Agenda for a meeting of the Waters Governance Board to be held at Waikato District Council, Committee Rooms 1 and 2, 15 Galileo Street, Ngaruawahia on **TUESDAY, 7 JUNE 2022** commencing at **10.00am**.

GJ Ion
CHIEF EXECUTIVE

TERMS OF REFERENCE AND DELEGATION

Reports to:	The Council
Chairperson:	Mr David Wright
Membership:	Mr Garth Dibley Mr 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**

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

Date:	Tuesday, 7 June 2022
Report Author:	Matt Horsfield, Democracy Advisor
Authorised by:	Gaylene Kanawa, Democracy Team Leader

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
Community organisations	Chair, Tokelau Renewable Energy Steering Group
Other appointments	Chair, Central Air Ambulance Rescue Limited Chair, Search and Rescue Services Limited Interim Chief Executive, Horowhenua District Council.
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

Waikato District Council
Te Kaunihera aa Takiwaa o Waikato

Open – Information only

To	**Waters Governance Board**
Report title	**Confirmation of Minutes**

1. Purpose of the report
Te Take moo te puurongo

To confirm the minutes for a meeting of Waters Governance Board held on Tuesday, 26 April 2022.

2. Staff recommendations
Tuutohu-aa-kaimahi

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

3. Attachments
Ngaa taapirihanga

Attachment 1 – WGB Minutes – 26 April 2022

Date:	Tuesday, 7 June 2022
Report Author:	Matt Horsfield, Democracy Advisor
Authorised by:	Gaylene Kanawa, Democracy Team Leader

MINUTES for a meeting of the Waters Governance Board Meeting of the Waikato District Council held via audio-visual conference on **TUESDAY, 26 APRIL 2022** commencing at **10.05am**.

Present:

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

Attending:

Cr E Patterson

Mr J Mackie (Department of Internal Affairs)

Mr R MacCulloch (General Manager Service Delivery)
Mr G King (Chief Information Officer)
Mr V Ramduny (Strategic Projects Manager)
Ms C Nutt (Waters Contract Relationship Manager)
Mr K Martin (Waters Manager)
Mr D Sharma (Three Waters Reform Project Manager)
Ms J Bell-Wymer (Corporate Planner)
Ms L Cilliers (Management Accountant)
Ms Z Al-Khaleefa (Three Waters Contract Engineer)
Mr M Horsfield (Democracy Advisor)

Ms R Chenery (Chief Information Officer - Watercare)
Mr M Telfer (Watercare)
Mr G King (Watercare)
Mr J Turner (Watercare)

APOLOGIES AND LEAVE OF ABSENCE

All members were present.

CONFIRMATION OF STATUS OF AGENDA ITEMS

Resolved: (Mr Ion/Mr Dibley)

THAT the agenda for a meeting of the Waters Governance Board Meeting held on Tuesday, 26 April 2022 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.

CARRIED **WGB2204/01**

DISCLOSURES OF INTEREST

There were no disclosures of interest.

CONFIRMATION OF MINUTES

Resolved: (Mr Dibley/Mr Ion)

THAT the minutes for a meeting of the Waters Governance Board Meeting held on Tuesday, 15 March 2022 be confirmed as a true and correct record of that meeting.

CARRIED **WGB2204/02**

REPORTS

Actions Register
Agenda Item 5

The Waters Contract Relationship Manager noted the following matters:

- Remunerations – A verbal update would be provided in public excluded section of the meeting.

- Huntly Wastewater Upgrade – There had been a number of meetings with Sleepyhead, Waikato Regional Council (WRC) and a large number of internal meetings discussing the possibility of bring the wastewater plant upgrade forward.

- Watercare had contacted Nga Muka to organise a appropriate date for a meeting. It was important to organise a meeting with as many board members present as possible,

Resolved: (Ms Schaafhausen/Mr Ion)

THAT the Actions Register be received.

CARRIED **WGB2204/03**

Three Waters Reform Project Update – April 2022
Agenda Item 6.1

Ms Schaafhausen noted she had a non-financial conflict of interest due to her role on the National Transition Unit – Three Waters Programme.

The Three Waters Reform Project Manager noted the following matters:

- Received a data and digital request for information from the National Transition Unit (NTU). Developed a working group in Council, with Watercare and Council provide separate spreadsheets.

- NTU needed to provide a provision to allow the two separate spreadsheets to be received.

- Information had been requested from the Rural Supply Technical working group on shared working schemes, and with agriculture supplies and drinking supplies. Hine Korako provides a the source for information to suppliers and laboratories,

- Taumata Arowai had asked for feedback for the proposed drinking water standards.

- Council had developed a decision matrix based off the better off funding criteria and Blueprint aspirations. Staff had been given six weeks to provide feedback for possible projects, with an aligned programme to work with Iwi. Looking to submit the application to DIA by August 2022.

- The Waters Manager would be on the local transition team, with weekly meetings from next week.

- What was decision process for the better off funding package, would it go to Council or the Waters Governance Board? It would be a Council decision and could cover a wide spectrum of Council activities. If possible projects involve three waters, the WGB would be able to express their views on the project.

- Important that Councillors were kept informed with work going on in this space.

- Were staff considering the acceleration of waters projects for better off funding? Yes, waters would be added to the long list for consideration. This may include bringing forward funding outside the LTP for projects such as the Huntly Wastewater Treatment Plant upgrade.

- There would likely be difficulties with the capacity of the market, as Council's across the country receive cash injections.

Resolved: (Mr Wright/Mr Ion)

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

CARRIED **WGB2204/04**

Better Off Funding - Presentation
Agenda Item 6.2

Mr Mackie noted the following matters:

- The Better Off Funding Package consisted of $2billion over five (5) years in two (2) tranches which would be released to local authorities. Became available from 11 April 2022 to 30 September 2022 for funding proposals for the first tranche of funding.

- There were high level objectives to support communities to move from a low carbon economy, provide infrastructure for developments that meets the criteria and place making projects such as pools and parks.

- Packages will need to be submitted to the Department of Internal Affairs (DIA) before 30 September 2022.

- The funding criteria was tight. It could not be used as a replacement for funding of existing projects in the Long Term Plan (LTP), but could be used to enhance and accelerate existing projects in the LTP.

- Funding could be rolled forward to tranche two (2) in July 2024.

- No guarantee that tranche two (2) funding follow through if there was a change in Government.

- It was strongly recommended that contingency projects were considered due to global and local instability.

- Each project would be subject to a wellbeing assessment.

- Funding Release – First 10% would be released and payable up front, then actual costs and arrears could be invoiced on a monthly basis. The reporting requirement would be six monthly.

- There would be a process for project substitution should an issue arise.

- Methodology for the allocation for funds to the Councils was based on a weighting 75% relating to population, 20% relating to deprivation in the district and 5% relating to land area.

- Council was working on creating a long list of projects for tranche one (1) and two (2), with Iwi engagement beginning on 3 May to look at projects that Iwi were interested in progressing. Projects would be shortlisted using the DIA criteria.

- Was funding linked to Council's three waters assets? No, it did not look at the valuation of the assets.

- Is there any costs to funding that will be incurred to Council? The costs should be built into the funding programme.

- Is there a business case that shows the financial value for the project? No, as long as it meets the criteria.

- There was no catch that Council's had to support the three waters reform to receive the funding. A waiver could be sought for Councils to apply for funding after the local government elections.

Resolved: (Mr Wright/Mr Ion)

THAT the Better Off Funding – Presentation be received.

CARRIED **WGB2204/05**

Three Waters Governance Report – April 2022
Agenda Item 6.3

Mr Telfer noted the following matters:

- Achieved performance outcomes in Feb and March. Year to date measures were on track to be achieved.

- Activities for water restrictions were well received. There were no restrictions this summer.

- Cyclone Dovi – Power outages impacted a number of plants and pump stations. Watercare was looking at more permanent generators at critical sites.

- Locations for the permanent filling stations had been confirmed.

- COVID – Operational teams had been split up. 60% of the team had been impacted by COVID however with teams being split up the impacts were limited.

- Health & Safety – There was a health and safety event on 12 April, that related to the installation of the MABR plant at Te Kauwhata. A subcontractor crushed their finger between two metal objects. It was a two person job done by one person. Worksafe was notified but did not investigate.

- Welding training had been provided to the teams, three staff were able to use the training immediately.

- Raglan filters at the Water Treatment Plant - They had been contructed and in place for additional level of security in disaster situations. There had been issue with the water quality during the Kaikoura earthquake. The filters would be used to mitigate quality issues. It was a DIA funding project and would be completed by July 2022.

- Complex Meters – 75% of the Complex meters had been completed, 8% were waiting for approval. 90% were expected to be done in the next few months. 3% had been uncontactable with Council's legal team looking to contact them. The project had been ongoing for a number of years with the aim to get these properties separately metered.

- Removal of the Hopu Hopu Water Treatment Plant – It had been addressed and it was good to see the work completed.

- The report highlights the SCADA comms losses – what does this mean and what happens to that real time data? SCADA could be impacted due to power outages, lack of connectivity and server events. The events that occurred were largely due to loss of power. When SCADA was not operating, staff would have to manually monitor plants. It was a resource drain to operate in this way. The second event was due to damage from an excavator.

- Congestion at the Te Kauwhata Site – Watercare were working with the contractor to mitigate congestion on the site. The incident in April was not due to congestion.

Resolved: (Ms Schaafhausen/Mr Dibley)

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

CARRIED **WGB2204/06**

Compliance Summary – March 2022
Agenda Item 6.4

Mr Telfer noted the following matters:

- There were a number of compliance challenges in the wastewater area. The ongoing maintenance of the plants was challenging. DIA funding provided desludging of the ponds at Huntly and Ngaruawahia but it could disturb the ponds, which could create some negative results.

- Te Kauwhata Plant compliance will be addressed in December when the MABR would be in place with the next stages following on to addressing discharges.

- OEM manuals and reports for each of the plants - They had not been maintained as well as it should have been and Watercare was looking to have them updated by July 2022.

- Status being assigned to different plants, what was the difference between Ngaruawahia plant (Moderate non-compliance) and Raglan (Significant non-compliance). There was a progression of non-compliance. N The status criteria was set by WRC and takes in account the number of non compliances and interprets the significance of the non-compliances.

ACTION: Compliance Summary report to be provided to the Waters Governance Board quarterly.

Resolved: (Ms Schaafhausen/Mr Dibley)

THAT the Compliance Summary – March 2022 report be received.

CARRIED **WGB2204/07**

Trade Waste and Wastewater Bylaw
Agenda Item 6.5

The Waters Contract Relationship Manager noted the following matters:

- Tradewater and Wastewater Bylaw was due for renewal. Council had 16 months to carry out the review. A workshop would be held next week with Council, to get a steer of what should remain and what should be removed.

- Following that, there would be early engagement with key stakeholders followed by open consultation.

- How does the allocation process work for new entrants? It was first come first serve, and if it was in the north of the district it was dependent on the capacity of the wastewater plant in Tuakau. If infrastructure needs to be upgraded, developer agreements could help pay for the upgrade. The Bylaw does not cover this however development agreements cover this.

Resolved: (Mr Wright/Mr Ion)

THAT the Waters Governance Board:

a. **receives the Trade Waste and Wastewater Bylaw report;**

b. **advises of any specific areas or topics to be considered as part of the TradeWaste and Wastewater Bylaw 2016 review.**

CARRIED **WGB2204/08**

Stormwater Improvement Areas
Agenda Item 6.6

The Three Waters Contract Engineer noted the following matters:

- Monthly workshop had been held with internal and external staff, including Watercare, Waikato District Alliance and WRC. The workshops had identified problems in the stormwater spaces, which included the design standards.

- Watercare, in consultation with Council had developed the Stormwater Guidelines document. The purpose of the document was to provide best practice for developers, with increased maintenance efficiencies and reduce environmental impacts. Watercare and Council had gone out to external stakeholders for feedback.

- The other major piece of work to come out from the workshops included delination and demarcation of stormwater assets. This work had clearly defined maintenance responsibilities.

- The graphics in the report did not intend to outline perfect design scenarios but to outline ownership and maintenance responsibilities.

- What sort of overall philosophy was being sought for stormwater guidelines, particularly centralised stormwater treatment? Need to be cognisant of the long term operating costs?

- What document do developers use for stormwater guidelines? Council had provided preferred treatment devices to developers. There were many outlines, including from WRC but Council's new guidelines specified best practice and referenced other guidelines with a focus on the Waikato District.

Resolved: (Ms Schaafhausen/Mr Ion)

That the Waters Governance Board:

a. **receives the Stormwater Improvement Areas report;**

b. **notes that certain stormwater problem areas have been identified and addressed; and**

c. **notes that improvement in the stormwater space is ongoing.**

CARRIED **WGB2204/09**

EXCLUSION OF THE PUBLIC

Agenda Item 7

Resolved: (Mr Wright/Mr Ion)

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 28 February 2022 Item PEX 3.2 SCADA Upgrade Project	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)** **7 (2) (h)**	**To protect information that would otherwise unreasonably prejudice a person's commercial position.** **To enable commercial activities to be carried out without prejudice or disadvantage.**
Item 3.2 SCADA Upgrade Project	**7 (2) (b) (ii)** **7 (2) (h)** **7 (2) (I)** **7 (2) (j)**	**To protect information that would otherwise unreasonably prejudice a person's commercial position.** **To enable commercial activities to be carried out without prejudice or disadvantage.** **To enable negotiations to carry on without prejudice or disadvantage.** **To prevent use of the information for improper gain or advantage.**

AND THAT Mr Telfer, Ms R Chenery and Mr Turner be permitted to remain at this meeting, after the public has been excluded, because of their 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 their roles and responsibilities for those matters.

CARRIED **WGB2204/10**

Resolutions WGB2204/11– WGB2204/15 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 12:25pm.

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**

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, 26 April 2022.

2. Staff recommendations
Tuutohu-aa-kaimahi

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

3. Attachments
Ngaa taapirihanga

Attachment 1 – Action Register

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

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	Verbal update will be provided at the meeting, in summary: 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.
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.
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

Open

To	**Waters Governance Board**
Report title	**Hamilton-Waikato Metropolitan Wastewater Detailed Business Cases**

1. Purpose of the report
Te Take moo te puurongo

To seek the Waters Governance Board's (WGB):

i. Approval of the Southern Hamilton-Waikato Metropolitan Wastewater Detailed Business Case and the associated Memorandum of Understanding, and

ii. Endorsement of the preferred option for the Northern Hamilton-Waikato Metropolitan Detailed Business Case to enable the project team to undertake more detailed assessments.

2. Executive summary
Whakaraapopototanga matua

The preferred southern metropolitan wastewater servicing option involves a standalone Cambridge Wastewater Treatment Plant (WWTP) and a Southern Sub-Regional Wastewater treatment plant south of Hamilton to meet the immediate needs of the airport area and the medium to long-term needs of the wider southern Hamilton-Waikato sub-region.

The key elements that inform the Southern Hamilton-Waikato Metropolitan Wastewater DBC and the proposed Memorandum of Understanding (MoU) have been approved and endorsed by the Project Governance Group (PGG). The PGG is made up of elected representatives from the partner organisations. Council's governance representatives are Mayor Allan Sanson, Deputy Mayor Aksel Bech and Garth Dibley (member of the Waters Governance Board).

The peer review of the Southern Hamilton-Waikato Metropolitan Wastewater DBC is now completed. On 29th April 2022, the PGG endorsed the DBC and the proposed MoU. These documents are presented for the Waters Governance Board's consideration, feedback, and approval. Consideration, feedback, and approval of the DBC and the MoU are also being sought from the relevant governance committees from the other partner organisations.

As endorsed by the PGG, Hamilton City Council (HCC) will be the lead council for the Southern Sub-Regional WWTP. The key roles of the lead Council include driving delivery and financing the project. HCC has some funding in its 2021-2031 Long Term Plan (LTP) for the land acquisition and planning phases for the Southern Sub-Regional WWTP. Multi-party funding agreements will also be required with Waikato District Council (WDC), and Waipa District Council (Waipa DC), particularly in relation to servicing the Waikato Regional Airport and environs.

HCC's funding for the Southern Sub-Regional WWTP in the 2021-2031 LTP is based on approximately 40% portion of the estimated land acquisition and planning costs (e.g., consenting, designations). The 40% funding portion was based on the assumed proportion of flow to the Southern Sub-Regional WWTP generated from Hamilton city communities in 2061. The multi-party funding agreement would enable HCC, WDC and Waipa DC to work out the cost-split for the construction of the WWTP.

The proportion of flow to the Southern Sub-Regional WWTP generated from Hamilton communities is likely to be significantly higher than assumed for the 2021-2031 LTP and therefore require a higher proportion of funding from HCC. Based on current flow assumptions, the HCC contribution to the land acquisition and planning phase is likely to be approximately 80%.

A request for additional funding from HCC may be required through annual plan and long-term planning processes from 2023/24 onwards to complete the pre-implementation phase. New funding will be required to finance construction of the plant with timing expected to be beyond 2024/25.

