north Waikato / south Auckland sub-region such as Huntly, Glenbrook or Drury.

BACKGROUND

Te Kauwhata is also confirmed as an identified growth area in the **Waikato Regional Policy Statement** (RPS) which implements the Future Proof Strategy settlement pattern.

- Accordingly, Te Kauwhata is likely to be allocated more growth as part of the settlement pattern update.

The government has produced the NPS-UDC which includes the requirement for territorial authorities in high-growth areas to ensure that they have sufficient land to support residential and business use to meet anticipated future demand.

Waikato District has been identified as a high growth area, and is currently working towards addressing this requirement.

- The north Waikato / south Auckland urban conurbation area had a population of 31,533 people (10,873 households) in 2015. This is expected to increase to 73,900 people (27,370 households) by 2043. This creates demand for an additional 16,497 households.
- Investing in Te Kauwhata's infrastructure brings forward the existing residential growth enabled by the Te Kauwhata Structure Plan by 3 to 5 years, helping achieve the outcomes of the NPS-UDC.
- 2,790 new dwellings are expected to be built in Te Kauwhata in the next 10 years. It is anticipated that HIF related development dwellings enabled by this proposal represent 9.4% of WDC's next 10-year requirement and an estimated 47% of the additional 20% of dwellings required by the NPS-UDC.

Challenges

The two challenges addressed in this DBC are:

1: Lack of housing availability and lack of affordable housing in the north Waikato and wider Auckland region

- It is a nationally acknowledged issue that in many of New Zealand's growing urban areas, including Auckland and Hamilton, the supply of housing has not kept up with demand.
- This has contributed to high and rapidly increasing home prices in recent years leading to housing affordability challenges.
- Waikato District is the fourth highest-growth district in the North Island, behind only the golden triangle of Auckland, Hamilton and Tauranga.
- The growth of Auckland and Hamilton, coupled with the high land and house prices in both of these cities and the comparatively lower median land and house prices within the Waikato District, are key 'push' and 'pull' factors fuelling growth in north Waikato.
- The North Waikato/ South Auckland sub-regional growth cell currently has a population of approximately 31,500 which is expected to grow to about 73,900 by 2023 and to nearly 104,500 people by 2046.

2: Current local government funding and revenue risk limit the programme for infrastructure upgrades which can bring forward provisions and infrastructure for new housing.

Te Kauwhata cannot provide for further development in support of proposed growth without addressing significant infrastructure constraints in **wastewater, water supply, and roading**.

- There is very limited capacbacity in Te Kauwhata's reticulated water treatment plant and its wastewater treatment plant to serve any residential development beyond that which is planned for through the Te Kauwhata Structure Plan.

Te Kauwhata has significant lake water discharge constraints:

- The current discharge consent (into Lake Waikare) expires in 2028, with a plan for the removal of the discharge from Lake Waikare within 15 years. The plan for removal is strongly supported by the local Te Kauwhata community.
- It is anticipated that there may be a requirement to install an alternative treated effluent disposal option.

While State Highway access in to Te Kauwhata includes a full grade separated interchange, some local roading upgrade investment is required:

- Although the local roads are currently fit for purpose the local transportation network requires improvements to deal with the forecasted additional traffic flows resulting from proposed developments.
- The new residential growth areas require upgrades to a number of roads, in particular to facilitate safe walking and cycling to the local school and township and future public transport infrastructure need to be taken into account.
- WDC is aware of the potential future provisioning for increased rail passenger services between Hamilton and Auckland and the opportunities for Te Kauwhata to redevelop a railway platform to service the township.

Waikato District Council has increasing costs and increasing environmental hurdles associated with growth:

- There is increased political, cultural, and environmental pressure on improved wastewater discharge approaches in the Waikato due to legislative changes relating to the environment and treaty settlements
- Based on previous wastewater discharge resource consents gained in the north Waikato south Auckland, a new wastewater discharge consent is likely to require extensive and long-term engagement with key stakeholders
- The cost to Council of obtaining and maintaining consents is an issue.

BACKGROUND

Alignment with HIF Objectives

In setting the investment objectives a review of the original HIF Investment criteria has been completed confirming the suitability of the project:

Criteria	Description Explanation	Summary & Reference
Geographic and high-growth urban area status	Applicant territorial authorities must be part of a high-growth urban area as described in the NPS-UDC.	Te Kauwhata is confirmed as an identified growth node within the South Auckland / North Waikato sub-regional growth cell.
New or upgraded infrastructure	Projects for which applicant territorial authorities seek HIF assistance must be for new or upgraded trunk infrastructure in the form of local and state highway roading (including public transport infrastructure), water supply, wastewater and stormwater infrastructure.	Infrastructure investments within the HIF DBC are consistent with the new or upgraded trunk infrastructure requirements.
Supports new dwellings	The infrastructure to which the proposals relate must support the building of new or additional dwellings in the short-medium term.	HIF will bring forward 1,190 houses within Te Kauwhata which will be provided 3-5 years earlier than currently scheduled in the WDC Long Term Plan. The HIF will deliver an additional 1,600 dwellings within the Lakeside Development
Capital expenditure	Funding assistance proposals can only relate to the capital cost of building or procuring infrastructure.	Capital request for $ 38,000,00 is consistent with HIF requirements

Consistent with SMART Investment Objectives

The HIF investment objectives for Te Kauwhata are:

Objective 1: To provide additional and earlier provision of households in the north Waikato urban growth nodes in a tangible manner that incorporates land use considerations

Objective 2: To provide the long term infrastructure solutions required to enable earlier and greater provision of households in the north Waikato urban growth nodes

Objective 3: To provide households in the north Waikato urban growth nodes which are affordable in comparison to the average house prices in Auckland and Hamilton

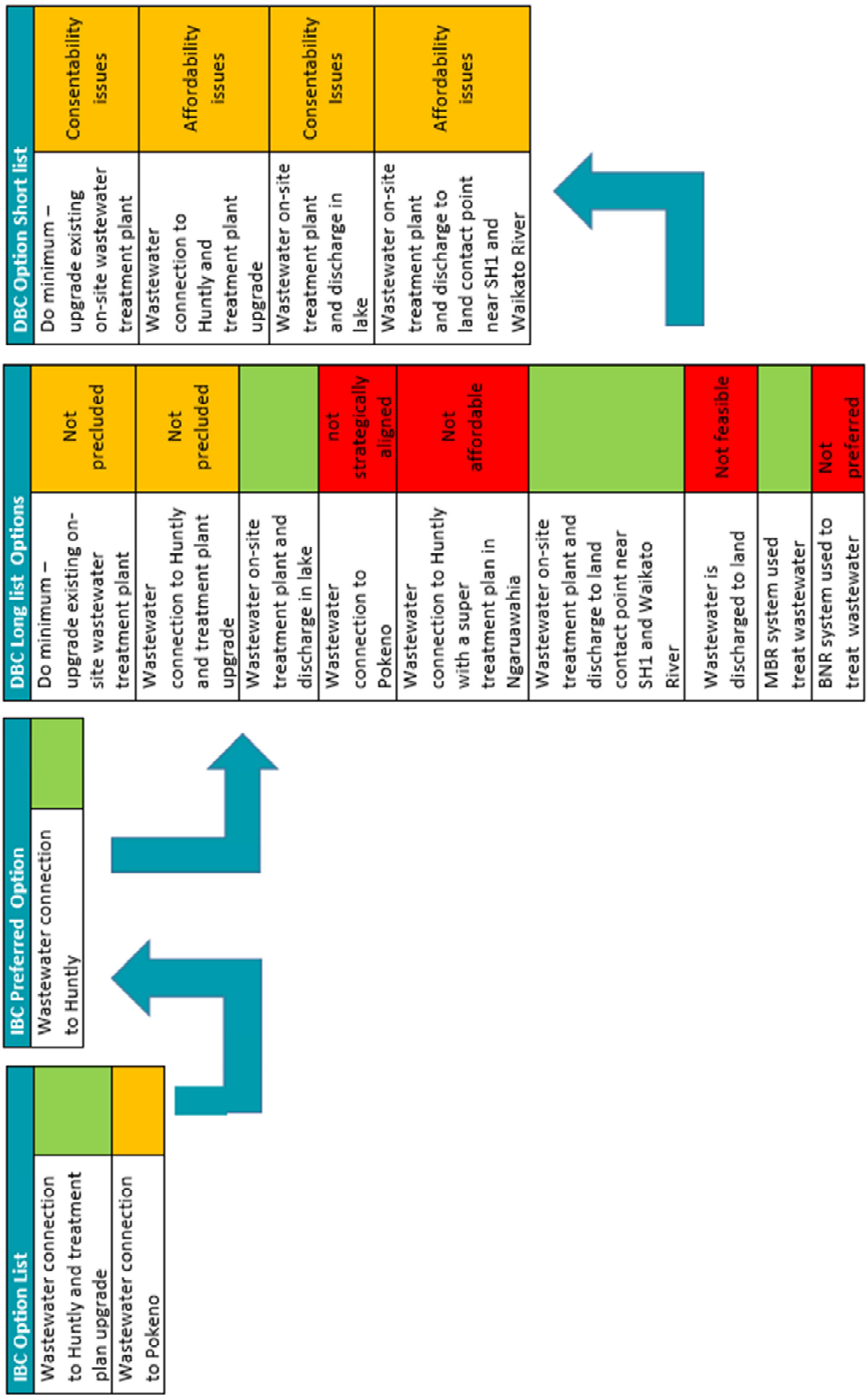
Objective 4: To support growing Te Kauwhata into a vibrant community which complements the existing township.

Governance and Review Process

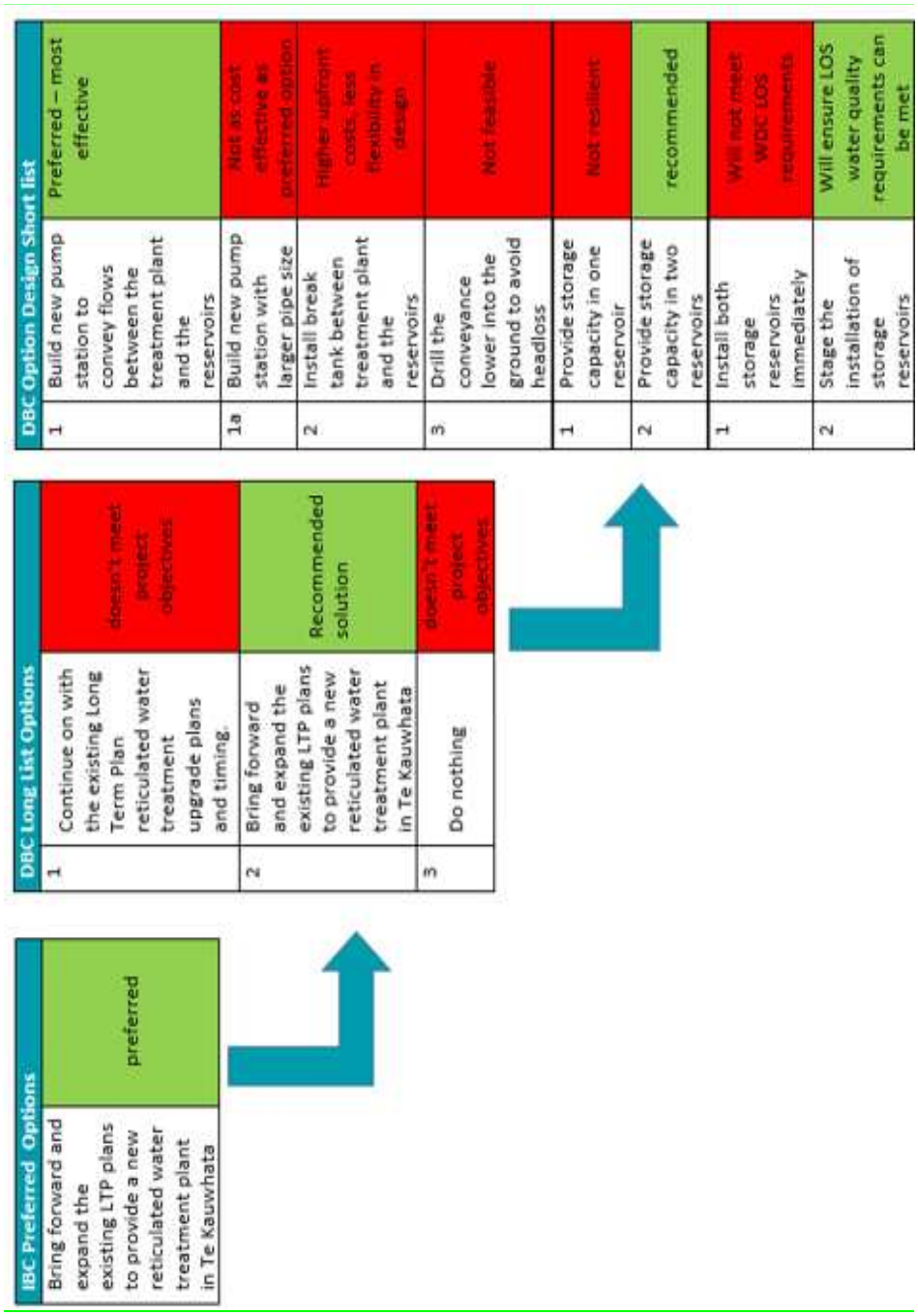
WDC has implemented its project management quality system to manage the development of the DBC and implementation of the project. Governance of the project and key decision-making is made by the Steering Group who meet monthly or as required.

The WDC Project Control Group (PCG) is responsible for project controls, outcome delivery, procurement and implementation of the Steering Group instructions. The PCG meets regularly for information and decision purposes. WDC, under its existing Local Authority Shared Services panel contracts, has procured consultants to provide design and peer review services.

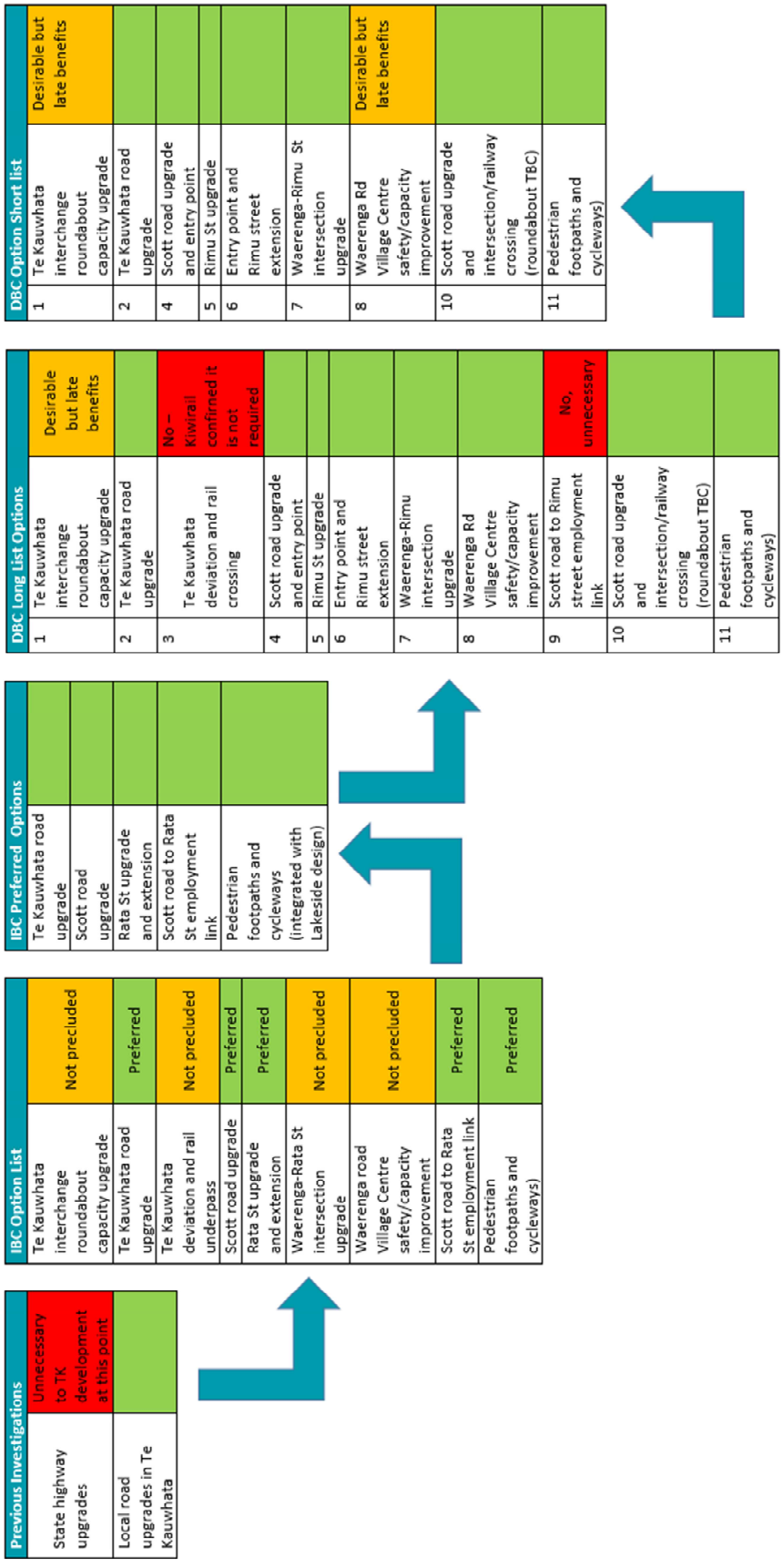
Options Considered – Waste Water:



Options Considered – reticulated water



Options Considered – Transport:



Previous Investigations	
State highway upgrades	Unnecessary to TK development at this point
Local road upgrades in Te Kauwhata	

IBC Option List	
Te Kauwhata interchange roundabout capacity upgrade	Not precluded
Te Kauwhata road upgrade	Preferred
Te Kauwhata deviation and rail underpass	Not precluded
Scott road upgrade	Preferred
Rata St upgrade and extension	Preferred
Waerenga-Rata St intersection upgrade	Not precluded
Waerenga road Village Centre safety/capacity improvement	Not precluded
Scott road to Rata St employment link	Preferred
Pedestrian footpaths and cycleways)	Preferred

IBC Preferred Options	
Te Kauwhata road upgrade	
Scott road upgrade	
Rata St upgrade and extension	
Scott road to Rata St employment link	
Pedestrian footpaths and cycleways (integrated with Lakeside design)	

DBC Long List Options		Desirable but late benefits
1	Te Kauwhata interchange roundabout capacity upgrade	
2	Te Kauwhata road upgrade	
3	Te Kauwhata deviation and rail crossing	No – Kiwirail confirmed it is not required
4	Scott road upgrade and entry point	
5	Rimu St upgrade	
6	Entry point and Rimu street extension	
7	Waerenga-Rimu intersection upgrade	
8	Waerenga Rd Village Centre safety/capacity improvement	
9	Scott road to Rimu street employment link	No, unnecessary
10	Scott road upgrade and intersection/railway crossing (roundabout TBC)	
11	Pedestrian footpaths and cycleways)	

DBC Option Short list		Desirable but late benefits
1	Te Kauwhata interchange roundabout capacity upgrade	
2	Te Kauwhata road upgrade	
4	Scott road upgrade and entry point	
5	Rimu St upgrade	
6	Entry point and Rimu street extension	
7	Waerenga-Rimu St intersection upgrade	
8	Waerenga Rd Village Centre safety/capacity improvement	Desirable but late benefits
10	Scott road upgrade and intersection/railway crossing (roundabout TBC)	
11	Pedestrian footpaths and cycleways)	

BACKGROUND

Benefits

Earlier supply of 2,790 households	•Bring forward the construction of 1,190 houses provided 3 to 5 years earlier than scheduled in the WDC LTP •Facilitate an additional 1,600 households within the Lakeside Development
Futureproofing infrastructure	•Potable water treatment, reticulation and storage upgrades •Wastewater treatment technology and capacity upgrade •The Membrane Bioreactor (MBR) will provide a reduction in all contaminant loads and/or compared with the current wastewater treatment plant •Scott and Rimu road upgrades
Affordable housing	• Provides a proportion of housing that will be more affordable given the differential in market conditions when compared to the south Auckland / north Waikato conurbation growth cell
Investment benefits aligned with NWIBC	• Provides focused growth in key towns instead of dispersed growth and development through rural sub-division •The new interchange at Te Kauwhata provides current and future residents safe and efficient access to employment opportunities available locally and in the wider sub-region, thus improving economic performance
Environmental wellbeing	• Remove all of the existing wastewater, and reduce other pollutants that are going into Lake Waikare and the Whangamarino wetland. • The proposed conversion from dairy farm to residential dwellings by Lakeside Development will provide a reduction in nutrient loads to Lake Waikare and downstream receiving environments, supporting the concept of "betterment" used to assess effects
Community wellbeing	• Facilitate a long term desire to stop wastewater discharge in to Lake Waikare, which will result in increased activity, use, and amenity value of local natural resources for the community • Provides social infrastructure such as parks and recreation, walking and cycling paths , thus providing positive outcomes for the community and programme partners

Key Risks

Risks associated with the project meeting its objectives for the proposed costs are shown below:

Risk	Description	Risk Rating	Management Approach
Private Plan Change timings	There is a risk that the Private Plan Change timings are independent from project. This could have a negative impact on the implementation project and delay realisation of benefits. If delayed more houses will not come on line sooner	Inherent: Significant Residual: Moderate	MITIGATE: Private Plan Change hearing (12-15 March 2018) is aligning with DBC dates. Commissioner's decision will follow in due course. Key risks from the hearing will be understood when the DBC is concluded.
Differing wastewater views	Developer disagreement on wastewater solution	Inherent: Significant Residual: Low	MITIGATE ACTION: Managed via the Private Plan Change process, maintain close relationship with developer and developer agreement MITIGATE ACTION: Transparency on costs associated with developer contribution have been tabled and value engineering step conducted to form greater alignment.
Cost estimating (P95) design requirement	Risk that requirement for P95 level engineering design requirement will push project delivery out due to greater amount of technical investigation required	Inherent: Significant Residual: Low	AVOIDED: Agreement reached with MBIE that P95 is not required. WDC opted to use P69. QS completed P50 and P 95 and interpolated P69 levels. Between *concept* and *developed* design conducted.
Consentability of waste water discharge to receiving environment	There is a risk that if there are delays or difficulty in getting approval for resource discharge consent for Te Kauwhata's treated waste water discharge, would delay implementation of HIF DBC projects.	Inherent: Significant Residual: High	MANAGE ACTION: Formal consenting strategy and extensive stakeholder engagement plan. Early stages of development are able to be accommodated with the upgrade of existing services until such time as new infrastructure is approved and built.

APPENDICES

Appendix 1: Economic Case

Economic Summary

The degraded water and wastewater infrastructure which are currently servicing Te Kauwhata are struggling to meet the growing demand within Te Kauwhata. The construction and upgrade of these facilities along with the upgrade and construction of the access roads, will not only meet the existing capacity constraints in the town, but will also provide the required infrastructure for the additional Lakeside development.

Without the infrastructure the Lakeside development will either not proceed at all, or will proceed at a much slower rate and well into the future. The economic case models these scenarios. The results indicate that the replacement and upgrade of the three infrastructure projects will realise both project specific benefits and wider economic benefits which exceed the net present costs of the project.

The project specific benefits refer to real monetary benefits which can be realised by the council. These include;

- increase in property rates as a result of the increase in households;
- reduction in operational (including maintenance and replacement) costs;
- increase in developer contributions; and
- residual values.

The net present value of these benefits over a 40 year analysis period, assuming a 6% discount rate, exceed the net present costs of the project. This is true even when certain sensitives are considered around variable discount rates, capital costs and occupancy uptake.

The project however has significant wider economic impacts. The provision of households sooner, increases demand, and therefore the need for a greater number of retail and commercial businesses in the region. This in turn generates greater demand and employment opportunities. The wider economic benefits refer to:

- Economic activity generated as a result of the construction and development of the infrastructure projects
- Economic activity generated as a result of the construction and development of the Lakeside households
- Economic activity generated as a result of increased household expenditure

The net increase in expenditure as a result of the project over the 40 year period is $1105 M, which generates an additional 314 jobs during the construction phase, and 123 jobs within retail and business in Te Kauwhata.

The largest impact to the results are realised when redefining the base case scenario. If the Lakeside development progresses, but does not start construction until 2025 and takes significantly longer construction timeframes, the benefits reduce. This is particularly true for the wider economic impacts as the increase in expenditure will be eventually realised at a later stage in the base case scenario, meaning the net benefit of the project will reduce.

However it should still be noted that the early provision of the households will generate significantly more regional income sooner allowing the region to develop, grow and expand as a prominent regional community with affordable housing.

Economic Cost benefit analysis

The economic case utilises a Cost Benefit Analysis (CBA) approach to capture measurable costs and benefits associated with the project and compares this to a base case scenario.

The cost benefit analysis (CBA) has been undertaken by applying the following key steps:

1. **Defining objectives, base and project case options** – Defining the objectives in addition to the base case and project case for comparison.
2. **Identification of benefits and costs –** All benefits and costs are identified and quantified where possible. These are the costs and benefits that may be expected due to the move from the base case to the project case.
3. **Discount future costs and benefits –** Appropriate measures of net economic worth are generated, including Net Present Value (NPV) and the Benefit-Cost Ratio (BCR) based on a 6% discount rate as defined in the EEM.
4. **Calculate decision criteria –** The selected measure/s of net economic worth are calculated and interpreted. This report considers both the net present value (NPV) and benefit cost ratio (BCR) measures.
5. **Sensitivity analysis –** Where appropriate, decision criteria are calculated with a range of input values to present the sensitivity of the output values to inputs. in particular capital costs, household development/uptake and alternative base case household development and uptake

The construction of an additional 1600 households, along with the increase in population within the region will lead to an increase in retail and commercial expenditure, which in turn improves both employment and income. The economic model therefore considers both project specific benefits and wider economic benefits.

Project Costs

The project costs are defined as the sum of capital, and operational costs of the three infrastructure projects. Capital costs for both the water treatment plant and wastewater treatment plant are aligned to the proposed construction program across a three year construction period (2019-2021/22) and would be operational by 2022.

The NPV of these costs are outlined in the table below.

Table** 1**: Capital costs

Capital Costs (Present value, 6% discount rate, over 40 years ($M))	Base Case	Project Case	Incremental
WWTP	$3.49	$31.12	$27.63
WTP	$8.36	$15.48	$7.12
Total	$11.85	$53.04	**$34.75**

Table 2: Operational costs

Operational Costs (Present value, 6% discount rate, over 40 years ($M))	Base Case	Project Case	Incremental
WWTP	$14.53	$13.95	-$0.58
WTP	$9.14	$6.17	-$2.97
Total Costs	$24.77	$22.73	**-$3.55**

Table 3: Total costs

Total Costs (Present value, 6% discount rate, over 40 years ($M))	Base Case	Project Case	Incremental
WWTP	$18.02	$45.07	$27.04
WTP	$17.50	$21.65	$4.15
Total Costs	$36.62	$75.76	**$31.20**

Total project specific benefits

The CBA has been assessed using various benefit streams. The first level analysis only considers project specific benefits and costs. The second level analysis considers all other wider economic benefits in terms of the injections into the economy from the construction activities and the increase in general expenditure within the region based on the overall increase in households. These benefits are outlined below.

Total Benefits (Present value, 6% discount rate, over 40 years ($M))	Base Case	Project Case	Incremental
Property rate recovery	$60.11	$103.15	$43.04
Connection Rate (WWTP) recovery	$5.99	$19.77	$13.78
Connection Rate (WTP) recovery	$4.11	$12.17	$8.06
Connection Rate (roads) recovery	$0.00	$2.12	$2.12
WWTP Residual Value	$0.00	$1.39	$1.39
WTP Residual Value	$0.00	$0.67	$0.67
Total	$71.52	$139.51	**$69.06**

Total wider economic benefits

Total Wider Economic Benefits (Present value, 6% discount rate, over 40 years ($M))	Base Case	Project Case	Incremental
Construction & development impacts (from construction of infrastructure projects	$11.03	$49.38	$38.34
Construction & development impacts (from household construction)	$109.65	$293.26	$63.12
Household expenditure impacts	$593.38	$1,597.43	$1,004.04
Total	$714.07	$1,940.06	**$1,105.51**

CBA Results

CBA Summary (Present value, 6% discount rate, over 40 years ($M))	Base Case	Project Case	Net Present value
Total costs	$35.52	$66.72	**$31.20**
Total project benefits	$70.21	$139.27	**$69.06**
Total wider economic benefits	$714.07	$1,934.07	**$1,099.52**

Benefits Cost Ratio Analysis

CBA results (excl. WEB)	4%	6%	8%
NPV ($M)	$55.80	$37.87	$26.47
BCR	**2.71**	**2.21**	**1.88**
CBA results (Incl. WEB)	**4%**	**6%**	**8%**
NPV ($M)	$1,544.54	$1,137.38	$871.55
BCR	**48.23**	**37.46**	**30.13**

The results (at 6% discount rate) suggest the project specific benefits alone are greater than the total infrastructure costs, giving an NPV of $37.9 M and BCR of 2.21.