The Northern Hamilton-Waikato Metropolitan Wastewater DBC continues to progress, with the short-list options assessment completed. Option A (servicing Taupiri, Hopuhopu, Ngaaruawaahia, Te Kowhai, Horotiu and the northern portion of Hamilton city from an upgraded Pukete WWTP) has emerged as the preferred option. This is subject to more detailed assessments being undertaken.

Should Option A be endorsed as the preferred option, a staged transition will be required to provide time to upgrade the Pukete WWTP to meet the higher treatment standards, and to cater for growth (including flows from the Waikato district communities). These elements are being considered, and a recommended preferred option to take forward in the Northern Hamilton-Waikato Wastewater DBC will be presented to the Project Governance Group on 30 May 2022 and reported to a subsequent Waters Governance Board meeting.

Staff consider the decisions in this report have low significance in terms of Council's Significance and Engagement Policy. The recommendations comply with Council's legal requirements.

3. Staff recommendations
Tuutohu-aa-kaimahi

That the Waters Governance Board:

a. receives the report.

b. 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.

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.

c. 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.

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.

4. Background
Koorero whaimaarama

This report covers the period of mid-March 2022 to early May 2022. Earlier this year the Waters Governance Board noted Option 4A (Five Plant Option) as the preferred servicing option to take forward for refinement, and to inform completion of the Southern Hamilton-Waikato Metropolitan Wastewater DBC.

On 16 April 2021, the Project Governance Group confirmed the preferred wastewater servicing option for refinement and completion of the Southern Hamilton-Waikato Metropolitan Wastewater DBC. In addition to confirming the preferred option for the Southern Hamilton-Waikato metropolitan area, the Project Governance Group agreed to the development of a MoU to secure commitments to implement the preferred option from the DBC.

The preferred wastewater servicing option confirmed on the 16th of April 2021 Project Governance Group meeting comprises:

i. The adoption of minimum treatment performance standards across all WWTPs, over time
ii. A new Southern Sub-regional WWTP to service the airport area and environs (including Mātangi/ the Tamahere commercial area) and southern Hamilton.
iii. Development of the Southern Sub-Regional WWTP will be staged to meet demand. Land discharge is proposed for Stage 1 with a move toward a discharge to water as flows increase i.e., in Stage 2 and beyond.
iv. Retaining and upgrading the Tauwhare Pā WWTP and land discharge to service local growth with the potential to be reticulated to the Southern Sub-Regional WWTP or HCC network in the future.
v. A new WWTP at Cambridge to achieve the adopted minimum treatment standards with discharge to the Waikato River.
vi. Retaining and upgrading the Te Awamutu WWTP to achieve improved treatment standards and cater for growth. Continued discharge via rock channel to the Mangapiko Stream is assumed.
vii. Improvements to the existing Mātangi WWTP until the wastewater is conveyed to the Southern Sub-Regional WWTP in around 2040.
viii. Tamahere commercial hub to continue to utilise on-site wastewater treatment and discharge systems until 2040 when Mātangi is diverted to the Southern Sub-Regional WWTP.
ix. Ohaupo continuing with private on-site wastewater systems.

Following the 16 April 2021 PGG meeting, the project team put together the template for the MoU and a recommended list of items for inclusion. The proposed items were discussed at the PGG workshop on the 18 June 2021. Pre-briefing sessions were also conducted with each partner ahead of the 18 June 2021 workshop. The feedback from the pre-briefing sessions and the 18 June 2021 PGG workshop was considered and the proposed levels of commitment and approaches for inclusion in the MoU were presented to the PGG on 30 June 2021.

Key items and level of commitment to be included in the MoU			
Item	**Agree to agree**	**Agree principles**	**Agree commitment**
1. Minimum performance / environmental standards			As per the WW DBC, Wastewater Minimum Treatment Standards that were endorsed at PGG meeting on 28th October 2020.
2. Governance structure	Detailed powers of any joint oversight function to be agreed.		Form of the joint oversight function, parties and scope.
3. Cost allocation, funding and financing		Cost allocation principles for: • Land acquisition for the Southern sub-regional plant • Reticulation / conveyance costs • Plant costs (Master-planning, consenting and design costs, initial ground works, plant construction costs)	
4. Southern sub-regional plant thresholds	Investment based on the cost allocation principles outlined in the MoU with specific amounts to be agreed in the future.		The SS WWTP thresholds and triggers for investment.
5. Lead Councils			Use of a Lead Council delivery structure. Allocation of Lead Councils for each project.
6. Cross-boundary servicing arrangements	Agree to negotiate service agreement details between Councils at the appropriate time.		A service agreement between Councils, based on commercial terms, will be used for servicing of cross-boundary communities.
7. Ownership		Principle that joint ownership of plant is not preferred and that ownership will likely reflect financing and control.	

On 30 June 2021, the PGG endorsed the key elements of the preferred option and levels of commitment to include in the MoU and to complete the Southern Hamilton-Waikato Metropolitan Wastewater DBC document.

Throughout the development of the DBC regular engagements were had with the Waikato Regional Airport Ltd (WRAL), Waipā District Council, Waikato District Council, Waka Kotahi, and mana whenua.

An expected increase in the HCC portion of funding toward the Southern Sub-Regional WWTP then had been assumed for HCC's 2021-31 LTP and the likely need for additional funding to be secured via annual or long-term planning processes.

Updates on the progress on the Northern Hamilton-Waikato Metropolitan Wastewater DBC were also provided to the WGB.

During April 2022, pre-briefing meetings were held with partner organisation representatives in preparation for the 29 April 2022 PGG meeting where the Southern Metro WW DBC and MoU documents were considered for approved.

Building on the work undertaken for the Southern Hamilton-Waikato Metropolitan DBC, two broad shortlisted options were identified for the northern metropolitan area: conveying all wastewater to a centralised wastewater treatment plant (WWTP) at Pukete (Option A) and retaining both the Ngaaruawaahia and Pukete WWTPs (Option B).

Option B has been broken into two conveyancing sub-options Option B1 with Te Kowhai, Horotiu and Taupiri conveyed to Ngaaruawaahia) and Option B2 with Te Kowhai and Horotiu conveyed to Pukete and Taupiri conveyed to Ngaaruawaahia). A do minimum Option C was also developed to provide a baseline against which the benefits of the other options can be compared.

The technical short-list assessments were completed in February and March 2022. Option A (servicing Taupiri, Hopuhopu, Ngaaruawaahia, Te Kowhai, Horotiu and the northern portion of Hamilton city from an upgraded Pukete WWTP) has emerged as the preferred option. This is subject to more detailed assessments being undertaken. The shortlist options were developed using the residential and non-residential growth assumptions and discharge quality assumptions developed and approved as part of the Southern Metropolitan Wastewater DBC and confirmed by the Governance Group 29 April 2022.

The shortlist options were developed in consultation with key stakeholders. Inputs included:

- Preferences for siting of pump stations and pipeline routes
- Inclusion of adequate system resilience provisions, including back-up generators for pump stations and emergency storage
- Use of twin mains where possible to reduce septicity of sewage and provide resilience.
- Consideration of conveyance projects already committed in Ngaaruawaahia.
- Facilitation of resource recovery including energy, phosphorus, and treated wastewater reuse at Pukete.
- Pukete layout to incorporate site constraints and operational requirements.
- A description of the options is provided in the table in next section.

5. Discussion
Matapaki

The Southern Hamilton-Waikato Metropolitan Wastewater DBC is a substantial document that pulls together key elements of the project to meet the requirements of the Treasury Better Business Case model and support the recommended investments.

The DBC has been independently peer reviewed by Stantec using the Treasury Better Business Case Peer Review template. The peer reviewers' comments have been worked through and addressed in the final draft DBC document.

On 29 April 2022, the PGG endorsed:

i. The Southern Hamilton-Waikato Metropolitan Wastewater DBC.
ii. Recommending the Southern Hamilton-Waikato Metropolitan Wastewater DBC to the partner organisations for adoption and implementation through their respective Long-Term Plan processes.
iii. Recommending that the relevant Councils commence implementation actions outlined in the Southern Hamilton-Waikato Metropolitan Wastewater DBC and the MoU.

The Southern Hamilton-Waikato Metropolitan Wastewater DBC is now presented for the WGB's consideration, feedback, and approval.

A summary of the DBC has been produced to support the approval process and is attached to this report (Attachment 1). This summary document draws out and aims to communicate the key elements of the DBC. Table 1 of the summary document details the population equivalents assumed over time used to conceptualise the Southern Sub-Regional WWTP. An "unformatted" version of the DBC document (including the for each case but excluding forewords, acknowledgements, and appendices) is included in Attachment 4. Forewords, acknowledgements, cross referencing, revised graphics, and all appendices will be included in the final formatted document.

The PGG has also requested a supplementary assessment evaluating the impacts of accelerated development of the Southern Subregional WWTP (i.e., more capacity earlier than assumed for the Southern Hamilton-Waikato Metropolitan Wastewater DBC and MoU) which will be completed in parallel with the Northern Hamilton-Waikato Metropolitan Wastewater DBC.

Implementing the recommendations of the Southern DBC will be closely linked to implementation of the Northern DBC. Integration of each of the DBCs will be necessary to deliver and implement a cohesive sub-regional investment plan. This integration will need to include closer examination of investment timing and triggers (e.g., what are the likely triggers for initiating the diversion of Hamilton south (and/or other areas) to the new Southern Subregional WWTP) and finalising and implementing a sub-regional wastewater consenting strategy.

Memorandum of Understanding

The MoU has been developed to give effect to the direction provided by the PGG (30th June 2021 meeting) on the content, structure, approaches, and levels of commitment to be included in the MoU.

Tompkins Wake was engaged to provide an initial version which was then reviewed and further developed by the project team and representatives from each of the partner organisations between October 2021 and March 2022.

Developing the MoU has been an iterative process and has included consideration and responses to

i. Feedback from the Project Control Group and technicians.
ii. Comments from partner organisations including Waikato-Tainui and Mana Whenua.
iii. Comments from legal advisors from partner organisations.

On 29th April 2022, the PGG endorsed:

i. The draft MoU in respect of the Hamilton-Waikato-Waipa metropolitan area wastewater projects (the endorsement was subject to minor amendments which have since been incorporated into the draft document).
ii. Recommending that the partner organisations sign the MoU (subject to resolving confirmation of iwi/mana whenua signatories to the MoU) and establish the governance framework set out in the MoU.

The MoU endorsed by the PGG is included as Attachment 2.

The presentation to the 29 April 2022 PGG is included as Attachment 3.

Southern Sub-Regional WWTP Project

Several project implementation activities are occurring in parallel with completing the Southern Metropolitan Wastewater DBC document, including:

i. the drafting of the Southern Subregional WWTP Project Management Plan (which will also include roles and responsibilities). A key area of focus is the overall project governance and delivery structure, given the multiple local authorities with interests in the project, and importance of ensuring that appropriate provision is made for iwi/mana whenua representation and participation in the project.
ii. Continuing due diligence investigations on potential land to support the Southern Sub-Regional WWTP project.

While HCC is currently funding this work, cost sharing needs to be agreed between councils. A multi-party funding agreement for the Southern Sub-Regional WWTP needs to be developed and negotiated between the parties.

Some concerns have been expressed by Waipa and ourselves regarding how the funds invested are protected. Council will need to borrow to fund its contribution. This ideally requires an asset that is being bought with the funds contributed.

The risk to council is that the contribution provided is subsequently transferred to the proposed Water Entity B and there is no asset against which council can recoup its fund.

The other concern is that council's contribution is not capped which means if the cost of the project is higher, council will be required to contribute more.

Northern Hamilton-Waikato Metropolitan Wastewater DBC Project

The Northern Hamilton-Waikato Metropolitan Wastewater DBC project is building on the Southern Hamilton-Waikato Metropolitan Wastewater DBC work, including the project vision and objectives, the communities included in the investigations, minimum treatment performance standards and the two short-listed options identified for the northern metropolitan area.

A significant amount of work has been completed to support delivery of the Northern DBC. The Northern DBC development has included ongoing focussed technical and maatauranga Maaori hui and workshops with project partners and "all-in" stakeholder workshops.

The PGG approved key project assumptions for the Northern DBC at its 29 April 2022 meeting including:

i. Investment objectives, Key Performance Indicators (KPIs) and the multi-criteria assessment (MCA) criteria.
ii. Population and treatment assumptions and sensitivity test scenarios.

The northern Hamilton-Waikato metropolitan area communities being considered as part of the project are Taupiri, Hopuhopu, Ngaaruawaahia, Horotiu, Te Kowhai and northern Hamilton. Whatawhata and major industrial facilities with their own water services (i.e., Open Country Dairy/AFFCO and Fonterra Te Rapa) are not included in the scope of the project.

The short-listed options under consideration for the Northern Hamilton-Waikato DBC are:

- **Option A: One WWTP** - All wastewater flow to the Pukete WWTP.
- **Option B1: Two WWTPs** –Te Kowhai, Horotiu, Hopuhopu, Taupiri and Ngaaruawaahia to an upgraded Ngaaruawaahia WWTP; Pukete continuing to service Hamilton.
- **Option B2: Two WWTP** – Hopuhopu, Taupiri and Ngaaruawaahia to an upgraded Ngaaruawaahia WWTP; Te Kowhai, Horotiu to Pukete WWTP; Pukete continuing to service Hamilton.
- **Option C: Do Minimum** – Retain existing plants and servicing.

	Option A	Option B1	Option B2	Do minimum
Option name	Pukete	Pukete and Ngaaruawaahia	Pukete and Ngaaruawaahia	Do minimum
Outcome	Best for River	Best for River	Best for River	Consentable minimum
Conveyance	All WDC conveyed to Pukete 	Te Kowhai, Horotiu and Taupiri conveyed to Ngaaruawaahia 	Te Kowhai and Horotiu conveyed to Pukete Taupiri conveyed to Ngaaruawaahia 	Te Kowhai conveyed to Ngaaruawaahia (subject to funding) 
Treatment standard	Total N: 4g/m³ Total P: < 0.5 g/m3	Total N: 4g/m³ Total P: < 0.5 g/m3 (Pukete), < 0.2 g/m3 (Nga)	Total N: 4g/m³ Total P: < 0.5 g/m3 (Pukete), < 0.2 g/m3 (Nga)	Total N: 7-8g/m³ (Pukete), 4g/m³ (Nga) Total P: < 0.5 g/m3 (Pukete), < 0.2 g/m3 (Nga)
Treatment type	MBR	MBR	MBR	Conventional activated sludge (with optimisation) for Pukete, MBR for Ngaaruawaahia
Reuse and recovery	Maximise reuse and energy recovery opportunities (including digester and mini-hydro on outfall)	No/minimal reuse or recovery at Ngaaruawaahia Able to achieve ~90% of Option A	No/minimal reuse or recovery at Ngaaruawaahia Able to achieve ~90% of Option A	No reuse No energy recovery (flaring only)
Footprint	Reduction in total footprint with option to provide remediation of Ngaaruawaahia site. New pump stations at several sites.	Maintain existing footprint (at both Pukete and Ngaaruawaahia)	Maintain existing footprint (at both Pukete and Ngaaruawaahia)	Increased footprint at both sites (Pukete and Ngaaruawaahia)
Discharge points	Two (near Pukete)	Three (two at Pukete, one at Ngaaruawahia)	Three (two at Pukete, one at Ngaaruawahia)	Three (two at Pukete, one at Ngaaruawahia)
Biosolids	Able to be reused subject to market Advanced treatment options	Able to be reused subject to market Advanced treatment options at Pukete only (eg further control of emerging contaminants, thermal drying to allow wider applications)	Able to be reused subject to market Advanced treatment options at Pukete only (eg further control of emerging contaminants, thermal drying to allow wider applications)	Risk biosolids not able to be reused No advanced treatment options Vermicomposting only
Staging	Dual pipelines could be used for some of the routes e.g. Horotiu to Pukete WWTP. Existing Taupiri pump stations and rising mains can be used until reach capacity.	Install 2 reactors at Ngaaruawaahia WWTP to start with and then 3rd when flows projected to increase beyond capacity. Existing Taupiri pump stations and rising mains can be used until reach capacity.	Install 2 reactors at Ngaaruawaahia initially, then 3rd when flows projected to increase beyond capacity. Existing Taupiri pump stations and rising mains can be used until reach capacity.	At Pukete, reactors and clarifiers can be staged to respond to growth (need approx. double the reactor capacity compared to MBR). Install 2 reactors at Ngaaruawaahia initially, then 3rd when flows projected to increase beyond capacity. Existing Taupiri pump stations and rising mains can be used until reach capacity.
Delivery	Single operator	Single operator or multiple operators	Single operator or multiple operators	Multiple operators

The project team has worked through the short-listed options assessment. From a technical assessment perspective, Options A and B2 scored well. Option B1 scored lower than Options A and B2. Option C scored very poorly. From a maatauranga Maaori perspective there was a consensus that with all other matters being equal, Option A appeared to be better as it would remove an existing discharge point to the river immediately upstream of Taupiri maunga, and potential remove restrictions on Waikato Tainui property at Hopuhopu.

Comparative P50 capital cost estimates for Options A, B1 and B2 are provided below. These are draft and subject to review. Draft P95 cost estimates have also been prepared. The draft P50 capital cost estimate for the Pukete WWTP upgrades out to 2061 is $771M (in $2022). The draft P95 capital cost estimate is approx. $1.3B (in $2022).