The additional wider economic benefits illustrate the significance of those wider impacts to the regional economy. When we include these benefits the BCR increases to 37.46.

The additional expenditure and employment opportunities from $100 M increase in total expenditure expected within the region throughout the construction timeframes will generate an additional 268 job opportunities for the region.

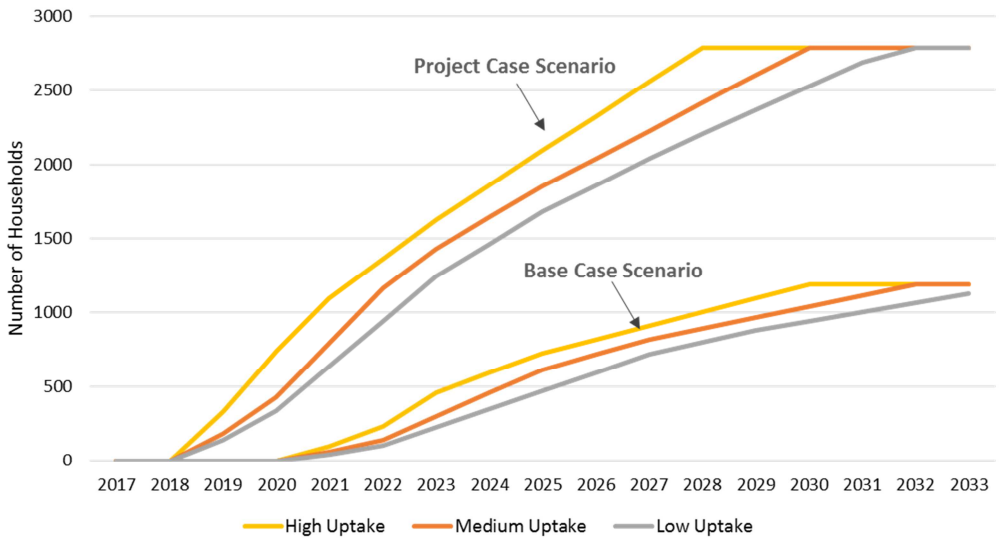
The model also predicts an increase in overall household expenditure for the region resulting from the increase in population which will bring in an additional $1,004 M. in total (direct and indirect) expenditure for the region over the next 40 years, resulting in an additional 123 FTE opportunities.

Development Uptake - Key Sensitivity

The economic model assumes that all households will be constructed as per the forecasted 10 year timeframe and 100% of households will be occupied once constructed. A number of other uptake scenarios have been tested assuming a slower uptake resulting in delayed construction of households.

Development/uptakes sensitivities (excl. WEB)	High uptake	Medium uptake	Low uptake
NPV ($M)	$37.87	$34.00	$30.42
BCR	**$2.21**	**2.09**	**1.98**
Development/uptakes sensitivies (incl. WEB)	**High uptake**	**Medium uptake**	**Low uptake**
NPV ($M)	$1,137.38	$1,070.40	$1,001.37
BCR	**$37.46**	**35.31**	**33.10**

The results indicate that regardless of the uptake scenario the significant wider economic benefits are still realised. The BCR ranges from 2.21 to 2.09 between high and low uptake assumptions. The slower the uptake of households the greater the reduction in project benefits. A four year delay to the end of construction however, does little to affect the BCR when we consider the wider economic impacts.



Delayed uptake sensitivities

Non-monetised benefits

Non-monetised benefits are those which do not have a monetary value but are still realised by the wider community. A number of environmental and social benefits arise from the construction of these infrastructure projects, including the positive impact on Lake Waikare and the Whangamarino wetland.

Environmental Benefits

- The removal of farmland (for the Lakeside development) removes harmful nitrogen and phosphorus runoffs currently entering both the lake and wetland. This will, in the long term, support improving the quality of the water and support the concept of “betterment” which is used to assess these effects.

Furthermore this is in line with both the Regional Policy Statement and National Policy Statement for Freshwater Management.

- Mitigation measures will also be put in place to minimise the impact of potential sediment and nutrient leaching during the development phase of the project. This is to ensure that the concept of "betterment" is met during this stage of the project.
- Improving the quality of the water of Lake Waikare and the Whangamarino wetland has a number of flow on effects to the environmental and to the community. Firstly the lake is recognised as a site of cultural and ecological significance, with the local hapū describing them as the lungs and kidneys of the lower Waikato.
- The wetland supports significant populations of rare native animals and plants and is recognised as a wetland of international significance under the RAMSAR Convention. RAMSAR is the only international convention on an ecosystem type and formally recognises the value of wetland sites around the world. New Zealand has six RAMSAR sites, including the Whangamarino wetland in Te Kauwhata.

Social Benefits

- The improved quality of both the lake and wetland will provide for better amenity and improved environment for Te Kauwhata locals to live and work in. This will help encourage both more residents and more businesses to the area. Lake Waikare restoration efforts also provides the potential for it to be used for recreational purposes. Currently the poor water quality prevents recreational activity. The provision of a wider range of activities to the community will again attract a greater number of people to the area and could also provide potential tourism opportunities.
- The earlier provision of households including the Lakeside development also brings further local businesses to the town. This improves the vibrancy of the community and improves public perception of the town. This is both true during the construction stage of the households and the longer term effects of the increase in residents.

Inputs & Assumptions for the Economic Base Case / Project Case Scenarios

Base Case	Project Case
The housing development outlined within the Te Kauwhata Structure Plan will continue at the original timeframes: • **283** households constructed between **2020-2022** • **169** households constructed between **2021-2024** • **738** households constructed between **2022-2029**	The housing development outlined within the Te Kauwhata Structure Plan will continue under an earlier timeframe and the development of an additional 1600 households under the Lakeside development (2,790 households total). • **283** households constructed between **2017-2020** • **169** households constructed between **2018-2022** • **738** households constructed between **2019-2027** • **1600** households constructed between **2018-2027**
Waste Water Treatment Plant The existing treatment plant will undergo significant maintenance within the first year, due to the degraded state of the facility and not being able to meet consenting requirements. By 2020 additional MBR or Aquamats will be required to meet consents. In 2028, in order to renew the consents, an additional $15M will be required for replacement and renewal of the plant (potentially providing additional capacity)	**Waste Water Treatment Plant** A new local waste water treatment plant will be constructed with a suitable land contact discharge location near SH1 and Waikato River. It is assumed construction will take approximately 3 years and the plant will be operational in 2022. This will cater for an additional 1600 households and meet all consenting requirements.

Base Case	Project Case
Water Treatment Plant The current water treatment plant is at capacity meaning a capital expenditure will be spend in the second year to allow for expansion. Another expansion cost has been assumed for 2028, to ensure the current treatment plant can cater for the additional households	**Water Treatment Plant** A new water treatment plant, conveyance and reservoir will be constructed over a 3 year timeframe and it is assumed to be operational by 2022. It is assumed that the new water treatment plant be able to cater for the next 40 years of growth, including the structure plan area and additional 1600 Lakeside households.

Infrastructure spend per dwelling

Total cost of the new infrastructure ($38,000,000)
Total number of new dwellings enabled by the HIF (2,790)

=$13,620 per dwelling

Appendix 2: Financial Case

WDC are requesting a HIF loan totalling $38 million over 10 years. This portion would align directly with the growth related costs of the infrastructure and would reduce the development contribution levy to $8,473 per lot. This DC income would be used to repay the HIF loan as the projects and development progresses. The proposal is focused around bringing more houses to market sooner and will remain consistent with the funding mechanisms of Council.

WDC funding policy

WDC has detailed its funding philosophies in its Revenue and Financing Policy.

- Operating costs are met by operating income - with the exception of depreciation expense for roading.
- Growth related operating costs should be met by WDC's income base.
- Asset renewal costs are funded from Capital Replacement Funds / new borrowing.
- All growth capital costs are met from development or financial contributions.

Source: WDC Financial Strategy (page 17 of 2015-2025 LTP, and consistent with 2018-28 draft LTP)

Rating capacity pressure

WDC notes that it is unlikely the rates affordability benchmarks could be achieved if WDC did proceed to fund trunk infrastructure for developments on its own account (hence the current funding policy).

- While WDC has sufficient capacity to forward fund the proposed works, WDC already has a very significant renewal programme to meet which requires large increases in targeted and general rates over the Long Term Plan period.

Forward funding risk / targeted rates

Given growth investments, Waikato district has the highest level of operational costs and second highest associated rates for these services out of New Zealand's provincial councils.

- The three waters targeted rates are proposed to be approximately $1,800 per connected property in the 2018/19 financial year which is constraining.

High Development Contributions is effecting growth in Housing

The above issues, along with the high cost of development contributions, are identified as the major constraints to housing development in the Waikato.

INFRASTRUCTURE COSTS (INCLUDING INFLATION):

HIF indicative business case			HIF detailed business case		
Project	**Total Cost**	**Costs sought from HIF**	**Project**	**Total Cost**	**Costs sought from HIF**
Wastewater upgrades – A new wastewater trunk line and associated components to carry wastewater from Te Kauwhata to Huntly	$30 million	$24.5 million	**Wastewater Treatment Plant** MBR plant in Te Kauwhata	$39.1 million	$21.5 million
Wastewater upgrades - Huntly Wastewater treatment plant upgrade			**Wastewater pump station and conveyance** Te Kauwhata with discharge to land / river		
Reticulated water infrastructure upgrade	$12.3 million	$7.3 million	**Water treatment plant upgrade & reservoirs**	$19.3 million	$16.5 million
Local road infrastructure upgrades	$34.3 million	$4.6 million	**Local road infrastructure upgrades**	$13.8 million	No application
Total cost	$76.6 million	$36.4 million	**Total cost**	$72.2 million	$38 million

FUNDING:

	HIF indicative business case	HIF detailed business case
Total Funding Requested:	$36.5 million	$38 million
Estimated drawdown of funding	2018: $28.6 million 2019: $2.4 million 2022: $5.5 million	2019: $7.4 million 2020: $14.5 million 2021: $16.1 million
Estimated repayment period	WDC does not expect to repay in instalments. Entire debt would be repaid in 2029.	WDC will make repayments equal to development contributions received from 2022 (year 4) onwards with balance paid in 2029.
No. of dwellings to be constructed	2,690 Total 2,238 Excluding consented/lodged	2,790 Total (100 additional) 2,338 Excluding consented/lodged
HIF per dwelling constructed	$13,569	$13,620

As set out in the Strategic Case, the transport component of the project has been excluded from the HIF application to maximise the potential funding available for the reticulated water and wastewater infrastructure required, which has resulted in amendments to the DBC. The financial case still includes the transport component but focuses on the wastewater and reticulated water elements of the project to set out how the HIF loan will be treated and managed.

The preferred option involves an HIF application to cover $38 million of capital works; $21.5 million to provide a wastewater network and $16.5 million of water network expansion. Inflation adjusted costs include contract management and contingency estimates. The total infrastructure programme for Te Kauwhata is $72.2 million,

with the HIF loan benefits passed on via interest-free development contribution levies. **This ensures government investment is focused on the overall objective of bringing more houses to market sooner.**

- Council's final 2018-28 Long Term Plan (LTP) will assume a HIF loan of $38 million is provided.
- The Lakeside private plan change, subject to commissioner decisions by June 2018 and any appeals, is assumed to be operative during the 2018/19 year.

The "without HIF loan" alternative for financial comparison purposes retains the assumption of an operative private plan change, albeit without assistance of interest-free debt. It is envisaged that the 1600 lot Lakeside development would be delivered outside the ten year period, and that development within the existing structure plan area would no longer be accelerated.

- Capital programmes have not been rephased for the "without HIF loan" option. Condition assessment, consent compliance and Lakeside connectivity will still need to be addressed in a timely manner.
- The lag in development timing of this option, coupled with interest costs, would have a significant impact on the development contribution levies.
- While Council debt would remain manageable, due to a strong funding philosophy of growth pays for growth, **the level of development contribution levies would discourage subdivision** and building activity in Te Kauwhata.

Project delivery costs

Project construction cost estimates have been completed using risk based 69 percentile (P69) expected costs in 2018 dollars and include contingencies for known or unknown risks that are likely to occur during implementation.

- Upgrades, extension work and intersection improvements to Scott Road and Rimu Street have been costed for information but will not require HIF loan funding. To keep within the realms of the original HIF application amount only water and wastewater funding will be sought. Graphs relating to the costs to bring Lakeside growth on line include roading; however, all graphs and tables relating to funding exclude any roading HIF.
- Water and wastewater projects will service existing and new dwellings at a total cost of $58.4 million. $38 million would be supported by the HIF loan with the remaining $20.4 million repaid by existing residents over the capacity life of the infrastructure (25 year timeframe).
- The share of costs for existing property and related rating impacts has been allowed for in the draft 2018-28 LTP.

The preferred wastewater solution differs to that presented through the indicative business case.

- It is accepted that continuing with the current Te Kauwhata wastewater treatment plant discharge is not sustainable in the long term.
- Affordability has determined that the lowest cost option (together with the best environmental outcome) is the most appropriate.

Costs will be split between growth (developers) and existing residents in acknowledgment of a fair apportionment of current consent compliance issues, new discharge consent requirements as well as capacity for growth.

- The split of costs is 55% (developer) and 45% (existing Ratepayers) respectively, with the growth portion directly funded by HIF, and the existing property elements funded by a mix of Council replacement funds (for renewal portion) and interest bearing loans.

Design work has identified that the existing water treatment plant and reservoir will not have capacity to deal with the level of growth anticipated.

- Treatment plant and conveyance costs are deemed to be 88% related to new demand (HIF loan funded) and 12% related to addressing backlog issues for existing properties (replacement funds). The current reservoir needs an extension of capacity to meet existing levels of service, and therefore the split of works for the new reservoirs has a higher proportion funded by existing properties, 26% (interest bearing loans), with the remainder relating directly to growth, 74%.

Council owns the majority of the land required for the preferred projects (sunk cost).

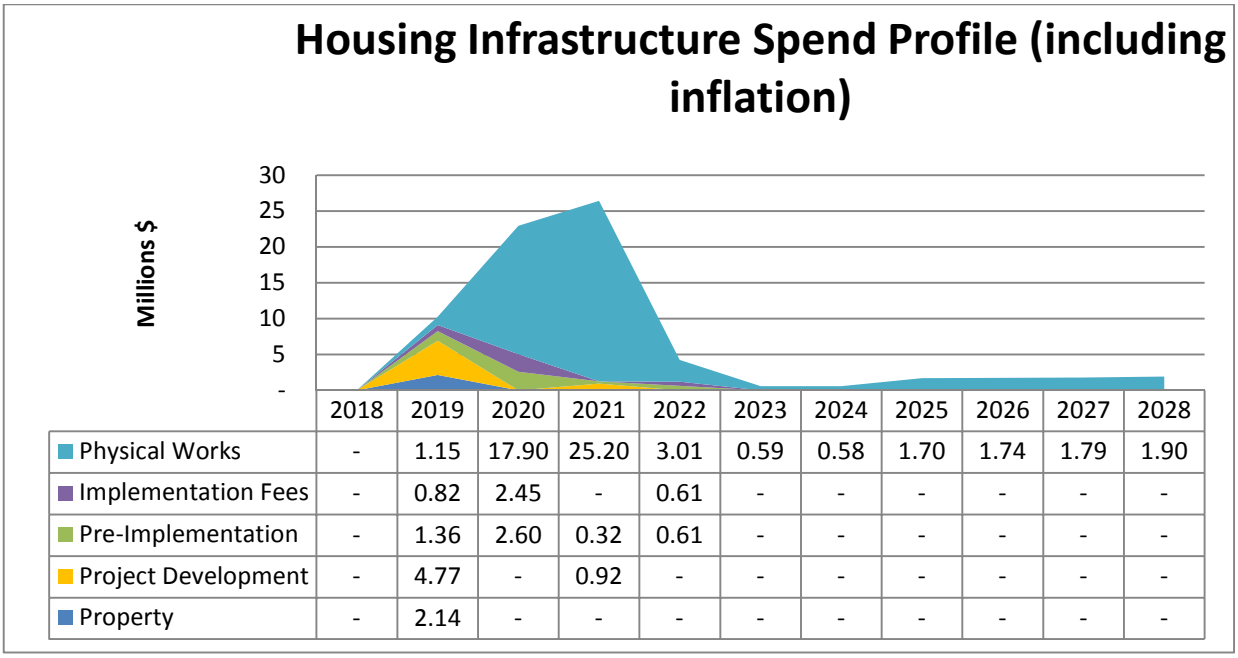
- $2.2 million has been allowed for property costs to support conveyancing and directional drilling elements for wastewater and water. The following table outlines infrastructure costs and funding before and after inflation.

INFRASTRUCTURE COSTS SUMMARY $ (millions)	Te Kauwhata Wastewater Treatment Plant	Pump Station	Conveyance/directional drilling	Water Treatment Plant	Reservoir	Conveyance/directional drilling	Rimu Street	Scott Road	**Total cost post inflation**	**Total cost uninflated 2018 $**
Wastewater infrastructure	28.7	3.5	6.7	-	-	-	-	-	38.9	37.6
Wastewater property	-	-	0.2	-	-	-	-	-	0.2	0.2
Water Infrastructure	-	-	-	9.9	3.3	4.1	-	-	17.3	16.9
Water property	-	-	-	2.0	-	-	-	-	2.0	1.9
Roading Infrastructure	-	-	-	-	-	-	6.9	6.9	13.8	12.2
Roading property	-	-	-	-	-	-	-	-	-	-
Total cost including inflation	28.7	3.5	6.9	11.9	3.3	4.1	6.9	6.9	**72.2**	-
Total cost uninflated 2018 $	27.7	3.4	6.6	11.5	3.2	4.0	5.8	6.3	-	**68.7**

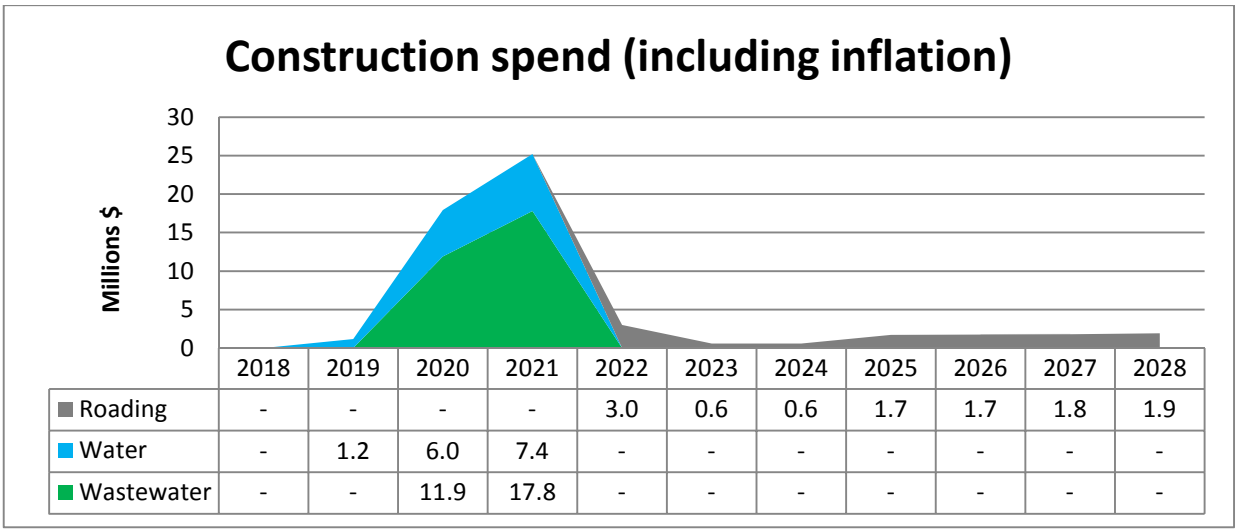
FUNDING SUMMARY										
HIF wastewater funding	15.8	1.9	3.8	-	-	-	-	-	21.5	20.8
HIF water funding				10.5	2.4	3.6			16.5	16.1
Ratepayer/Council reserve funding	12.9	1.6	3.1	1.4	0.9	0.5			20.4	19.6
Direct developer funding							6.9	6.9	13.8	12.2
Total funding including inflation	28.7	3.5	6.9	11.9	3.3	4.1	6.9	6.9	**72.2**	
Total cost uninflated 2018 $	27.7	3.4	6.6	11.5	3.2	4.0	5.8	6.3		**68.7**

Construction spend is front loaded with water and wastewater infrastructure planned for completion by the end of year 3 (noting that the actual financial years may differ to that in the LTP dependant on wastewater discharge consent timing and private plan change outcomes).

- The roading works are not part of the HIF application and are 100% developer led so timing will dependant on staging of the development.



	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Physical Works	-	1.15	17.90	25.20	3.01	0.59	0.58	1.70	1.74	1.79	1.90
Implementation Fees	-	0.82	2.45	-	0.61	-	-	-	-	-	-
Pre-Implementation	-	1.36	2.60	0.32	0.61	-	-	-	-	-	-
Project Development	-	4.77	-	0.92	-	-	-	-	-	-	-
Property	-	2.14	-	-	-	-	-	-	-	-	-



	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Roading	-	-	-	-	3.0	0.6	0.6	1.7	1.7	1.8	1.9
Water	-	1.2	6.0	7.4	-	-	-	-	-	-	-
Wastewater	-	-	11.9	17.8	-	-	-	-	-	-	-

Ongoing maintenance and operation costs

With a mix of replacement and improvements to existing network infrastructure a moderate decrease in overall maintenance and operational costs is expected as such this should not be a major consideration in the acceptance of the business case.

Funding, Financing and Debt

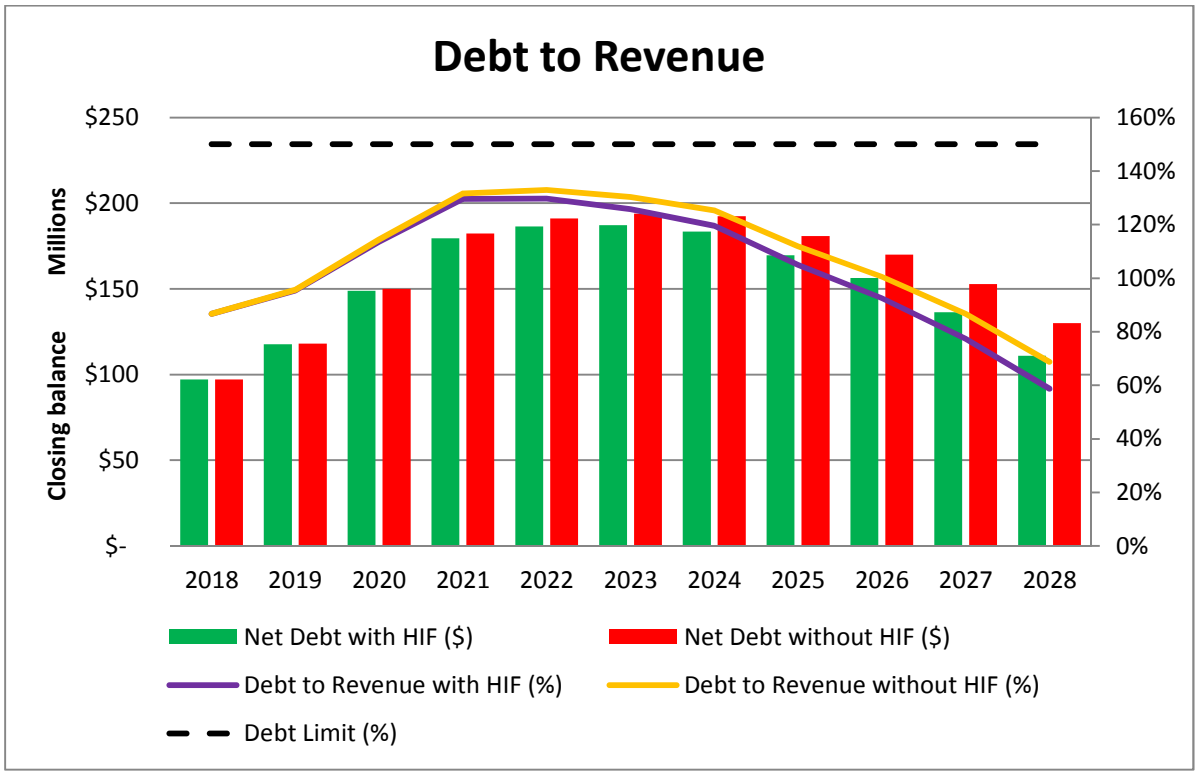
The objective of bringing more houses to market sooner is heavily influenced by the level of development contribution levies. Without the HIF loan development contributions would be a deterrent to subdivision and building activity in Te Kauwhata.

- In evaluating of of development contributions, Council has made the assumption that the new growth and accelerated growth would occur before the end of 2029. This assumption has a higher level of associated risk and has been addressed in the risks register, uncertainty log, and within financial and economic sensitivity analysis. In scenarios tested the CBA remains positive (>1.0) (See Economic summary).
- Condensing the additional growth and providing the new capital works free of interest lowers the development contribution levies for HIF related wastewater and water to approximately $21,337 per lot/dwelling saving of $8,473 in 2019 dollars (see table below). Development contribution levies will be used to repay the HIF loan in entirety by the end of 2029.

DC without HIF GST inclusive (for wastewater and water only)	DC with HIF GST inclusive (for wastewater and water only)	Benefit that HIF provided per lot to developers (more house to market sooner)
$29,810	$21,337	$8,473

The HIF interest-free loan is expected to reduce interest costs by approximately $18 million over the ten year period. Savings can be shared with developers through reduced levies to ensure a commercial incentive. This ensures government investment is focused on the overall objective of bringing more houses to market sooner.

- The financial modelling assumes that operating costs are met by operating revenues. Under both the with and without HIF options, Council remains within specified financial strategy and LGFA debt limits of 150% and 175% respectively.
- The financial case assumes that no further debt would be required for these projects beyond year 10. If there is a balance remaining after year 10, it would be re-financed from the Local Government Funding Agency or bank facilities.
- Council's financial forecasts show a gross debt position of $130 million by 2028 without the HIF loan, an increase of $12 million from the forecast opening position in 2019. The addition of the HIF loan decreases the gross debt at 2028 by approximately 15% to $114 million. Maximum net debt planned over the 10 year period with the HIF loan in place is $187 million in 2023.



WDC's local communities are stretched financially with some of the highest targeted rates in New Zealand. If Council were to independently fund projects with more interest bearing debt then there would be a high risk that existing residents would have to pick up the costs should development does not occur.

- Having sufficient debt capacity is a key risk management principle within Council's financial strategy to allow for unforeseen events. The following table shows that Council is forecasting to retain capacity within its own stipulated limits throughout the 10 year period.

With HIF loan ($ millions)	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Debt capacity (Council limit of 150%)	206	263	217	225	233	246	258	269	280	300
Closing debt	118	149	180	187	187	184	170	156	136	111
Debt surplus	88	114	38	39	46	63	88	113	144	189
Revenue surplus	62	66	69	72	74	77	81	84	88	95
Without HIF loan ($ millions)										
Debt capacity (Council limit of 150%)	206	263	217	225	233	246	258	269	280	300
Closing debt	118	150	182	191	194	192	181	170	153	130
Debt surplus	88	113	35	34	39	54	77	99	128	170
Revenue surplus	62	66	69	72	74	77	81	84	88	95

Loan Repayment

Council will repay the HIF loan via development contributions and maintain infrastructure through rates generated from the housing provided by the Lakeside and other Te Kauwhata structure plan development and where required district wide rating growth.

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
General Rates (includes Roading/Parks)	6.24%	4.80%	3.73%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
3 Waters Targeted Rate increases										
Water	4.50%	4.50%	4.50%	4.50%	4.50%	4.50%	4.50%	4.50%	4.50%	4.50%
Wastewater	13.90%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Stormwater	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%

Take up

A conservative general rate projection for Lakeside has been included in Council's draft LTP from year 2 onwards.

- Rating growth is based on an extra 100 dwellings per annum (rather than using the 200 lots expected) to allow for a mix of capital values, relative staging of building and any infrastructure delays.
- In all scenarios tested the Cost Benefit Analysis remains positive (>1.0) (See Economic summary).

Funding and Repayment

The majority of the capital expenditure is programmed in the first three-four years of the LTP, with HIF loan drawdowns taken over the first four years as illustrated in the following graph:

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
Capital Expenditure											**Total**
Roading	0.0	0.0	1.2	4.0	0.5	0.5	1.5	1.5	1.5	1.5	12.2
Wastewater	4.4	16.5	16.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.8
Water	5.9	5.9	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.8
Inflation	0.0	0.6	1.3	0.3	0.1	0.1	0.2	0.3	0.3	0.4	3.5
Total (inflated)	**10.2**	**23.0**	**26.4**	**4.2**	**0.6**	**0.6**	**1.7**	**1.7**	**1.8**	**1.9**	**72.2**

Proposed HIF drawdown and repayments

Year*	HIF drawdown amount (millions)	HIF repayments (millions)	HIF loan Balance	
2019	$7.40		$7.40	*Actual financial year may differ based on timing of wastewater discharge consent and private plan change outcomes. Given the HIF loan is interest free the delay in timing is not a major financial risk provided works have gone out for design and tender subject to consent approval.
2020	$14.50		$21.90	
2021	$16.10		$38.00	
2022		$2.0	$36.00	
2023		$2.0	$34.00	
2024		$2.0	$32.00	
2025		$2.0	$30.00	
2026		$2.0	$28.00	
2027		$2.0	$26.00	
2028		$2.0	$24.00	
2029		$24.0	$0.00	
Totals	**$40.00**	**$38.00**	**$0.00**	

Repayments of the loan would come directly from HIF related development contribution levies.

- Repayments of the loan would come directly from HIF related development contribution levies. To ensure the loan remains interest-free in nature, Council will remit actual development contributions received in each year. Table 82 reflects a minimum repayment level of $2 million in each year with the remainder being paid in 2029. This does not tie directly to business case financials, which are based on anticipated contributions income, but reflects a level of repayment that provides certainty for Treasury for administration purposes. Table 83 shows the amounts expected to be repaid based on assumed development timing.

The works related to the $38 million interest-free loan have been isolated in a separate contribution for water and wastewater. Lakeside and accelerated growth will receive the benefits of the reduction in development contribution levies.

- The following table shows the expected revenue to be generated each year for HIF related development contributions.

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
Development contribution income											**Total**
Wastewater	0.20	3.00	2.40	2.40	2.10	2.60	2.60	2.60	2.60	1.00	21.50
Water	0.10	2.20	1.90	1.90	1.60	2.00	2.00	2.00	2.00	0.80	16.50
Total	0.30	5.45	4.55	4.55	3.95	4.85	4.85	4.85	4.85	1.80	38.00

- It is proposed that development contribution levies collected during the year are paid to MBIE at the commencement of the following financial year, once the projects are materially complete. As levies will be charged based on P69 estimates, adjustments are anticipated at the end of each year to reflect actual project costs.

- The first repayment of $10.3 million would be made in year 4 with final repayments of $1.8 million made in year 11.
- Note the proposed HIF Drawdown and Repayments schedule reflects a minimum repayment level of $2 million in each year with the remainder being paid in 2029. This does not tie directly to business case financials, which are based on anticipated contributions income, but reflects a level of repayment that provides certainty for Treasury for administration purposes.

Accounting treatment

HIF loans will be recognised at present value on the balance sheet on day one, with the present value discount recognised as non-operating income which will effectively be released across the life of the loan. This is the agreed approach from the HIF accounting working party.

- Council's financial modelling assumes repayment is made in full within the 10 year period to reduce the risk of Council having to pick up developer costs. Council is acting as an intermediary in this process and as such has an expectation that development contributions will be timed with the provision of infrastructure and uplift of consents.

Financial risk

Financial risk	Mitigations
Cost escalation Tender prices differ from budget	• Detailed business case costings used as basis of financial modelling • Contingency allowance included • Key assumptions are transparent for all affected parties
Development contribution income Staging of development or total number of lots available differs from business case assumptions	• Development agreements negotiated and in place ahead of plan change approval and/or commencement of works • Interest-free benefit set as a finite 10 year period, incentivising early development • Private plan change process to date indicates that 1600 lots is achievable albeit with larger lot sizes
Private plan change/ Regional council consent dependencies Appeals to the private plan change delay progress, significantly change the yield in the Lakeside catchment or ultimately stop the plan change from becoming operative Regional council delays or declines wastewater discharge consent approval	• Weighting given to HIF objectives • Weighting given to NPS objectives • Infrastructure project timings rephased • Timing of HIF drawdowns and repayments rephased • Infrastructure revisited for reduced yield or consent compliance reasons if required • Subject to Council approval, debt headroom used in absence of operative plan change to fund essential wastewater and water infrastructure projects

Financial case sensitivities

The actual financial year of construction may differ based on securing wastewater discharge consent and private plan change outcomes. Given the HIF loan is interest free, delays in timing will in general terms not create a major financial risk provided works have gone out for design and tender subject to consent approval and the programme of works is completed within the ten year timeframe.

- If delays relating to obtaining discharge consent are substantial the objective to bring houses to market within the ten year period could be compromised. To mitigate this particular timing risk Council will invest in remedial works on the current wastewater treatment plant to support the first 400 lots of the Lakeside development.
- Capital construction movements in excess of P69 values would need to be picked up by additional debt funding. The additional costs would be apportioned between growth and existing properties.

Sensitivity testing shows that for every 10% increase in capital expenditure (assuming capital programme of $72 million and that the HIF loan is capped at $38 million):

- a further $3.8 million of development contribution income is required
- the HIF related development contribution levies would increase by approximately $1,600 per lot/dwelling before interest is applied
- Ratepayer funded loans would increase by $2 million assuming proportionate cost shares remain unchanged
- Rates increases in the first year relating to interest on increased loan funding of $134,000 or a 0.23% general rate increase

Council has been conservative in its estimated rating growth, and there is sufficient debt capacity to pick up moderate capital project cost increases if absolutely necessary, noting that this would impact the level of rating income required in future years.

- History has shown that development is extremely sensitive to increases in development contributions but it is difficult to quantify the level at which development will slow or cease.
- Developers have indicated that any DC above the current 2017/18 levies of approx. $25,000 per lot would be a deterrent for them to develop in Te Kauwhata.

Keeping infrastructure costs (and the flow on effect to development contributions) to a reasonable level will determine the success of the HIF objectives of more houses to market sooner.

Appendix 3: Commercial Case

The financial case confirms that the proposed projects are commercially viable for council and that the associated debt funding arrangements are appropriate (within suitable council debt headroom), and that technical accounting issues can be managed.

- These include: payment and repayment handling; annual costs are accounted for; suitable funding mechanisms are available to council; and that there is certainty of government funding via the proposed load agreement.

WDC's allocation of the HIF fund

Discipline	Approx. Funding allocation	% of $1b HIF Fund	% of WDC Funding
Wastewater	$21.5 M	**2.15%**	57%
Water	$16.5 M	**1.65%**	43%
Totals	**$38M**	**3.84%**	100%

Council confirms it is experienced in scale of the proposed development and with the procurement and delivery of the identified projects proposed, and has selected a traditional Design Build RFP approach for the identified infrastructure sub-projects outlined in the proposed contract packages outlined above.

- Overall, we note that the **WDC's allocation of the HIF fund is less material than other applications** (has relatively smaller and lower cost project spend) than many councils applications. $38 M (or 3.8% of the overall HIF fund) has been allocated to the Waikato District Council HIF project.
- **Detailed risk based costing analysis** has been completed (and independently costed by WT Partners) for each project / sub-project, which can be fairly allocated to participants during the RFP process.
- Noting the traditional RFP approach outlined, Council wishes to be efficient in its decision making and project delivery. **Council have reserved the right to have direct developer engagement** on delivery of individual sub-projects under a design build contract suitable to council. If suitably negotiated, the developer could deliver individual infrastructure components or packages of work should a commercial agreement appropriately allocate and transfer risk to the developer while maintaining a focus on value for money and accelerated access for developments.

The proposed consenting and procurement strategy proposed are appropriate to engage with stakeholders and the market respectively.

- Given the proposed scale of investments, the **traditional procurement** process as outlined (based on value for money, risks management, and accelerated access for development) is appropriately based on a traditional RFP process, and has been designed to fairly allocate identified and costed technical risks.
- From a **consenting** point of view, there are two components to the project which require consent – the new dwellings themselves, and the infrastructure required to support the new dwellings.

Private Plan Change Process is well underway

Winton Partners, the developers of the proposed 1,600 dwellings at Lakeside, have already made an application to change the Waikato District Plan to enable dwellings to be built in the Lakeside development area. A decision on the plan change (Proposed Private Change 20) is anticipated in April 2018.

- The remaining 1,190 of dwellings proposed to be delivered earlier with HIF support, are already enabled by the Te Kauwhata Structure Plan which has been incorporated into the Waikato District Plan.

Requirement for Supporting Infrastructure

Proposed Private Plan Change 20 and the existing Te Kauwhata Structure Plan do not cover the wastewater, reticulated water and transport requirements (the subject of this DBC).

- **Consenting Risks** related to the preferred options (undertaken through the Proposed Private Plan Change 20 consultation processes) identified that the requirement for a new wastewater discharge consent is a key risk to the project and this risk has been appropriately elevated for management. Council has identified that:
    - **There is increased political, cultural, and environment pressure** on improved wastewater discharge approaches in the Waikato due to legislative changes relating to the environment and treaty settlements
    - **Iwi** will require strong input into any new discharge consents
    - **There is strong community feeling in Te Kauwhata about the existing wastewater treatment processes**. As a result the proposed new wastewater treatment plant is anticipated to be subject to a great deal of public interest.

WDC has identified that the consent strategy process for the wastewater infrastructure will focus on early and collaborative engagement with Iwi and other stakeholders to produce a wastewater discharge solution acceptable to the key stakeholders.

- WDC is investigating the use of a Wastewater Advisory Group (WAG) to facilitate engagement with the key wastewater stakeholders. The consenting requirements of the reticulated water and transport elements of the project will be addressed using the same consent strategy process, and approach to consultation, which will meet the RMA Part 2 Requirements and WDC's consultation and engagement requirements.

In terms of **delivery team capability and required skillsets**, a formal governance structure including overall HIF Programme Manager (supported by internal senior Project Managers) has been put in place to manage delivery - post procurement – and where senior responsible persons within council have been identified as project sponsors and / or owners of outcomes.

Contractual and implementation timescales while identified as accelerated in the first few years, are within Councils capability. In particular the key risk of take-up and investment hurdle points for developer pre-sales (of houses) will likely be required in order to manage implementation timing risk and trigger the exact dates of loan drawn down.

Output based specification

From a delivery point of view, the following detailed design services and physical works are required:

- Maintenance and improvements to the existing **wastewater treatment plant** to service the existing and anticipated population in the first three years while the new wastewater treatment plant is built. A new membrane bioreactor (MBR) wastewater treatment plant in Te Kauwhata, including a new lift pump station, a works facility (a pre-treatment system for wastewater before it reaches the MBR plant), a dewatering and storage facility for the sludge extracted, overflow management facilities and a rising main to convey the treated water from the new Te Kauwhata plant to suitable land contact discharge location near State Highway One and the Waikato River.
- A new **reticulated water treatment plant** and pump station, new reservoirs and upgrade or build main trunk reticulation (water conveyance) infrastructure.
- **Upgrades to Scott Road and Rimu Street** in Te Kauwhata, including walking and cycling capability.

Implementation of the above projects is anticipated to achieve acceleration of short-term and medium-term supply of new housing in Te Kauwhata as follows:

- Provision of **1,190 dwellings** planned in the Te Kauwhata Structure Plan 3-5 years earlier than otherwise possible; and
- Provision of **1,600 dwellings** in Lakeside development, not currently provided for, or able to be accommodated by the existing wastewater, reticulated water and transport infrastructure in Te Kauwhata.

Implementation strategy and programme

WDC has a robust implementation strategy to facilitate development, enabled by HIF funding. WDC has developed a detailed construction and phasing sequence that provides for early delivery of stage one development and then enable the longer term role out of stages and infrastructure across Te Kauwhata.

WDC has partnered with Lakeside. Development principles have been signed off and a formal developer agreement is being completed to enable the early development of up to 400 houses in stage one which is due to start from summer 2020 and deliver up to a total of 1600 houses over a ten year period (subject to private plan change decisions on lot sizing).The HIF funding is applied to only part of the investment required to develop Te Kauwhata.

As outlined previously, Council has reserved the right to have the roading upgrade physical works and the new wastewater treatment plant constructed by the developer if that option proves to be more efficient, derives better value for money and allows the Lakeside site to be developed faster than the traditional procurement.

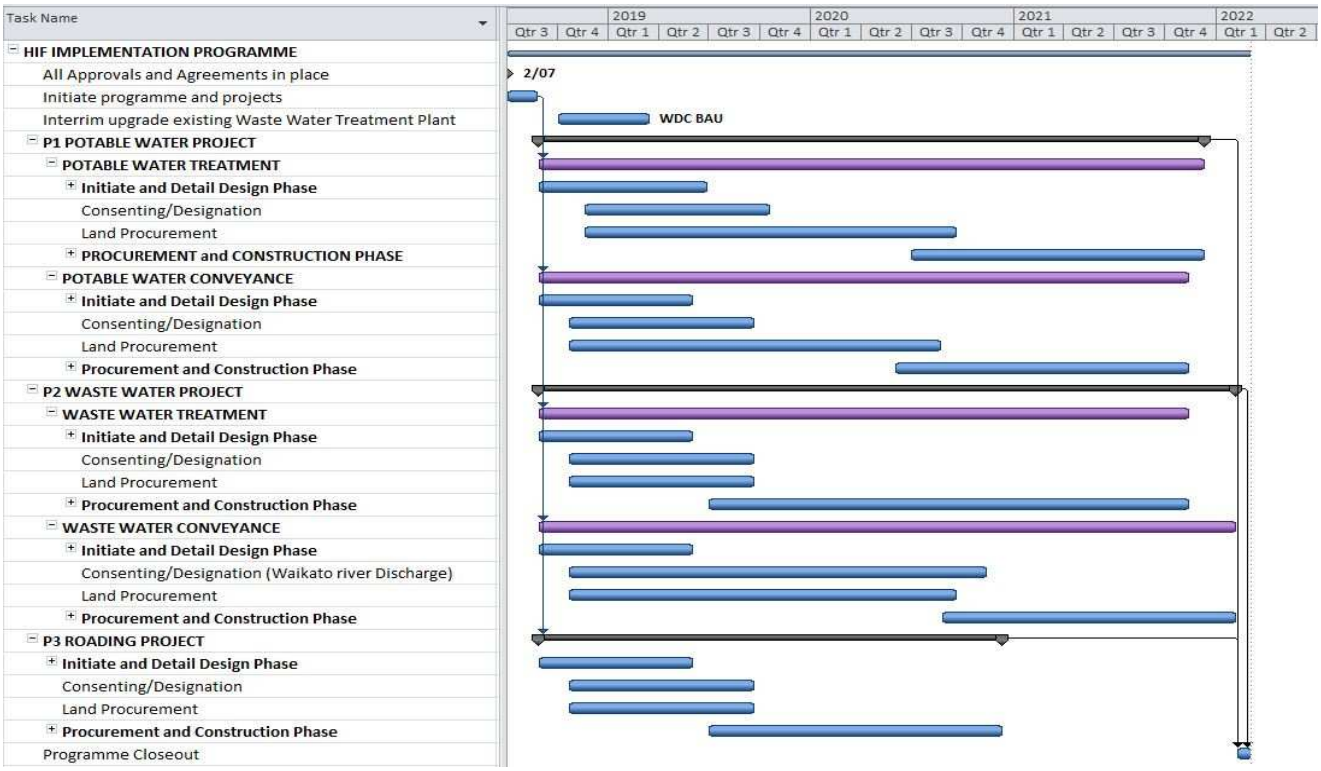
Proposed infrastructure responsibilities has been separately identified as:

• Wastewater	WDC responsibility
• Potable water	WDC responsibility
• Local Roading Upgrades	WDC or Lakeside Developer responsibility (TBC)
• Internal roading	Lakeside Developer responsibility
• Internal Potable water	Lakeside Developer responsibility
• Internal wastewater	Lakeside Developer responsibility
• Stormwater	Lakeside Developer responsibility
• Other Internal services	Lakeside Developer responsibility

Early delivery of stage one of the Lakeside developments will be possible with the advancement of interim works on the existing wastewater plant to provide the necessary capacity to service the initial 400 lots of stage one of Lakeside development.

Sequencing and Phasing*

The project is planned to start on the 2nd July 2018, post plan change and DBC approvals, and final legal drafting of agreements (loan and developer).



Each sub-project has an initiation, detailed design, consenting and/or designation, where applicable land acquisitions which are largely not material, procurement, and construction phases, with a programme closeout activity at the end of the whole programme.

*Construction Sequence**

Project	Est. Construction Start Date	Est. Construction Finish Date
Interim capacity improvements to Wastewater Treatment plant (for stage one 400 lots)	Q4 2018	Q2 2019
Wastewater - Treatment	Q2 2019	Q4 2021
Roading Works	Q3 2019	Q4 2020
Potable Water - Conveyance	Q2 2020	Q4 2021
Potable Water - Treatment	Q3 2020	Q4 2021
Wastewater - Conveyance	Q3 2020	Q1 2022

*Subject to delay /consenting processes and outcomes.

- The plan is aligned with the Financial Case and draw down timing. It is likely that the Council will likely require an element of pre-sales to be achieved by the developer before initial draw down is enacted, to manage Council's development risk.
- Project consenting and land acquisition activity is planned to start early, in conjunction with the detailed design process. Post detailed design, a programme wide constructability review is planned to address any unforeseen issues identified which will seek to optimise the programme and consider any implications on the proposed construction seasons.
- Substantial time has been allocated to consenting and to achieving wastewater discharge consents. In particular, based on the Watercare MBR based technology solution precedence, there is an allowance of two years to allow for the significant engagement required. This has programme delay risk associated (refer key risks section).

Developer Strategy and Agreements

WDC has had productive discussions with Winton Partners on the Lakeside development and other major land owners within the Te Kauwhata area to align their aspirations for delivering sections and housing. The primary negotiations to secure housing supply has been with Winton Partners given their ability to advance the delivery of approximately 1,600 houses and WDC has taken a principles approach to development agreements.

Winton Partners is the largest land owner in the Te Kauwhata area with development plans to enable the development of up to 1600 houses across their land holdings. The main impediment to the proposed residential development at Lakeside Development is the requirement to rezone the property to residential, to allow the proposed development to occur. The decision on the Private Plan Change was issued 11 April 2018. The Private Plan Change has been approved. Council is required to publicly notify this decision after which time submitters will then have 30 days to appeal the decisions.

Figure 1: Lakeside development*

*Staging comment to be provided by Winton Partners and their consultants (TBA in due course post plan change outcomes)

Development Principles (high level)

Council is in the process of negotiating and finalising the Development Agreement which will capture the joint agreement (key terms and conditions) of the agreement between the parties. **It is still subject to final development agreement.** The agreement is based on the key principles that:

1. growth is to fund growth; and
2. growth does not financially contribute to any backlog Level of Service (e.g. compliance issues) or Renewal costs. This is funded by ratepayers receiving the service.

The parties have agreed that Development Contributions levied on Lakeside Development by WDC will:

- be equal to or less than the Development Contribution Levies for Te Kauwhata effective 1 July 2017 (including GST).
- be fixed during the interest free period of the HIF funding period. Development contributions can be adjusted by WDC after this time to account for the interest impact – thus providing a clear financial incentive to the developer to deliver more houses sooner (within the modelled ten year period).

- allow Lakeside Developments 2017 Ltd to pre pay development contributions at any time, prior to expiry of the HIF funding, to lock in the charges – again providing significant developer incentive to develop sooner.
- note that Development Contributions levied on the Lakeside Developments that are not used to repay the HIF funding, will not be fixed and will increase as per the WDC development contributions policy states.

The financial impacts and impacts on revenue (development contributions) from the agreement are reflected in the Financial Case. At the time of writing a draft Development Agreement is a work in progress, subject to detailed drafting.

The HIF fund is intended to support growth infrastructure in the first instance. The stated goal of the Housing Infrastructure Fund is "to bring forward specific transport and water infrastructure projects that will enable land to be used for new housing." This principal has been reflected in negotiations with Winton Partners.

For the avoidance of doubt, the parties have agreed that Winton Partners is to pay (via the provision of development contributions) for growth related infrastructure (only) and that WDC will fund all works related to renewal or retrospective compliance costs of existing infrastructure.

Sourcing options - procurement strategy

WDC's preferred approach to procurement is to use the Waikato Local Authority Shared Services (LASS) Professional Services Panel (PSP) to select engineering design consultants to develop the detailed design and construction drawings for the roading, water and wastewater infrastructure.

The LASS PSP provides design consultancy services across five different disciplines, including: Building Services; Three Waters; Urban Design; Flooding Hazard Management; Planning; and Advisory services.

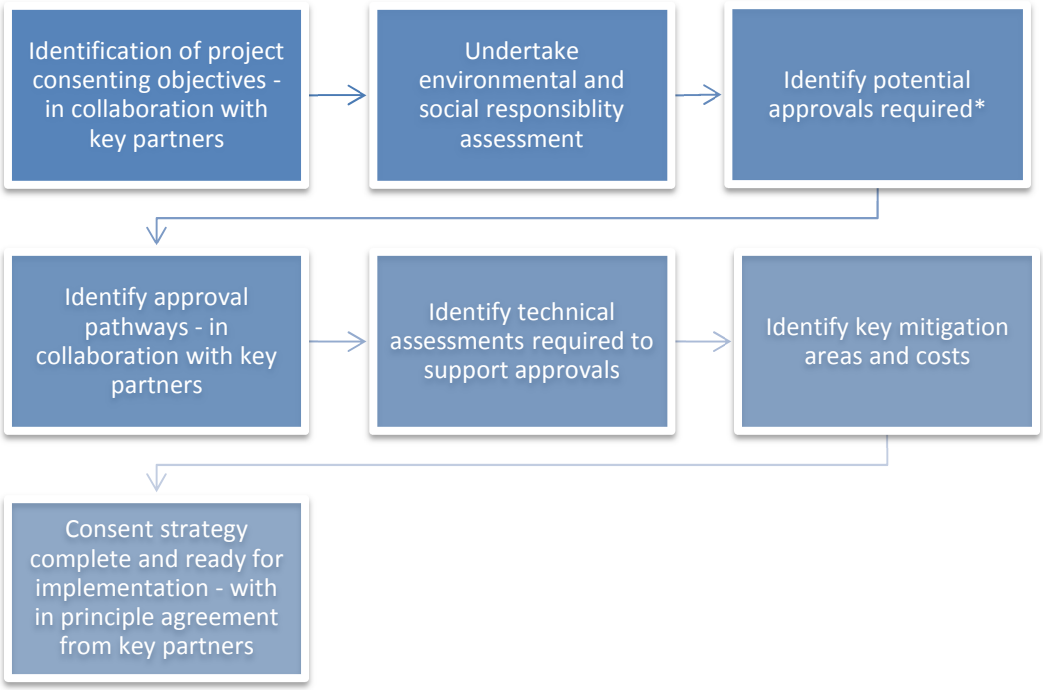
- Utilising this panel will reduce time and costs associated with a traditional procurement process allowing a efficient process and external detailed design consultants to be appointed rapidly, to expedite housing supply in Te Kauwhata.
- WDC will engage the external consultants that developed the concept designs for the water and wastewater options to support the proposed growth in Te Kauwhata to prepare project documentation (background, scope, instructions for tendering and bases for payment).

All four physical works packages will be procured using the same approach, namely a single stage open tender based on the traditional Price Quality Method (PQM). PQM is seen to derive the best value for money outcomes and provide the best platform to obtain quality and manage/transfer risks for projects of this nature.

Consenting strategy and risks

There are two components to the project which require consent – the new dwellings themselves, and the infrastructure required to support the new dwellings.

- WDC has identified that the consent strategy process for the wastewater infrastructure will focus on early and collaborative engagement with Iwi and other stakeholders, to produce a wastewater discharge solution acceptable to the key stakeholders.
- WDC is investigating the expanded use of a Wastewater Advisory Group (WAG) to facilitate engagement with the key wastewater stakeholders. Applying this approach to the consent strategy process that will be followed (detailed below) will mitigate this key consenting risk. At the conclusion of this process the consent strategy will be complete and ready for implementation - with in principle agreement from key partners.
- The consenting requirements of the reticulated water and transport elements of the project will be addressed using the same consent strategy process, and approach to consultation, which will meet the RMA Part 2 Requirements and WDC's consultation and engagement requirements.



Consent strategy development process

*Approvals are potentially required under the Resource Management Act, 1991 (Waikato Regional Plans, Waikato District Plan, National Environmental Standards) Historic Places Act, 1993 and Conservation Act, 1987.

Property acquisition strategy

Council confirms they already own significant areas of land holdings in relation to delivering the key elements of the proposed projects and upgrade. The proposed developments can largely be undertaken on land either under WDC control or on land that is part of the Lakeside development. A small amount of property is required for expanding the reticulated water plant and for establishing easements the wastewater rising main to discharge.

The affected land comprises mostly small areas of rural land holdings. Therefore, land purchase requirements are considered to be minor in terms of scale and complexity involving the follow requirements involving:

- Reticulated Water plant - $2M allocation for land for in-situ plant.
- Cost of easements – Approximately $180k for wastewater rising main connections to discharge points.
- No allocation for land purchases associated with wastewater rising main discharge requirements has been made – subject to consent process outcomes (e.g. requirement for potential wetlands)
- No allocation for land purchases related to local roads has been made – nothing that retaining walls have been costed rather than additional land purchase.

Details of exact areas will be **confirmed post the detailed design phase once design requirements are confirmed**. Noting the risk analysis and project contingency provides an allowance for changes to the property acquisition requirements.

From a property acquisition perspective, the proposed projects and related acquisitions are small scale with some flexibility in land requirements, has a medium lead-in time to construction, some level of certainty, and the approach contains some reasonably straight forward properties and is subject to largely private property negotiations.

- The project is well suited to a direct negotiated approach with current landowners with the fall-back position of an acquisition programme incorporating the Public Works Act 1981 (PWA) and its compulsory acquisition provisions. WDC's preferred acquisition method is therefore based around good faith negotiations.

There is some risk associated with Geotechnical results and potential cost of ground treatment of land required to accommodate plant and buildings for the Wastewater Treatment Plant.

- The developer has agreed that should the geotechnical results prove identified land is not efficient to develop, Winton Partners is willing to make available a suitable site on their development land – should this prove more efficient.

Building consent strategy

To enable construction of the 2,790 dwellings at Lakeside and those approved through the Te Kauwhata Structure Plan, all necessary building consents will be prepared and lodged upon conclusion of the consenting approvals process and detailed design. The necessary building consent applications will be lodged to WDC and will be prepared by consultants to meet the requirements of the Building Act 2004.

- WDC plan to engage a detailed engineering design consultant who will develop a *building consent* strategy, to ensure all intricacies and links between resource consents and designation processes.
- The potable water and wastewater conveyance (pipeline) infrastructure will be exempt from the requirement to obtain a Building Consent under schedule one of the Building Act 2004. An exemption for the construction of this infrastructure will be granted by WDC.
- All buildings required for the potable water and wastewater treatment plants will require a building consent under Section 40 of the Building Act 2004, unless it is less than 10 m^2.
- WDC anticipate that for the wastewater conveyance, the consultant's strategy will focus on developing the design in combination with the discharge resource consent approval prior to preparing and submitting building consent applications to minimise risk and costs.

Risk allocation and transfer / mitigation

Key implementation risks have been identified, evaluated and recorded in the detailed risk register. These tables identify individual risk owners within WDC who are responsible for managing, mitigating or transferring each as necessary to those best placed to manage them.

The implementation risks have been assessed by WDC and the potential risk allocation between the parties is outlined in the following table. The risk apportionment has been developed by WDC based on the current project understanding between WDC, supplier and the developer(s). The potential risk allocation is based on those best placed to manage or mitigate the risk and also how WDC is able to obtain the best value for money to Council and ratepayers through delivery of the infrastructure. Final risk allocation is still to be confirmed through the developer agreement.

Risk allocation table

	Potential Risk Allocation		
Risk Category	**WDC**	**Supplier/** Developer	**Shared**
Design risk	20%	80%	✓
Construction and development risk	20%	80%	✓
Transition and implementation risk	20%	80%	✓
Availability and performance risk	80%	20%	✓
Operating risk	100%	-	X
Variability of revenue risks	80%	20%	✓
Contract termination risks	30%	70%	✓
Technology and obsolescence risks	100%	-	X
Programme/project control risks	70%	30%	✓
Residual value risks	80%	20%	✓
Financing risks	100%	-	X
Legislative risks	60%	40%	✓

WDC's approach includes the ability to provide for (in particular) the following items:

- Construction risk allocation includes the ability with in contract for defects and liability period to cover off non-delivery aspects. As is normal practice, the Acceptance process for work also allows for the ability to have acceptance conditions.
- Availability risk approach is based on a flexible, multi contractor approach, which mirrors the approach taken to date in the process for peer review and capacity purposes.
- Variability of revenue risk largely relates to the timing risk of Development contributions. The Development Agreement negotiated incentivises the developer to contract within the 10 year draw down period otherwise the development contribution increases – given the benefit to council is no longer available (maintaining commercial alignment).
- Contract risk is assumed to be largely related to contract structure, contingency management, management of provisional sums, and the prudent use of professional advisors for forecasting to minimise risk (e.g. WT Partners QS).