Area	Conveyance Cost ($ M) to 2061	WWTP name	WWTP Capital Cost ($ M) to 2061	Total ($ M)
OPTION A				
Taupiri	$103M	Pukete	$771M	$874M
Ngaaruawaahia/ Hopuhopu				
Horotiu				
Te Kowhai				
Hamilton				
OPTION B1				
Taupiri	$55M	Ngaaruawaahia	$77M	$903M
Ngaaruawaahia/ Hopuhopu				
Horotiu				
Te Kowhai				
Hamilton	-	Pukete	$771M	
OPTION B2				
Taupiri	$16M	Ngaaruawaahia	$66M	$878M
Ngaaruawaahia/ Hopuhopu				
Horotiu	$25M	Pukete	$771M	
Te Kowhai				
Hamilton				

The following items have been included in the comparative capital costs:

i. Operations and maintenance facilities
ii. Process items and structures
iii. Mechanical and electrical installation
iv. Balance of plant – providing interconnection between unit process systems
v. Instrumentation and control
vi. Site civil works (platform preparation, roading, drainage, fencing etc.)
vii. Allowances for moderate foundation improvements
viii. Project costs (Preliminary + General, contractor margins, forex risk)
ix. Consultant fees (Investigation/Design/Engineering)
x. Risk/contingency allowances – 20-30%
xi. Client management/overhead costs @8%
xii. Consenting costs based on current budgets and costs of similar applications in the Waikato Region xiii. Procurement costs @ 2%

The following items have been excluded from the comparative capital costs:

i. Legal fees
ii. Client insurances
iii. Escalation after 2nd quarter 2022
iv. Site decommissioning and restoration
v. Goods and Services Tax

A conceptual design of the preferred option will need to be prepared to confirm the estimated capital and operating costs. An estimating tolerance has been included to account for general unknowns in the design and for any discrepancies in the design information prepared to date. These estimates are Class 5 estimates as per the AACE Cost estimate Classification System and have an expected range of -30% / +50%.

Comparative operational costs were developed for each option for 2031, 2041, 2051 and the 2061 flows. Over time the total operational costs increase as flows and plant loading increase. Pukete WWTP has significantly lower costs per ML than the new Ngaaruawaahia WWTP due to energy recovery potential and reduced biosolids volumes for disposal. The operational cost estimates are included below:

Area	WWTP Operational Cost 2031 ($ M)	WWTP Operational Cost 2041 ($ M)	WWTP Operational Cost 2051 ($ M)	WWTP Operational Cost 2061 ($ M)
OPTION A				
Ngaaruawaahia WWTP	-	-	-	-
Pukete WWTP	$19M	$22M	$25M	$24M
Conveyance	$0.41M	$0.49M	$0.55M	$0.67M
OPTION B1				
Ngaaruawaahia WWTP	$1.9M	$2.9M	$3.4M	$3.6M
Pukete WWTP	$18M	$21M	$23M	$22M
Conveyance	$0.16M	$0.22M	$0.23M	$0.28M
OPTION B2				
Ngaaruawaahia WWTP	$1.4M	$1.9M	$2.3M	$2.5M
Pukete WWTP	$18M	$21M	$24M	$23M
Conveyance	$0.14M	$0.19M	$0.23M	$0.25M

The components included for WWTP operational costs were:

i. Electricity (50% recovery assumed for Pukete WWTP)
ii. Chemicals (CIP, alum, caustic, polyelectrolyte)
iii. Operators iv. General maintenance including membrane replacement
iv. UV lamp replacement
v. Biosolids and screenings disposal (landfill disposal assumed)
vi. Compliance and operational test requirements (monitoring, sampling, testing, data management, reporting and management of same)

The components included for conveyance operational costs were:

i. Electricity (based on pump size and annual flows)
ii. Septicity dosing for long lines only
iii. Maintenance provisions

Renewals expenditure is excluded from the operational costs. From the work completed to date, Option A has emerged as the preferred option. If Option A is approved as the preferred option a staged transition will be required to provide time to upgrade the Pukete WWTP to meet the higher treatment standards, and to cater for growth (including flows from the Waikato district communities).

These elements are being considered, and a recommended approach moving forward will be presented to the PGG on 30 May 2022. Staff will provide a verbal update at the WGB meeting on this.

Recommended preferred option for refinement

The project team has recommended Option A as the preferred option to take forward for refinement as part of the DBC. The recommendation is primarily made on the following rationale:

- Option A and Option B2 score similarly through the MCA process.
    - They both score well on discharge quality and related factors – they have the same effective level of treatment and therefore the same discharge quality and level of expected effect on algal biomass and river ecosystems.
    - Provide opportunities for energy and carbon reduction
    - Can be designed to meet future treatment capacity requirements based on population growth assumptions.
    - Are expected to give effect to Te Ture Whaimana (to the extent that it is possible for a wastewater discharge to the Waikato River to give effect to Te Ture Whaimana).
- Option A scores better than Option B2 against criteria influenced by the number and size of treatment plants (and therefore number of discharge points):
    - Lower WWTP operational requirements (lower staffing, less overall monitoring, and compliance requirements).
    - Greater flexibility in day-to-day treatment (more levers to pull to meet treatment standards at Pukete than at Ngaaruawaahia).
    - Greater ability for treatment to respond to growth (more capacity to absorb growth without a need for short-term treatment plant upgrades).
    - More opportunity energy recovery, and resource recovery (which are generally more feasible at Pukete and would benefit from greater flows through Pukete).
    - Greater risk associated with conveyance network failure – can be mitigated to some extent by building-in resilience.
    - Opportunity for development and/or restoration at Ngaaruawaahia WWTP site (removal of WWTP, pond, and associated buffer).
    - Opportunity for development of Waikato-Tainui land at Hopuhopu resulting from reduction/removal of the buffer around the Ngaaruawaahia WWTP.
    - Removal of Ngaaruawaahia WWTP may improve relationship with Waikato-Tainui at their Hopuhopu properties (including the Endowed College) and the awa.

- While Option B2 scores higher against criteria influenced by the conveyance network, it is the opinion of the project consultant team that the identified risks and complexities can be adequately mitigated and managed.
- Option A is preferred from a maatauranga Maaori perspective (noting that Option B2 could be a reasonable step towards achieving Option A by continuing to operate the Ngaaruawaahia WWTP until such time as it can be decommissioned)
- There is little difference between the costs associated with Options A and B2 either in the short term or looking out to 2061.

6. Financial Considerations

Whaiwhakaaro Puutea

Implementing the Southern Hamilton-Waikato Metropolitan Wastewater DBC recommendations is likely to have significant financial implications for HCC's 2021–31 LTP. HCC has included a funding provision of $9.3M (inflated) to secure a site and consents for a new WWTP in years 1 – 3 of the 2021 – 31 LTP.

Waikato District Council (WDC) has not allowed for any costs associated with the Southern WWTP in its LTP but has noted an unbudgeted provisional sum of $4M towards upfront investment in land acquisition, designation, and consenting processes to signal a commitment to delivering sub-regional solutions. The latest indications are that council's contribution would be in the order of $2.2M.

Waipa District Council (Waipa DC) has not included or noted any funded or unfunded provision to contribute toward the new Southern Sub-Regional WWTP in its 2021-2031 LTP.

Further funding from HCC will be required to construct the Southern WWTP and realise the servicing benefits that it will provide to Hamilton and the wider metropolitan area. A full breakdown of potential costs for the new Southern Sub-Regional WWTP is presented in the final DBC and summarised in the summary document and MoU.

A significant amount of technical work has been completed to inform the short-listed options assessment for the Northern DBC. This work includes updated cost estimates to upgrade the Pukete WWTP to meet improved treatment standards and accommodate future growth. The cost estimates for the Pukete WWTP upgrades are significantly higher than the previous high-level estimates completed in 2020 to support the current LTP.

Concerns have been expressed earlier in this report about the security of the contribution council makes in the light of local government reform. There is also the concern that the contribution is not capped. Both these issues need to be worked through before the MOU is signed.

7. Legal and Policy Considerations

Whaiwhakaaro-aa-ture

Staff confirm that this project and the matters in this report comply with Council's legal and policy requirements.

8. Wellbeing Considerations

Whaiwhakaaro-aa-oranga tonutanga

The purpose of Local Government changed on the 14 May 2019 to include promotion of the social, economic, environmental, and cultural wellbeing of communities in the present and for the future ('the 4 wellbeings').

Both the Southern and Northern Hamilton-Waikato Metropolitan Area Wastewater DBCs adopt the Treasury Better Business Case Programme Business Case model. The 4 wellbeings are core considerations in delivering the business case in addition to Te Ture Whaimana o te Awa Waikato – The Vision and Strategy for the Waikato River and relevant Iwi Management Plans.

Risks - Tuuraru

There are no known risks associated with the decisions sought in this report. However, there are a series of significant risks associated with the successful delivery of the overall project. A project risk register and mitigation strategy has been prepared. The significant risks relate to:

i. Lack of alignment across partner organisations leading to conflicting aspirations, inconsistent messaging, partner disagreement at key decision points.
ii. Funding and affordability challenges to implement the Southern Hamilton-Waikato Metropolitan Wastewater DBC recommendations and the investment needed at the Pukete WWTP overtime; and
iii. Timing constraints arising for Cambridge Wastewater short-term consent conditions.
iv. Cost and recovery considerations. Also, ensuring certainty of the amount contributed. An uncapped contribution is not acceptable to council.

Risk management plans will be developed as part of completing the DBCs and detailed.

9. Climate Change and Sustainability

Āhua o te rangi

Wastewater is recognised as a significant source of greenhouse emissions. Carbon dioxide produced directly from a treatment system is a biogenic source. The new and upgraded wastewater treatment plants will help reduce this with newer technology which will bring an enhanced level of sophistication to the plant.

10. Significance & Engagement Policy

Kaupapa here whakahira/anganui

Having considered the Significance and Engagement Policy, staff have assessed that the matters in this report have a low level of significance.

Given the low level of significance determined, the engagement level is low. Iwi and mana whenua have been key project partners. This project is a partnership delivered through collaboration of the project partners: HCC, WDC, Waipaa DC, Waikato-Tainui and mana whenua.

11.Attachments

Ngaa taapirihanga

The attachments for this report can be found on Waikato District Council website here.

Attachment 1 - Southern Metro Wastewater Detailed Business Case Summary Document

Attachment 2 - Metro WW DBC - Memorandum of Understanding - V2.0b for Approval

Attachment 3 - Project Governance Group - 29 April 2022 - Meeting Presentation

Attachment 4 - Southern Metro Wastewater Detailed Business Case - Final Unformatted version

Date:	23 May 2022
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Waikato District Council
Te Kaunihera aa Takiwaa o Waikato

Open

To	**Waters Governance Board**
Report title	**Three Waters Reform Project Update – June 2022**

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

This report updates the Waters Governance Board of the various activities Council has undertaken under the Three Waters Reform project, with a particular focus on a Request for Information from the National Transition Unit, recommendations made to Government by The Three Waters Working Group on Representation, Governance and Accountability, and tranche 1 of the Better-off funding.

3. Staff recommendations
Tuutohu-aa-kaimahi

That the Waters Governance Board:

a. receives the report; and

b. notes that the project management for water reform is ongoing.

4. Background
Koorero whaimaarama

A Request for Information was made to Council by the Three Waters National Transition Unit's Commercial and Legal Workstream as a legal due diligence process.

The purpose of the Commercial & Legal workstream is to ensure successful delivery of commercial and legal elements required for the establishment of the proposed water service entities (WSEs).

The request is designed for early identification and management of commercial and legal risks associated with the transfer of three waters assets, liabilities, and other interests from Council to WSEs. Furthermore, the request seeks to highlight the critical assets and significant arrangements that need be established from 1 July 2024 insofar as WSEs deliver three waters services and local authorities to continue performing their remaining roles and functions.

Pursuant to concerns raised by territorial authorities during the eight-week engagement period, Local Government New Zealand worked with the Government to broker the establishment of the Three Waters Working Group on Representation, Governance and Accountability (Working Group). Comprised of equal parts iwi leaders and elected members of local government, the Working Group was tasked with providing independent advice on improving governance and accountability arrangements for the WSEs.

The Department of Internal Affairs has released Tranche 1 funding for the "Better Off Funding" which is the second part of the funding released to Councils as part of three water reform. The first package being the stimulus funding which was released when the MOU was signed. Tranche 1 funding for our Council represents $7.88 million.

The Better Off Funding purpose is to support councils to transition to their new role post reform through meeting some or all of the following criteria, as laid out in the Heads of Agreement.

- Supporting communities to transition to a sustainable and low emissions economy by building resilience to climate change and natural hazards
- Delivery of infrastructure and/or services that enable housing development and growth, with a focus on brownfield and infill development opportunities where those are available.
- Delivery of infrastructure and/or services that support local place making and improvements in the community well being

Councils as part of the project evaluation are expected to provide a wellbeing assessment setting out the expected benefits and wellbeing outcomes for each Programme.
The assessment should outline how the programme will deliver on:

•The broader "wellbeing mandates" under the framework of the Local Government Act 2002 (LGA), and
•The specific wellbeing criteria for the better off package

The criteria for the Better off funding package recognise that local authorities are expected to engage with iwi/Māori in determining how it will use its funding allocation. For tranche one, it is expected that the Funding Proposal demonstrates genuine engagement, extending beyond standing committees. Council has reached out to local Iwi and Hapu, explained the Better Off Funding package and invited Iwi Hapu to provide projects for long list evaluation and to form part of the assessment panel.

The Assessment Panels role is to evaluate the Longlist Project, based on the DIA criteria and to come up with a suitable shortlist.

The recommended shortlist projects will be presented to Council by the assessment panel to enable the Council to decide on the final projects that will form Councils funding proposal with the DIA.

A Terms of Reference (attached) has been developed to facilitate the Assessment Panels scope and jurisdiction.

5. Discussion
Matapaki

5.1 Commercial and Legal Request for Information

Waikato District Council is one of 17 other representative territorial authorities being sampled in this phase of the due diligence process.

A high-level understanding of the core assets and contractual arrangements relating to the current provision of Three Waters services by Council is being sought. This will be used for early identification and legislatively driven management of significant commercial and legal risks to the transfer process.

Specific information is being sought on:

1. material contracts regarding provision of water services
2. customer / consumer arrangements and supplier/service provider arrangements
3. mixed-use assets utilized land and property
4. permits/designations
5. technology and privacy arrangements
6. warrants, delegations, and bylaws.

5.2 Council Shareholding in WSEs

The Working Group has made a total of 47 recommendations to Government regarding governance and accountability of the WSEs, to be reflected in the Water Services Entities Bill. Cabinet has agreed to progress almost all recommendations, thereto.

The recommendations cover some key areas:

1. Community ownership through public shareholding
2. Equal and merit-based mana whenua representation in regional representative groups
3. Embracing Te Mana o te Wai through all water services frameworks
4. Finding mechanisms of strengthening connections with local communities.

To strengthen community ownership of the WSEs, direct shareholding interests have been allocated to territorial authorities within the purview of each Entity.

Each share has been assigned on a per 50, 000 population basis, with ceiling rounding. Moreover, each territorial authority has been guaranteed at least one share.

Entity B has 33 direct shares that will be distributed amongst the councils within the Entity B boundary. Council has been allocated two shares in Entity B based on a population of 85, 900. This will be reviewed every five years for currency.

A recommendation by the Working Group is to prohibit the WSE from financially benefiting from territorial authorities.

5.3 National Transition Unit Overview

The Data and Digital workstream is currently analysing Councils' submission.

The People and Workforce workstream is currently developing a partnership strategy with unions.

The Finance and Corporate workstream is currently developing two Requests for Information: the former relating to pricing and charging and the latter relating to debt.

5.4 Better-off Funding

The Department of Internal Affairs has set the criteria for accepting funding applications. Council may submit more than one project but only one funding application.

Minimum expectations of Council regarding iwi/hapu engagement have been outlined. To this effect, Council has partnered with Iwi to form an assessment panel, with equal Iwi and Council representatives.

One of the many goals of the panel is to synergize Mātauranga Māori with Council's strategic vision of "liveable, thriving, and connected communities" for the projects being proposed for this funding stream.

Council is currently in the process of collating a longlist of projects, which will then be shortlisted by the aforementioned panel.

6. Next steps
Ahu whakamua

6.1 Commercial and Legal Request for Information

As a starting point, Council will be given an opportunity to agree with the assets, liabilities, and interests that will transfer as well as the ongoing future arrangements that will be in place with the WSEs in relation to mixed-use assets.

The next phase of this discovery process will require a more comprehensive legal due diligence process to be completed. The National Transition Unit will provide more information shortly about the process (including the legislative framework) that will be used to identify the assets, liabilities, and other interests that will transfer to the WSEs.

The Department of Internal Affairs has offered Council a funding mechanism to assist with the costs associated with this Request for Information, which will be pursued.

6.2 Council Shareholding in WSEs

Upcoming legislation provides changes to the governance structure of the WSEs. The change includes Council shareholding in the WSE structure to support Council's views and further protection against privatization or significant changes to infrastructure. Council will be allocated two shares based on population.