Payment / repayment mechanisms

Council is intending to pass through development contributions (to repay the HIF loan) in the year that they are earned and make regular repayments as modelled. A cash flow has been developed as part of the Financial Case within the DBC which is based on an assumed start date and take-up assumptions that articulates the amount and timing of repayments. The Development Agreement being negotiated with the Lakeside developer is aligned with this process.

Table 4: HIF payment repayment based on DC income assumptions

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
No. new lots *	21	316	266	266	233	282	282	282	282	108	0
Revenue (DCs) 000's											
Wastewater	195	2,905	2,446	2,446	2,136	2,595	2,595	2,595	2,595	988	0
Water	148	2,234	1,880	1,880	1,647	1,994	1,994	1,994	1,994	763	0
Proposed repayments (beginning of year following receipt)				9,808	4,326	3,783	4,589	4,589	4,589	4,589	1,751

* This does not include consented and lodged lots of 452 who will not receive the benefit of the HIF loan. The total including these lots is a total development of 2,790 (2338 + 452).

Note: The proposed financial case HIF drawdown and repayments table commits to a repayment schedule of $2 million per annum for years 4-10 with the balance of $24 million being repaid in year 11 (2029). This does not tie directly to business case financials, which are based on anticipated contributions income, but reflects a level of repayment that provides certainty for Treasury for administration purposes.

Winton partners have provided an estimate of 200 lots per annum in the first two years of development which has been extrapolated out for the remaining 1,200 lots.

- While council cannot guarantee market environment factors other than re-zoning (dependent on the private plan change outcome) and benefits of an interest-free loan, the development agreement will endeavour to lock in development timeframes by applying interest to any development outside the ten year timeframe.
- Any saturation of market supply and reduced developer profits may have an impact which is out of the control of Council.
- While, the development agreement will not fully mitigate this risk, the issues is essentially a commercial decision for the developer – with clear incentives to develop within the HIF timeframe.

Contract management

The infrastructure necessary to enable to 2,790 new dwellings in Te Kauwhata will be designed and constructed over approximately 4 years from funding approval.

- Once funding has been approved, the responsibility for managing the pre-implementation programme will fall to the HIF Programme Manager.
- Initial tasks will include procurement of the detailed design and consenting consultants for each of the three projects.
- The project managers (outlined in the Management Case) will develop a contract and relationship management plan in consultation with successful suppliers.
- Upon award, delivery under the contract and supplier relationship management will pass to relevant project manager(s), namely the HIF Project Manager Waters and HIF Project Manager Roading.

WDC's procurement processes and guidelines provide guidance on how to ensure that goods or services are delivered on time, at the agreed cost and to the specified requirements and that the service is being delivered as agreed, to the required level of performance and quality.

- The contract management plan will detail mechanisms for measuring the supplier's performance and determining the overall benefits achieved.
- The supplier's performance will be reviewed monthly and issues escalated, if necessary, within the agreed governance structure to the PGG.

As is WDC policy, contractors are required to provide a construction programme both during the tender phase and prior to commencement. This will include the critical path which is then used to determine how requested change control items are treated.

- This programme is expected to be updated monthly, as part of the contractor's progress reporting requirements.

Appendix 4: Management Case

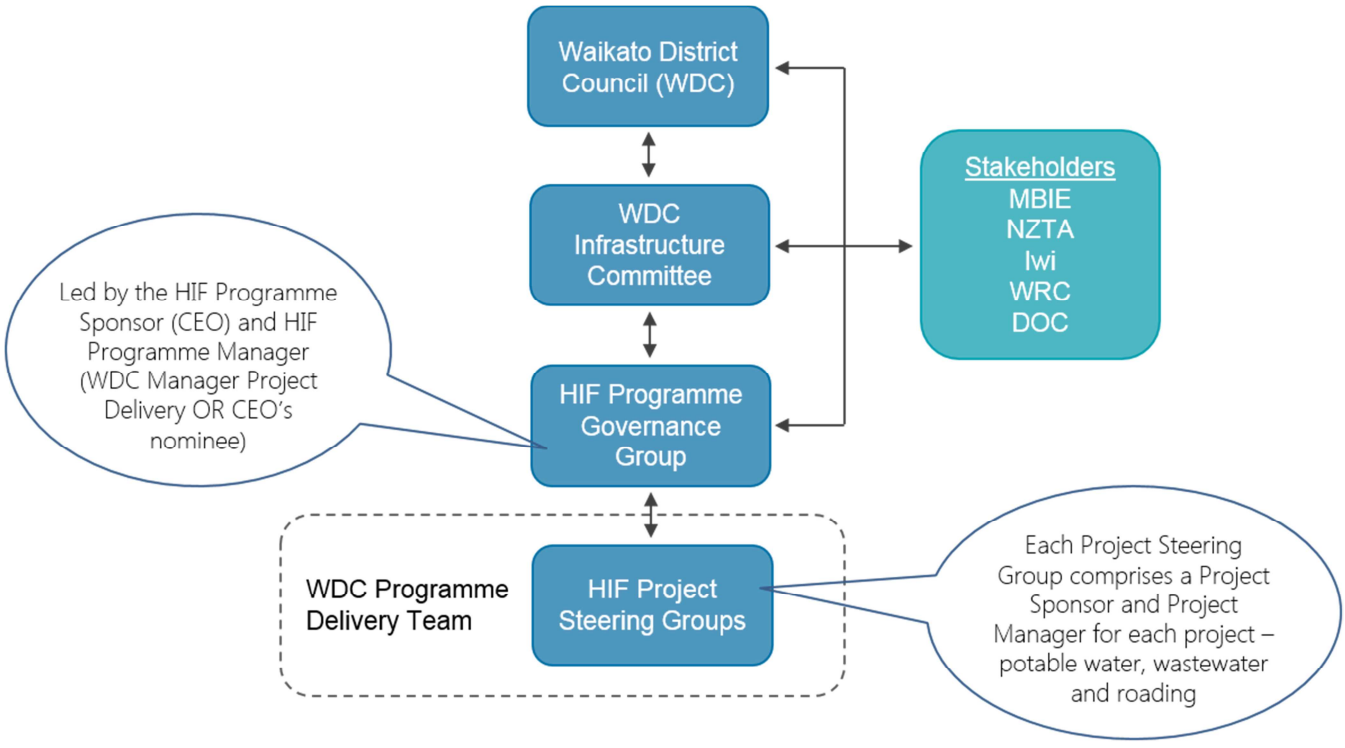
The management case confirms that the programme is deliverable within the proposed timeframes, and to the required quality standards. It established that WDC has the ability and frameworks in place to effectively manage governance, risk management, communications and stakeholder management, benefits realisation and quality assurance.

- Key personnel have been identified and roles and responsibilities assigned
- Programme milestones, outcomes and measurement have been identified
- Risk management processes are in place to manage the financial and commercial, project and technical risks
- Established processes and procedures for procurement and consultation have been agreed
- Project evaluation and benefits realisation measurement have been established

HIF Programme Governance

A four-tiered governance structure has been developed to support quick decision making and provide robust management and governance of the infrastructure projects in line with WDC's established project management quality system. This will allow expeditious and efficient delivery to enable 'more houses sooner'.

- Governance and key day-to-day decision-making will be made by the HIF Project Steering Groups that report to the HIF Programme Governance Group, led by the Programme Sponsor - Gavin Ion, Waikato District Council Chief Executive.
- The WDC Infrastructure Committee, which reports to WDC, will oversee the HIF Programme Governance Group and monitor the development of new infrastructure and facilities.



- WDC will collaborate with Ministry of Business, Innovation and Employment (MBIE), NZ Transport Agency (NZTA) and other key stakeholders at a governance level.
- Effective collaboration and transparent communication with these stakeholders will allow for the appropriate review of risks, opportunities and issues and alignment on the appropriate management approach and ensure that required approvals and direction for the projects are obtained in a timely manner, and that benefits are realised.

Managing implementation

WDC uses best practise project management methodologies, for large projects. WDC's HIF Programme Delivery Team, comprising a Programme Manager and Project Managers, is responsible for the successful delivery of the programme.

- The HIF Programme Delivery Team will lead the procurement of external consultants will be procured to deliver the detailed design and resource consenting applications associated with each of the three projects
- The HIF Programme Delivery Team will be supported by a number of central WDC functions, specifically the Consenting, Procurement, Asset Management and Regulatory teams to ensure that the projects are consented and procured within the Council's regulatory requirements, meet all statutory obligations under the Resource Management Act (RMA) and are delivered in line with the policies related to the Long Term and District Plan
- The HIF Programme Governance Group will identify work requiring independent technical peer review and appoint consultants to undertake, as necessary, this to ensure the proposed technical solutions deliver on project objectives, minimise technical risks, drive value for money and achieve benefits realisation

Risk management

Key implementation risks have been identified, evaluated and recorded in accordance with WDC's risk management policy and framework. WDC has an appropriate and effective risk management process in place to manage the financial and commercial, project and technical risks associated with the programme.

- Risk management framework and processes were developed in alignment with the Joint Australian/ New Zealand International Standard Risk Management – Principles and guidelines: AS/NZS ISO 31000:2009
- Risks are identified and managed at three levels; Strategic, Operational and Project level. Each risk level has corresponding processes that provide systematic steps to assess and manage risks relative to the risk level.
- HIF programme risks will be managed on Project Steering Group level and Programme Governance Group levels, with escalation of project risks to the HIF Programme Governance Group. High impact risks will be reported to Council via the Audit & Risk and Infrastructure committees.
- Broadly speaking, the majority of programme risks have low residual risk meaning these will be managed using WDC's routine project/contract procedures, involving regular monitoring and reporting of the risk profile (on WDC's risk 'watch list').
- There are three programme risks that have more significant residual risk (High or Significant) will

require more scrutiny and ongoing watch along with specific management and more robust reporting framework. These are:

- Wastewater discharge consentability - delays or difficulty in getting approval for resource discharge consent could delay implementation of the HIF programme
- Private Plan Change 20 timings and approval – timings are independent from the HIF programme so could negatively impact programme implementation and delay benefits realisation
- Developer agreement –the final negotiations may complicate or delay the programme

- The key infrastructure project technical risks are relating to design and final cost certainty relating to:
  - Wastewater Treatment Plant – ground improvements required for developing a new wastewater treatment plant on the existing site
  - Wastewater Rising Main Conveyance – resource consent approval for the wastewater discharge location near the Waikato River. Associated stakeholder engagement and Iwi consultation.
  - Potable Water Treatment Plant - Land acquisition for plant expansion and damage to existing services during construction.
  - Roading upgrades – geotechnical conditions for road improvements.
- Risk owners and associated management approaches have been identified and documented.

Procurement

WDC will utilise the Waikato Local Authority Shared Services (LASS) Professional Services Panel (PSP) to procure the detailed design and consenting consultants. Given the scale and complexity of the projects being procured, this will be managed using WDC's large scale procurement policy standards. This will allow for a robust and comprehensive procurement management process that ensures the right people do the right things, at the right time to achieve optimal outcomes

- WDC's Procurement Policy reflects the overarching principle guiding WDC procurement, being 'Sustainable value for money through the whole of life of an asset or service'.
- The procurement process allows for effective risk management and stakeholder involvement, a structured approach to market and features a number of gateways/hold points to facilitate optimal choices and the most appropriate supplier selection.
- The Procurement Policy Principles are based on the Office of the Auditor General's Good Practice Guide "Procurement Guidance for public entities".
- Utilising the LASS panel will reduce time and costs associated with a traditional procurement process allowing a more efficient process and external detailed design consultants to be appointed more rapidly, to expedite housing supply in Te Kauwhata.
- Phase 1 will procure the detailed design of all infrastructure necessary to enable the construction of 1,190 houses and an additional 1,600 dwellings from the Lakeside Development and construction of the interim wastewater treatment plant upgrade.
- Phase 2 will procure the construction of the necessary water and wastewater infrastructure to enable the construction of 1,190 houses and additional 1,600 dwellings at Lakeside.
- There is an opportunity to have a developer-led design build contract for aspects of the infrastructure necessary to enable the new 2,790 dwellings in Te Kauwhata. It has been agreed that the road infrastructure upgrades will be undertaken by the developer and there is ongoing

discussion that the developer also lead a design build contract for the new MBR wastewater treatment plant.

Consultation & stakeholder engagement

WDC has an established and proven consultation and stakeholder engagement framework that is guided by by the International Association for Public Participation (IAP2) participation spectrum.

- Central to programme success is consensus between programme partners and key stakeholders.
- Three organisations (NZ Transport Agency, MBIE and Waikato District Council) form the HIF Programme Governance Group (PGG) which is the main means of engagement between these parties. This group will meet monthly.
- Stakeholders have been identified on programme and project-specific levels, noting the differing interest areas and level of engagement necessary to reach agreement on key decisions or alignment on key points.
- There are a wide range of key stakeholders with interests in the three projects and majority of these have participated in ongoing engagement and consultation with WDC, however there are some exceptions given the wastewater conveyance and discharge mechanism. Associated stakeholder engagement and Iwi consultation will be central during consenting and engineering design.
- The HIF Programme Manager will be responsible for all engagement, in consultation with the three project teams. Engagement and consultation forms a standard item on the agenda for all consultant monthly reports and meetings, which provides the opportunity for the design consultant to keep the HIF Programme Manager and Delivery Team abreast of any issues or risks.

Further information

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Watercare Waikato

Te Kauwhata WWTP - Upgrade

Contract Approval and Change Request
OG0001081

Date: 06/07/2022
Version: 2.0

Prepared by: Peter Crabb / Richard Pullar
Distribution: Water Governance Board, Carole Nutt

Document Purpose:

This Business Case provides an assessment of the proposed need. The purpose is to:

- confirm business requirements and identify any constraints to the solution
- check that the outcome is aligned with WDC and Watercare's strategies and initiatives
- identify the solution boundaries and options to achieve the project outcome
- secure funding to progress the project

Document Review & Approval:

Consultation and Review:

I confirm that I have consulted with the various business unit personnel to develop this Business Case

Responsibility	Consultation	Title	Name
WDC Finance	To confirm LTP budget and funding is available	Management Accountant	Linda Cilliers

Endorsement:

Project Role	Approval	Signature	Date
Waters Contract Relationship Manager	Agrees that the need exists, and the high-level outcomes suit the business need	[Minuted Approval]	

Document Approval:

Project Role	Approval	Signature	Date
Waters Governance Board	Approves this Business Case and the associated investment	[Minuted Approval]	

Recommendation

It is recommended that a total of $24.29M be approved to complete the Te Kauwhata Wastewater Treatment Plant (WWTP) Upgrade, releasing a further $7.85M of allocated LTP funding. The upgrade remains within budget, brings the plant back into compliance, and will cater to the current growth, supplying a process capacity of 1500 m^3/d, before an additional process lane is needed.

The best value solution for the Te Kauwhata WWTP Upgrade installs a dual-lane Membrane Aerated Biofilm Reactor (MABR) close-coupled to a Membrane Bioreactor (MBR) to provide a high-quality filtered effluent and retain the existing ponds and wetlands for a flow buffer during storm events. The MABR/MBR process is compact, proven, resilient, simple, and expandable. The compact MABR treatment process has already secured the benefit of enabling the ground improvements to be completed quickly.

To deliver process improvements by December 2022, the project will commission the MABR element of the plant, supported by a temporary containerised membrane filtration system, until the balance of the plant is commissioned in October 2023. The supporting temporary equipment cost is $0.84M.

A workshop is recommended to review the projected growth in conjunction with the timing of the new consent and future funding requirements.

1. Business Requirements

1.1 Project Purpose

The purpose of the upgrade is to achieve compliance, provide safe and efficient wastewater treatment, allow for projected growth, and create a platform that can be readily expanded.

1.2 Wastewater Catchment and Growth

The Te Kauwhata wastewater catchment includes Te Kauwhata, Rangiriri, and the Springhill Correction Facility, which has a prison population of 1500. The current combined population equivalent (PE) connected to Te Kauwhata WWTP is 3,400.

The original WWTP was upgraded in 2006 from basic oxidation ponds to an enhanced aerated pond system using ‘Aquamats’. The submerged mats provide surface area for the growth of microorganisms to treat the wastewater. Treated wastewater then flows through planted wetlands and a rock filter in a continuous manner to Lake Waikare, via a small tributary that runs adjacent to the site.

The Housing Infrastructure Fund business case anticipated the population would increase to 9,500 by 2027 and then zero growth through to 2070. The recent 2070 Growth Strategy raised growth projections to 12,500 by 2030, peaking at 18,800 by 2070 and including additional commercial and industrial flows.

1.3 Committed Timeline

Te Kauwhata WWTP is not currently compliant with the consent. Formal proceedings with the Regional Council have commenced. An agreement was reached with the Regional Council to hold further action following a commitment to complete the significant plant upgrade by the end of 2022. The Waikato District Council also signed a memorandum of understanding with the community that discharges from the plant to Lake Waikare would cease in 2023. The treatment plant consent expires in 2028.

1.4 Te Ture Whaimana

Te Ture Whaimana is the vision and strategy for the restoration and protection of the Waikato and Waipā Rivers, with principles and directions that underpin the Waikato River Iwi’s engagement in the Waikato Regional Council (WRC) Healthy Rivers Wai Ora Plan Change. The special relationship between River Iwi and the Waikato and Waipā Rivers is paramount.

The Waikato and Waipā Rivers must be protected from further degradation, with outcomes where the Waikato and Waipā Rivers are protected and restored. Te Kauwhata native vegetation, Lake Waikare, and tributaries are connected to the Waikato River and form an important part of the wider river ecosystem.

The planned Te Kauwhata WWTP upgrade is an integrated resilient treatment solution that delivers high-quality filtered effluent, while also seeking an improved discharge under a new consent. A resilient treatment system reduces the demand on the natural environment and avoids cumulative effects on the rivers and wildlife.

1.5 Te Kauwhata WWTP Upgrade

The Te Kauwhata WWTP Upgrade Project is one of the major projects being delivered by Watercare Waikato to ensure the new wastewater system delivers consent compliance and is the platform to meet future population growth within the catchment.

The project provides additional wastewater treatment capacity by installing a new membrane treatment system and retains the existing ponds for a flow buffer in storm events. Retaining the existing treatment ponds offers a basic treatment process in extreme storm events or a significant natural disaster, a feature important to the local community.

A Membrane Aerated Biofilm Reactor (MABR) has a reduced footprint and reactor tank height that has offered a notable groundworks benefit. A compact membrane plant forms Phase 2 and brings the plant back into compliance and will cater to the current growth, supplying a process capacity of 1500 m^3/d, before an additional process lane is needed.

1.6 Upgrade Sequence and Outcomes

The **UV Upgrade** delivered initial process and compliance improvements by installing a UV treatment system, reducing E.Coli levels. The pumped UV is now operational and is incorporated in the final plant upgrade. The current operational process areas are indicated below in **Figure 1**

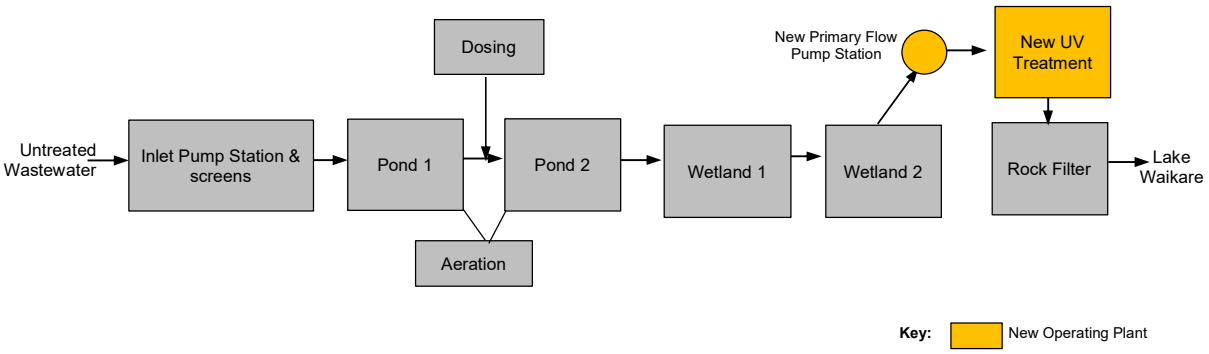

***Figure 1** – Te Kauwhata WWTP – Current process flow diagram*

The **Phase 2 MABR Treatment Plant** upgrade installs a new treatment system that delivers a high-quality filtered effluent, with a continued initiative for prompt outcomes that deliver excellence in the Waikato District. The enabling works and procurement of key items are underway; the ground improvements and concrete foundation slab are complete and all four MABR tanks are on-site.

For the construction of the new treatment plant, the tender returns have been received from contractors with practical experience in wastewater treatment and project delivery. The tender covers the construction and installation of the new treatment plant.

The returns included two options, both were evaluated by the tender and design team. This paper presents the solutions returned, Watercare's recommendation, and seeks approval to progress.

The **New Discharge Consent** seeks to relocate the discharge away from Lake Waikare, to meet current commitments and secure a new consent. Phosphorus and nitrogen daily load limits are also a constraint, catchment growth will be an additional driver for the consent renewal.

Lake Waikare is significant to Iwi, where Hapū has long-standing kaitiakitanga responsibilities for the mauri of the lake. The lake is very shallow and is hyper-eutrophic, vegetation and wildlife have been reduced since the lake level was lowered in the 1960s as part of the lower Waikato flood control defenses. The lake is also heavily impacted by farm runoff.

2. MABR Treatment Plant

The piling works are complete, the four MABR tanks are on-site, and the foundation work has commenced. This is suitable for both options detailed below site. The site will soon be ready for the main plant build.

Option 1 - MABR biofilm:

For the installation of an MABR biofilm with membrane filtration (MF), the tender return was lower than the parallel estimate, confirming pricing is competitive.

Item/Activity ($M)	Estimate	MABR Pure Biofilm
Project Delivery (inc. Margin)	0.81	0.74
Design Support	0.40	0.40
Construction	10.95	9.44
Contingency	0.88	0.76
Commissioning & Supervision	0.20	0.20
Total Capital Envelope	**13.23**	**11.54**

The main MABR biofilm with membrane filtration (MF) process areas are indicated below in **Figure 2.**

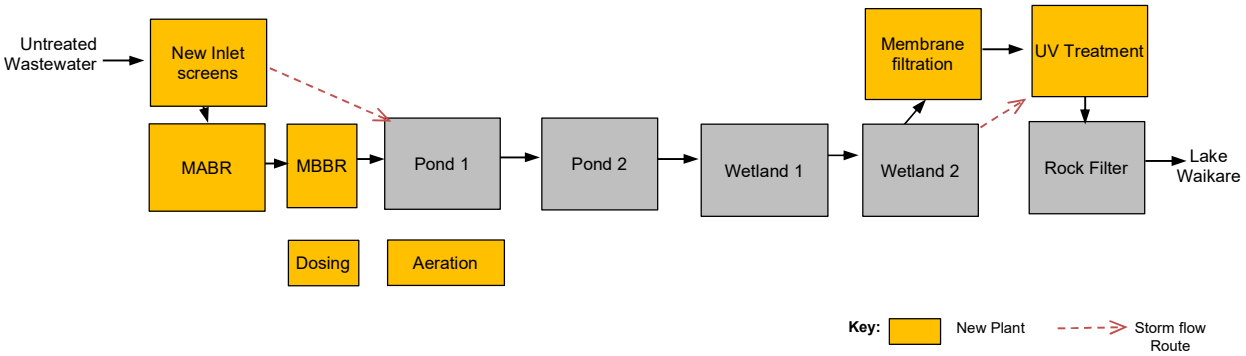

***Figure 2** – Te Kauwhata WWTP – MABR biofilm + MF process flow diagram*

The MABR Biofilm process delivers:

Process Performance	MABR Biofilm
MABR + MBBR	
Average dry weather flow	1100 m^3/d (12.7 L/s)
Peak hydraulic capacity	5200 m^3/d (60 L/s)
Membrane Filtration	
Average dry weather flow	1100 m^3/d (12.7 L/s)
Peak hydraulic capacity	1500 m^3/d (17.4 L/s) *

* Membrane Filtration sets the maximum flow of 1100 m^3/d (12.7 L/s) of full treatment.

The MABR biofilm process is a leading technology. Ongoing pilot trials at Mangere for the raw sewage pure MABR application have found that the mechanisms for nitrogen removal are more complex than initially assumed, and these remain under investigation. Until resolved, this represents a project process risk for this option.

Continued use of the existing oxidation ponds and wetlands for the primary treated flow represents a risk to the final effluent quality. Both are retaining high biosolids levels and a refresh is due, which is an action coupled to the biosolids strategy, a separate project.

Option 2 - MABR/MBR:

An MABR system treating secondary effluent is common and proven. A close-coupled MABR/MBR operates conventionally, and the MBR replaces the MBBR and MF. The main process areas are indicated below in **Figure 3.**

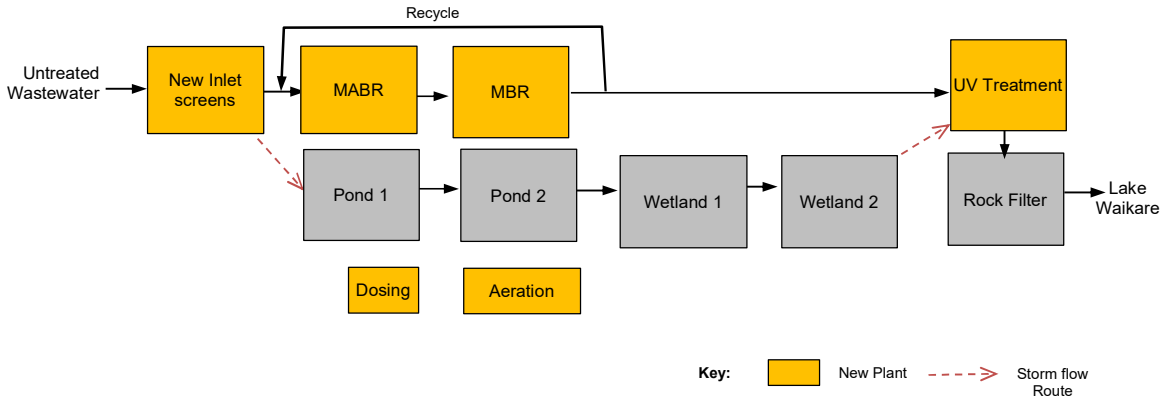

***Figure 3**– Te Kauwhata WWTP – MABR + MBR process flow diagram*

The MABR/MBR returns offered improved performance, reduced process risk, and simplified operation. The design takes advantage of the synergistic combination of MABR/MBR membranes and a leading supplier with deep membrane technology experience. The MABR/MBR solution secures one overall process and membrane guarantee from Suez.

A **single lane** can be installed at a cost that matches *Option 1 MABR Biofilm* above. The addition of two process tanks allows a **dual-lane** arrangement that delivers more capacity, operational flexibility, improved storm performance, and reduced compliance risk during wet weather events. Additionally, a dual-lane system can utilise the existing ponds during storm events and is expandable by adding more lanes.

A single-lane MABR/MBR will be significantly more complex and costly to upgrade in the future, because of limitations in modifying a single-lane process once operational. The most likely expansion pathway is to replicate the process once to increase capacity to 60L/s peak flow and again to reach 90L/s capacity.

The dual-lane option allows plant operations to continue, although at reduced capacity, while the new plant is commissioned.

The MABR/MBR process delivers:

Process Performance	*MABR/MBR Single Lane*	*MABR/MBR Dual Lane*
Average dry weather flow	*1100 m^3/d (12.7 L/s)*	*1500 m^3/d (17.4 L/s)*
Peak hydraulic capacity	*2600 m^3/d (30 L/s)*	***5200 m^3/d (60 L/s)***

The comparative costs are tabulated below:

Item/Activity ($M)	*MABR/MBR Single Lane*	*MABR/MBR Dual Lane*
Project Delivery (inc. Margin)	0.74	0.85
Design Support	0.40	0.40
Construction	9.44	12.18
Contingency	0.76	0.76
Commissioning & Supervision	0.20	0.20
Total Capital Envelope	***11.54***	***14.39***

To obtain process improvements by December 2022, the solution will commission the MABR element of the plant, supported by a temporary containerised membrane filtration system, until the balance of the plant is commissioned in October 2023.

The **Ultimate Treatment Plant** upgrade expands the process by adding a third lane, increasing the capacity to a process capacity of 2,250 m^3/d, and requires a solids handling facility. However, the limits of membrane technology can only achieve 5mgN/L median quality, within the current Nitrogen consented mass-limit. This means the new consent will need to be in place, before a third lane can be brought into service.

The additional lane will likely require groundwork which is a significant part of the CAPEX costs. The project is estimated to be similar in scale to Phase 2 with a CAPEX between $25M - $30M (subject to detailed designs and population projections).

3. Project Deliverables

This section defines what the Te Kauwhata WWTP Upgrade needs to deliver.

3.1 Scope

The scope of the MABR/MBR includes:

- An upgrade to provide a process capacity of 1500 m^3/d
- Meet the treated effluent consent requirements
- Detailed design including the development of P&D's and control philosophies
- Construction and installation of the membrane treatment plant
- Commissioning
- Production of O&M manuals
- Training of operators
- As-built construction record

The scope excludes:

- The addition of a third lane Ultimate Treatment Plant and the new Discharge Consent.
- New discharge consents
- Infrastructure associated with the new discharge location.

3.2 Procurement

Construction will proceed under a 3916 Construction Contract.

3.3 Project Outputs

The current time frame for the delivery of the works is as follows:

- The MABR and optional temporary filtration plant will be constructed and operational by December 2022
- The additional process units will be constructed and commissioned by October 2023.

3.4 Assumptions

- The Plant will have a 30-year life
- Current supply chain and shipping delays will not become significantly worse.
- New resource consents will not be required for the construction works.

4. AMP Funding

The allocation of funds for this project is shown in the table below:

Funding allocated ($M)	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	Total
Te Kauwhata HIF Funding AMP Code: 1WW10651, OG0001081	13.52	21.84	-	-	-	-	-	-	35.36
TK Treatment Plant Process Improvements AMP Code:DIA OG0001184	0.40	0.64	-	-	-	-	-	-	1.04
UV Treatment System	0.39	0.65	-	-	-	-	-	-	1.04
MABR/MBR	0.79	6.51	9.78	7.20	-	-	-	-	24.29
Pump Station	-	-	-	0.79	0.85	1.74	0.35	-	3.73
Conveyance	-	-	-	1.56	1.67	3.43	0.69	-	7.35
Balance available (+/-)	12.74	15.32	-9.78	-9.56	-2.52	-5.16	-1.03	-	0.00

The UV Upgrade was completed under an earlier approval of $1.04M. $16.44M has previously been approved for the MABR/MBR, an additional $7.85M of LTP funding needs to be released for commitments to proceed further. The project remains within the LTP budget and has $0.25M retained in risk to cover escalation costs while the tender remains open, pending approval to proceed.

The upgrade remains within budget, delivers a high-quality treated effluent and the 1500 m^3/d capacity is aligned with current technology and consent load limits.

A workshop is recommended to review the projected growth in conjunction with the timing of the new consent and future funding requirements.

5. Risks/Issues

The following overarching risks to the project achieving this objective through the programme have been identified. The risks will be mitigated once a detailed design and been completed and supply agreements put in place along with proposed mitigation. The following may impact the project:

- Delays in the procurement of key equipment from Europe due to shipping delays.
- Lack of local contracting resources for civil works
- Unforeseen ground conditions – This will be mitigated during detailed design
- Cost escalations due to current post covid inflation
- Project delays due to Covid 19.

6. Programme

The upgrade works have commenced, and the interim solution will be in place by December 2022, with the total delivery completed in October 2023.

Project Duration	Start	Finish
Feasibility	Complete	Complete
Design	Complete	Complete
Execution	Underway	October 2023
Closure	November 2023	December 2023

7. Project governance/ reporting

This project will follow the normal governance and project management process.

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Te Kauwhata WWTP – Basis of Design Statement

Introduction

Scope of Document

This basis of design statement sets out the key assumptions and parameters for the concept design of a process for the upgrade of Huntly WWTP to meet the wastewater resource consent limits and treatment needs of Huntly and Te Kauwhata. This document will therefore include the physical works required.

Project Overview

CH2M Beca has reviewed the information provided by WDC and prepared a letter report (attached) that summarises the information reviewed, any gaps in the information, assumptions made in the absence of information and any additional investigation recommended.

A basis of design statement has been prepared using population and growth forecast data, wastewater characterisation and flow data (Stantec, October 2017), existing resource consent conditions and WDC's specific operational requirements.

Design Criteria and Assumptions

Use this form to establish the key design criteria, parameters, information, and assumptions on which the design is to be based. This form must be maintained as an accurate reference for the design team.

1. Design area or discipline			
Title of area/discipline:	Wastewater	Activity No:	

2. Description of the design activity

This Basis of Design covers the flow and load requirements for the upgrade to Huntly WWTP to enable it to treat the future wastewater flow from Huntly and Te Kauwhata (including the proposed Lakeside development, Springhill Corrections Facility, and Huntly septage).

For details refer to Basis of Design Report (attached).

3. Design area or discipline

- HIF, cost estimate, risk register and DBC reports and input requirements;
- GIS data and folders
- Population forecast information and future expected changes in land use which may affect wastewater character e.g. future commercial/industrial customers
- Te Kauwhata wastewater quality and flow data
- Previous reports associated with Te Kauwhata and Huntly WWTPs:
  - Lakeside Private Plan Change Peer Review
  - Lakeside Private Plan Change Infrastructure Assessment
  - Huntly WWTP Actiflo Upgrade- Concept Design (Beca)

Several reports have been received, which are referenced throughout, these are as follows:

- Reference 1: *Centralised and Decentralised Wastewater Treatment Plant Investigation*, Stantec (October 2017); and
- Reference 2: *Wastewater Flow Forecasts 2017 to 2048*, Stantec (August 2017)
- Reference 3: *Te Kauwhata WWTP Capacity Assessment*, Beca (October 2017

4. Other reference documents

- GHD, Sept 2017 (memorandum). *WDC Housing Infrastructure Fund (HIF) - Te Kauwhata Detailed Business Case: Summary of longlist options assessment*

5. Design standards

- NZ standards
- Waikato / Hamilton industry standards
- Auckland Watercare standards where appropriate

Assumptions

The following assumptions have been made as part of this work:

- The flow and load per capita from both Huntly and Te Kauwhata will increase proportionally to the population growth in that area
- The influent characteristics from each area will remain constant over time. The change in influent characteristics due to the change in the network have not been accounted for, with the exception of hydrogen sulphide in the incoming stream from Te Kauwhata to Huntly which has been assumed to increase
- Diurnal patterns for the flow and load from each area will remain constant over time
- Design horizon of the new WWTP will be for 50 years from

Populations:

Area	Source	2017	2068
Huntly	*Wastewater Flow Forecasts 2017 to 2048* (Stantec,2017)	7,799	9,420
Te Kauwhata (excluding Springhill corrections facility)	*Te Kauwhata WWTP Capacity Assessment* (Beca, 2017)	1,258	7,489
Combined Population		9,057	16,909

Design Criteria:

Parameter	Unit	2068 (Pop. ~17,000) Combined Flow/Load
Average Daily Flow	m^3/d	5,216
Average Dry Weather Daily Flow	m^3/d	4,013
Peak Wet Weather Daily Flow	m^3/d	22,282
Peak Instantaneous Flow	L/s	336
COD (as O_2)	kg/d	4,135
$cBOD_5$	kg/d	1,716
Total Kjeldahl Nitrogen	kg/d	315
Ammonia Nitrogen (as N)	kg/d	205
Total Phosphorus (as P)	kg/d	29
Total Suspended Solids	kg/d	2,676
Volatile Solids	kg/d	2,048

7. Attachments

CH2M Beca, January 2018. *Te Kauwhata WWTP – Basis of Design Statement*

8. Approvals

Comments:

Initiator : Reuben Bouman Date: 25/01/18

print name *signature*

Discipline leader: John Crawford Date: 25/01/18

print name *Signature*

Attachments

CH2M Beca, January 2018. *Te Kauwhata WWTP – Basis of Design Statement*.

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Waikato District Council
Private Bag 544
Ngaruawahia 3742
New Zealand

25 January 2018

Attention: Mark Curtis

Dear Mark

Te Kauwhata WWTP – Basis of Design Statement

1 Introduction

Waikato District Council (WDC) has been allocated $37m from the national Housing Infrastructure Fund (HIF) to further develop Te Kauwhata Township. WDC is now preparing a detailed business case (DBC) to support its HIF application which must be submitted by the end of February 2018.

The outcome for this project is that WDC will have Phase 1 concept designs for wastewater option 1 as outlined in the long list options assessment (GHD, Sept 2017).

The concept design report will inform the DBC and will be used for the development of capital costs and whole of life costs associated with option 1 (provision of Te Kauwhata WWTP capacity at the Huntly WWTP site, in addition to Huntly capacity). This will allow the DBC to compare option 1 with the alternative option proposed by Lakeside Developments. It will further allow WDC to calculate development contributions and NPV costs for Huntly WWTP/Lakeside WWTP options.

2 Glossary

ADF	Average daily flow
ADWF	Average dry weather flow
BoD	Basis of Design
$cBOD_5$	Carbonaceous biological oxygen demand
COD	Chemical oxygen demand
PWWF	Peak wet weather flow
TKN	Total Kjeldahl nitrogen
TP	Total phosphorous
TSS	Total suspended solids

3 Information Received

The following information has been provided by Waikato District Council:

- HIF, cost estimate, risk register and DBC reports and input requirements
- GIS data and folders
- Population forecast information and future expected changes in land use which may affect wastewater character e.g. future commercial/industrial customers
- Te Kauwhata wastewater quality and flow data
- Previous reports associated with Te Kauwhata and Huntly WWTPs:
  - Lakeside Private Plan Change Peer Review
  - Lakeside Private Plan Change Infrastructure Assessment
  - Huntly WWTP Actiflo Upgrade- Concept Design (Beca)

Several reports have been received, which are referenced throughout, these are as follows:

- Reference 1: *Centralised and Decentralised Wastewater Treatment Plant Investigation*, Stantec (October 2017); and
- Reference 2: *Wastewater Flow Forecasts 2017 to 2048*, Stantec (August 2017)
- Reference 3: *Te Kauwhata WWTP Capacity Assessment*, Beca (October 2017

4 Assumptions and Exclusions

In preparing this basis of design document and the subsequent concept design, CH2M Beca has made the following assumptions:

- **Work completed by others** – it is assumed that works associated with the wastewater transfer pipeline from Te Kauwhata to Huntly, water treatment, storage and reticulation assessments, transportation assessments will be completed by others and are excluded from the scope of services
- **Wastewater flow assumptions** – flow assumptions are to be agreed with WDC based on existing information
- **Missing Data** – Where specific data required for the BoD and subsequent concept design are missing or unavailable, CH2M Beca will make its best efforts to source typical industry data from a similar context and derive, from that, data for use in this project. However, no guarantees or assurances can be given in terms of the actual suitability of that data to represent the situations being analysed
- **Lakeside WWTP** – we understand that Mott MacDonald has provided a peer review of technical issues, functionality, redundancy provisions and costing work for the proposed Lakeside WWTP design and assessment of this option is excluded from this scope of services
- **Risk register** – a single risk register for all packages shall be maintained by Jacobs (based on a SharePoint site) that shall be a live document with all teams accessing and feeding into this
- **Financial and economic analysis** – any financial (except OPEX assessment) and economic analysis is excluded from this scope of services
- **Progress reporting and project decisions** – it is assumed that progress reporting and project decisions will be made via the weekly project meeting with WDC

The following assumptions have been made as part of this work:

- The flow and load per capita from both Huntly and Te Kauwhata will increase proportionally to the population growth in that area
- The influent characteristics from each area will remain constant over time. The change in influent characteristics due to the change in the network have not been accounted for, with the exception of hydrogen sulphide in the incoming stream from Te Kauwhata to Huntly which has been assumed to increase
- Diurnal patterns for the flow and load from each area will remain constant over time

5 Current Influent Characterisation

5.1 Influent Flow

5.1.1 Huntly WWTP Flow

Influent flow data for the existing Huntly WWTP has been provided for 2010 through to February 2017, refer to Figure 1. The average influent flow to the plant from March 2016 to February 2017 was 2,430 m³/d. The higher flows in 2010-2012 were due to a large number of wet weather events. During a peak wet weather event in April 2017, the WWTP received 15,600m³ of wastewater over 27.7hrs (13,530m³/d) This equates to a peak wet weather flow (PWWF) that is 7.54 times that of the average dry weather daily flow.

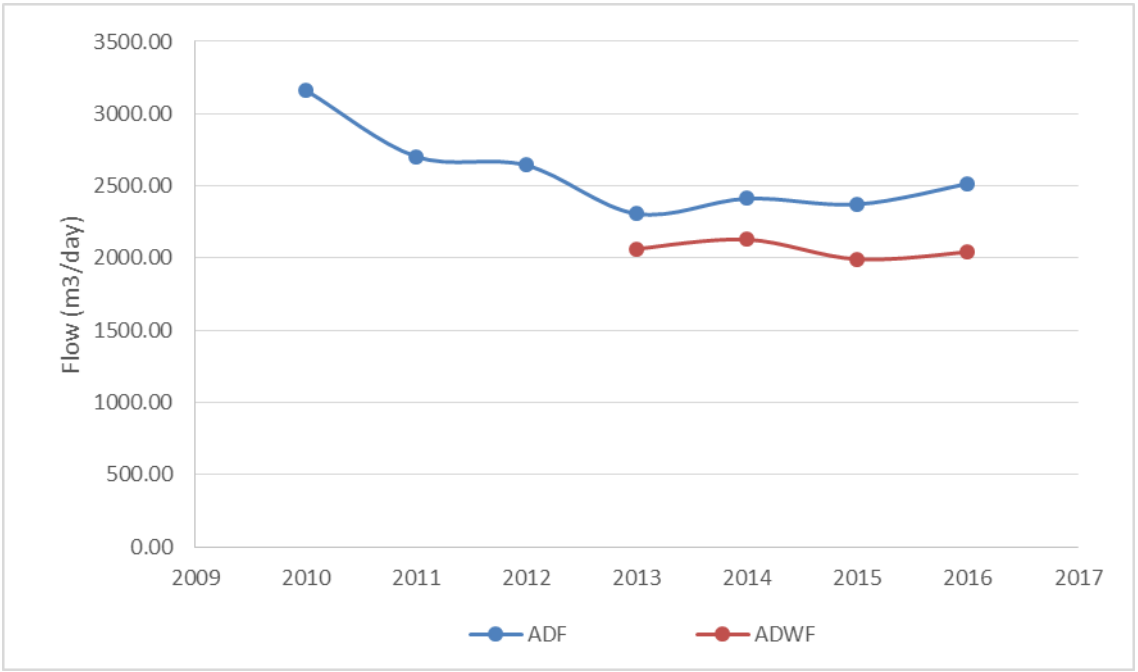

Figure 1: Historical Average Daily flow at Huntly WWTP 2010 - 2017

5.1.2 Te Kauwhata WWTP Flow

Influent flow data for the existing Te Kauwhata WWTP has been provided for the last seven years. However due to significant growth and development within the Te Kauwhata area of benefit (AoB), only recent daily flows from 2015 to 2017 have been considered, refer to Figure 2. The average influent flow to the plant from September 2016 to September 2017 was 779 m^3/d. The peak daily flow occurred in March 2017 and was 5 times the annual average daily flow. The peak daily combined Springhill and Te Kauwhata flow rate over the same period, September 2015 to September 2016, was 3,987 m^3/d. To optimise the pumps and pipe from Te Kauwhata to Huntly, it has been decided (by others) to base the design on storage of wastewater in Te Kauwhata Ponds during peak wet weather events, and pump to the central WWTP when flows have returned to near normal levels. As such the design PWWF from Te Kauwhata WWTP is based on the peak weekly flows from the population (which is 3 times ADWF) plus the design peak flow from Springhill corrections facility (which is 1,400m^3/d) as presented in reference 3.

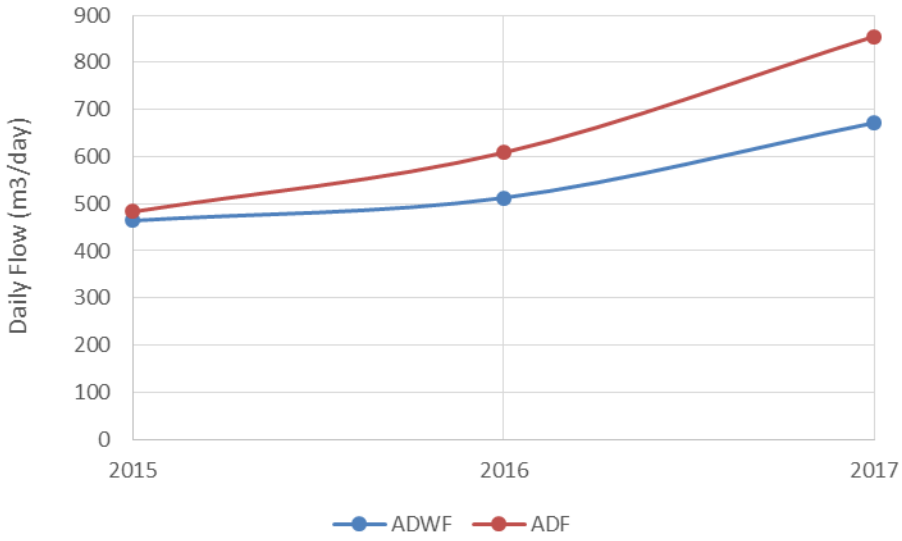

Figure 2: Historical Average Daily flow into Te Kauwhata WWTP September 2015 – September 2017

5.2 Influent Load

Historic Influent Loads

Influent nutrient data from Reference 2 has been used for Huntly WWTP's basis of design. The estimated 2017 values are detailed in Table 5-1. A structured influent sampling and analysis programme will be required to adequately characterise the influent for preliminary design of the Huntly WWTP.

Influent nutrient samples were collected every 2-4 days between December 2015 and February 2016 for the Te Kauwhata WWTP including Springhill Prison Loads.

Flow data from 2010 to February 2016 has been provided for both Te Kauwhata and Huntly. The estimated 2017 flows were used to calculate associated influent loads, refer to Table 5-1.

Table 5-1: Estimated 2017 Influent Loads at Huntly WWTP and Te Kauwhata WWTP

Parameter	Units	Huntly Influent	Huntly Raw Septage	Te Kauwhata Influent	Springhill	Total
COD	kg/d	1,102	600	203	240	2145
$cBOD_5$	kg/d	560	100	118	105	883
TSS	kg/d	653	400	144	120	1317
TKN	kg/d	112	16	21	21	170
NH4-N	kg/d	78	4	14	14	110
TP	kg/d	20	3	4	4	31

5.3 Diurnal Variation in Flow and Load

No hourly or instantaneous data for either Huntly or Te Kauwhata has been provided to Beca. It has been assumed that both Te Kauwhata and Huntly follow similar diurnal flow and load patterns as other small towns within the upper North Island and that Huntly WWTP will exhibit slightly flatter peaks and troughs in flows and loads than Te Kauwhata due to its higher population and more commercial activity. Refer to Figure 3. It is assumed that the existing ponds at Te Kauwhata WWTP will not be used for smoothing the diurnal peaks. Further investigations into the historical diurnal pattern at Huntly, Te Kauwhata, and Springhill corrections facility will be required for preliminary design.

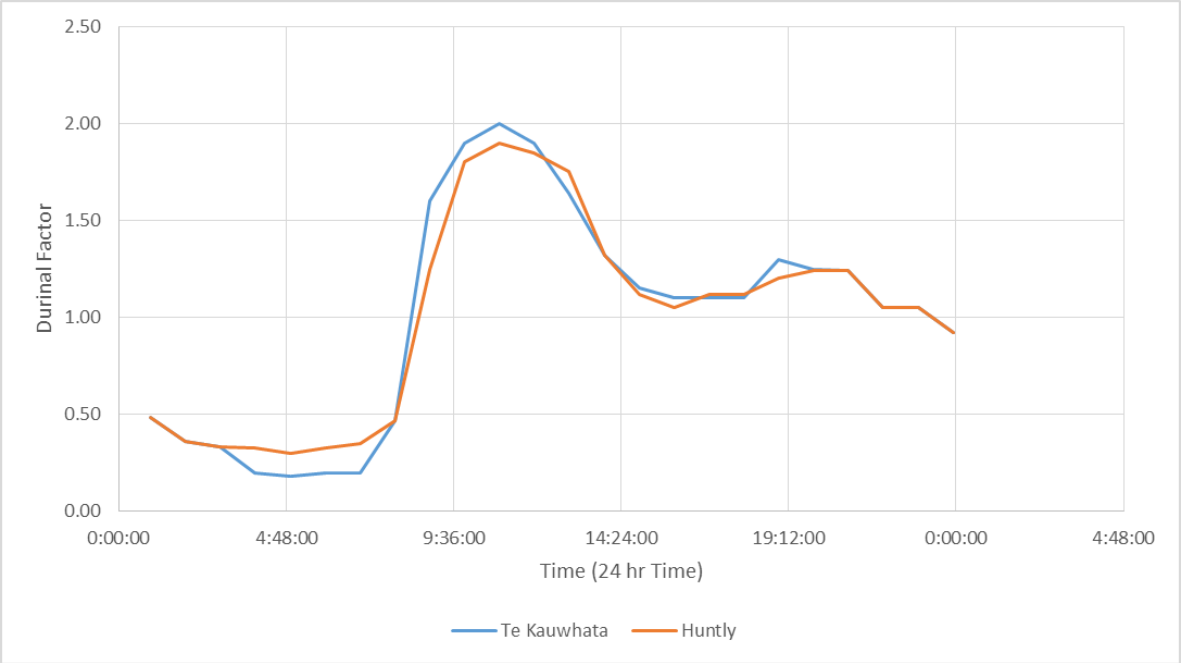

Figure 3: Te Kauwhata WWTP and Huntly WWTP Influent Flow Diurnal Profiles

6 Estimated Future Flow and Load to Huntly WWTP

6.1 Population Forecast (Huntly & Te Kauwhata)

The population growth forecasts for each catchment have been provided by WDC, refer to Table 6-1. The upgrade to the plant is to be sized for design horizon to 2048 with a population of 17,000 people, which will provide sufficient capacity until 2068 based on extrapolation of the design population growth curve. The process sizing for the plant and a staging strategy for the development after 2035 will require further investigations in preliminary design.

Table 6-1: Population Increase for Huntly WWTP Design Horizon

Area	2017	2048	2068
Huntly*	7,799	8,496	9,420
Increase (%) from 2017	0%	9%	21%
Te Kauwhata #	1,258	7,489	7,489
Increase (%) from 2017	0%	495%	495%
Total	0%	76%	87%
Combined Population	9,057	15,985	16,909

*Based on population forecast for Huntly found in Ref 1

Based on population forecast for Mid-Waikato, plus an additional 400 dwellings by 2020 and 1600 additional dwellings by 2028. Based on each dwelling have 2.5 occupants (Stantec, 2017)

Springhill Prison Populations have not been included in Te Kauwhata Population estimates as it assumed there will be no increase in contributing flows

6.2 Per Capita Flow and Load (Huntly & Te Kauwhata)

The current flows from the previous sections have been converted to an average flow and load per capita using the forecast population at 2017 from Reference 1 for Huntly and Reference 3 for Te Kauwhata. The per capita loads for Huntly are based on values provided by Stantec's report, reference 1, and verified by WDC. The per capita loads for Te Kauwhata WTTP are based off influent data provided for the periods of September 2016 to September 2017, with the exception of ammoniacal nitrogen and chemical oxygen demand, which are also based on values provided within Reference 1.

Table 6-2: Historical Per Capita Flows and Loads for Te Kauwhata and Huntly WWTP

Influent Parameter	Unit per capita	Huntly WWTP	Te Kauwhata WWTP	Typical NZ per capita
Average Daily Flow	L/d	310	260	350
Average dry weather flow (ADWF)	L/d	230	200	180-280
Peak Wet Weather Daily Flow	L/d	1265	600	
Ammoniacal Nitrogen (as N)	g/d	10.5	11.1	
$CBOD_5$	g/d	71.8	94	80
COD (as O_2)	g/d	141.3	161	
TKN	g/d	14.4	16.4	15
TP	g/d	2.6	3.1	2.0
TSS	g/d	83.7	114	86
Volatile Solids	g/d	63.6	84.4	

6.3 Projected Future Flow and Load (Huntly & Te Kauwhata)

The future flow, load and population projections for 2048 and 2068 are presented in Table 6-3. Values are based on the previously presented per capita loads and flows. These average loads are to be carried forward into the process sizing and sequencing analysis.

Table 6-3: Projected and Design Flows and Loads for the Upgraded Huntly WWTP

Parameter	Unit	2017 (Pop. ~9,000)	2048 (Pop. ~16,000)					2068 (Pop. ~17,000)				
		Combined Flow/Load	Huntly	Huntly Septage	Te Kauwhata	Springhill Prison	Combined Flow/Load	Huntly	Huntly Septage	Te Kauwhata	Springhill Prison	Combined Flow/Load
Average Daily Flow	m^3/d	3,066	2,634	36	1,950	300	4,920	2,920	45.5	1,950	300	5,216
Average Dry Weather Flow	m^3/d	2,366	1,954	36	1,500	300	3,790	2,166	46	1,500	300	4,013
Peak Wet Weather Flow	m^3/d	12,041	14,737	36	4,500	1,400	19,273	16,336	46	4,500	1,400	22,282
Peak Instantan. Flow	L/s		242		52	16	310	268		52	16	336
COD (as O_2)	kg/d	2,145	1,200	1,100	1,200	240	3,740	1,330	1,365	1,200	240	4,135
$cBOD_5$	kg/d	883	610	180	704	105	1,599	680	227	704	105	1,716
Total Kjeldahl Nitrogen (as N)	kg/d	170	122	29	123	21	295	135	36	123	21	315
Ammonia Nitrogen (as N)	kg/d	110	89	7	83	14	193	99	9	83	14	205
Total Phosphorus (as P)	kg/d	31	22	6	23	4	55	24	7	23	4	59
Total Suspended Solids	kg/d	1,317	711	720	854	120	2,405	788	910	854	120	2,672
Volatile Solids	kg/d	974	540	576	632	89	1,837	600	728	632	89	2,048

7 Effluent Quality Required

It is assumed that the Huntly WWTP will continue to ultimately discharge to the Waikato River. During construction of the upgraded plant the existing plant must continue to meet the treated water quality standards outlined in Table 7-1.

Table 7-1: Existing Resource Consent Limits at Huntly and Te Kauwhata WWTP

Parameter	Units	Huntly WWTP		Te Kauwhata WWTP	
		90th %ile Limit*	Median Limit	90th %ile Limit*	Median Limit
Expiration Date		31/03/2029		1/07/2029	
Flow	m^3/d	11500		3600	1100
pH		6 to 9		-	
Biochemical Oxygen Demand ($cBOD_5$)	mg/L	60	30	20	10
Total Suspended Solids (TSS)	mg/L	100	30	25	15
E.*coli*	MPN/100mL	-	126	-	1500
Ammoniacal (NH_4-N) Nitrogen	mg/L	20	10	-	-
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	12	6
Total Nitrogen (TN)	mg/L	-	25	-	8
Total Nitrogen Load	kg/d	-	29*	-	-
Total Phosphorous (TP)	mg/L	-	8	-	5.6
Total Phosphorous load	kg/d	-	8.8*	-	-

*Based on the combined limit for Ngaruawahia and Huntly WWTP (TN: 57kg/d, and TP 17.3kg/d) spilt based on the consented flow.

It is expected that the new treatment plant will need to comply with the treated water quality standards in Table 7-2: Estimated Future Resource Consent Criteria for Huntly + Te Kauwhata WWTP effluent discharge (Source: Stantec, 2017). These values are based on predictions outlined in the Reference 1, by Stantec.

Table 7-2: Estimated Future Resource Consent Criteria for Huntly + Te Kauwhata WWTP effluent discharge (Source: Stantec, 2017)

Parameter	Units	90th %ile Limit*	Median Limit
pH			6 to 9
Biochemical Oxygen Demand ($cBOD_5$)	mg/L	20	10
Total Suspended Solids (TSS)	mg/L	25	10
E.*coli*	MPN/100mL	-	126
Total Kjeldahl Nitrogen (TKN)	mg/L	12	6
Total Nitrogen (TN)	mg/L	-	8
Total Nitrogen Summer Load	kg/day	-	25* (37)
Total Phosphorous (TP) Summer Load	kg/day	-	5* (7)

*Final consenting value will likely include Ngaruawahia wastewater discharge. However, these values are for combined Huntly and Te Kauwhata WWTP only. Total value given in brackets.

To meet the load limits as given in table 7-2. The design limits for the WWTP will be 5mg/L TN, and 1 mg/l TP.