6.3 National Transition Unit Overview

Council was expecting a Request for Information from the People and Workforce workstream regarding individual staff qualifications although this has now been delayed until July. A Staff Transition Plan will also be released to Council for feedback.

Council is expecting another Request for Information from the Finance and Corporate workstream in the third quarter of 2022. Further information on the "No worse off" package is also anticipated.

The technical workstreams have also planned to seek information from Council on key operations non-compliance schedules, stormwater multi-function assets and functions to transfer, level of service agreements, and risk management information.

The Iwi and Māori workstream are currently undertaking a stocktake of Treaty of Waitangi settlements related to water services.

6.4 Better-off Funding

Council will continue to partner with iwi in shortlisting proposed projects. Council is currently creating a longlist of suitable projects and working with the Assessment Panel to develop a shortlist process for Council approval.

7. Attachments
Ngaa taapirihanga

Attachment 1 – Council shareholding in Water Service Entities

Attachment 2 – Assessment Panel Terms of Reference

Date:	7 June 2022
Report Author:	Deron Sharma - Three Waters Reform Project Manager
Authorised by:	Gavin Ion - Chief Executive

Council shareholding in water service entities

Entity A

Council	Population	Shareholding
Auckland Council	1,718,000	35
Far North District Council	72,600	2
Kaipara District Council	26,000	1
Whangārei District Council	99,400	2
	Total shares	40

Entity B

Council	Population	Shareholding
Hamilton City Council	178,500	4
Hauraki District Council	21,800	1
Kawerau District Council	7,670	1
Matamata-Piako District Council	36,700	1
New Plymouth District Council	87,300	2
Ōpōtiki District Council	10,300	1
Ōtorohanga District Council	10,750	1
Rangitikei District Council	16,050	1
Rotorua District Council	77,400	2
Ruapehu District Council	12,900	1
South Taranaki District Council	29,100	1
South Waikato District Council	25,500	1
Stratford District Council	10,100	1
Taupō District Council	41,100	1
Tauranga City Council	155,200	4
Thames-Coromandel District Council	33,000	1
Waikato District Council	85,900	2
Waipa District Council	59,500	2
Waitomo District Council	9,640	1
Western Bay of Plenty District Council	58,100	2

Whakatane District Council	38,400	1
Whanganui District Council	48,400	1
	Total shares	33

Entity C

Council	Population	Shareholding
Carterton District Council	10,050	1
Central Hawke's Bay District Council	15,600	1
Chatham Islands Council	780	1
Gisborne District Council	51,500	2
Hastings District Council	90,100	2
Horowhenua District Council	36,500	1
Hutt City Council	112,800	3
Kapiti Coast District Council	58,000	2
Manawatu District Council	33,000	1
Marlborough District Council[1]	51,500	2
Masterton District Council	28,200	1
Napier City Council	66,700	2
Nelson City Council	54,700	2
Palmerston North City Council	90,500	2
Porirua City Council	61,900	2
South Wairarapa District Council	11,650	1
Tararua District Council	19,050	1
Tasman District Council[2]	57,900	2
Upper Hutt City Council	47,500	1
Wairoa District Council	9,040	1
Wellington City Council	217,000	5
	Total shares	36

[1] Note: parts of Marlborough District Council will sit in Entity D, but given small population in those areas shareholding rights are attributed to Entity C.

[2] Note: parts of Tasman District Council will sit in Entity D, but given small population in those areas shareholding rights are attributed to Entity C.

Entity D

Council	Population	Shareholding
Ashburton District Council	35,900	1
Buller District Council	9,660	1
Central Otago District Council	24,800	1
Christchurch City Council	392,100	8
Clutha District Council	18,500	1
Dunedin City Council	133,300	3
Gore District Council	13,050	1
Grey District Council	14,100	1
Hurunui District Council	13,450	1
Invercargill City Council	57,00	2
Kaikoura District Council	4,260	1
Mackenzie District Council	5,480	1
Queenstown-Lakes District Council	48,300	1
Selwyn District Council	73,600	2
Southland District Council	32,700	1
Timaru District Council	46,296	1
Waimakariri District Council	66,300	2
Waimate District Council	8,290	1
Waitaki District Council	23,800	1
Westland District Council	8,910	1
	Total shares	32

3 Waters Better Off Funding

(Assessment Committee)

Reports to:	JMA Committee and Infrastructure Committee
Chairperson:	Carolyn Hopa
Deputy Chairperson:	Donald Turner
Membership:	4 Waikato District Council (WDC) staff members • Roger McCulloch • Alison Diaz • Clive Morgan • Everard Whangapirita 4 Iwi representatives ▪ East – Carolyn Hopa ▪ West – Haydn Solomon ▪ North – Crystal Cherrington ▪ South – Donald Turner
Meeting frequency:	As and when required, at least weekly

Introduction

The 3 Waters Better Off Funding is an investment by the Crown into the future for local government and community wellbeing; and In recognition of the significance to the local government sector (and the communities they serve) of the transfer of responsibility for water service delivery.

The use of this fund supports Waikato District Council (WDC) to transition to their new role post-reform through meeting some or all of the following criteria, as laid out in the Heads of Agreement by Supporting communities to transition to a sustainable and low emissions economy, including by building resilience to climate change and natural hazards. This fund also supports the delivery of infrastructure and/or services that enable housing development and growth, with a focus on brownfield and infill development opportunities where those are available. Delivery of infrastructure and/or services that support local place-making and improvements in community well-being.

The funding criteria set by the Department of Internal Affairs for 3 Waters Better Off Funding provides flexibility for the 3 Waters Better Off Funding Assessment Committee within WDC to identify a potentially wide range of funding proposals.

Where Council and Iwi have existing strategic plans and documentation that meet the funding criteria, these may inform project selection, including proposals to accelerate,

scale up or enhance current and planned initiatives.

Furthermore, to assist in identifying and prioritising applications the Assessment Committee may choose to assign different weighting to these prioritisation factors based on the needs of the community and the aspirations of Whaanau, Hapuu and Iwi.

Purpose and Terms of Reference:

1. The Department of Internal Affairs (DIA) has released the opportunity for Waikato District Council to apply for 3 Waters Better Off Funding in partnership with Iwi, Council and the DIA
2. To consider funding applications and projects in accordance with the DIA guidelines, Iwi aspirations and Council's mission statement.
3. To provide a wellbeing assessment setting out the expected benefits and wellbeing outcomes for each project or initiative that outlines how the programme will deliver on the broader "wellbeing mandates" under the framework of the Local Government Act 2002 (LGA), and the specific wellbeing criteria for the better off funding package.
4. The Chairperson will provide an update report to the Waikato Tainui Joint Management Agreement Committee and any other relevant committee considered necessary be the Chairperson.
5. The terms of reference are for the period of Tranche 1 funding and related to the assessment, evaluation and approval of projects for Tranche 1 better off funding.

The Committee is delegated the following powers to act:

a) Evaluating projects and initiatives against the criteria determined by the DIA to enable funding proposal to be submitted for approval of applications for the 3 Waters Better Off Fund.

b) Uphold and exercise the protocols of partnership within the Waikato Tainui Joint Management Agreement and Co-governance arrangements when considering applications.

c) Identify a Long List of projects and Initiatives

d) Keep council informed and report regularly on activity

e) Determine and agree the weighting and values being applied to the criteria as part of the assessment scoring to enable the priority factors as defined by the needs of the community, WDC and the aspirations of the Whaanau, Hapuu and Iwi.

f) Convert Long List into a Short List for approval by Council

g) Present shortlist and recommendations to council

h) apply a wellbeing assessment setting out the expected benefits and wellbeing outcomes for each programme that outline how the programme will deliver on the broader "wellbeing mandates" under the framework of the Local Government Act 2002

(LGA), and the specific wellbeing criteria for the better off funding package.

Other :

- External appointees to the committee will be entitled to remuneration for attendance at meetings inaccordance with the terms agreed between the Council and DIA
- Alternates may be used where committee members cannot fulfil functions at any time

Waikato District Council
Te Kaunihera aa Takiwaa o Waikato

Open – Information only

To	**Waters Governance Board**
Report title	**Three Waters Governance Report – May 2022**

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 Three Waters Governance Report – May 2022 be received.

4. Attachments
Ngaa taapirihanga

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

Date:	07 June 2022
Report Author:	Carole Nutt - Waters Contract Relationship Manager
Authorised by:	Gavin Ion - Chief Executive

WAIKATO DC

THREE WATERS GOVERNANCE REPORT

MAY 2022

Mathew Telfer
Operation Manager
Watercare Waikato
May 2022

1. Highlights and lowlights

- There was a lost-time injury at the Te Kauwhata construction site on 12 April. The injury was a crushed finger, and notification at the time of the incident and an investigation was carried out, and the report was provided to Waikato District Council.
- The Meremere Wastewater Membrane Bioreactor Plant is now fully operational, and the abatement notice was lifted in May. A press release was issued, and internal communications given to both Council and Watercare staff.
- All performance measures were achieved in April, and the year-to-date results are 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 new UV plant is experiencing blockages of weed and debris, including small eels (below) from the existing wetlands. The debris basket on the inlet side of the UV inlet has been modified but requires cleaning multiple times each day.
- The IMPAC audit was completed with a positive draft 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 April.
- There was one recordable injury involving contractors in April (Detailed below).
    - There was a lost-time injury at the Te Kauwhata construction site on 12 April. The injury was a crushed finger, and notification at the time of the incident and an investigation was carried out, and the report was provided to Waikato District Council.
- HFA dose injection point leakage identified. The spool and injection lance have been replaced. An ICare near miss has been lodged to capture the upgrade of H&S signage.
- The focus for the month was Energy / Underground services, and we continue to focus on reducing speed events.
- The IMPAC health and safety audit was completed on 13 May the Initial results from Impact were provide (below) with the final report is expected late May.

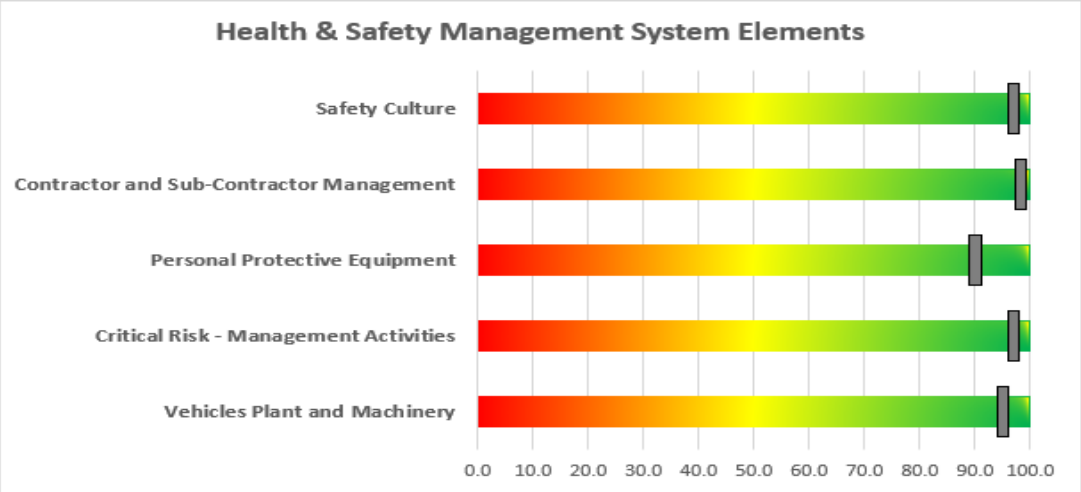
Looking ahead and wellbeing

- The focus for next month is Working at height.

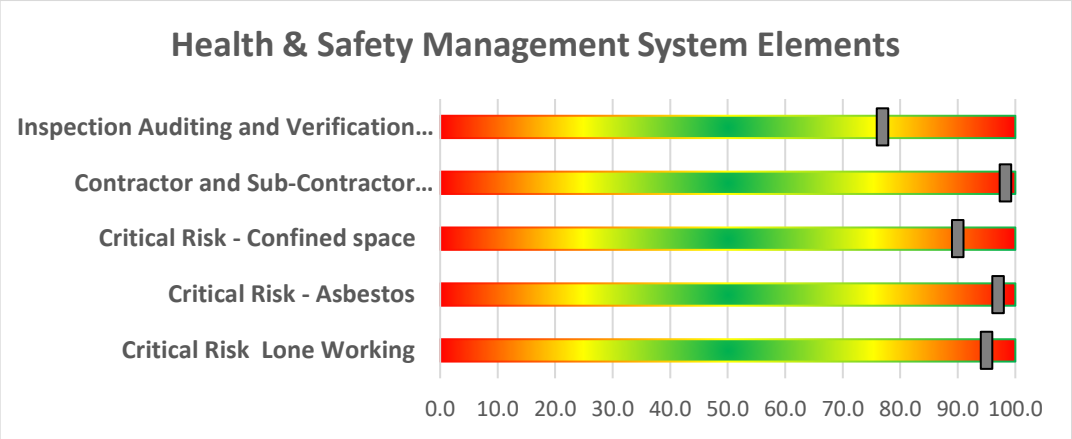
Internal Health and Safety Audit 2022

The initial response from the external IMPAC auditor is summarised below. The final report is expected late May.

2022 results (Draft)



2021 results



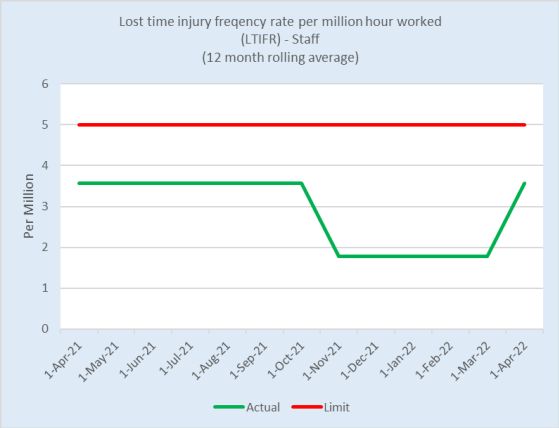
Critical risks

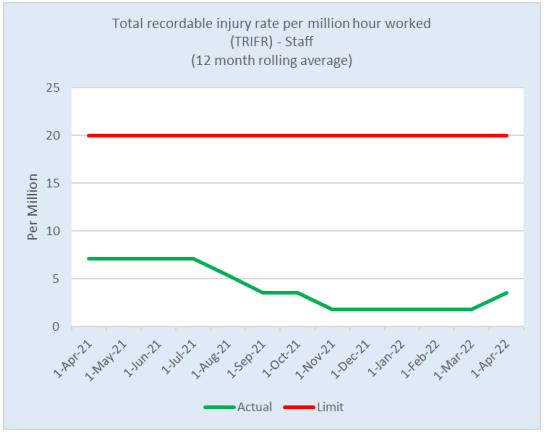
Watercare is assessing one of our critical risks (Appendix 1) each month (excludes Nov and Dec) as per the schedule below.

		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			

April metrics

- There was a lost-time injury at the Te Kauwhata construction site on 12 April. The injury was a crushed finger, and notification at the time of the incident and an investigation was carried out, and the report was provided to Waikato District Council.





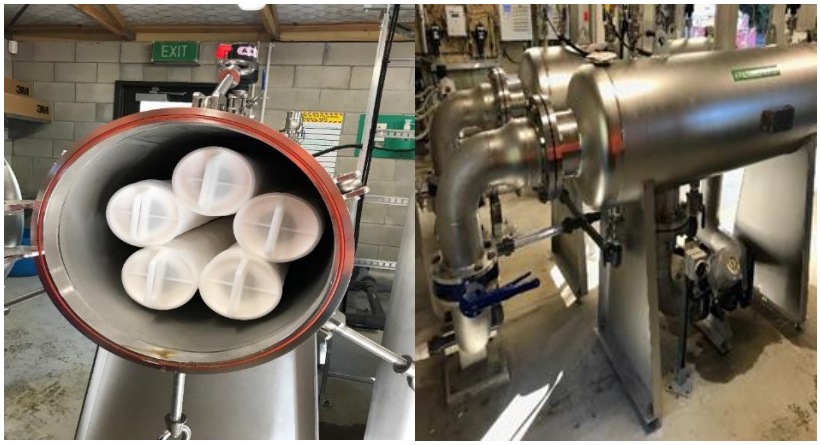
3. Operations

3.1. Production

A new Water/Wastewater Treatment Plant Operator joined our team on the 11th of April.

Water

- The two new raw water filter units at the Raglan Water treatment plant have been installed, and wet commissioning has been completed. One of the units has been brought into service and monitored for differential pressure change. The second filter has no cartridges installed and remains on standby, providing a clear path until the first filter life has been proven.



- On 19 May there was a break-in at the Huntly water treatment plant. The break-in was aborted when the security alarm went off. Police attended and the site security is being assessed and improved.
- HFA dose injection point leakage was identified at the Ngaruawhia water treatment plant. The spool and injection lance have been replaced. An ICare near miss has been lodged to capture the upgrade of H&S signage.

- A new ducting has been installed at the Te Kauwhata water treatment plant to replace the super chlorinated water line connecting the gas chlorinators to the Treated water feed to the reservoirs.
- UV unit A has been overhauled. 11 lamps were replaced, and two spare lamps were left on site as spares.

Wastewater

- The Meremere wastewater treatment plant continues to operate well. Some instrumentation and software items are under review, and the snag list of items is being worked through. The abatement notice was lifted in May, and the plant is now fully compliant. SCADA access is limited to Team Viewer with no alarm notifications available. We are waiting for the overall upgrade to the new Archestra monitoring and control system.
- A site visit with Gavin and the Waikato Council team has held a the start of May to the Te Kauwhata water and wastewater plants and the Meremere plant.
- The debris basket on the inlet side of the UV inlet at the Te Kauwhata wastewater treatment plant has been modified but requires cleaning multiple times each day. This is an on-going issue and is being managed by the contractors until further process improvements are made. UV wiper mechanism fouled with debris from the wetlands. Site operations are continuing as normal.

- An overhaul of the UV unit lamps plant and sleeves at the Huntly Wastewater plant has been completed
- The final effluent pond at the Raglan wastewater plant has been washed down to minimise the solids carried over to the receiving waters

3.2. Networks

- The replacement of all meters aged 19 and >20 years is well underway. CityCare has been contracted to complete the replacements in Pokeno and Tuakau and has fully completed the Pokeno area to date. Approximately 45% of the replacements in the district have been completed, with overall completion expected before 30 June.
- To date, 608 backflow devices have been tested and repaired as necessary. This is on target for the Dec 2022 completion date.
- Scada RTU Upgrade Project – Neo has issued the scope of works and has completed packages 14 & 15, the final design packages. All As-Built drawings are completed and are now issued for construction. The engineering estimate is almost finished; Neo is working through cable sizings. The level 1 WW functional description is currently under review with an expected completion date of May. New cabinets and hardware have been installed at all the Franklin sites.
- The Tauwhare Pa pumps have arrived with Aquatec, and the installation was completed in the first week of May. Allen's United has been engaged to vacuum out all the pump chambers to ensure a straightforward installation process. Over 50 EOne pumps were replaced with more robust grinder low-pressure pumps. This should significantly reduce the occurrence of blockages in this area.
- Remedial work to seal the concrete reservoir was completed in April. The reservoir had a slow leak leading to a boggy area forming on the southwest side. This was sealed with epoxy to prevent any further leakage.

- Faults of significance – Fortunately, no major network faults occurred in April.

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 to update the model.
- Tuakau Water Network Model – Consultant engaged to update the model
- 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. This covers Huntly and Ngaruawahia townships and surrounds.
- Huntly Wastewater network model - Consultant, engaged to update the model 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.

Internally staff worked on/with:

- Continuing work with Watercare's Auckland staff on the Infor asset management system.
- Attend Northern Metro DBC workshops
- Preparation for Asset revaluation.
- Rangiriri WW Pump station in legal road study
- TKWA water take discussions

Business cases

- Te Kauwhata WWTP upgrade and Ngaruawahia WW Pipeline project are in the tender evaluation process. We will be submiting out-of-cycle papers in June to the Water Governance Board once that process concludes.
- We are developing the Tuakau Pokeno upgrades recommendation based on the workshop held with the WDC team. Additional technical assessment is required, and once completed a proposal will be presented for discussion.

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- Stage 1: This project upgrades the rising main across the Waikato River Bridge. The bridge section is complete, and the tie-ins at each end are currently being planned. The remaining stages that convey flow to the treatment plant are in Tender.
- The POAL WWPS – The wet-well and storm tanks have been installed. The Earthworks are progressively building the ground back up, ready for the installation of services.

POAL WWPS - Earthworks are underway to form the finished ground level

- The new sewer in Swan Road, Te Kauwhata has been installed. Works to decommission the old pump station are underway, which completes this project.
- 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 is planned for May through to June.
- Tuakau Interceptor Pump Station Upgrade and the Tuakau to Pokeno pipeline: A Water Governance board paper will be prepared, presenting a staged Capex approval for two options; A standard transmission installation along with a lean-agile design solution.

4.4. Network Renewals

- Water Network Renewals are well underway. The Raglan-bulk main installation has completed the drilling works, and the manifold and tie-in works are being installed.
- The first stage of the Tuakau Dominion has been installed and is being pressure tested.
- Te Kauwhata water main renewals have commenced with utility mapping and procurement of the long lead items.

4.5. Pond Desludging

- Desludging works at Ngāruawāhia WWTP will be completed in May.

4.6. Treatment plant Upgrades

- Raglan WTP Upgrade – The commissioning is complete, and the new filters are in service.
- Ngaruawahia WTP Upgrade – The installation of the new UV treatment system has commenced. The installation of the new run to the waste system will follow.
- Whangamarino WTP 4.5MLD Upgrade – The desludging is complete. The BAC filter and pump-sets are in position. The tie-in and commissioning activities are being planned.

Whangamarino WTP – Desludging work is complete, Pond 2 to be returned to service in May

- Te Kauwhata WWTP Phase 1 upgrade – The UV System is operating; performance testing is underway.
- Te Kauwhata WWTP Phase 2 –Stage 2 The piling works are complete, and the foundation installation work has commenced. All four MABR tanks are on site. The installation of the Phase 2 treatment plant is in Tender.

5. Compliance

5.1. April updates

- All April drinking water monthly reports demonstrated compliance.
- A review of the Huntly UV Water outlook and Watercare C.t compliance reports has identified errors that require investigation and a re-validation to confirm accuracy. Considering errors found previously in other reports, a review of all continuous monitoring compliance reports is necessary. It may occur in line with migration to the new compliance rules and/or implementation of Lutra ID.
- A *Draft Drinking Water Quality Assurance Rules* gap analysis report has been produced to give detailed oversight and direction on each potential rule for all WDC drinking water supplies. Several tasks are underway to align with the new rules.
- All April compliance reports for Wastewater will be submitted to Waikato Regional Council during the second week of April 2022 with relevant notes, updates, and other resource consent reporting requirements as scheduled. All March reporting was completed in full and on time. No new WWTP reportable events occurred.
- The Lutra ID system trial at the Meremere WWTP is progressing. A comparison between compliance reporting provided by the commissioning consultants and the ID reports indicated alignment and feedback were received on a suitable structure for an annual report.
- A review of registered drinking water populations against the latest documents on demand management indicates that the drinking water register should be updated to reflect population growth. Further investigation is required to determine whether any seasonal variation needs to be considered for current and proposed drinking water compliance rules.

- Laboratory tests and schedules for chemistry monitoring in the distribution zone have been changed to align with Auckland resulting in a reduction in the number of samples for some zones, adding zones that were not previously sampled, and reducing the scope of testing.

5.2. Abatement notices

- Meremere WWTP MBR is operating under the new tighter consent limits. WRC had issued Abatement Notice EAC6415 in April 2019 against the previous consent AUTH105031.
- 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

- We are actively chasing five owners who advised they will sign the agreement, but we have not yet received it.
- Drafted letter to remind property owners that their water meters are installed and charging begins from 1 July 2022

Complex Water Meter installation progress	Count of Property ID	%
Meter installed	137	78
Owner signed agreement, waiting for all to hand over to contractors	14	8
Contacted owner and waiting on returned signed agreement	5	3
In progress to install by Contractor	16	9
Visited property - no contact with WDC Legal team	4	2
Grand Total		100%

6.2. Complex Water meter installation project Backflow Preventor Device Testing

- Backflow Control Services Limited emails weekly updates

	Contractor revisit	WSL investigate	PASS	To test
Percentage Done	1%	0%	15%	84%
Count Done	**29**	**0**	**579**	3,287
Tested	608	**to 22 April 2022**		

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 will continue through May.

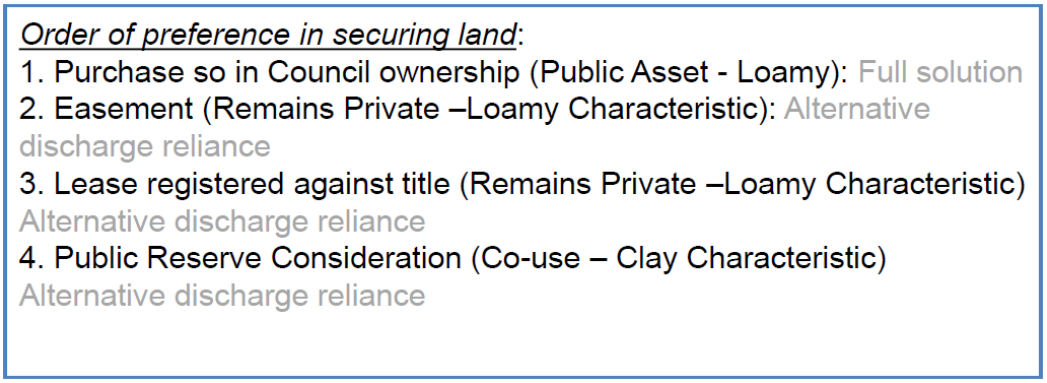


Image: Raglan Community e-meeting slide

Te Kawhata WWTP resource consent application preparation

- There was an opportunity to present preliminary discharge optioneering at the May Te Kauwhata Waters Consenting 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.

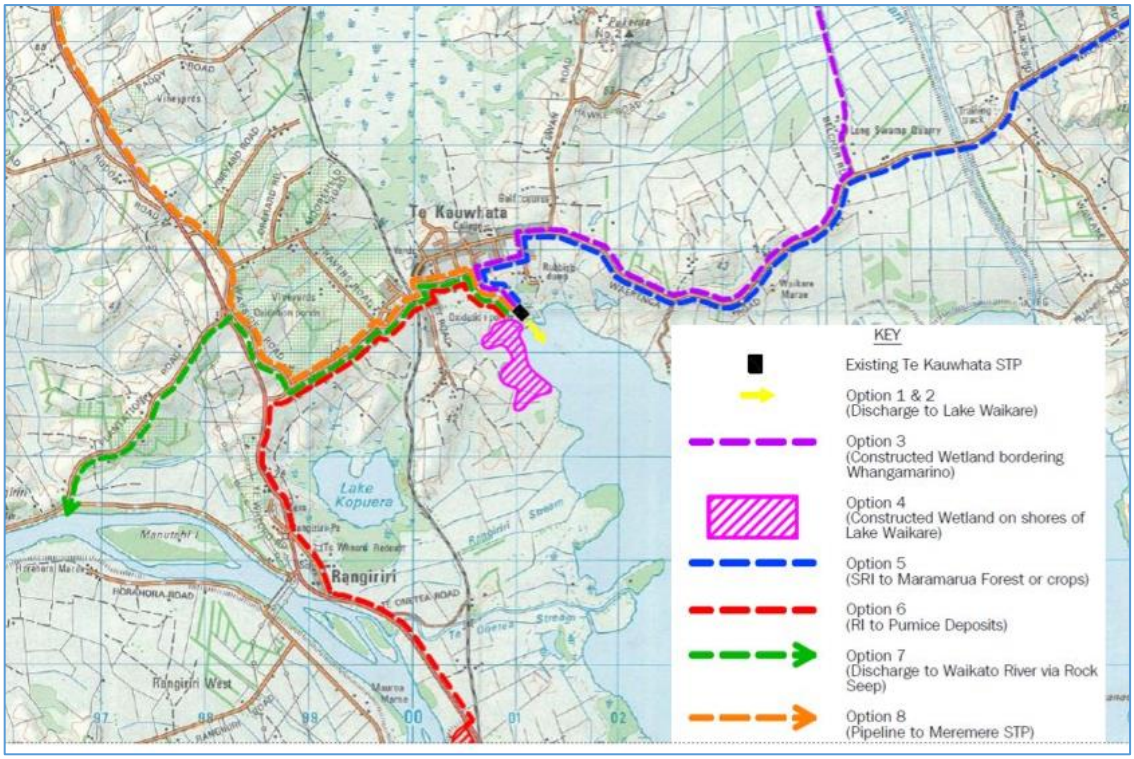


Image: 2012 Short listed Discharge Options

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.	April - 39 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.	April – 59 Year to date - 94	≤ 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	April – 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.	April – 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):	April – 0.59 Year to date Result – 13.43	≤ 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	April – 0.52Year to date Result – 1.92	≤ 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	April – 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.	April – 82 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.	April – 143 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):	April – 0.79 Year to date Result – 5.93	≤ 10/1000
		Stormwater
The number of Stormwater flood/blockage events that affected habitable floors (expressed per 1000 connections):	April – 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):	April – 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%

Waikato District Council
Te Kaunihera aa Takiwaa o Waikato

Open

To	Waters Governance Board
From	Keith Martin **Waters Manager**
Report title	Port Waikato and Onewhero Options Assessment Report

1. Purpose of the report
Te Take moo te puurongo

To present an assessment to the Water Governance Board of the Port Waikato and Onewhero water supply schemes' options going forward.

AND

To seek WGB support on continuing to provide Port Waikato and Onewhero residents with a council supplied water supply

AND

Authorisation to engage Watercare to conduct developed design and costing for upgrades to the Port Waikato and Onewhero WTP schemes that may be used to sequence these upgrades into the long-term plan and seek the required additional funding for each scheme.

2. Executive summary
Whakaraapopototanga matua

The Port Waikato and Onewhero Water Treatment Schemes are two of the three small water schemes (as displayed in Figure 1) under the ownership and management of WDC whose water supplies were previously considered for decommissioning.

No business case currently exists that approves the use of capital for options 1 to 3 as described in this section. Council has a $750,000 opex budget previously approved for the decommissioning of the Council's three small water schemes, Te Ākau, Port Waikato and Onewhero. This paper discusses the requests the reversal of this decision and approval for a decision to upgrade the WTP. Opex funds cannot be utilised to fund such a capital project so no transfer of the decommissioning budget can be allocated to options 1, 2 or 3.

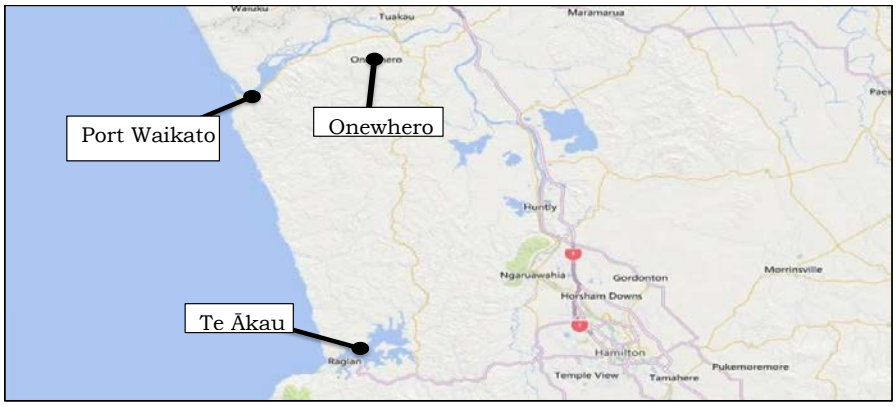


Figure 1: Port Waikato, Onewhero and Te Ākau small water supply scheme locations

We present in Table 1, a high-level summary of the capital costs of the two upgrade options that Council have identified and that Beca have assessed. A more detailed breakdown of these estimates is included in the Beca report. We further present the lower level of upgrade to Port Waikato as previously presented by Lutra that may present an interim upgrade should insufficient funding be available for the full upgrade proposed by Beca at this time. Consideration of such a future upgrade shall be considered in a Watercare business case, should Option 1 not be selected as preferred for Port Waikato. These estimates are for comparison purposes only and are considered high-level estimates as designs were not completed to base them off. The expected level of accuracy is +50% to -30%, unless stated otherwise.

Table 1: Summary of Cost Estimates

Option	**Port Waikato Estimated Capital Cost** (expected accuracy range - 30% to + 50%)	**Onewhero Estimated Capital Cost** (expected accuracy range - 30% to + 50%)
1 – WTP upgrade	$5 080 000 (Includes membrane treatment)	$320 000
2- Partial WTP upgrade	$720 000 (± 50% accuracy)	
3 – Rainwater tanks at each household	Decommissioning cost for WTP (one off opex cost) + $910 000	Decommissioning cost for WTP (one off opex cost) + $540 000

This report summarises a desktop options study that has been completed by Beca to summarise requirements and estimate the cost of upgrading Port Waikato and Onewhero Water Treatment Plants (WTPs).

The objective of the upgrades are to meet the current Drinking-water Standards for New Zealand 2005 (revised 2018) (DWSNZ), the Drinking Water Standards for New Zealand (Draft) December 2021 (the Standards) and the Draft Drinking Water Quality Assurance Rules 20 December 2021 (the Rules). The Standards and the Rules are currently out for consultation and so may change.

For both sites, two shortlisted options were compared by Beca; decommissioning of the WTPs and replacement with household rainwater systems or upgrades to the existing WTPs to provide reliable compliance with the DWSNZ. There are limitations associated with household rainwater tanks for both supplies, mainly that rainwater systems are not reliable in periods of low rainfall and this is particularly significant for Port Waikato as it has peak demand over the summer months due to visitors to the campground and Marae in the area.