8 Other Relevant Issues

The flows and loads derivation presented above forms the core of the basis of design statement. At this very early stage in the concept design development, there are a number of other relevant issues known about, that need to be borne in mind while developing the concept. These include:

- WDC's preferred long term strategy is to treat the wastewaters from Ngaruawahia, Huntly and Te Kauwhata in a single, central location
- The ultimate populations from the three communities are roughly similar and, thus, a three identical reactor strategy could be a logical masterplan concept to bear in mind
- WDC's currently preferred process configuration is biological nutrient removal, configured as MBRs rather than with clarifiers. That allows comparison with other options that are being considered but the concept design developed should not cause other forms of solids separation to be excluded
- It is unknown yet as to whether the existing wetlands at the Huntly WWTP will be required to be retained as part of a long term WWTP. In conceptualizing the new WWTP, it should be assumed in the affirmative. This may also mean that additional wetlands are required in the longer term because of the higher flow volumes and rates from the joint WWTP
- The concept design needs to assume that, in the shorter term, transitional period, some blending of pond effluent and MBR effluent may be required
- There are currently capacity issues with the existing Huntly WWTP outfall. It should be assumed that, subject to investigations by WDC determining otherwise, the outfall diffuser system and possibly the transfer pipe will need to be duplicated and or replaced

9 Risks

The following risks have been identified as part of the work. Further risks will be identified, and transferred to the risk register as the concept design process proceeds:

- Diurnal peaks are based on typical diurnal patterns found at similarly sized plants, this includes Pauanui, Whangamata, Snells Beach and Warkworth WWTPs. This method has been used due to insufficient data being available. Larger diurnal peaks would require greater peak hour aeration capacity. Additionally, existing storage at the Te Kauwhata WWTP may be used to balance the flow which would smooth the diurnal peaks and troughs
- PWWF factors are based on current data plus a margin due to possible limitations in the flow monitoring. Higher PWWF than assumed, impacts on the assessment of peak flow storage (in the existing ponds) vs plant hydraulic capacity required
- Instantaneous flows are based on some coarse assumptions. Larger instantaneous flows than currently assumed would require larger inlet facilities
- Potential for future changes in flow variability seen at the new treatment plant due to changes in the catchments due to growth and changes in flow of Te Kauwhata
- Ground conditions in the area of the new treatment plant appeared to be very poor. A geotechnical investigation brief will be prepared as part of this work
- Consenting risks. The addition of Te Kauwhata flow to the Waikato River, will bring a new nutrient load to the river. However this is offset by the removal of wastewater discharge to Lake Waikare

- Cost estimating risk: If not fully reviewed and normalised, the potential for the Lakeside Development WWTP proposal to under estimate the likely actual cost of putting an acceptably (to WDC as the organisation to whom it will be vested and operated by) configured WWTP of suitable capacity at the TKWWTP site
- Cost estimating risk: Risk of very high Auckland city urban rates, particularly for pipeline installation, being transposed into an almost entirely rural context
- There is an existing outfall capacity issue with the Huntly discharge to the Waikato River. We understand that WDC are currently investigating this. If WDC do not identify a temporary blockage causing this issue, this system may need to be replaced

Yours faithfully,

John Crawford
Principal – Wastewater Engineering

on behalf of

CH2M Beca Ltd

Phone Number: +64 9 300 9000
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Waikato District Council
Private Bag 544
Ngaruawahia 3742
New Zealand

19 January 2018

Attention: Surya Pandey

Dear Surya

Te Kauwhata WWTP - On-site MBR Option Concept Design

Waikato District Council (WDC) has commissioned CH2M Beca Ltd to conceptualise an upgrade to the Te Kauwhata wastewater treatment plant (WWTP) to support its application to the Housing Infrastructure Fund (HIF) to further develop Te Kauwhata township. This option considers the installation of a 2.25 mega-litre per day (MLD) membrane bioreactor (MBR) on the existing WWTP site.

This work follows on from a study carried out to upgrade the Huntly WWTP to receive wastewater from both Huntly and Te Kauwhata towns (Te Kauwhata HIF – Wastewater Treatment Plan Concept Design, CH2M Beca, November 2017).

1 Concept Design

Attachment One shows the proposed concept design for upgrading the Te Kauwhata WWTP to a MBR process. Te Kauwhata WWTP is located in Rimu Street, Te Kauwhata (Part of Secs 26, 27 and Secs 32, 33 Te Kauwhata Suburbs, Lot 2 DPS 69450, Sec 1 SO 61508). The site is designated in the Waikato District Plan as M14 for wastewater treatment/landfill purposes.

The treatment plant location is at the interface of Te Kauwhata town and Lake Waikare and there is a lack of competent ground in that vicinity. The concept currently assumes construction in an area currently occupied by one of the treatment wetlands. There could be a better site for this greenfield facility within M14 which may have lower construction costs (due to less ground improvements needs and a better elevation in relation to the sewerage catchments and the final discharge point). However the extent of the closed landfill on M14 is unknown and requires further investigation.

1.1 Key Design Elements

Key design elements considered for the new Te Kauwhata WWTP upgrade are:

- Inlet lift pump station to raise incoming flows to the new inlet works. It is possible that the existing lift station and Springhill rising main may suffice, but the configuration would not be ideal.
- An inlet works facility which comprises a single packaged pre-treatment systems appropriate for a membrane bioreactor (MBR) plant. The packaged system would include:
  - Influent collection chamber feeding into 2x inlet channels
  - 2x Coarse (5mm aperture), primary screens
  - 2x Aerated grit removal tanks which includes aeration, grit removal conveyors and scum removal
  - 2x Fine (1mm aperture), secondary screens
  - Screenings load out conveyors/chutes to skip bin

  - Screening washer/compactors if the screens do not include an integral compaction zone
  - Scum/fat collection tank including decanting pipework
- A new MBR facility, comprising:
  - Activated sludge reactors (ASRs) including internal recycle, configured for nitrogen removal
  - Blowers and diffused aeration system,
  - Ultrafiltration membrane separation using submerged hollow fibre membranes
  - A clean in place (CIP) systems required for regular cleaning of the membranes
  - Return activated sludge (RAS) and waste activated sludge (WAS) pumping systems
  - Alum dosing for phosphorus removal
  - Sodium bicarbonate (existing on site or similar) for managing wastewater alkalinity during the nitrification process.
  - Future detailed influent characterisation may identify that supplementary carbon dosing is required to provide for the required level of denitrification.
- A WAS dewatering facility comprising:
  - WAS storage which includes coarse bubble aeration
  - Dewatering utilising either single stage centrifuge technology or screw press with pre-thickening.
  - Associated pumps and polymer systems
  - Dewatered solids load out into skips or truck for disposal offsite to Hampton Downs landfill or to some other facility such as a monofill at Huntly WWTP. In this regard, a target dry solids content of 20% is appropriate.
- Overflow balancing including reconfiguring a portion of existing Pond 1, a gravity bypass from the new Inlet works to the storage facility and a gravity return line back to the influent lift station.

1.2 Common Design Parameters

The following design parameters have assumed to be the same as described in the CH2M Beca report, dated November 2017 which described a concept for a combined WWTP at the Huntly site:

- Flows and loads (excluding Huntly) to 2048
- Design will be to Importance Level 3 as per NZS:4219
- Process description section including inlet works (screenings and grit treatment), reactor tank sizing, membrane sizing, recycle flows, activated sludge wasting, chemicals, process utilities, predicted performance

1.3 Design Parameters Specific to this Option

Flood Levels

The existing WWTP is situated on the south side of the central ridge that runs through Te Kauwhata township. The WWTP is built at the intersection of Lake Waikare and the sloping ground of the ridge. Based on the Te Kauwhata Stormwater Catchment Management Plan, Beca, 2009, the flood scheme design (100 year ARI) water level for Lake Waikare at Te Kauwhata is 7.50mRL. Ideally the main working platform would be built above that level.

1.3.1 Staging Options

It is likely to be possible to apply some staging to the development of the treatment plant. All preloading would be done in a single operation. However, the reactors have been sized using a reasonably conservative MLSS and because (unlike Huntly) Te Kauwhata development takes place over a reasonable period of time, it may be possible to build a single reactor initially and load it up (biologically) to higher than the long term intended load then build the second reactor later. Similarly, the number of UF membrane cassettes may also be able to be staged to suit the pattern of increase in flows.

1.3.2 Electrical Requirements

The estimated electrical load for the new plant requires installation of a new 500kVA transformer. WEL Networks has confirmed that the existing WWTP has a 200kVA transformer. It is understood that this will be made redundant when the new WWTP is installed.

WEL Networks has advised that the 11kV supply cable to the existing 200kVA transformer can be extended to feed the new 500kVA transformer for the WWTP at the proposed nearby location. This will require a new run of underground cable with joints and terminations to a new RMU and transformer complete with earthing and foundations.

The electrical, instrumentation and controls for the new WWTP will be based on recent plants of comparable size and will be supplied and installed in compliance with NZ regulations and standards. The SCADA and PLC will be in accordance with customer preferred equipment.

Emergency standby generation capacity is proposed to provide for critical load maintenance during power outages.

2 Desktop Geotechnical Assessment

To assist in developing the concept design and assess likely construction risks, Nathan McKenzie, Technical Director – Geotechnical, CH2M Beca has carried out a desktop geotechnical assessment, including review of the following report for a nearby site: Review of Te Kauwhata Heavy Vehicle Bypass Preliminary Geotechnical Report, Earthtech Consulting Ltd, 2010.

2.1 Geology

The Auckland QMap shows the site to be underlain by recent alluvial soils, likely to include loose sandy and soft to firm clayey sediments and potentially including layers of organic rich soils.

2.2 Geotechnical Testing

Identified geotechnical field tests near the proposed site have comprised three Cone Penetration Tests (Earthtech, 2010), one completed to 30m depth and two completed to 13m depth. These tests were within 50m of the proposed site.

2.3 Ground Conditions

The available geotechnical testing was consistent with other known geological information. Ground conditions at the site are expected to comprise up to 3m of weak organic rich soils (inferred from CPT records) over interbedded loose sands and silts to 13m depth or greater. Dense soils or rock was not encountered.

Due to the proximity of Lake Waikare, groundwater levels are expected to be near the ground surface.

2.4 Geotechnical Constraints and Development Considerations

Geotechnical constraints for the proposed WWTP and development implications are expected to include:

2.4.1 Ground Settlement

Peat and weak alluvial soils are expected to settle under any new loads imposed by earthworks and structures. High differential settlement may occur due to variations in the thickness of the more compressible soils beneath a structure. Thick clayey layers, where encountered, can settle slowly over months or years due to their low permeability. Peat soils can experience high creep settlement that can continue over years to decades.

New tanks may need to consider the effect of operational differential settlement due to changes in the net load imposed (e.g. where tanks vary between empty and full).

New structures may require near surface weak materials to be undercut and replaced with engineered fill and/or a preload to be placed to reduce post construction settlement to acceptable levels. A 3m excavation to undercut organic soils would be challenging and likely very expensive at this location. Supporting new structures on pile foundations may be a more cost effective option. Piles foundations would experience down drag loads from any new fill placed as part of the development.

A new raised platform for the WWTP, suitable for access roads and any structures that are not sensitive to settlement, is expected to require staged construction and pre-loading to limit post construction settlement. New infrastructure supported by the fill platform will need to be designed to accommodate ongoing settlement.

Abrupt differential ground movement can occur between pile supported structures and infrastructure supported on a fill platform. Buried pipeline connections and other underground services are particularly vulnerable to damage.

2.4.2 Seismic Liquefaction

Loose sandy soils beneath the site are expected to be prone to liquefaction in a moderate to large earthquake event. Available testing indicates layers of potentially liquefiable soils to 20m depth or greater nearby. The effects of liquefaction include reduced bearing capacity of the affected soils and significant post-earthquake ground movements. Lateral ground movements may also occur due to the proximity of existing pond slopes. These effects could significantly damage WWTP infrastructure.

The mitigation of liquefaction may require consideration of the overall resilience of the site and the pipeline networks and for appropriate performance post-earthquake expectations to be set (e.g. what damage could be acceptable).

Options to mitigate liquefaction at the site include deep ground improvements to either reduce the liquefaction susceptibility or carry the structural loads to soils below the liquefaction depth (e.g. supporting structures on deep pile foundations). The type and scale of ground improvement required cannot be readily assessed based on available information.

2.4.3 Low Bearing Capacity

Near surface soils are expected to have a variable and low bearing capacity.

The treatment for low bearing capacity soils is to locally undercut and replace weak materials ground improvements or pile foundations. Available information indicates driven pile foundations may be an effective option to support new structures at this site.

2.4.4 Buoyancy

High ground water levels may induce high uplift pressures onto buried structures including chambers, pipelines and tanks founded below ground level. Buoyancy can be a more significant issue where tanks are partially buried to reduce their net loads as part of settlement mitigation measures.

Buoyancy is typically managed by increasing the weight of buried structures to exceed the potential uplift loading, often using wider or thicker foundations.

2.5 Ground Improvement Concepts

Ground improvement concepts have been assessed based on inferred ground conditions as outlined above and the associated geotechnical constraints.

2.5.1 Fill Platform (for access and low bearing pressure structures)

A new fill platform is assumed to be around 2.5m above current ground levels. A surcharge fill treatment is proposed for initial assessment purposes. The support concept would reduce ground settlement under static loading, though with some ongoing movement occurring. Liquefaction effects would not be treated, meaning buried pipelines and other infrastructure would be damaged in a moderate to large earthquake event. More extensive and costly ground improvements would be needed to reduce liquefaction effects on pipelines and other infrastructure supported by the fill platform, if required.

Table 1 - Fill Platform

Feature	Approx. Reduced Level
Surcharge to speed settlement 1m (Removed later)	10.0m
Preload allowance for settlement 1m	9.0m
Target Finished WWTP Platform Level	8.0m

Feature	Approx. Reduced Level
Existing Pond Embankment	8.0m
1% ARI Flood Level	7.5m
Existing wetland embankment	6.0m
Existing wetland base	5.5m
Preload Area	5,300m^2
Preload Volume	24,000m^2

Construction Sequence: Remove vegetation, sludge and wetland surface water from the treatment plant area. Place a geotextile separation layer and build a granular working platform, potentially requiring geogrid base reinforcement. Build up the platform using engineered fill including a surcharge fill to speed up settlement in peat and weak clayey soils. Monitor and allow 12 months for settlement. Excavate to subgrade level. Build other infrastructure (structures, pipelines, other services, pavements).

Excess surcharge fill material could be re-used.

2.5.2 Tanks and other Heavy Structures

Tanks are assumed to support 5m wastewater (average foundation loads around 60kPa including tank structure). Tanks and buildings are recommended to assume pile foundations to mitigate ground settlement and liquefaction risks. Driven piles taken to below liquefaction depth are recommended to be considered for an initial assessment of the site feasibility. Shorter driven piles to limit settlement under static loads could be feasible where structures were not required to resist earthquake loading and liquefaction effects (e.g. significant damaged was acceptable).

Construction Sequence: Build fill platform as above. Install and test driven piles once settlements substantially completed. Construct tanks and pipelines (including additional treatments at locations where high differential movements may occur).

2.6 Further Geotechnical Assessment

The potential geotechnical constraints outlined above have been assessed on ground conditions inferred from limited geological information (one deep CPT and two shallow CPTs). Actual conditions and the associated impact on the proposed treatment plant works may be different.

Site specific geotechnical field testing and associated assessment is required to better understand the constraints at the proposed site and give a better understanding of site works needed to accommodate them. A recommended scope for initial assessment purposes comprises the following:

- Machine boreholes to assess thickness and layering of weak soils, potential for pile foundations, soil samples for classification and compression testing.
- CPTs to assess thickness and layering of weak soils, potential for pile foundations.
- Test pits to characterise near surface organic rich soils.

- Seismic CPTs to characterise the liquefaction potential at the site, including shear wave velocity measurement.
- Laboratory testing to characterise strength, compressibility and liquefaction susceptibility.
- Preliminary geotechnical assessment of the liquefaction susceptibility, ground settlement under new loads, bearing capacity and ground improvement concept design. Assessments would be completed to a level of detail sufficient to characterise constraints and determine suitable foundation treatment concepts.

The WWTP is adjacent to a closed landfill. For initial purposes, and because of a lack of detailed historical information it has been assumed that the new WWTP cannot be built on the closed landfill. However, it is possible that there are areas of the old landfill that would be sufficiently competent for the construction of a WWTP facilities. Such areas may have been operational areas or they may contain only a thin layer of refuse which could easily be removed and remediated. It is recommended that further historical operational knowledge and or data from the landfill site is interrogated to ascertain if this is possible.

3 Risk register

A risk register is attached in Attachment Two. This assesses some of the potential risks associated with the planning, construction and operation of the WWTP upgrade and provides best, likely and worst scenarios based on % likelihood of occurrence.

4 Conceptual Cost Estimation

The brief for this work phase has not included preparation of a component quantity schedule or full cost estimate. For the combined Huntly / Te Kauwhata scheme concept, the project quantity surveyors requested that CH2M Beca provide some indication of the likely mechanical and electrical costs for the project, and they would separately assess the balance of plant costs (eg, civil, structural, buildings, earthworks, non-construction costs etc. On this same basis, the conceptual mechanical and electrical component cost estimates for the stand alone Te Kauwhata MBR WWTP are as per the table below. This is to enable the balance of plant costs to be estimated by the project quantity surveyors, the table also includes a summary of other plant components:

Table 2 - Conceptual Cost Estimation

Description	Unit	Most Likely Quantity	Quantity Range	Most likely Cost ($M)	Cost Range ($M)
Mechanical Plant	LS	1		4.2	2.1 – 5.4
Electrical & Control	LS	1		1.3	0.8 – 2.2
11kV Upgrade	LS	1		0.12	
Ground Improvement	m^2	4,800	4,000 - 6,000		
Preload Volume	m^3	22,000	18,000 – 27,000		

Description	Unit	Most Likely Quantity	Quantity Range	Most likely Cost ($M)	Cost Range ($M)
Piling – 60kPa Loads	m^2	850	700 – 1,200		
Piling – Light buildings	m^2	480	350 - 550		
Reactor Tanks (approx. depth = 5m)	m^3	2,500	2,000 – 3,600		
Membrane Tanks (approx. depth = 3m)	m^3	1,000	850 – 1,500		
Dewatering Building (heavy industrial class)	m^2	250	200 - 300		
Other buildings (light industrial class)	m^2	480	350 - 550		
Internal Roading	m^2	1,700			
Other Plant slabs (concrete approx. 200mm thick)	m^2	200			

The mechanical plant and electrical control cost estimates were based on interpolation of recent Class 4 and tender prices for MBR plants from 1-12 MLD. In addition to this, another $120,000 is allocated for upgrading the site high voltage electrical power supply. The relatively high allowance for ground improvement and piling reflects the generally poor ground conditions and liquefaction risk at the proposed site for the new MBR.

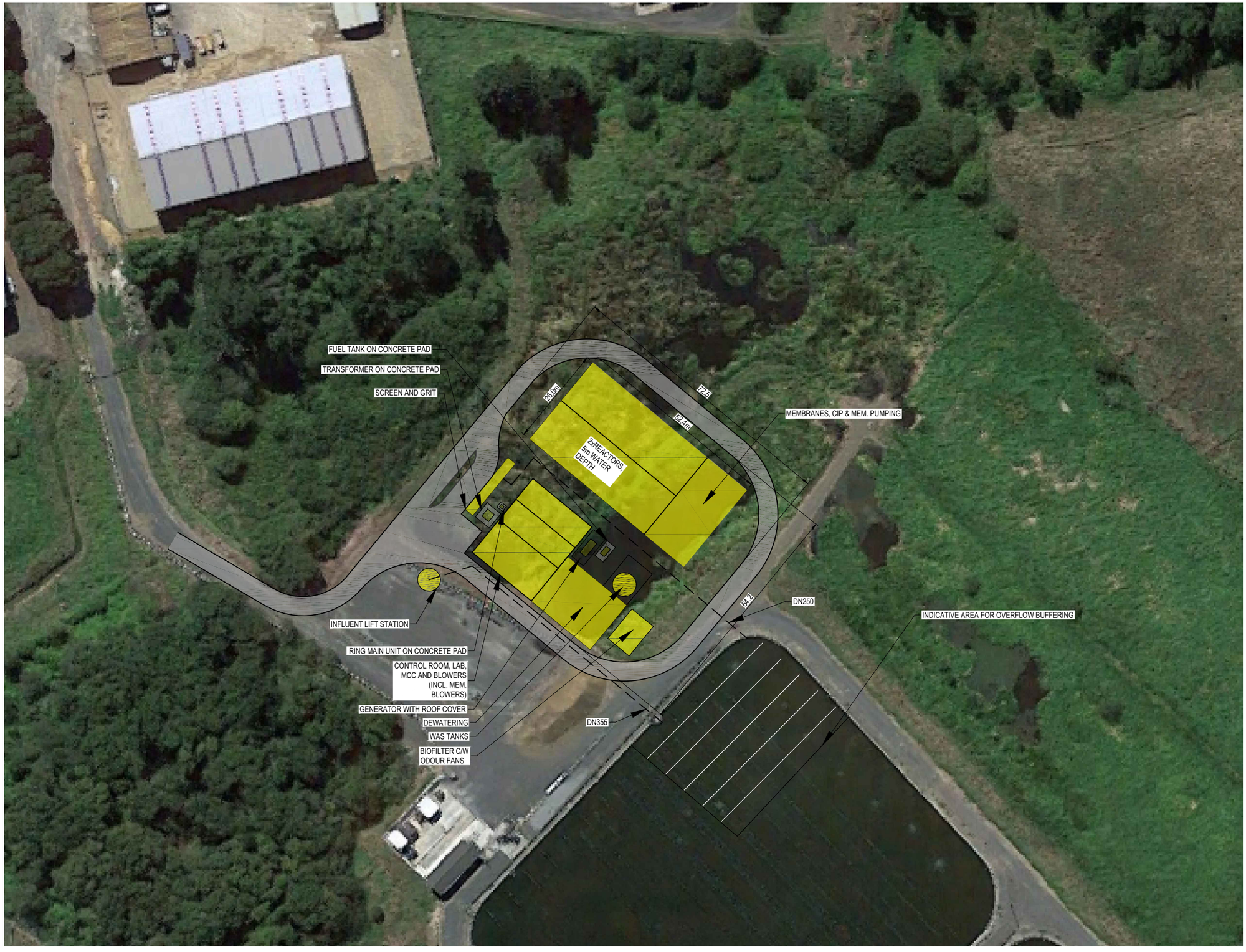
It is acknowledged that these cost estimates are based on conceptual level information and are for HIF funding purposes only. The mechanical plant and electrical control and power supply cost estimates presented do not include contract preliminary and general costs, contractor's margins, FOREX risk allowance, design and other investigations and professional fees or any contingency sums. At this time, no attempt has been made to quantify underground civil works.

Yours faithfully

John Crawford
Principal - Wastewater Engineering

on behalf of
CH2M Beca Ltd
Direct Dial: +647 960 7002
Email: john.crawford@beca.com

Drawing Plotted: 17 Jan 2018 3:35 p.m.



NOTES:

1.

CONCEPT DESIGN
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Appd	Date
A	FOR CONCEPT DESIGN	SM	JC	GM	11.01.18

Drawing Originator: CH2M Beca www.ch2mbeca.com

Original Scale (A1) 1:500
Reduced Scale (A3) 1:1000

Design	DG	8.01.18	Approved For Construction*
Drawn	SM	11.01.18	
Dsg Verifier			
Dwg Check			Date

* Refer to Revision 1 for Original Signature

Client: Waikato District Council — UNDER REVISION

Project: TE KAUWHATA WASTE WATER TREATMENT PLANT (TE KAUWHATA) CONCEPT DESIGN

Title: GENERAL ARRANGEMENT

Discipline: CIVIL

Drawing No. 6514821-CA-K004

Rev. A

DO NOT SCALE

IF IN DOUBT ASK.

Document No. 6514821-CA-K004.DWG

www.ch2mbeca.com

Risk Register (Standard)

Project Name: Te Kauwhata HIF DBC - Wastewater Treatment

Project Number:

Completed By: CH2M Beca

Date:

Risk Ref #	Risk Statement *Risk statement to include "Bad outcome - cause"*	Risk Consequence Category	Gross Risk score			Treatment plan *What can we do about each significant risk to either eliminate it or reduce it?*	Residual Risk score						Contingency *If the risk becomes reality…what action(s) will we implement?*	Risk Owner Who will take responsibility for this risk? (One person!)	Monitoring/ Reporting *Who will monitor and report on this risk?*	Timeframe *What is the frequency for monitoring/ reporting?*	Status *Ongoing or complete*
			Likelihood	Consequence	Factor		Likelihood	Best	Likely	Worst	Consequence	Factor					
WWT1	Estimate bounds are wrong. Unknown ground conditions lead to under or over estimation of costs of site preparation.	Technical	3	4	High	Provide a broad spread on estimated ground improvement measures that could be required.		0%	20%	50%							
WWT2	Poor ground conditions lead to ecessive settlement, differential settlement or liquifaction	Technical	5	5	Extreme	Preload site generally. Allow for Piles for all main structures. Ground loads 60kPa under tanks.		0%	10%	30%							
WWT3	Uncertain peak flows. Leads to excessive reactor, membrane and discharge pipe requirements	Technical	2	4	Moderate	Only one site so risk not as likely as when combined with Huntly. Provide for offloading peak flows, post screening, to a bunded off area of existing ponds.		0%	10%	30%							
WWT4	Uncertain peak flows lead to selected screens being too small	Finanical	3	3	Moderate	Build in provision for adding an extra screen train. Build in provision for, if necessary, pre-screening bypass into the peak flow lopping pipeline.		10%	20%	30%							
WWT5	Existing plant becomes non-compliant or fails to operate due to interference of construction and commissioning activities	Compliance Regulatory	3	3	Moderate	Build new MCC facility and lift station. Build PWWF buffer storage after commissioning. Notify WRC that part of existing wetland is coming off-line to build the plant.		0%	10%	20%							
WWT6	Incorrect influent characterisation due to lack of actual data reflecting the actual communities. Leads to under sized reactors and dewatering	Compliance Regulatory	2	3	Moderate	Adopt a conservative sizing approach based on low loading. Use best available industry data to fill in gaps		10%	20%	50%							
WWT7	Incorrect influent characterisation due to lack of actual data reflecting the actual communities. Leads to understated OPEX estimates	Finanical	4	3	High	Adopt a conservative OPEX cost approach to aeration and dewatering Use best available industry data to fill in gaps		10%	20%	50%							
WWT8	Incorrect influent characterisation due to lack of actual data reflecting the actual communities. There is only a single alkalinity data point for TK. None for H. Leads to alkalinity correction being required.	Technical	3	3	Moderate	Existing TK plant already uses alkalinity dosing. Assume in CAPEX & OPEX that it will continue to be required for a plant that nitrifies reliably.		10%	20%	50%							
WWT9	Incorrect influent characterisation due to lack of actual data reflecting the actual communities. There are zero COD_{ff} sample results for either community. Leads to supplementary rbCOD dosing being required to achieve adequate denitrification	Technical	4	3	High	Small additional CAPEX for Acetic or ethanol dosing. Significant additional OPEX for chemical supply.		10%	20%	50%							
WWT10	Local 11kV power supply capacity is insufficient to supply a new WWTP with these electrical load requirements.	Technical	2	4	Moderate	Have determined Network lines upgrade required by WEL Networks. What proportion of costs would WDC pay?		0%	10%	10%							
WWT11	Cost estimating risk: Risk of very high Auckland city urban rates, particularly for pipeline installation, and overhead costs being transposed into an almost entirely rural context.	Finanical	4	2	Moderate	Ensure that the cost estimate rates reflect the context of the build and not urban auckland rates. Potentially engage a local, competent contractor to assist with cost verification.		10%	20%	30%							
WWT12	Preloading requirements of 12 months plus delay commissioning of the WWTP	Compliance Regulatory	4	3	High	Recommend an enabling works contract is provided for to strengthen access Road, Undertake basic site preparation, including preload placement. Piling main structures and providing additional preload surcharge will minimise time risk.		10%	20%	40%							
WWT13	High ground water levels complicate preloading	Technical	4	2	Moderate	Dewatering is likely to be futile on this site. Provide for building up from the existing constructed wetland bed level. Key structures to be piled.		20%	30%	50%							
WWT14	Possibility of construction market being flush and tenderers few	Finanical	4	4	High	CAPEX estimates to provide a line item for likely state construction market. Select procurement strategy appropriate to market conditions		20%	30%	50%							

Waikato District Council
Te Kaunihera aa Takiwaa o Waikato

Open

To	**Waters Governance Board**
Report title	**Pokeno/Tuakau Wastewater Network Upgrade**
Date:	19 July 2022
Report Author:	Keith Martin, Waters Manager
Authorised by:	Gavin Ion, Chief Executive

1. Purpose of the report
Te Take moo te puurongo

The purpose of this report is to seek approval to commence upgrade of the wastewater network between Pokeno and Tuakau.

AND

To recommend to the Waters Governance Board that we proceed with the value engineering approach to ensure we maintain momentum and serve the growth needs of the district.

2. Executive summary
Whakaraapopototanga matua

Watercare are recommending a scope change in the Pokeno Tuakau wastewater network upgrade to take account of price escalation within the project. Cost escalation and amended assumptions has meant a change to the phasing of the project deliverables.

Watercare have completed an Agile Engineering review of the project to be able to provide more certainty over timing and cost of the project.

The Pokeno Tuakau wastewater network upgrade is vital if Council is to continue to provide for existing levels of service whilst accommodating for growth.

Affordability and budget constraints has meant recommending delaying some of the staged work programmes to the 2024 LTP.

The first stages are being recommended to be completed within this LTP budget, these stages being the Tuakau interceptor wastewater pump station mechanical and electrical upgrade and construction of a new low gravity trunk sewer from Whangarata Rail to Bollard road and increasing the capacity of Market Street pump station in Pokeno.

3. Staff recommendations
Tuutohu-aa-kaimahi

That the Waters Governance Board recommends to Council that:

a. The following work be approved to proceed:

i. the upgrade of the Tuakau interceptor wastewater pump station mechanical and electrical capacity

ii. resilience improvements

iii. constructing a new low gravity trunk sewer from Whangarata Rail to Bollard Road

iv. increasing the capacity of Market Street pump station in Pokeno; and

b. the upgrades outlined in stages 3 to 7 are incorporated into the 2024 LTP to ensure infrastructure delivery is planned to support growth aspirations whilst maintaining levels of service.

4. Background
Koorero whaimaarama

The Pokeno Tuakau area is recognised as a growth node for Council with both commercial and residential expansion pressures being exerted on Council.

The supporting wastewater network upgrade is planned over multiple stages with stage 2 and 3 being the focus of this Business Case.

***The Water Governance Board (WGB) will be aware that this project has seen cost escalation from approximately $26 million to $72 million. Cost Escalation is not addressed within the scope of this request as it is being addressed separately)**

The stages required to complete the project fully are;

- Stage 1 - Second rising main to Market Street wastewater pump station to serve wet industry (recently completed)
- Stage 2 – Tuakau interceptor wastewater pump station mechanical and electrical upgrade increasing capacity along with resilience improvements
- Stage 3 – New low gravity trunk sewer from Whangarata Rail to Bollard initially serving Whangarata business zone and increasing the capacity of Market Street pump station in Pokeno.
- Stage 4 – Pokeno rising main trunk sewer upgrade to increase capacity and cater for residential growth in Pokeno
- Stage 5-7 - Future pump station and rising main upgrades

A workshop was held in March 2022 with Council staff detailing the main drivers shaping change in the Pokeno wastewater catchment, along with engineering solutions available to meet future conveyance requirements.

Following the workshop, each stage was reviewed comparing construction and installation alongside a lean agile design. The Tuakau Interceptor Pump Station upgrade has been amended to lead with an electrical upgrade and installation of a standby pump, supported by performance monitoring. The mechanical upgrade has been deferred to Stage 7.

For the pipeline projects Stages 3 & 4 the best gains are secured by the contractor's method. The programme will ensure there is time for the Tender process to fully engage with the market to secure the right specialist contractor. Modern trenchless construction techniques offered by tunnelling specialist, remains the best path to securing value for both pipeline stages.

The planned time frame for the delivery of Stages 2 & 3 is as follows:

- Stage 2 –Tuakau Interceptor Pump Station Upgrade will commence construction in October, construction is expected to take 8 months.
- Stage 3 – Gravity Sewer Upgrade will commence completing the detailed design and with construction scheduled to commence in March 2023.Construction is expected to take two years.

The Whangarata gravity sewer is required for the servicing of the Whangarata Business zoned land and will provide an additional 10-20 litres per second of network capacity to the Pokeno township.

The Tuakau Interceptor pump station upgrade is required as the current variable speed drives are poorly ventilated and overheat regularly in summer and there is no standby pump. Additionally, as development occurs in the southwest of Tuakau and in the Whangarata/Bollard Rd business zones, new customers will need to be serviced. The upgraded pump station will accommodate increased flow from the residential growth that continues in Pokeno.

The LTP budget and project cost for each year is detailed below:

Funding allocated ($M)		2020 /21	2021 /22	2022 /23	2023 /24	2024 /25	2025 /26	2026 /27	2027 /28	2028 /29	2029 /30	2030 /31	Total
Pokeno and Tuakau WW PS & Rising main AMP Code: 1WW12690, OG0001074			1.72	5.24	6.87	10.36	2.51						26.70
Tuakau WW Gravity Upgrades AMP Code:1WW12695, OG0001118			3.74	3.93									7.68
Total Funding			5.46	9.17	6.87	10.36	2.51	0.00	0.00	0.00	0.00	0.00	34.38
Planned Commitments	Stage 2 – Tuakau WWPS Upgrade			1.45									1.45
	Stage 3 – Whangarata Rail to Bollard Low Gravity Sewer			4.00	12.49	10.00							26.49
Future Projects	Stage 4 – Pokeno Rising Main Upgrade (Munro to Whangarata)					3.93	14.50						18.43
	Stage 5 – Hitchen 2 WWPS Upgrade **						2.00	8.20					10.20
	Stage 6 – Pokeno Rising main Stage 2						3.00	2.23					5.23
	Stage 7 - Tuakau WWPS Upgrade and Rising Main Duplication							3.00	8.00				11.00
Balance available (+/-)		0.00	5.46	3.72	-5.62	-3.57	-16.99	-13.43	-8.00	0.00	0.00	0.00	-38.42

* Includes carry forward from FY2020/21

** Most likely $M day (nominal) excluding Capitalised Interest

* Includes carry forward from FY2020/21

** Most likely $M day (nominal) excluding Capitalised Interest excluding

5. Discussion and analysis
Taataritanga me ngaa tohutohu

5.1 Options
Ngaa koowhiringa

The original work stream and project plan outlined in the LTP was for all stages to be completed by 2027/2028. Given cost escalations, this is no longer possible. To ensure momentum is continued Watercare is proposing to stage the projects delivery over two LTP periods to enable the appropriate funding solutions to be available over time.

Staff have assessed that there are alternatives for the Water Governance Board to consider. This assessment reflects the level of significance (see paragraph 6.1)

Staff recommend that stages 2 and 3 are continued to be delivered. Stage 2 as been modified to an electrical upgrade without additional storage capacity. Storage Capacity will be addressed in stage 7.

An Agile engineering review has refined stages 2 and 3 and tendering for stage 3 will be based on the tenderers providing value for money in delivering the Whangarata Rail to Bollard Low Gravity Sewer.

5.2 Financial considerations
Whaiwhakaaro puutea

The current LTP has total budget of $34.38 million to deliver stages 2 to 7. Delivering stages 2 and 3 will cost $27.49 million. This change in scope (only delivering stages 2 and 3) will require the other projects to be incorporated into the 2024 LTP.

5.3 Legal considerations
Whaiwhakaaro-aa-ture

Staff confirm that the staff recommendation complies with the Council's legal and policy requirements.

5.4 Strategy and policy considerations
Whaiwhakaaro whakamaaherehere kaupapa

The staff recommendation is consistent with the Long-Term plan.

5.5 Maaori and cultural considerations
Whaiwhakaaro Maaori me oona tikanga

Te Ture Whaimana is enhanced with this network upgrade as capacity within the network is enhanced, improving levels of service, protecting the health and wellbeing of the Waikato River.

When it comes to tendering, Council will be asking Watercare to seek out local Māori owned business with the suitable experience and credentials to submit tenders for consideration.

5.6 Climate response and resilience considerations
Whaiwhakaaro-aa-taiao

The decisions sought by, and matters covered in, this report are consistent with the Council's Climate Response and Resilience Policy and Climate Action Plan.

5.7 Risks
Tuuraru

The following risks may impact the project:

- Delays in the procurement of key items
- Unforeseen ground conditions
- Difficulty gaining access to private land
- Cost escalations due to unforeseen issues
- Project delays due to Covid-19.

6. Significance and engagement assessment
Aromatawai paahekoheko

6.1 Significance
Te Hiranga

The decisions and matters of this report are assessed as of low significance, in accordance with the Council's Significance and Engagement Policy.

6.2 Engagement
Te Whakatuutakitaki

Highest level of engagement	Inform	Consult	Involve	Collaborate	Empower
	✓	✓	☐	☐	☐
Tick the appropriate box/boxes and specify what it involves by providing a brief explanation of the tools which will be used to engage (refer to the project engagement plan if applicable).	*Engagement has taken place with multiple developers who are looking for certainty in respect to the timing and provision of infrastructure.* *Existing wet industries are looking to expand product lines and renegotiate trade waste agreements when the networks (and WWTP) have sufficient capacity.*				

State below which external stakeholders have been or will be engaged with:

Planned	In Progress	Complete	
☐	✓	☐	Internal
✓	☐	☐	Community Boards/Community Committees
✓	☐	☐	Waikato-Tainui/Local iwi and hapuu
✓	✓	☐	Affected Communities
✓	✓	☐	Affected Businesses
☐	☐	☐	Other (Please Specify)

7. Next steps
Ahu whakamua

- To report the WGB's recommendations to Council
- To instruct Watercare to proceed with stages 2 and 3 upon receiving WGB and Council approval to proceed.

8. Confirmation of statutory compliance
Te Whakatuuturutanga aa-ture

As required by the Local Government Act 2002, staff confirm the following:

The report fits with Council's role and Water Governance Board Terms of Reference and Delegations. *Refer to the Governance Structure*	Confirmed
The report contains sufficient information about all reasonably practicable options identified and assessed in terms of their advantages and disadvantages (*Section 5.1)*.	Confirmed
Staff assessment of the level of significance of the issues in the report after consideration of the Council's Significance and Engagement Policy (*Section 6.1)*.	Low
The report contains adequate consideration of the views and preferences of affected and interested persons taking account of any proposed or previous community engagement and assessed level of significance (*Section 6.2)*.	Confirmed
The report considers impact on Maaori (*Section 5.5*)	Not applicable
The report and recommendations are consistent with Council's plans and policies (*Section 5.4)*.	Confirmed
The report and recommendations comply with Council's legal duties and responsibilities (*Section 5.3)*.	Confirmed

9. Attachments
Ngaa taapirihanga

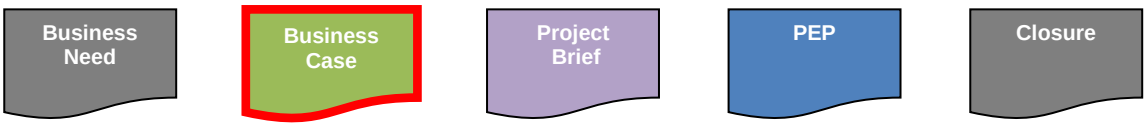
Attachment 1 – Watercare Business Case - Pokeno Tuakau WW Upgrades

Watercare
An Auckland Council Organisation

Business Case (G1)

Pokeno Tuakau WW Upgrades

1WW12690, 1WW12695 (OG0001118)



Date: 22-06-2022
Version: 2.2
Prepared by: Richard Pullar / Peter Crabb

Document Purpose:

This Business Case provides an assessment of the proposed need. The purpose is to:

- confirm business requirements and identify any constraints to the solution
- check that the outcome is aligned with WDC and Watercare's strategies and initiatives
- identify the solution boundaries and options to achieve the project outcome
- secure funding to progress the project

Document Review & Approval:

Consultation and Review:

I confirm that I have consulted with the various business unit personnel to develop this Business Case

Responsibility	Consultation	Title	Name
WDC Finance	To confirm funding is available	Management Accountant	Linda Cilliers

Endorsement:

Project Role	Approval	Signature	Date
WDC Special Infrastructure Projects Manager	Agrees that the need exists and the high-level outcomes suit the business need	[Minuted Approval]	

Document Approval:

Project Role	Approval	Signature	Date
Waters Governance Board	Approves this Business Case and the associated investment	[Minuted Approval]	

Recommendation

It is recommended that $27.94M be approved for the **Tuakau Interceptor Pump Station Upgrade** and the new **Whangarata Rail to Bollard Low Gravity Sewer** along with $0.2M for decommissioning (Opex), Stages 2 & 3.

The cost of the staged upgrade packages has escalated since 2019. The alignment is direct with a trunk sewer that matches the downstream capacity. The main opportunity is to seek construction innovation and value by committing to tender. It is recommended that the pipeline tender includes a workshop to review alternative construction solutions.

The remaining Pokeno / Tuakau WW upgrade stages will not have adequate funding in the current approved Long Term Plan to progress, this will need to be addressed in the next LTP cycle.

1. Business Requirements

1.1 Need to be addressed

Upgrade the wastewater network between Pokeno and Tuakau to serve growth while maintaining a safe and reliable network that conveys flows to the Watercare Pukekohe Network.

1.2 Background

Existing Wastewater Network

The existing trunk wastewater network connects Pokeno to Tuakau and then onto the Pukekohe Branch Sewer. The Trunk sewer consists of two key pump stations, Market Street Pump Station (Pokeno) and Tuakau Interceptor Wastewater Pump Station, along with long rising mains and gravity sewers. The network was designed for the unreticulated village and new residential commercial and business areas developed by Dines since 2010.
The current network has a capacity of:

- 90 l/s for the Market St Pump Station and its rising main
- 100l/s for the Tuakau Pump station

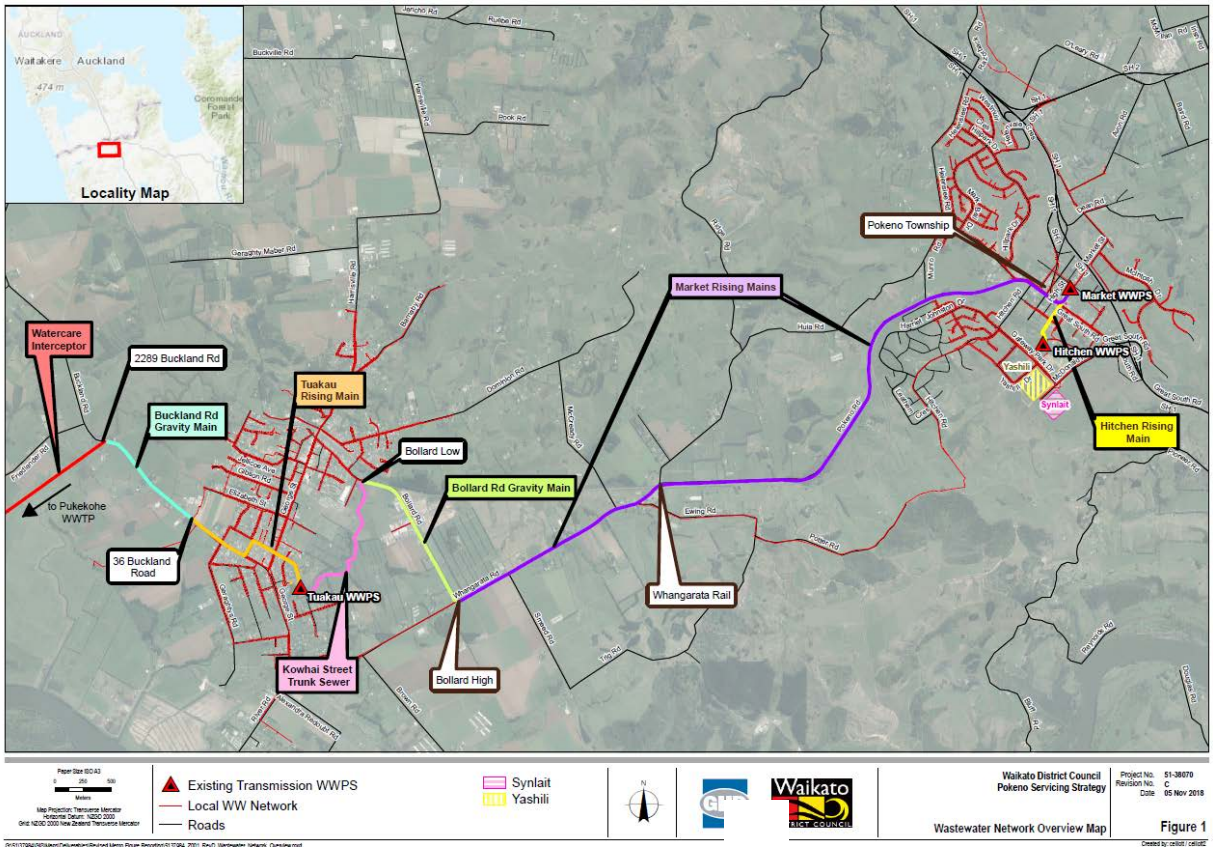


Figure 1: Pokeno / Tuakau Wastewater Trunk Network

1.3 Strategic alignment

Pukekohe WWTP

All flows from Pokeno and Tuakau are treated at Watercare's Pukekohe WWTP which also services the wider Pukekohe area. An upgrade to increase treatment capacity is underway, growth in the WDC townships has been catered for, but increases in wet industry flows must be negotiated with Watercare on a case-by-case basis.

Growth and Discharge Flows

The 2019 Wastewater Servicing Strategy developed solutions to serve residential growth and wet industry flows (Yashili and Synlait Dairy factories). The strategy detailed population growth assessment which was used to project wastewater flows from Pokeno.

Excluding Pokeno's wet industry the current peak daily flows were expected to be 38 l/s with an average daily flow of 18 l/s. By 2031 the peak daily flows were anticipated to increase to 86 l/s and an average daily flow of 44 l/s. The current actual average flows are 13 l/s, 25% less than modelled, overpredicting commercial and business flows.

Wet Industry (Yashili & Synlait) currently have an agreement to discharge a total of 2,355 cubic metres per day. This is discharged into the network at a constant rate of 34 l/s. The signaling of increases from these industries is often at short notice and very difficult to plan for. If Wet industry discharges were kept static, the current network could operate until 2028 – 2030 with no upgrade.

Proposed upgrades

The servicing strategy detailed staged pipeline and wastewater pump station upgrades up to 240 l/s:

- Matching the capacity of the gravity sewer upstream and downstream of the Tuakau Interceptor Pump Station
- Servicing the predicted wet industry, 93 l/s as a maximum, however a more likely scenario now is between 60- 70 l/s.
- The proposed district plan increased the residential land zoning in line with population forecasts.

1.4 Strategy Upgrade Project Stages

The proposed wastewater trunk sewer upgrades are planned in stages:

Stage 1 - Recently Completed

2020 – 21 Second Synlait Rising Main to Market Street Wastewater Pump Station to serve wet industry

Stage 2 – Initial Interceptor WWPS Upgrade

2022 Tuakau WWPS Mechanical and Electrical Upgrade increasing the capacity from 100 to 140 l/s along with resilience improvements from the addition of a standby pump.

Stage 3 – New Gravity Sewer Trunk Sewer (Starting at Tuakau 0m - 3430m)

2022 – 23 Whangarata Rail to Bollard Low Gravity Sewer with a capacity of 240 l/s and initially serving Whangarata Business zone. This will also increase the capacity of Market Street WWPS in Pokeno from 90 l/s to 100 l/s.

Stage 4 – Rising Main Trunk Sewer Upgrade (3430 - 7400m, finishing in Pokeno)

2023 – 24 Pokeno Rising Main Upgrade (Munro to Whangarata) with a capacity of 240 l/s to cater for residential growth in Pokeno

Future Pump Station Upgrades

2024 – 25 Hitchen 2 WWPS Upgrade from 30 l/s to 240 l/s replacing the Market Street WWPS as the main Pokeno pump station, via the new trunk sewer to Tuakau.

2025 – 26 Tuakau WWPS Upgrade and Rising Main Duplication to increase the conveyance capacity from 140 to 250 l/s, by either upgrading the existing station or by installing a new WWPS to bypass flows north to Tuakau.

This Business Case seeks to secure commitment to Stage 2 and Stage 3 only. Growth in wet industry flow will drive the timing of subsequent stages. The layout plans are detailed below**.**

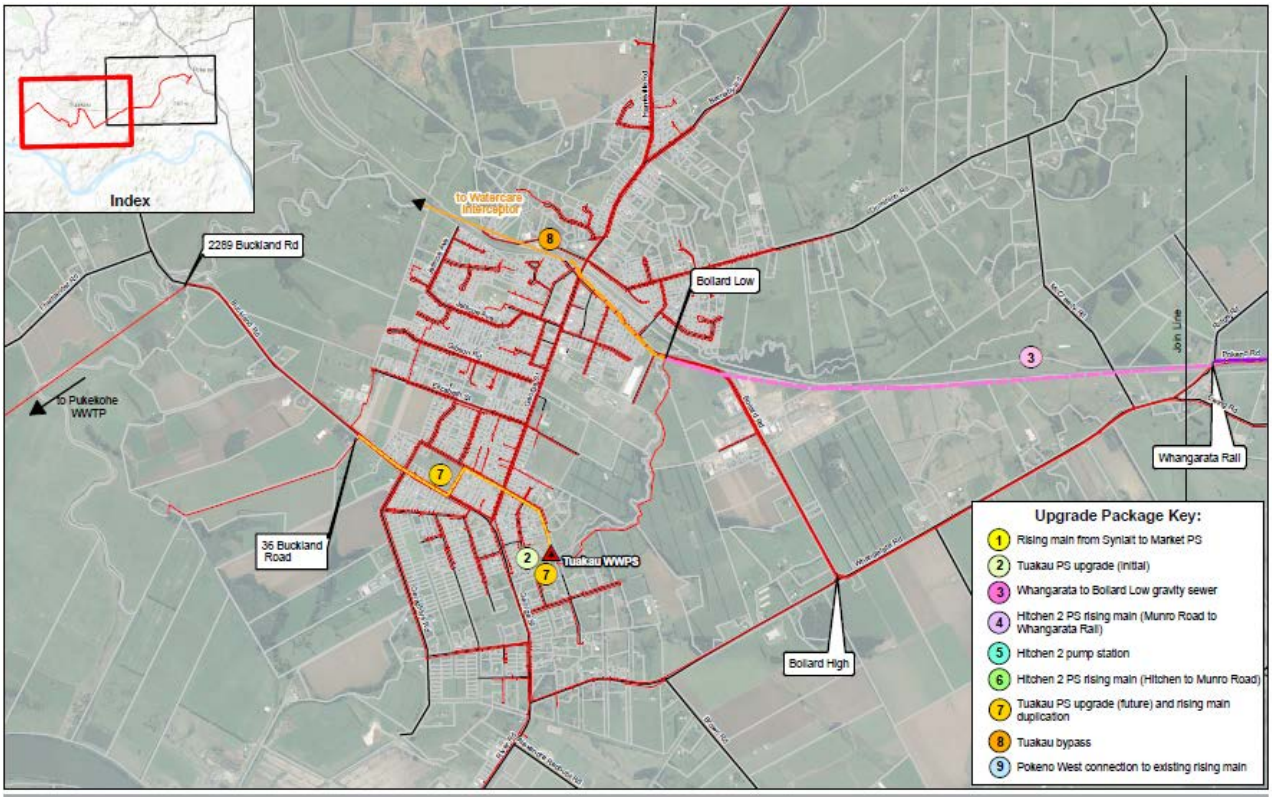


Figure 2: Tuakau Network Upgrades

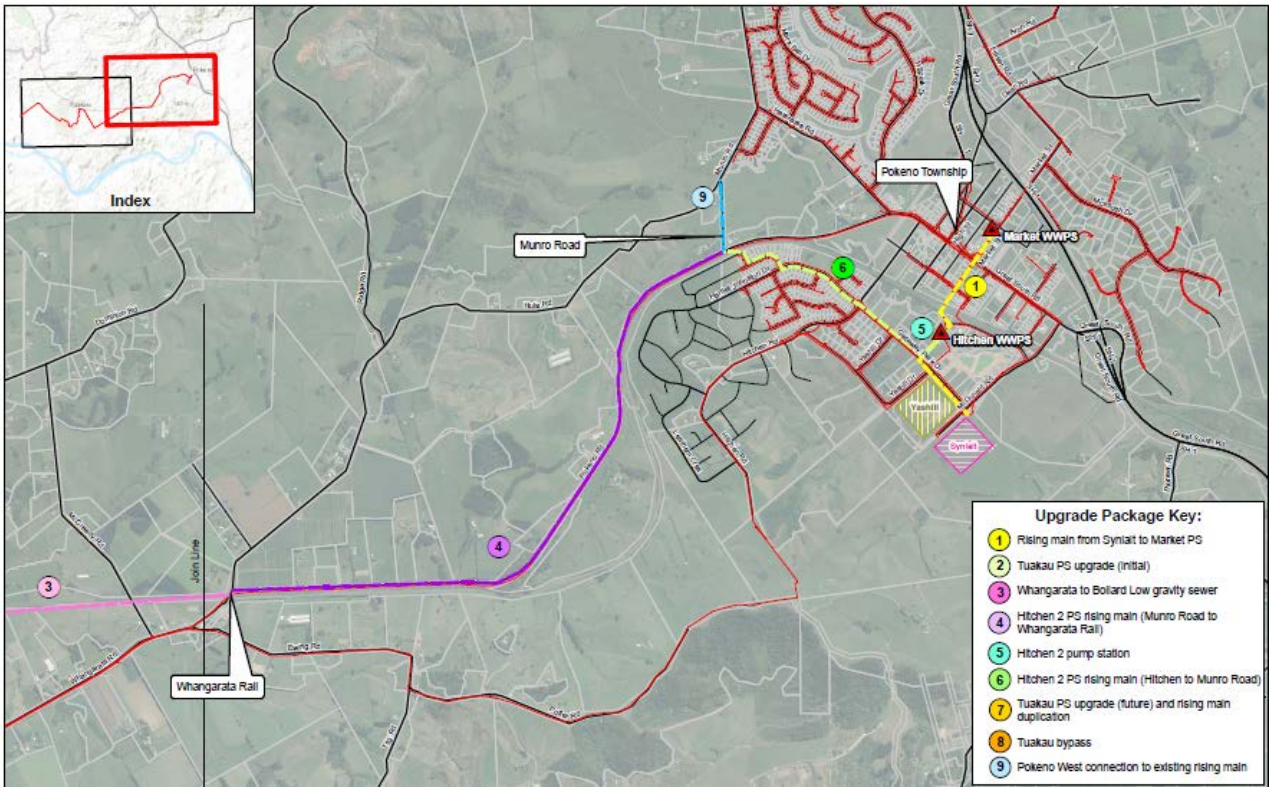


Figure 3: Pokeno Network Upgrades

1.5 Proposed and Recommended Staging

Stages 2 to 4 have had concept designs developed and revised cost estimates developed, significant cost escalations have occurred (these are shown in section 2). This means the approved funding in the current LTP is adequate for stages 2 and 3. It will mean also that the stage 2 -Tuakau Interceptor pump station upgrade scope will need to be reduced, this reduction of scope does bring some operational risk relating to the rising main performance.

Stages 2 & 3 will allow the servicing of the Whangarata Business Park, which the developer is currently progressing. Delays in the development of the gravity sewer may require a temporary solution to be developed to service the business park. It will also provide a small increase in the discharge capacity from the existing Pokeno rising mains (10 – 20 L/s).

Following discussions between Watercare and Waikato District Council a reduced scope that involves only an electrical upgrade and installation of a third pump is proposed for the Tuakau Interceptor Pump Station. The change secures value and attracts some operational risk.

1.6 Procurement

The pipeline will be tendered as a separate NZS3910 construction contract to secure a competitive schedule of rates. The work is significant in scale and requires the management of live flows. The tender will initially shortlist contractors with a proven track record, include workshops seeking innovation, and then undertake a price assessment.

2. Recommended Solution

This section defines what the project needs to deliver.

1.1 Scope

The scope of the project includes:

- Detailed design including the development of P&ID's and control philosophy
- Construction supervision
- Power supply delivered to each of the pump station upgrades
- Construction of the new section of the trunk sewer
- Production of O&M manuals and as-built drawings
- Commissioning
- Operators Training

The scope of the project excludes:

- The scope delivers connection points but not the branch networks into adjacent development sites

1.2 WDC Project Workshop

A workshop was held in March 2022 with Waikato District Council detailing the main drivers shaping change in the Pokeno wastewater catchment, along with engineering solutions available to meet future conveyance requirements.

Following the workshop, each stage was reviewed comparing a transmission installation alongside a lean-agile design. The Tuakau Interceptor Pump Station upgrade has been amended to lead with an electrical upgrade and installation of a standby pump, supported by performance monitoring. The mechanical upgrade has been deferred to Stage 7.

For the pipeline projects Stages 3 & 4 the best gains are secured by the contractor's method. The programme will ensure there is time for the Tender process to fully engage with the market to secure the right specialist contractor. Modern trenchless construction techniques offered by tunneling specialist, remains the best path to securing value for both pipeline stages.