Generally, the Onewhero WTP is performing well and so upgrading this WTP only includes a few improvements such as improving pH control, installing run to waste and installing SCADA. Port Waikato WTP has had issues meeting treated water turbidity limits and has been upgraded over the years with a number of small improvements and so a much larger upgrade to replace the current filtration system with membrane filtration has been assumed for the purposes of Beca's options comparison. This should be reviewed in a Watercare business case before installation.

The Port Waikato estimate shows that upgrading this WTP is expected to be significantly more expensive than household rainwater tanks. This is largely because a major upgrade including installation of membrane treatment has been assumed by Beca to give certainty of compliance with the proposed standards and rules. Further investigations will confirm if less significant process improvements or an alternative source may be possible. Despite this significant cost difference upgrading this treatment plant was recommended by Beca. The key issue with household rainwater tanks is the reliability of supply particularly over the summer months when Port Waikato see a significant increase in demand largely due to visitors to the campsite. In addition to the availability of water, a centralised WTP is often considered to be a safer way to supply water. Although household rainwater tanks do not have the risk of contamination in the reticulation, it is more common for household systems to not be maintained as adequately and for limited testing and risk assessments to be completed.

The cost estimates for household rainwater tanks is higher than the cost estimate for improvements to the Onewhero WTP and therefore, for the same reasons as above, upgrading the existing WTP was recommended by Beca.

3. Staff recommendations
Tuutohu-aa-kaimahi

THAT the Water Governance Group

a. recommends to Council that:

i. community engagement is conducted with all stakeholders on the four (4) options to finalise the preferred option

ii. upon the community confirming the preferred option, should Option 2 or 4 be adopted as the preferred solution, that a new business case is developed to enable a capital funding request for the financial year 2022-23.

iii. given Councils experience with the Te Akau community, Council staff believe that the two communities are likely to strongly endorse Option 2 as the preferred solution.

iv. WDC conduct a detailed design of the WTP's upgrade to determine necessary new equipment while retaining all compliant infrastructure concurrently as the business case is developed.

4. Background
Koorero whaimaarama

4.1 Background

Port Waikato and Onewhero Water Treatment Plants (WTPs) are owned by Waikato District Council (WDC / Council) and operated by Watercare Services Ltd (Watercare). Council has a $750,000 opex budget previously approved for the decommissioning of the Council's three small water schemes, Te Ākau, Port Waikato and Onewhero. The combination of the new rights for those managing small water schemes through Taumata Arowai, to hand those over to council, and changes in the Drinking-water Standards for New Zealand 2005 (amended 2018) (DWSNZ) have indicated to council that retention and upgrade of small water schemes are likely to offer a better outcome for communities than decommissioning.

This paper discusses the request for reversal of this decision and approval for option 1 or 2 to be implemented and presents a third option where the schemes are decommissioned, and rainwater supplies are installed. A desktop options study has been completed by Beca Ltd (Beca) to summarise requirements and estimate the cost of changes to these schemes to meet the Drinking Water Standards for New Zealand (Draft) December 2021 (the Standards) and the Draft Drinking Water Quality Assurance Rules 20 December 2021 (the Rules). The Standards and the Rules are currently out for consultation and so may change.

In March and April 2021, Lutra prepared an audit report for each water supply to compare it to the revisions that were anticipated to the Drinking-water Standards for New Zealand 2005 (amended 2018) (DWSNZ) at the time. A number of improvement options were considered for each supply including upgrades to the existing WTPs.

Following the completion of Lutra's reports, the draft Standards and Rules have come out and so the requirements to meet these documents have been reviewed and consideration of a couple alternative upgrade options were developed in consultation between Council and Watercare.

4.2 Purpose

The purpose of this report is to enable the WGB to support amending the previous WDC position that both WTPs and networks should decommissioned, to instead recommend that the Port Waikato and Onewhero WTPs and network should be maintained.

We present below a high-level summary of the upgrade options that Council have identified and that Beca have assessed. The cost of the lower level upgrade to Port Waikato previously presented by Lutra (that may present an interim upgrade should insufficient funding be available for the full upgrade proposed by Beca) is presented, resulting in the following options:

- Option 1: WTP upgrade with full certainty of compliance
- Option 2: Partial WTP upgrade
- Option 3: Rainwater tank supplies

4.3 Port Waikato and Onewhero water supply

Existing Infrastructure

Table 2 summarises the existing infrastructure for the two schemes. Under the Water Supply Categories for the draft Rules, Port Waikato water supply is considered a small supply. The Port Waikato supply serves 20 properties including a daycare, campground and Marae. Onewhero is considered a very small supply and serves only 13 properties. Should option 1 or 2 be selected for either supply, there is the opportunity to expand the scheme to other residents. The campground and Marae at Port Waikato may make it a varying population which triggers different monitoring requirements under the draft Rules.

Table 2: Summary of Existing Infrastructure

Area	Port Waikato	Onewhero
Intake	• Surface water from Maraetai Stream • Single submersible pump in wet well, fixed speed, stops and starts based on treated water level	• Stream/spring source • Duty/standby 3 m^3/h raw water pumps
Treatment	• Raw water soda ash dosing to raise pH for improved coagulation (unknown if raw water pH analyser feeds into soda ash doing control), 500 L batch tank in a plastic bund with mixer and level indication, use of concentrated sodium carbonate pellets	Raw water soda ash dosing to raise pH, fixed speed dosing

Area	Port Waikato	Onewhero
	• Flow paced PACl dosing from an IBC • Flocculator for PACl mixing • Polyelectrolyte dosing after the flocculator, manually batched onsite with a hopper on top of a 500 L tank • All chemicals are dosed with Qdos 30 peristaltic pumps • A single clarifier • A single Arkle 40 mm disc filter used for prefiltration • A single booster pump with pressure tank • Pre-multimedia filter to waste • Multimedia filtration with backwashing and air scour • Pre-UV filter to waste • Single Wedeco Spektron 15 UV reactor • Sodium hypochlorite dosing from a 500 L tank in a plastic bund with flow paced dosing using a peristaltic pump	• Two 1 micron cartridge filters in series each with pressure gauges used for determining when to change the filters • Duty/standby or duty/assist Viqua Pro 20 UVMax UV disinfection units in parallel
Storage	• Two concrete reservoirs (total 46 m³)	• None
Treated water conveyance	• Reticulation pumps	• Gravity flow through reticulation
Power	• Main power, no on-site generator	• Main power, no on-site generator
Controls	• Local PLC and SCADA screen • Compliance alarms on SCADA and physical alarms on the MCC	• No PLC or HMI, no alarms
Data logging	• Historian for data logging	• Manual data logging

Understanding of the existing infrastructure comes predominantly from the 2021 Lutra reports as a site visit was not completed.

Water Quality

Beca have indicated that Port Waikato raw water has a greater range for each water quality parameter which is common for surface waters as they have a number of influencing factors. This is in line with our historic knowledge of these sources – Port Waikato being a small stream with variable and poor water quality at times. Onewhero is a spring supply with more consistent and better quality.

Additional data analysis is recommended during detailed design, should option 1 or 2 be selected, as this may inform changes to operations to provide better performance (e.g. changes to reticulation operation/monitoring to make sure that sufficient residual is always provided).

Current Issues

Beca have summarised the current issues at both schemes as presented in Table 3.

Table 3: Key Issues with Port Waikato and Onewhero Water Supply Schemes

Area	Port Waikato	Onewhero
Source	• Existing consent has expired	-
Treatment Type	• Treated water turbidity must be less than 0.5 NTU to meet requirements in the draft Rules and it has been reported to be up to 0.98 NTU (95th percentile 0.63 NTU). This is not currently achieved, and hence a more conservative membrane filtration process is assumed. • Exceedance of 50% of MAV for sum of THM MAV ratios indicating that improvements to coagulation may be required • pH control is inconsistent • It is not known if 30 minutes chlorine contact time is provided, there is sufficient tank volume, but the physical arrangement and potential short-circuiting is unknown	• Draft Rules require 5 micron followed by 1 micron cartridge filters and two 1 micron in series are currently installed (this may also reduce operational costs) • Flowrate might also be too high for cartridge filter • A run to waste is not installed and so out of specification water can reach the consumer • pH control is inconsistent • No residual disinfection is present • Remote site without level indication on soda ash storage can mean that tank runs dry and pH correction doesn't occur
Monitoring	• Improvements to monitoring required	• Improvements to monitoring required

The capacity of the treatment processes at Port Waikato were not reviewed and are assumed to be adequate. The use of cartridge filtration and UV disinfection at Onewhero WTP appears appropriate, and there is no evidence available to us currently to justify the need for a more conservative treatment process.

5. Discussion and analysis
Taataritanga me ngaa tohutohu

5.1 Options
Ngaa koowhiringa

Design Basis

Table 4 summaries the current flows and design flows. The existing WTP capacities have been used as the design flows for this assessment however as the current maximum flows are so much lower than the existing plant capacities, a lower flow may be selected to save

cost if significant upgrades were required. We understand that a significant increase in demand is not expected in the coming years.

Table 4: Summary of Current Flows and Design Flow

Parameter	Port Waikato Range	Onewhero Range	Comment
Current average flow (m^3/d)	31.7	5.5	From 2015 – 2021 data[1]
Current maximum flow (m^3/d)	71.1	23.7	95th percentile flow from available data[1]
Current WTP capacity (m^3/d)	148 m^3/d	65 m^3/d	To remain WTP capacity if significant upgrades are not required
Assumed design flow for significant upgrades (m^3/d)	80 m^3/d	25 m^3/d	As the current demand is much less than the current capacity it was assumed that any significant upgrades would be completed to a smaller capacity than current to provide cost savings. The flows assumed here should be reviewed and should consider predicted growth.

[1]Note that this data was not analysed so any change in flow (such as an increasing demand) has not been accounted for. WDC should confirm that this is an accurate representation of the current demand.

Option 3: Rainwater tanks at each connection

For this option the existing WTPs would be decommissioned, and rainwater tanks would be installed at each connection (households, marae, day-care, and campground). Beca's assessment assumed that rainwater tank systems would be installed to meet the requirements of Taumata Arowai's Drinking Water Acceptable Solution for Roof Water Supplies which was released in January 2022 and is currently out for consultation.

This is not technically a requirement for the individual households that only supply themselves however under the Building Act 2004, potable water must be provided. Complying with this acceptable solution is a logical way to do this. This includes cartridge filtration and UV treatment.

It is assumed that existing reticulation would remain in the ground and that isolation at each connection would be carried out.

Benefits:

- Small reduction in stormwater flows for connected households

Challenges:

- There is a significant risk that rainfall will not be adequate to maintain water supply during the summer months. This is particularly significant for Port Waikato, and the campground in particular, as there is a seasonal influx of visitors in this area. Further consideration of rainwater tank sizing can be completed to mitigate this risk however this comes at an increased cost and does not remove the risk completely.
- Change in perspective for customers to use rainwater sources.
- Large rainwater tanks required to be effective which customers may not accept or have suitable space to install
- Risk of running out of water during dry periods with high cost of tanker supply to fill if required. Tankered water to supplement rainwater tanks is likely to be required during extended dry periods. The roads to the region and cost of tankered supplementary supply make this requirement a logistical difficulty.

Sustainability:

- Recent comparison studies Beca conducted have indicated that rainwater supply to households will have a significantly higher carbon impact than the local sourced water supply. This would increase even further for the additional emissions from tankered supplementary water supply.

Exclusions:

- Assessment of cost of initial fill of rainwater tanks with tankered water
- Assessment of cost or requirement for geotechnical assessments for individual households. Additional civil or retaining works may be required due to geotechnical assessment results
- Supply is not able to supply 1 in 100-year drought LoS yield
- Consenting costs and legal and regulatory aspects were not reviewed.

We note that Council has requirements to provide clean drinking water as noted in section 134 of the Local Government Act 2002.

Option 1: Upgrade the WTP

Table 5 lists the upgrade items that have been included in Beca's cost estimate. This list covers capital expenditure items that could be included in an upgrade but does not include things like increased monitoring and changes to procedures.

For Port Waikato, a full treatment upgrade was assessed by Beca. This WTP has had a number of additions and upgrades over the years and rather than completing another small upgrade to improve turbidity and organics removal, Beca recommend that a more significant upgrade is considered and proposed replacement of the existing media filtration with membrane treatment. An assessment of whether or not the current clarifier and poly dosing should be retained should be completed however no changes have been allowed for in Beca's estimates. Membranes have been selected over conventional treatment due to the remote nature of the site and the requirement for automation.

Further assessment, including a site visit and condition assessment, should be completed before finalising the decision to replace the current treatment with a membrane plant.

A review of available land for the upgraded Port Waikato WTP has not been completed but Beca note that finding adequate level ground to accommodate a new building may be difficult. Land procurement and significant earthworks to provide level ground has not been allowed for in the estimate. Should upgrade of the WWTP be pursued, WSL will need to determine whether some or most of the required upgrades may be installed in the existing building, as opposed to a new building. These installations could be completed during the off-peak season is such a case.

Table 5: Upgrade Inclusions for the Existing WTPs for Option 1

Area	Port Waikato	Onewhero
Source	• Allowance for a new consent (assuming that this is possible at the existing source)	
Treatment	• Modified pH control based on new treated water pH analyser and flow meter • Modified coagulation control based on new UV spectrometer and raw water flow • New membrane plant complete with ancillaries such as CIP systems, compressed air, waste balancing and neutralisation (with existing waste disposal assumed to be adequate) • New building to house membrane plant and chemical storage and dosing systems • Replacement chemical storage and dosing within the new building (designed to provide adequate separation and bunding)	• Modified pH control based on new treated water pH analyser and flow meter • Installation of chlorine storage and dosing (assume sodium hypochlorite) equipment to provide a residual disinfection (assumed that no changes needed to accommodate delivery) • A new HDPE 25m³ reservoir or a pipe loop to provide chlorine contact time (may not be required) • Replace first cartridge in cartridge filter with 5 micron (not included in CAPEX and considered an operational expense) • Installation of run to waste to allow off specification water to be disposed of • Installation of SCADA

The following investigations should be considered. Many of them may influence the cost of the upgrade depending on outcomes:

- Investigation into water security issues associated with the water sources (particularly related to water quality and quantity changes that may occur due to climate change) and therefore consideration of alternative water sources (note that WDC do not have record of any groundwater investigations completed and groundwater may be a better source)
- Baffling in the reservoir or using multiple contact tanks in series to provide improved chlorine contact time for Port Waikato
- Process improvements to Port Waikato coagulation and flocculation including improving mixing
- Any improvements required to the waste disposal system to meet consent requirements
- Reticulation modifications or alterations to operations so that 0.2 mg/L FAC is always achieved in the Port Waikato reticulation
- Further modifications to the chemical delivery and storage systems may be required to meet the Health and Safety at Work (Hazardous Substances) Regulations 2017
- Additional procedures and documentation may be required. A review of this has not been completed
- WDC may wish to install a greater level of redundancy in the treatment process as well as other emergency safeguards such as generators
- Required modifications to the backflow protection within the reticulation should be investigated
- Upgrades or replacement of existing infrastructure due to condition or age. Reducing leakage in the network could reduce size of the WTPs.
- New WSPs are required for both sites

Beca's upgrade and cost assessments have not included an allowance for investigations or any additional spend recommended due to the outcomes of these investigations.

5.2 Financial considerations
Whaiwhakaaro puutea

Summary

No business case currently exists that approves the use of capital for option 1 or 2. Council has $750,000 opex budget for the decommissioning of the Council's three small water schemes, Te Ākau, Port Waikato and Onewhero. Opex funds cannot be utilised to fund a capital project so no transfer of the decommissioning budget can be allocated to option 1 or 2.

We present in Table 6, a high-level summary of the capital costs of the two upgrade options that Council have identified and that Beca have assessed. A more detailed breakdown of these estimates is included in the Beca report.

We further present the lower level of upgrade to Port Waikato as previously presented by Lutra that may present an interim upgrade should insufficient funding be available for the full upgrade proposed by Beca at this time. Consideration of such a future upgrade shall be considered in a Watercare business case, should Option 1 not be selected as preferred for Port Waikato.

Table 6: Summary of Cost Estimates

Option	**Port Waikato Estimated Capital Cost** (expected accuracy range - 30% to + 50%)	**Onewhero Estimated Capital Cost** (expected accuracy range - 30% to + 50%)
1 – WTP upgrade	$5 080 000 (Includes membrane treatment)	$320 000
2- Partial WTP upgrade	$720 000 (± 50% accuracy)	
3 – Rainwater tanks at each household	Decommissioning cost for WTP (one off opex cost) + $910 000	Decommissioning cost for WTP (one off opex cost) + $540 000

General Estimate Assumptions

The estimate is based on the design, assumptions, limitations and exclusions outlined in the Beca report

This estimate is based on concept design information. The estimate is deemed to be a Class 5 estimate in terms of the AACE Cost Estimate Classification System guidelines. The expected accuracy range of the estimate is -30% to +50%.

Ongoing operational costs would be subsidised through the District Wide targeted water supply rate currently set at $293.10 as a fixed annual rate plus $2.10 per cubic meter used (GST inclusive). Changes to the Te Ākau, Port Waikato and Onewhero schemes may cause the district wide rate to increase or Council may have to consider scheme specific charges for each small community which would charge the community's specific to the WTP they are served by. Enquiries will be required to confirm this and to confirm that all properties in these schemes are being charged the appropriate fixed rates before and after any changes approved are implemented. These enquires will include developing a method for Council to identify any unconsented buildings (as the building consents would trigger correct identification of buildings that should be registered as a separately used or inhabited part of a rating unit (SUIP)) to ensure all properties receiving a water supply pay for the service appropriately.

The schemes are both currently closed schemes, meaning Council does not allow new connections. If the plants are upgraded, this may allow for other unconnected properties to connect.

The development of the business case by Watercare for the preferred option for each scheme will consider the impact on the fixed annual rate and per cubic meter rate to support the preferred option.

5.3 Legal considerations
Whaiwhakaaro-aa-ture

Council has requirements under the Local Government Act to provide clean drinking water as noted in section 134 of the Local Government Act 2002.

Although, as an alternative to upgrading the water treatment plants, Council may choose to decommission the small water schemes and provide each house currently connected to the water networks with its own water tank and water pump. A referendum to shut down the small water schemes would be required. A referendum requires 75% of supplied owners to agree to have the scheme shut down which is unlikely to occur.

Under Water Reform, any private small water scheme supplying drinking water to two or more houses may be handed over to council if a private water scheme chooses not to maintain either scheme to the new drinking water rules.

This could occur in two cases for these schemes:

- The rain water tank supplies that would be required for the campground and Marae in Port Waikato would classify as supplies for two or more dwellings under Water Reform and may therefore be handed to council, as per above.
- If council chooses to hand over one or both of the water treatment plant schemes to the communities instead of considering the options presented.

Handover of the current schemes or creation of rainwater schemes that would inherently supply two or more dwellings such as in the case of Port Waikato's campground and Marae are therefore considered non-feasible and likely to be handed back to council.

5.4 Strategy and policy considerations
Whaiwhakaaro whakamaaherehere kaupapa here

The report and recommendations are consistent with the Council's policies and strategy for the small water schemes. Council wishes to ensure that residents of Port Waikato and Onewhero are supplied with safe drinking water in the best manner for the community.

5.5 Maaori and cultural considerations
Whaiwhakaaro Maaori me oona tikanga

As part of our engagement, WDC wish to specifically address with Iwi/Hapu the four options, not only from a level of service perspective but from that of Mana Whenua and specific areas of significance.

Section 6.2 captures the groups with which Council will engage going forward.

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 and aims to support resilience in the water supply to the Te Ākau community.

5.7 Risks
Tuuraru

Surety of the supplying stream in either scheme was not considered. This risk is considered low given past utilisation history but should be considered by Watercare in business cases for the preferred options.

6. Significance and engagement assessment
Aromatawai paahekoheko

6.1 Significance
Te Hiranga

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

The following criteria are particularly relevant in determining the level of significance for this matter:

- The degree to which the issue has a financial impact on Council or the rating levels (both targeted and general) of its communities. *Reference relevant criteria from the Policy*.
- The likely impact on present and future interests of the community, recognising Maaori Tikanga (culture values) and their relationship to land and water.
- The community interest is likely to be high.
- The likely consequences are controversial if option 1 or 2 are not short listed and enacted.

6.2 Engagement
Te Whakatuutakitaki

The following external stakeholders will be engaged with:

Stakeholder:	Port Waikato	Onewhero
Internal	-	-

Stakeholder:	Port Waikato	Onewhero
Community Boards/Community Committees	Port Waikato (and Te Ākau) Rep: Richard Thompson thompson07@xtra.co.nz 0272047928	Onewhero Community Board Rep: Kandi Ngataki kandi4onewherotuakau@gmail.com 0212468475
Waikato-Tainui / Local iwi / Hapū	Waikato Tainui: Taroi Rawiri Environment Manager Taroi.rawiri@tainui.co.nz 021802232 Kahurimu Flavell Iwi Engagement Officer Kahurimu.flavell@tainui.co.nz	
Households	Once way forward is established, consult with Landowners.	
Business/Other	Fire & Emergency NZ	

Contact will be made with the above groups including Iwi/Hapū and identification of additional interested parties will occur.

Council, including our Pouhono Iwi ki te Haapori (Iwi and Community Partnerships Manager) will engage with these groups and with the relevant community boards/committees. This engagement will include discussing options such as upgrade or individual supply with decommissioning of a scheme to gain feedback.

Where the recommended outcome is no level of service change, engagement may not be required.

7. Next steps
Ahu whakamua

After reviewing the costs and higher likelihood community acceptance of Option 1 and 2, The following next steps are recommended:

- Engagement as per section 6.2 of the report to determine all parties' views. Noting that, where the recommended outcome is no level of service change, engagement may not be required.
- Watercare to prepare a detailed design for upgrade of the WTPs.
- That Watercare assess the design against the new Standards and Rules to understand the requirements for documentation and monitoring.
- Council Waters team to prepare costing and funding arrangements for upgrades.
- Seek approval from Council for capital funding

8. Confirmation of statutory compliance
Te Whakatuuturutanga aa-ture

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

The report fits with Council's role and Committee's/Community Board's 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)*.	Medium
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 Māori (*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

9. Attachments
Ngaa taapirihanga

Attachment 1 – Beca Report.

Date:	May 2022
Report Authors:	Hermanus Kruger (Beca employee seconded to Waikato District Council) Keith Martin, WDC
Authorised by:	Gavin Ion Chief Executive

Options Assessment for Port Waikato and Onewhero Water Supply Schemes

Prepared for Waikato District Council
Prepared by Beca Limited

14 April 2022

Creative people together transforming our world

Contents

Appendices

Revision History

Revision Nº	Prepared By	Description	Date
A	Lisa Mace	Issue A	14 April 2022

Document Acceptance

Action	Name	Signed	Date
Prepared by	Lisa Mace		14 April 2022
Reviewed by	Philip La Roche		14 April 2022
Approved by	Claire Scrimgeour		14 April 2022
on behalf of	Beca Limited		

Executive Summary

This report summarises a desktop options study that has been completed to summarise requirements and estimate the cost of upgrading Port Waikato and Onewhero Water Treatment Plants (WTPs). The objective of the upgrades are to meet the current Drinking-water Standards for New Zealand 2005 (revised 2018) (DWSNZ), the Drinking Water Standards for New Zealand (Draft) December 2021 (the Standards) and the Draft Drinking Water Quality Assurance Rules 20 December 2021 (the Rules). The Standards and the Rules are currently out for consultation and so may change.

For both sites, two shortlisted options were compared; decommissioning of the WTPs and replacement with household rainwater systems or upgrades to the existing WTPs to provide reliable compliance with the DWSNZ. There are limitations associated with household rainwater tanks for both supplies, mainly that rainwater systems are not reliable in periods of low rainfall and this is particularly significant for Port Waikato as it has peak demand over the summer months due to visitors to the campground and Marae in the area.

Generally, the Onewhero WTP is performing well and so upgrading this WTP only includes a few improvements such as improving pH control, installing run to waste and installing SCADA. Port Waikato WTP has had issues meeting treated water turbidity limits and has been upgraded over the years with a number of small improvements and so a much larger upgrade to replace the current filtration system with membrane filtration has been assumed for the purposes of this options comparison. This should be reviewed in more detail before installation.

Estimates for these two options at each WTP were completed and are summarised below. These estimates are for comparison purposes only and are considered high-level estimates as designs were not completed to base them off. The expected level of accuracy is +50% to -30%.

Option	Port Waikato	Onewhero
1 – Rainwater Tanks	$ 910,000	$ 540,000
2 – Upgrade Existing WTPs	$ 5,080,000	$ 320,000

The Port Waikato estimate shows that upgrading this WTP is expected to be significantly more expensive than household rainwater tanks. This is largely because a major upgrade including installation of membrane treatment has been assumed to give certainty of compliance with the proposed standards and rules. Further investigations will confirm if less significant process improvements or an alternative source may be possible. Despite this significant cost difference upgrading this treatment plant is the recommended option. The key issue with household rainwater tanks is the reliability of supply particularly over the summer months when Port Waikato see a significant increase in demand largely due to visitors to the campsite. In addition to the availability of water, a centralised WTP is often considered to be a safer way to supply water. Although household rainwater tanks do not have the risk of contamination in the reticulation, it is more common for household systems to not be maintained as adequately and for limited testing and risk assessments to be completed.

The cost estimates for household rainwater tanks is higher than the cost estimate for improvements to the Onewhero WTP and therefore, for the same reasons as above, upgrading the existing WTP is recommended.

1 Introduction

1.1 Background

Port Waikato and Onewhero Water Treatment Plants (WTPs) are owned by Waikato District Council (WDC / Council) and operated by Watercare Services Ltd (Watercare). A desktop options study has been completed by Beca Ltd (Beca) to summarise requirements and estimate the cost of upgrading these WTPs to meet the Drinking Water Standards for New Zealand (Draft) December 2021 (the Standards) and the Draft Drinking Water Quality Assurance Rules 20 December 2021 (the Rules). The Standards and the Rules are currently out for consultation and so may change.

In March and April 2021, Lutra prepared an audit report for each water supply to compare it to the revisions that were anticipated to the Drinking-water Standards for New Zealand 2005 (amended 2018) (DWSNZ) at the time. A number of improvement options were considered for each supply including upgrades to the existing WTPs.

Following the completion of Lutra's reports, the draft Standards and Rules have come out and so the requirements to meet these documents have been reviewed as well as consideration of a few alternative upgrade options developed in consultation between Council and Watercare.

1.2 Purpose

The purpose of this report is to provide a high-level summary of the two upgrade options that Council have identified and the capital and operational costs of these options:

- Option 1: Rainwater tanks at each existing connection
- Option 2: Upgrade the existing WTPs

Piping treated water from another supply to replace these WTPs was also considered but due to the long pipe distances that would be required, this option is considered cost prohibitive and has not been considered further. Similarly, tankering treated water from another supply was also considered at a high-level however the distances to these supplies make this option cost prohibitive as well as the fact that Onewhero would need a reservoir to receive this water and the peak demand over the summer period at Port Waikato would be difficult to keep up with.

The Lutra report included a full audit of compliance against the changes that were anticipated to the DWSNZ at that time. The draft Standards and Rules have since been released; however, this assessment has not included a thorough review of these documents in relation to things like documentation and monitoring requirements. This assessment has been focused on significant capital work associated with meeting the bacteriological and protozoa requirements.

2 Existing Water Supplies

2.1 Existing Infrastructure

Table 2-1 summarises the existing infrastructure for the two schemes. Under the Water Supply Categories for the draft Rules, Port Waikato water supply is considered a small supply (serving 20 properties including a daycare, campground and Marae) and Onewhero is considered a very small supply (serving only 13 properties). The campground and Marae at Port Waikato may make it a varying population which triggers different monitoring requirements under the draft Rules.

Table 2-1: Summary of Existing Infrastructure

Area	Port Waikato	Onewhero
Intake	• Surface water from Maraetai Stream • Single submersible pump in wet well, fixed speed, stops and starts based on treated water level	• Stream/spring source • Duty/standby 3 m³/h raw water pumps
Treatment	• Raw water soda ash dosing to raise pH for improved coagulation (unknown if raw water pH analyser feeds into soda ash doing control), 500 L batch tank in a plastic bund with mixer and level indication, use of concentrated sodium carbonate pellets • Flow paced PACl dosing from an IBC • Flocculator for PACl mixing • Polyelectrolyte dosing after the flocculator, manually batched onsite with a hopper on top of a 500 L tank • All chemicals are dosed with Qdos 30 peristaltic pumps • A single clarifier • A single Arkle 40 mm disc filter used for prefiltration • A single booster pump with pressure tank • Pre-multimedia filter to waste • Multimedia filtration with backwashing and air scour • Pre-UV filter to waste • Single Wedeco Spektron 15 UV reactor • Sodium hypochlorite dosing from a 500 L tank in a plastic bund with flow paced dosing using a peristaltic pump	• Raw water soda ash dosing to raise pH, fixed speed dosing • Two 1 micron cartridge filters in series each with pressure gauges used for determining when to change the filters • Duty/standby or duty/assist Viqua Pro 20 UVMax UV disinfection units in parallel
Storage	• Two concrete reservoirs (total 46 m³)	• None
Treated water conveyance	• Reticulation pumps	• Gravity flow through reticulation
Power	• Main power, no on-site generator	• Main power, no on-site generator
Controls	• Local PLC and SCADA screen • Compliance alarms on SCADA and physical alarms on the MCC	• No PLC or HMI, no alarms
Data logging	• Historian for data logging	• Manual data logging

Understanding of the existing infrastructure comes predominantly from the 2021 Lutra reports as a site visit was not completed.

2.2 Water Quality

A full review of all available information has not been completed. The main purpose of this review was to assess whether significant capital expenditure is required to upgrade the treatment processes. Additional data analysis is recommended as this may inform changes to operations to provide better performance (e.g. changes to reticulation operation/monitoring to make sure that sufficient residual is always provided).

Raw water quality data was not available to be reviewed as part of this report, however the Lutra reports include a summary of the data that was available for their assessment. Table 2-2 and Table 2-3 summarises water quality parameters of notable interest. The tables also include comments on these parameters relating to the performance of the treatment plant and the ability to provide water that meets the draft Standards and Rules. The Lutra reports have noted additional limitations with this data and have provided additional commentary on results.

Generally, Port Waikato raw water has a greater range for each water quality parameter which is common for surface waters as they have a number of influencing factors. This is in line with our historic knowledge of these sources – Port Waikato being a small stream with variable and poor water quality at times, and Onewhero being a spring supply with more consistent and better quality.

Figure 2-1 summarises raw water turbidity for Port Waikato. Note that there was a gap in data from April – August 2019. This figure shows that raw water turbidity can be as high as 174 NTU during a rainfall event. Available information shows that the treated water turbidity has been as high as 0.98 NTU for this same period. We have not had enough information to investigate the treatment in detail during these high turbidity events but the maximum treated water turbidity of 0.98 NTU implies that treatment is meeting the current DWSNZ but that it will not always meet the T2 limit of 0.5 NTU.

Table 2-2: Raw Water Quality Parameters of Interest

Parameter	Port Waikato Range	Onewhero Range	Comment
Total alkalinity (as $CaCO_3$) (mg/L)	10 – 215 (65 average)	13.3 – 14.18	Relatively low alkalinity can be seen in both raw waters hence the use of soda ash however Port Waikato also has high alkalinity at times <30 mg/L can increase corrosion of copper and lead (found in brass materials)
Total Coliforms (MPN/100 mL)	2,420 – 8,664	<1 – 1,733	Present in both supplies
E. coli (MPN/100 mL)	86 – 1,250	<1 – 62	E. coli present in all Port Waikato samples from 2015 - 2020 7 Onewhero samples out of 72 collected in an 8-year period found E. coli
Total iron (mg/L)	<0.02 – 2.4	<0.021 – 0.094	High total iron seen in raw water Port Waikato, not present in reticulation monitoring (see below)
Total manganese (mg/L)	0.02 – 0.05	0.004 – 0.005	
pH	6.0 – 8.3 (7.2 average)	5.7 – 6.1	Low pH seen at both sites hence the use of soda ash
Turbidity (NTU)	0.01 – 174 (18.7 average)	0.1 – 6.6	1 Onewhero sample out of 134 collected in an 8-year period had turbidity higher than 2.5 NTU

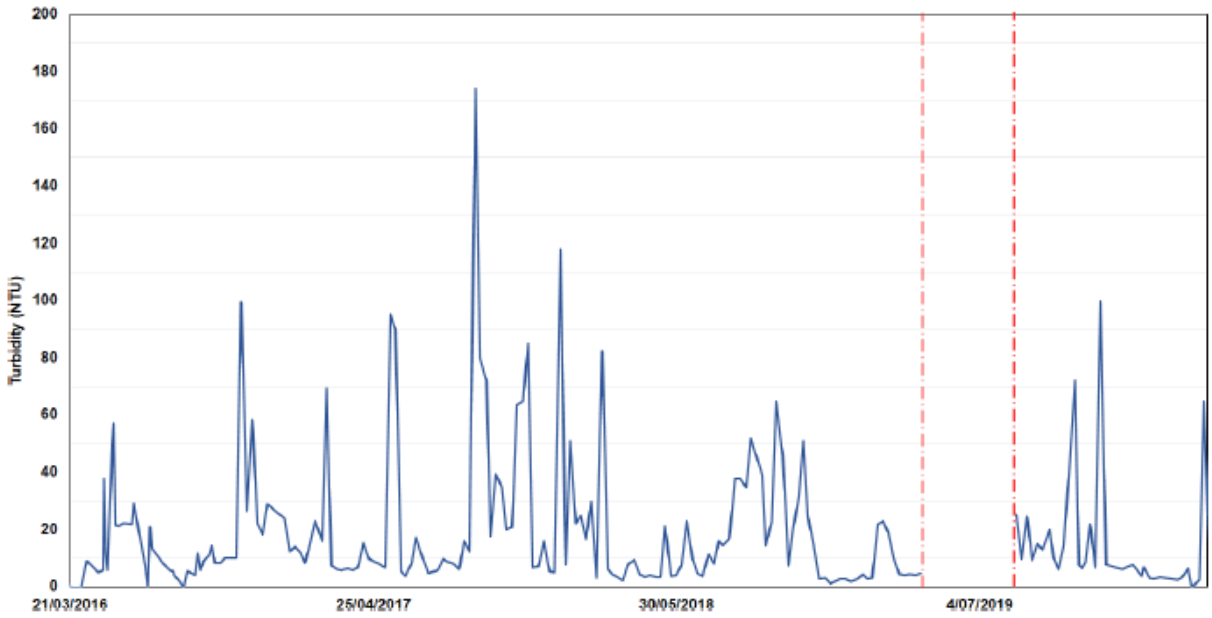


Figure 2-1: Weekly Raw Water Turbidity Data for Port Waikato WTP (2015 – 2020) (from Lutra Report)