1.3 Project Deliverables/Outputs

The planned time frame for the delivery of Stages 2 & 3 is as follows:

- **Stage 2 –Tuakau Interceptor Pump Station Upgrade** will commence construction in October, construction is expected to take 8 months.
- **Stage 3 – Gravity Sewer Upgrade** will commence completing the detailed and with construction scheduled for March 2023, construction is expected to take two years to complete.

1.4 Assumptions

- Growth will meet projections and wet-industry will expand to take the remaining trunk sewer capacity
- The bulk supply agreement with Watercare for wastewater treatment will continue for the foreseeable future

3. Capital Cost summary

The project cost is detailed below. The construction cost are based on an AACE Class 4 estimate with expected accuracy rates of -15% to + 25%.

Item/Activity ($M)	Stage 2 - Tuakau WWPS Upgrade (revised)	Stage 3 - Whangarata Rail to Bollard Low Gravity Sewer	Total
Design and Consenting (Prior Approval)	0.25	0.20	0.45
Project Delivery	0.13	1.17	1.30
Construction and Installation	0.82	20.99	21.81
Design Support	0.05	0.35	0.40
Supervision and Commissioning	0.1	1.68	1.78
Risk Allowance	0.1	2.10	2.20
Total Capital Envelope	**1.45**	**26.49**	**27.94**
Decommissioning (OPEX)	**0.05**	**0.15**	**0.20**

1.5 Assets to be written off

- Tuakau Interceptor Pump Station: The existing pumps and electrical equipment
- Sections of the existing Pokeno to Tuakau pipeline replaced by the trunk sewer upgrade

2. AMP Funding

The design and recent costing highlighted the potential for the LTP budget to be exceeded. The original estimates were drawn from the servicing strategy, the table below shows the original estimates and what is currently estimated.

Stage	* GHD Strategy Estimate (2019 $M)	Current Estimates (2021 $M)
Stage 2 – Tuakau WWPS Upgrade	0.40	1.45
Stage 3 – Whangarata Rail to Bollard Low Gravity Sewer	7.20	21.26
Stage 4 – Pokeno Rising Main Upgrade (Munro to Whangarata)	4.44	23.66
Stage 5 – Hitchen 2 WWPS Upgrade **	10.20	10.2
Stage 6 – Pokeno Rising main Stage 2	1.92	5.23
Stage 7 - Tuakau WWPS Upgrade and Rising Main Duplication	2.12	11
Total	26.28	72.8

* The values are uninflated budgets, values include inflation allowance

** subject to wet well / dry well option assessment

The understanding of the cost for the staged upgrade packages has escalated since 2019. The Whangarata gravity sewer is required for the servicing of the Whangarata Business zoned land, it also will provide an additional 10-20 l/s of network capacity to the Pokeno township. If there were no further increases in the wet industry flows this would provide capacity for at least 10 years. This would enable the staging of the subsequent upgrades to be spread over the 10-year period.

The Tuakau Interceptor pump station upgrade is required as the current variable speed drives are poorly ventilated and overheat regularly in summer and there is no standby pump. Additionally, as development occurs in the southwest of Tuakau and the Whangarata/Bollard Rd business zones will be able to be serviced. The upgraded station will also be increased flow from the residential growth that continues in Pokeno.

The LTP budget and project cost for each year is detailed below:

Funding allocated ($M)		2020 /21	2021 /22	2022 /23	2023 /24	2024 /25	2025 /26	2026 /27	2027 /28	2028 /29	2029 /30	2030 /31	**Total**
Pokeno and Tuakau WW PS & Rising main AMP Code: 1WW12690, OG0001074			1.72	5.24	6.87	10.36	2.51						26.70
Tuakau WW Gravity Upgrades AMP Code:1WW12695, OG0001118			3.74	3.93									7.68
Total Funding			5.46	9.17	6.87	10.36	2.51	0.00	0.00	0.00	0.00	0.00	34.38
Planned Commitments	Stage 2 – Tuakau WWPS Upgrade			1.45									1.45
	Stage 3 – Whangarata Rail to Bollard Low Gravity Sewer			4.00	12.49	10.00							26.49
Future Projects	Stage 4 – Pokeno Rising Main Upgrade (Munro to Whangarata)					3.93	14.50						18.43
	Stage 5 – Hitchen 2 WWPS Upgrade **						2.00	8.20					10.20
	Stage 6 – Pokeno Rising main Stage 2						3.00	2.23					5.23
	Stage 7 - Tuakau WWPS Upgrade and Rising Main Duplication							3.00	8.00				11.00
Balance available (+/-)		0.00	5.46	3.72	-5.62	-3.57	-16.99	-13.43	-8.00	0.00	0.00	0.00	-38.42

* Includes carry forward from FY2020/21

** Most likely $M day (nominal) excluding Capitalised Interest

3. Risks/Issues

The following risks may impact the project:

- Delays in the procurement of key items
- Unforeseen ground conditions
- Difficulty gaining access to private land
- Cost escalations due to unforeseen issues
- Project delays due to Covid-19

4. Project governance/ reporting

This project will follow the normal governance and project management process.

Waikato District Council
Te Kaunihera aa Takiwaa o Waikato

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To	**Waters Governance Board**
Report title	**Trade Waste and Wastewater Bylaw**
Date:	19 July 2022
Report Author:	Zinab Al-Khaleefa, Three Waters Contract Engineer Carole Nutt, Waters Contract Relationship Manager
Authorised by:	Gavin Ion, Chief Executive

1. Purpose of the report
Te Take moo te puurongo

To present an overview of the changes proposed for the Trade Waste and Wastewater Bylaw and feedback from the early engagement.

2. Executive summary
Whakaraapopototanga matua

Council has a statutory requirement to review the Trade Waste and Wastewater Bylaw. This provides an opportunity for Council to assess how the bylaw is working, if the bylaw is still needed, and request feedback from the community on any changes proposed. The process to review and issue a new bylaw has commenced and needs to be completed including adoption of the bylaw by 01 September 2023.

3. Staff recommendations
Tuutohu-aa-kaimahi

That the Waters Governance Board:

a. **receives the report on Trade Waste and Wastewater Bylaw;**

b. **notes the changes proposed by Council and Watercare staff and feedback from early engagement; and**

c. **advises staff of any specific areas or topics to be further considered as part of the Trade Waste and Wastewater Bylaw 2023.**

4. Background
Koorero whaimaarama

Council has an existing Trade Waste and Wastewater Bylaw that came into force on 01 September 2016, revoking the Waikato District Council Trade Waste Bylaw 2008 and the Franklin District Council Trade Waste Bylaw 2007.

Council and Watercare staff are at the first draft stage of the new bylaw and have received feedback as part of the early engagement that was open from 20 May to 20 June 2022. As part of this early engagement, an online feedback link was emailed to the following stakeholders:

- 92 Iwi and Marae Reps
- 6 Funeral Directors
- 17 Trade Waste consent holders
- 6 Wastewater stakeholders
- Community Board and Community Committee Chairs
- Maangai Maaori

Council received seven submissions from the early engagement, a full analysis of suggestions has been provided below.

5. Discussion
Matapaki

A first draft of the Trade Waste and Wastewater Bylaw has been developed with changes/ addition of new clauses proposed by Council and Watercare staff. The following is a summary of the proposed changes, please note that the changes below are subject to legal review:

Introduction:

Clause	Proposed New Clause	Reason for Clause
1.2	Te Ture Whaimana: Council also has a duty under Section 17 of the Waikato River Settlement Act 2010, to have particular regard to Te Ture Whaimana o Te Awa o Waikato (the vision and Strategy for the Waikato River) where the vision is "for a future where a healthy Waikato River sustains abundant life and prosperous communities who, in turn, are all responsible for restoring and protecting the health and wellbeing of the Waikato River, and all it embraces, for generations to come".	This section has been added to appropriately provide for Te Ture Whaimana and our vision for a healthy Waikato River. Currently, there is no reference to the vision and strategy for the Waikato River.

Clause	Proposed New Clause	Reason for Clause
2.3	Short title, Commencement and Application: Clause 8 (c) and (d) and paragraph (b) of the definition of prohibited waste in clause 6 (which relate to mortuary waste) come into force on a date determined by resolution of Council.	This section relates to the mortuary discharge clauses introduced to this bylaw. This ensures that these clauses do not come into effect until Council and businesses are in a position to appropriately discharge mortuary waste to meet cultural needs.
4.1 (e)	Assist in meeting Council's legal obligations and commitments, including (but not limited to): • The Waikato River Settlement Act 2010 (specially, Section 17, which requires Council to have regard to the Vision and Strategy for the Waikato River by Contributing to the protection and restoration of the health and wellbeing of the Waikato River).	This section has been added to appropriately provide for Te Ture Whaimana and our vision for a healthy Waikato River. Currently, there is no reference to the vision and strategy for the Waikato River.
6	Addition of the following definitions: **Mortuary:** Means a room regularly used or intended to be regularly used for the preparation of deceased bodies or burial or for the embalming of bodies or the examination or treatment of bodies prior to burial; but does not include premises so used or intended to be so used primarily for hospital care within a hospital care institution (within the meaning of section 58(4) of the Health and Disability Services (Safety) Act 2001). **Mortuary Waste:** Means the trade waste from any process involving physical contact with a deceased person at a mortuary. **Mortuary Waste Disposal Site:** Means a site designated by the Council as a mortuary waste disposal site. **Mortuary Waste Licence:** Means a licence granted by Council.	If mortuary waste and land-based discharge is introduced to the bylaw, these definitions will be required to establish the meanings of key terms relating to mortuary waste.

Changes proposed for the Wastewater section:

Clause	Proposed New Clause	Reason for Clause
7.1 (c)	Connecting to the wastewater system: Only Council is to install low pressure wastewater connections to the property	This clause outlines the appropriate requirements for connecting to the wastewater

Clause	Proposed New Clause	Reason for Clause
	boundary, all standard gravity wastewater connections are to be carried out by owner or other person and must ensure prior to any wastewater connection, disconnection, or other works: • that works are carried out by a qualified contractor/drainlayer holding the current NZ Certificate in Infrastructure Works, • obtain Council approved consent or engineer plan and provide information specific by Council or Authorised Officer, • Installation completed to meet Regional Infrastructure Technical Specifications (RITS).	system, both standard and low pressure systems.
7.3	Wastewater Service Areas: Council may define the service area and make information relating to the service area and availability of connection publicly available on the official website.	Outline boundaries for wastewater servicing as supplementary information to the Bylaw.
	Building Over or in Close Proximity to Wastewater Network: • A person intending to do new building works over or within five meters of the Public Wastewater System must make an application to Council and must not proceed with the works unless Approval is granted. • Ensure compliance with the approval and any conditions of the approval. • A person must ensure that any new building works over or within five meters of the Public Wastewater System complies with the requirements of the Regional Infrastructure Technical Specifications (RITS). • Applicants must include a CCTV inspection of the subject pipeline, in accordance with Section 2 of the New Zealand Pipe Inspection Manual, undertaken by a contractor qualified and with the necessary experience to do so.	Addition of this clause ensures Council has legal grounds to request written applications for building over or adjacent to the public wastewater network. This application should include pre- and post- construction CCTV for proper assessment of the condition of the line prior to any works commencing.

Clause	Proposed New Clause	Reason for Clause
7.8	Prohibited inflow, infiltration and discharge • No person may cause or allow stormwater inflow or groundwater infiltration into the wastewater network or any private drain which is connected to the wastewater network. • Clause 7.8 (a) does not apply where: o The stormwater is directed to a combined system with Council approval as a resource consent authority or building consent authority and there is no provision for separate stormwater drainage; or o The addition of stormwater to the wastewater networks is in accordance with the Trade Waste Agreement. • No person may discharge or introduce prohibited waste into the wastewater network. • In (c), prohibited waste means: o Waste that has, or is likely to have, any of the prohibited characteristics set out in Schedule 1; and includes, but is not limited to: o Non-dispersible items or waste,	This clause has been introduced to prevent inflow and infiltration of stormwater into the wastewater system. This gives Council grounds to enforce owners or occupiers of the property to correct private stormwater drains connecting to the wastewater system.
7.9	Payment: (a) Payment for the discharge of wastewater and related services shall be in accordance with the Council rates, development or capital works contributions as per the schedule of fees and charges prevailing at the time. (b) The Council may recover unpaid wastewater rates in respect of the wastewater services as prescribed in the Local Government Act 2022 from the owner or occupier (or both) of the premises.	Clause added to outline payment for wastewater discharge as per the fees and charges.

Changes proposed for the Trade Waste section:

Clause	Proposed New Clause or Change	Reason for Clause
8.1	Classification of discharge: (c) The Council may, on application, grant a mortuary waste licence allowing the disposal of mortuary waste at a mortuary waste disposal site. (d) A person disposing of mortuary waste must ensure it is only disposed of: i. By discharging the waste at a mortuary waste disposal site; and ii. In accordance with a mortuary waste licence.	This clause may be introduced to resolve the cultural issue of mortuary waste discharge into the wastewater system and ultimately Waikato River. Although this clause may be introduced in this bylaw, it will not come into effect until a date decided by Council, where businesses have worked through a solution that allows for land-based discharge.
Schedule 12	Pre-treatment and Discharge Requirements -	These may need to be changed on a frequent basis, proposing to have a separate document that can be adapted to meet changing requirements.

Other changes proposed for the Trade Waste and Wastewater Bylaw:

Clause	Proposed New Clause	Reason for Clause
13	Liability: The Council shall not be liable for any loss, damage or inconvenience which the customer (or any person within the premises) may sustain as a result of deficiencies, reduced level of service or interruptions to the wastewater system.	This clause has been introduced to protect Council against consequential loss from system failures or outages that customers may experience. This clause also allows for some consistency with the Water Supply Bylaw and other Councils.
14	Breakage and Damage of the Wastewater System on Private Property: Where the wastewater system is on private land and the wastewater system is damaged, even if unintendedly, by build overs or private assets or private infrastructure, the Council is not liable for the cost of remedy or repair of the wastewater system. The owner of the private property whose build over or private asset or infrastructure that has	This clause has been introduced to protect Council having to compensate for damage to the wastewater system on private property where damage is caused by build overs or otherwise.

Clause	Proposed New Clause	Reason for Clause
	aided in the damage to the wastewater system is liable and responsible for the cost of remediation and repair back to the original standard.	
15	Council or Authorised Officer may serve or issue a notice or order on the owner, occupier or other person where works have damaged or are likely to cause damage to any part of Council's wastewater infrastructure. Failure to comply with such notice or order constitutes an offence against this Bylaw. The stopped work is not to recommence until appropriate remedial work is carried out and an 'Approval to Recommence Work' authority is issued by Council or Authorised Officer.	Currently, there is no provision for stop work orders, this clause has been introduced to clarify the authority under which such orders may be issued and could also ensure that non-compliance with the order itself constitutes a breach of this Bylaw.

Feedback from Early Engagement:

An online feedback link was emailed to over 100 parties inviting them to comment on the how we can improve the current Bylaw and whether they have any comments or suggestions about mortuary waste disposal. Seven submissions were received in the early engagement open from 20 May to 20 June.

Mortuary Waste:

There were a total of seven responses for Mortuary Waste, approximately half expressed that they would prefer land-based discharge of mortuary waste as opposed to discharge to the river. Others conveyed their concern of the costs involved with implementing an alternate solution that meets cultural needs.

The feedback will be presented to Council at a workshop scheduled for 18 July 2022, a verbal update of Council's position with regards to mortuary waste will be given to the Water Governance Board following this workshop.

Suggestions received for Mortuary Waste:

Organisation	Suggestion
CST Group Ltd	This is a reasonable idea, but the systems would need to be designed to accept large volumes at one time, as it would be something where it would be more cost-effective for the waste to be collected in bulk loads. - it will add more costs to the Mortuary operations and compliance issues, and it seems to be focused on one race, and I am not sure if it includes the opinions of all Cultures, considering our Multi-Cultural Nation.
Turangawaewae Trust Board	1. Preference for land based discharge. 2. Incorporate Mātauranga Māori into mortuary waste disposal? 3. More consultation with tāngata whenua

Organisation	Suggestion
Ngaa Uri o Maahanga Trust Board	Ngaa Uri o Maahanga Trust Board on behalf of Ngaati Maahanga do not support mortuary waste being disposed of into our awa (rivers) and eventually our moana. Mortuary waste should be disposed of to land and not in our waterways.
Waikare Marae	The inclusion of Mortuary Waste in this bylaw is effectively making positive steps towards restoring the mauri of our waterways in particular, giving effect to Te Mana o te Wai and upholding the importance of mana over the water itself. It is important for Council to have key technical experts and mana whenua included in all engagements and consultations of this bylaw. I look forward to further consultation. I hope WDC will follow Te Tairaawhiti
Haven Funeral Services Ltd	I think it is difficult to make any real distinction between mortuary waste and say, a women's menstrual discharge along with daily bodily waste products, ie urine and faeces going into the wastewater system. Mortuary waste is made up of obviously, Blood, Urine, Faeces, embalming fluid and water. I believe in the big picture of things the amount of discharge would not be considered huge and would be happy to provide some figures around this. I would be happy to talk on this matter as it raises some very interesting points.
Independent	I believe we need to consider all cultural views not just Te Ao Maori view point for mortuary waste. Are we also considering the cost of completing a different methodology of waste removal & disposal when it is well documented that the cost of 'dying' is out of reach for a lot of families. Will this add additional cost to an already difficult situation. This is a 'treated' product that is being released into the river, the same argument can be had with human waste on a daily basis, it is from people from the land and should be returned to the land, but it simply can not. There are lots of containments in waste product including medicines, chemicals, blood etc. the embalming process is yet another chemical and blood, which is treated like all product going through the wastewater treatment plants.

Wastewater:

We received a total of five responses relating to Wastewater which we will take into consideration with the Bylaw review and update.

The feedback involved a variety of suggestions including monitoring, wastewater systems for Marae, positive response in relation to a new build over clause, feedback in relation to Regional Infrastructure Technical Specifications and the requirement of CCTV which will be considered by staff when updating the bylaw.

Organisation	Suggestion
Turangawaewae Trust Board	1. More stringent monitoring of on-site wastewater management systems. Especially near waterways. 2. Early public warning/notifications of wastewater faults. i.e. wastewater overflows, wastewater leakage, wastewater treatment plant failure. (Raw Sewage).
Ngaa Uri o Maahanga Trust Board	Thought should be paid to Wastewater systems for Marae and Papakaainga and how the Council can assist Marae and Papakaainga developments within the Waikato District.
Haven Funeral Services Ltd	It definitely makes some sense to include a non build over section.
Independent	Current standards do exist in the Regional Infrastructure Technical Specifications for the 1st point. Improving the functions on GIS will asset all users around supplies/structures within the area.
Streamline Environmental	Require CCTV for domestic sewer before house purchase / sale

Trade Waste:

We received a total of five responses relating to Trade Waste which we will take into consideration with the Bylaw review and update.

The feedback involved a variety of suggestions including tankered waste, monitoring of compliance, consideration of Te Ture Whaimana, and others which will be considered by staff when updating the bylaw.

Organisation	Suggestion
CST Group Ltd	With the Tankered waste, it would be ideal to consult the operators before making any new laws, as new laws that have been made in other areas have been quite detrimental to the operation of our businesses. Also making the receiving point for tankered waste more appropriate and user-friendly and consulting on the operators when changes are made would make for better co-operation between both parties.
Turangawaewae Trust Board	1. Consultation with tāngata whenua over land discharge location. Tankered Waste, (unless already considered previously). 2. Monitoring of compliance. More monitoring over aspects of illegal dumping of prohibited waste and non-compliance. 3. Increase penalties and fines for non-compliance.
Ngaa Uri o Maahanga Trust Board	We would encourage Council to maintain their obligations and responsibilities to Te Ture Whaimana for the Waikato and Waipa Rivers in relation to Trade Waste and protection of our awa from Trade Waste.
Haven Funeral Services Ltd	Any new system needs to be balanced.
Independent	Consideration of any changes to tankered waste needs to ensure operators completing septic tank cleans are not disadvantaged by the actual residents waste. It is collected from within the districts

Organisation	Suggestion
	boundaries, limited education is supplied to any residents about their responsibilities and how to care for a septic tank correctly. It is not until operators get to uncover the lid of a tank and collect the product that it can at times be found to be fill of 'wipes, rags, excess fat' and has to be disposed of. This is still domestic waste. We can educate the resident at the time of removal about the ins and out of a normal working septic tank for the future but often it is an overflowing and blocked lines that we are called to assist with. We have to charge accordingly on the day but limited to charge additional after the fact when we maybe in receipt of any additional charges from Council. Pre-warning of price increases to be occurring, not just receiving it on the 1st July each year (pre-warning of these increases is helpful).

6. Next steps
Ahu whakamua

The early engagement feedback, as well as the proposed changes by staff will be presented to elected members at a Council workshop on 18 July 2022. Further review/changes may be made by staff following any feedback received at the Council workshop before undergoing the two-month public consultation.

7. Attachments
Ngaa taapirihanga

There are no attachments to this report.

Waikato District Council
Te Kaunihera aa Takiwaa o Waikato

Open – Information only

To	**Waters Governance Board**
Report title	**Three Waters Reform Project Update – July 2022**
Date:	19 July 2022
Report Author:	Deron Sharma, Three Waters Reform Project Manager
Authorised by:	Gavin Ion, Chief Executive

1. Purpose of the report
Te Take moo te puurongo

To update the Waters Governance Board of current workstreams, activities, and key matters under the Three Waters Reform Project.

2. Executive summary
Whakaraapopototanga matua

The Waters Service Entities Bill was introduced to Parliament on 2 June 2022, had its first reading on 9 June 2022, and has subsequently been sent to the Finance and Expenditure Select Committee.

Costs incurred during the Commercial and Legal Request for Information have been claimed from the Department of Internal Affairs on behalf of Council and Watercare Waikato.

The Terms of Reference for Better-off Funding Assessment Panel has been accepted by Council. The Assessment Panel is working with Council's communications team to execute a communications strategy within the next two weeks. Council's Iwi and Community Partnerships team will assist with the marae-based engagement process as well.

The Department of Internal Affairs has created an Asset Management Working Group to develop an Asset Management Plan (AMP) for Entity B. This requires representation from up to six council staff within Entity B's geographical purview. To this end, Waikato District Council has expressed interest in the opportunity, with the exact nominee and subsequent backfilling to be determined.

3. Staff recommendations
Tuutohu-aa-kaimahi

That the Waters Governance Board:

a. receives the report.

b. notes that the project management for three waters reform is ongoing.

4. Background
Koorero whaimaarama

4.1 Water Services Entities Bill

The Water Services Entities Bill is the first in a suite of legislation to enact the three waters reforms. It sets out the ownership, governance, accountability arrangements relating to these entities and includes essential provisions for ongoing public ownership and engagement, incorporating safeguards against future privatisation.

Moreover, the Bill parametrizes the geographical boundaries of the service delivery area for each of the four entities and provides for transitional arrangements to enable the transition and establishment activities needed to ensure these four new entities are in place to deliver services from 1 July 2024.

4.2 Asset Management Working Group

The Local Establishment Entity will need to create an asset management plan (AMP), that reflects the required levels of service for Entity B. The Technical Reference Group for Entity B recommends that an Asset Management Working Group be created to lead the collation and development of the AMP.

5. Discussion
Matapaki

5.1 Waters Services Entities Bill

The Bill establishes a two-tier governance structure of the water services entities:

- At the strategic level, regional representative groups will provide regional and local level direction and oversight, including joint monitoring of the water services entities. The regional representative groups will be based on a representative model.
- Regional advisory panels may be established by the regional representative groups to provide them with advice about how to perform or exercise their duties, functions, and powers.

- At the operational level, the water services entities will appoint independent, skills-based, professional boards. These independent boards will run the day-to-day management of the entities and oversee the maintenance and renewal of water infrastructure.

The Water Services Entities Bill sets out the roles and responsibilities of the regional representative groups. Each regional representative group will consist of between 12 and 14 members, with half of its members appointed from mana whenua within its region, and half from territorial authorities.

The Bill establishes strong accountabilities to communities and consumers on the performance and strategy of a water services entity.

The water services entity board will:

- consist of between 6 and 10 members who collectively have the appropriate skills to manage the infrastructure and service delivery.
- be directly accountable to the regional representative group. The regional representative group will form a committee to appoint and remove, if necessary, members of the skills-based board.

In relation to consumer interest, the water services entities must:

- undertake direct engagement with consumers on its asset management plans, funding and pricing plans, and infrastructure strategies.
- establish a consumer forum(s) to assist with effective and meaningful consumer and community engagement, and understand consumer needs, expectations, and service requirements.

Annually, the Chief Executive of each WSE must undertake a consumer engagement stocktake that captures consumer and community feedback on satisfaction with how the entity is performing. The consumer stocktake must set out how the water services entity will respond to consumer and community needs and address concerns.

5.2 Asset Management Working Group

An Asset Management Lead has been appointed by the Department of Internal Affairs to deliver the AMP, which includes employing staff from councils within Entity B's geographical boundaries. This working group will have consultants providing project management, writing, analytics, and other necessary support during the development of the AMP. A request for nominations from Councils within Entity B has been made by the Asset Management Lead.

Six council staff are being sought, who have the ability to:

- on average, provide up to 20 hours per week for 12 to 18 months. Hours will fluctuate depending on the works programme
- provide leadership, technical guidance and information to Councils who are not represented on the working group
- represent the needs of their council as well as Entity B.

6. Next steps
Ahu whakamua

6.1 Waters Services Entities Bill

The Select Committee is currently accepting public submissions on The Bill. Submissions close on 22 July 2022 and the Committee is expected to report back to the House by 11 November 2022 allowing the remaining stages of the legislative process to be completed before the end of the year. Council will make a submission.

Further legislation will be introduced later this year that will provide for the transfer of assets and liabilities from local authorities to Water Services Entities and integrate entities into other regulatory systems. Future legislation will also cover economic regulation and consumer protection, to ensure water services are reasonable and affordable.

6.2 Asset Management Working Group

Council has expressed interest in the opportunity whilst informing the Local Transition Team that the resource and backfilling of the position is yet to be determined.

The Asset Management Lead is currently developing a Terms of Reference for membership and drafting more details regarding the work required for this.

It has been indicated that staff time will be funded, but the mechanism remains to be confirmed.

7. Attachments
Ngaa taapirihanga

There are no attachments for this report.

Waikato District Council
Te Kaunihera aa Takiwaa o Waikato

Open

To	**Waters Governance Board**
Report title	**Exclusion of the Public**
Date:	19 July 2022
Report Author:	Gaylene Kanawa, Democracy Team Leader
Authorised by:	Gavin Ion, Chief Executive

1. Staff recommendations
Tuutohu-aa-kaimahi

THAT the public be excluded from the following parts of the proceedings of this meeting.

The general subject of each matter to be considered while the public is excluded, the reason for passing this resolution in relation to each matter, and the specific grounds under section 48(1) of the Local Government Official Information and Meetings Act 1987 for the passing of this resolution are as follows:

General subject of each matter to be considered	Reason for passing this resolution in relation to each matter	Ground(s) under section 48(1) for the passing of this resolution
Item number PEX 1 **Confirmation of Minutes** **Item PEX 2** **Actions Register** **Item PEX 3.1** **Waters Financial Results to 31 May 2022** **Item PEX 3.2** **Three Waters Reform Project Update** **Item PEX 3.3** **Tuakau/Pokeno Wastewater Network Upgrade Cost Escalation Review**	**Good reason to withhold exists under Section 6 or Section 7 Local Government Official Information and Meetings Act 1987**	**Section 48(1)(a)**

This resolution is made in reliance on section 48(1)(a) of the Local Government Official Information and Meetings Act 1987 and the particular interest or interests protected by Section 6 or Section 7 of that Act which would be prejudiced by the holding of the whole or relevant part of the proceedings of the meeting in public, as follows:

Item No.	Section	Interest
Item PEX 1 Confirmation of Minutes		**Refer to the previous Public Excluded reason in the agenda for this meeting.**
Item PEX 2 Actions Register		**Refer to the previous Public Excluded reason in the agenda for this meeting.**
Item 3.1 Waters Financial Results to 28 February 2022	**7 (2) (b) (ii)**	**To protect information that would otherwise unreasonably prejudice a person's commercial position.**
	7 (2) (h)	**To enable commercial activities to be carried out without prejudice or disadvantage.**
Item 3.2 Three Waters Reform Project Update	**7 (2) (c) (i)**	**To protect information that is subject to an obligation of confidence and to ensure the information avenue remains open, when it is in the public interest for it to do so**
Item 3.3 Tuakau/Pokeno Wastewater Network Upgrade Cost Escalation Review	**7 (2) (i)**	**To enable negotiations to carry on without prejudice or disadvantage**
	7 (2) (b) (ii)	**To protect information that would otherwise unreasonably prejudice a person's commercial position**
	7 (2) (j)	**To prevent use of the information for improper gain or advantage.**

2. Attachments

There are no attachments for this report.