Table 2-3: Treated Water Quality Parameters of Interest

Parameter	Port Waikato Range	Onewhero Range	Comment
UVT (%)	-	-	Not measured for either WTP but required for UV compliance
Turbidity at WTP (NTU) (5th to 95th percentile)	0.1 – 0.63	0.06 – 0.47 (1.08 maximum)	Port Waikato 95th percentile turbidity is above 0.5 NTU limit in draft Rules Onewhero maximum turbidity has been above 1 NTU limit for cartridge filters in draft Rules (only once)
pH at WTP (5th to 95th percentile)	6.8 – 7.9	6.74 – 7.6	Treated water pH has been low at both WTPs. The aesthetic range in the draft Standards is 7.0 – 8.5 (preferably less than 8)
FAC at WTP (5th to 95th percentile) (mg/L)	0.71 – 2.14 (0.04 minimum and 1.24 average)	-	Lowest FAC was less than 0.5 mg/L as required which indicates improvements to chlorine dosing control may be required
Sum of THM MAV ratios at WTP	<0.018 – 0.64	-	One Port Waikato sample out of 14 exceeded 50% of the MAV indicating that improvement may be needed to the coagulation process
FAC in Reticulation (mg/L)	0.06 – 1.65	-	FAC was not always measured to be above 0.2 mg/L however the 5th percentile at each monitoring point was above 0.2 mg/L
E. coli in Reticulation (MPN/100 mL)	<1	Not provided	
Total Iron in Reticulation (mg/L)	<0.02	Not provided	

2.3 Current Issues

Our understanding of the current issues at both schemes is summarised in Table 2-4. Most of this is based on the Lutra reports. We have not completed a review to compare the current monitoring with that required in the draft Standards and Rules however it is understood that there are some gaps in the monitoring data from the Lutra reports.

Note that Lutra did not confirm that cartridge filters operate within the manufacturers range or that installed UV disinfection is rated for 40 mJ/cm² at the flow rates and UVT seen for these supplies. UVT data was not available for Lutra's review and has not been provided for this report. It has been assumed that manufacturers requirements are met but further review should be completed. UVT must not be lower than 80% for Port Waikato to meet the T2 Rules. Similarly, the capacity of the treatment processes at Port Waikato has not been reviewed and are assumed to be adequate.

The use of cartridge filtration and UV disinfection at Onewhero WTP appears appropriate, and there is no evidence available to us currently to justify the need for a more conservative treatment process. The raw water turbidity data in Table 2-2 shows that turbidity has been suitably low to date and WDC have not reported any performance issues, therefore so use of cartridge filters has been assumed to be appropriate.

Table 2-4: Key Issues with Port Waikato and Onewhero Water Supply Schemes

Area	Port Waikato	Onewhero
Source	• Existing consent has expired	-
Treatment Type	• Treated water turbidity must be less than 0.5 NTU to meet requirements in the draft Rules and it has been reported to be up to 0.98 NTU (95th percentile 0.63 NTU). This is not currently achieved, and hence a more conservative membrane filtration process is assumed. • Exceedance of 50% of MAV for sum of THM MAV ratios indicating that improvements to coagulation may be required • pH control is inconsistent • It is not known if 30 minutes chlorine contact time is provided, there is sufficient tank volume, but the physical arrangement and potential short-circuiting is unknown	• Draft Rules require 5 micron followed by 1 micron cartridge filters and two 1 micron in series are currently installed (this may also reduce operational costs) • Flowrate might also be too high for cartridge filter • A run to waste is not installed and so out of specification water can reach the consumer • pH control is inconsistent • No residual disinfection is present • Remote site without level indication on soda ash storage can mean that tank runs dry and pH correction doesn't occur
Monitoring	• Improvements to monitoring required	• Improvements to monitoring required

3 Upgrade Options

3.1 Design Basis

Table 3-1 summaries the current flows and design flows. The existing WTP capacities have been used as the design flows for this assessment however as the current maximum flows are so much lower than the existing plant capacities, a lower flow may be selected to save cost if significant upgrades were required. We understand that a significant increase in demand is not expected in the coming years.

Table 3-1: Summary of Current Flows and Design Flow

Parameter	Port Waikato Range	Onewhero Range	Comment
Current average flow (m³/d)	31.7	5.5	From 2015 – 2021 data[1]
Current maximum flow (m³/d)	71.1	23.7	95th percentile flow from available data[1]
Current WTP capacity (m³/d)	148 m³/d	65 m³/d	To remain WTP capacity if significant upgrades are not required
Assumed design flow for significant upgrades (m³/d)	80 m³/d	25 m³/d	As the current demand is much less than the current capacity we have assumed that any significant upgrades would be completed to a smaller capacity than current to provide cost savings. The flows assumed here should be reviewed and should consider predicted growth.

[1]Note that this data was not analysed so any change in flow (such as an increasing demand) has not been accounted for. WDC should confirm that this is an accurate representation of the current demand.

3.2 Rainwater Tanks at each Existing Connection

For this option the existing WTPs would be decommissioned, and rainwater tanks would be installed at each connection (households, marae, day-care, and campground). We have assumed that rainwater tanks systems would be installed to meet the requirements of Taumata Arowai's Drinking Water Acceptable Solution for Roof Water Supplies which was released in January 2022 and is currently out for consultation. This is not technically a requirement for the individual households that only supply themselves however under the Building Act 2004, potable water must be provided and complying with this acceptable solution is a logical way to do this. This includes cartridge filtration and UV treatment.

It is assumed that existing reticulation would remain in the ground and that isolation at each connection would be carried out.

Benefits:

- Small reduction in stormwater flows for connected households

Challenges:

- There is a significant risk that rainfall will not be adequate to maintain water supply during the summer months. This is particularly significant for Port Waikato, and the campground in particular, as there is a seasonal influx of visitors in this area. Further consideration of rainwater tank sizing could be completed to somewhat mitigate this risk however this comes at an increased cost and does not remove the risk completely.
- Change in perspective for customers to use rainwater sources.
- Large rainwater tanks required to be effective which customers may not accept or have suitable space to install
- Risk of running out of water during dry periods with high cost of tanker supply to fill if required. Tankered water to supplement rainwater tanks is likely during extended dry periods.

Sustainability:

- Recent comparison studies Beca conducted have indicated that rainwater supply to households will have a significantly higher carbon impact than the local sourced water supply

Exclusions:

- Assessment of cost of initial fill of rainwater tanks with tankered water
- Assessment of cost or requirement for geotechnical assessments for individual households
  - Additional civil or retaining works required due to geotechnical assessment results
- Supply is not able to supply 1 in 100-year drought LoS yield
- Consenting costs and legal and regulatory aspects were not reviewed.

We note that Council has requirements to provide clean drinking water as noted in section 134 of the Local Government Act 2002.

3.3 Upgrade Existing WTPs

Based on information in the issues listed in Section 2.3, Table 3-2 lists the upgrade items that have been included in our cost estimate. This list covers capital expenditure items that could be included in an upgrade but does not include things like increased monitoring and changes to procedures.

For Port Waikato, a full treatment upgrade has been assumed. This WTP has had a number of additions and upgrades over the years and rather than completing another small upgrade to improve turbidity and organics removal, we recommend that a more significant upgrade is considered. For the purposes of this report we have assumed that the existing media filtration is replaced with membrane treatment. An assessment of whether or not the current clarifier and poly dosing should be retained should be completed however no changes have been allowed for in our estimates. Membranes have been selected over conventional treatment as currently installed due to the remote nature of the site and the requirement for automation. Further assessment, including a site visit and condition assessment, should be completed before finalising the decision to replace the current treatment with a membrane plant.

A review of available land for the upgraded Port Waikato WTP has not been completed but we note that finding adequate level ground to accommodate a new building may be difficult. Land procurement and significant earthworks to provide level ground has not been allowed for in the estimate. Should upgrade of the WWTP be pursued, WSL will need to determine whether some or most of the required upgrades may be installed in the existing building, as opposed to a new building. These installations could be completed during the off-peak season is such a case.

Table 3-2: Upgrade Inclusions for the Existing WTPs

Area	Port Waikato	Onewhero
Source	• Allowance for a new consent (assuming that this is possible at the existing source)	
Treatment	• Modified pH control based on new treated water pH analyser and flow meter • Modified coagulation control based on new UV spectrometer and raw water flow • New membrane plant complete with ancillaries such as CIP systems, compressed air, waste balancing and neutralisation (with existing waste disposal assumed to be adequate) • New building to house membrane plant and chemical storage and dosing systems • Replacement chemical storage and dosing within the new building (designed to provide adequate separation and bunding)	• Modified pH control based on new treated water pH analyser and flow meter • Installation of chlorine storage and dosing (assume sodium hypochlorite) equipment to provide a residual disinfection (assumed that no changes needed to accommodate delivery) • A new HDPE 25m³ reservoir or a pipe loop to provide chlorine contact time (may not be required) • Replace first cartridge in cartridge filter with 5 micron (not included in CAPEX and considered an operational expense) • Installation of run to waste to allow off specification water to be disposed of • Installation of SCADA

The following investigations should be considered. Many of them may influence the cost of the upgrade depending on outcomes:

- Investigation into water security issues associated with the water sources (particularly related to water quality and quantity changes that may occur due to climate change) and therefore consideration of alternative water sources (note that WDC do not have record of any groundwater investigations completed and groundwater may be a better source)
- Baffling in the reservoir or using multiple contact tanks in series to provide improved chlorine contact time for Port Waikato
- Process improvements to Port Waikato coagulation and flocculation including improving mixing
- Any improvements required to the waste disposal system to meet consent requirements
- Reticulation modifications or alterations to operations so that 0.2 mg/L FAC is always achieved in the Port Waikato reticulation
- Further modifications to the chemical delivery and storage systems may be required to meet the Health and Safety at Work (Hazardous Substances) Regulations 2017
- Additional procedures and documentation may be required. A review of this has not been completed
- WDC may wish to install a greater level of redundancy in the treatment process as well as other emergency safeguards such as generators
- Required modifications to the backflow protection within the reticulation should be investigated
- Upgrades or replacement of existing infrastructure due to condition or age. Reducing leakage in the network could reduce size of the WTPs.
- New WSPs are required for both sites

We have not included an allowance for investigations or any additional spend recommended due to the outcomes of these investigations.

4 Cost Estimates

4.1 Summary

Table 4-1 summarises the high-level cost estimates for the options above. A more detailed breakdown of these estimates is included in Appendix A. These estimates have an expected accuracy range of -30% to +50%.

An OPEX estimate has not been completed at this stage. Additional OPEX for household rainwater tanks would include power for household pumps and UV as well as replacement filters, bulbs and other maintenance at each treatment system. There would be an OPEX savings associated with not running the WTPs. There is not expected to be a change in OPEX associated with upgrading Onewhero WTP (Option 2) however the membrane plant assumed for Port Waikato may use more power than the existing plant and will require membrane replacements. However, there may be savings associated with reduced chemical consumption due to the improved operation of the plant.

Table 4-1: Summary of Capital Cost Estimates

Option	Port Waikato	Onewhero
1 – Rainwater Tanks	$ 910,000	$ 540,000
2 – Upgrade Existing WTPs	$ 5,080,000	$ 320,000

4.2 General Estimate Assumptions

- The estimate is based on the design and assumptions outlined in this report
- All quantities and dimensions in the estimate are approximate
- For the household rainwater option, no allowance is included for professional management of installations – it is assumed that householders will engage each of the trades necessary to complete the installation. WDC should consider how to make sure that appropriate quality and functionality of installations is achieved.
- It is assumed that a robust and competitive tendering process will be followed and that a minimum of 3 competitive tenders (where possible) are received for the project as part of the agreed procurement process
- It is assumed that all works are carried out during normal daytime working hours
- It is assumed that the contractor will have unobstructed access to the whole site throughout the construction phase
- The estimates assume that the proposed work can be consented
- Contingency allowance has been included at 30% for concept level design. No detailed risk analysis has been carried out. Please note that the above contingency allowances exclude changes in scope beyond what is generally described in these estimates. We recommend that the Client hold a separate project contingency budget for this if this risk is deemed likely.
- The allowance for Professional Fees includes for the cost of engineering and design, construction monitoring and providing technical support during the construction phase. Please note that the allowances for Professional Fees in the estimates are typical allowances included for comparative purposes - a work breakdown or fee estimate has not been prepared.
- The estimate is based on rates and prices current as of March 2022 and no allowance has been included for increases in the costs of labour, materials or plant beyond this date.
- Estimate range is an indication of the degree to which the final cost outcome for a given project will vary from the estimated cost – it is not an additional Contingency.

- This estimate is based on concept design information. The estimate is deemed to be a Class 5 estimate in terms of the AACE Cost Estimate Classification System guidelines. The expected accuracy range of the estimate is -30% to +50%.

4.3 Exclusions

- Land purchase has not been included for any of the options.
- Significant earthworks to provide level ground for upgrades.
- Demolition and decommissioning of the existing plant, building and pipework has not been included for any options.
- Consenting and legal costs.
- Goods and Services Tax (GST).
- Construction escalation beyond date of estimate.
- Foreign Exchange rate fluctuations and costs.
- Staged or phased handover or commissioning.
- Client-owned project-related costs.
- Cost of community engagement if required for consenting.
- Incurred costs to date.
- Fast-track or accelerated programme.
- Geotechnical treatment or ground improvement beneath structures.
- Cost of maintaining water supply level of service and keeping the plant operational during tie-ins and commissioning of the new equipment.
- Power supply network upgrade.
- Any future impact of extraordinary global events (such as the current COVID-19 outbreak).

4.4 Cost Estimation Risks

Key risks with a potential cost effect include:

- Design development.
- Client-driven scope changes.
- Cost escalation.
- Procurement and staging.
- Location and contractor availability.
- Project delays due to further Covid-19 outbreaks.
- There may be risks and opportunities other than those described above that are not yet identified and have therefore not yet been considered during cost estimation.

4.5 Estimate Limitations

- This estimate is solely for our Client's use for the purpose for which it is intended in accordance with the agreed scope of work. It may not be disclosed to any person other than the Client. Any use or reliance by any person contrary to the above, to which Beca has not given its prior written consent, is at that person's own risk.
- The purpose of the estimate is to provide Council with indicative capital construction costs to help with feasibility assessment, budgeting for the project and to select an option for detailed design by Watercare.

- The high-level estimate presented in this report is typically developed based on extrapolation of recent similar project pricing, budget quotes for some equipment items, industry unit rates, and Beca's general experience. The concept estimate is based on incomplete design and other information. While a contingency allowance has been included in the estimate to cover design development, further investigation and design work is recommended. A detailed design should be undertaken if a more reliable estimate is required.

5 Comparison and Discussion

The estimate in Section 4 shows that upgrading the Port Waikato WTP is expected to be significantly more expensive than household rainwater tanks. This is largely because a major upgrade including installation of membrane treatment has been assumed to give more certainty that the water quality will meet the DWSNZ and rules rather than less significant process improvements which may be possible after further investigations including assessment of alternative water sources.

Despite this significant cost difference upgrading the Port Waikato treatment plant is the recommended option. The key issue with household rainwater tanks is the reliability of supply particularly over the summer months when Port Waikato see a significant increase in demand largely due to visitors to the campsite. In addition to the availability of water, a centralised WTP provides greater control and quality assurance of treated water quality and is generally considered to be a lower risk way to supply water. Although household rainwater tanks do not have the risk of contamination in the reticulation, it is more common for household systems to not be maintained as adequately and for limited testing and risk assessments to be completed.

The cost estimates for household rainwater tanks and improvements to the Onewhero WTP are similar and therefore, for the same reasons as above, upgrading the existing WTP is recommended.

A

Appendix A – Cost Estimates

Port Waikato

Item	QTY	UNIT	RATE	TOTAL	Comment
Households:					
Household tank supply and delivery with sand base	34	No	$ 8,050	$ 273,700	25000L tank x 2 per supply
Daycare, campground and marae tank supply and delivery with sand base	12	No	$ 8,050	$ 96,600	25000L tank x 4 per supply
Pump and base	20	No	$ 1,300	$ 26,000	
Connection to roof and collection system	20	No	$ 1,000	$ 20,000	
Inlet, outlet valve and connections	20	No	$ 800	$ 16,000	
Household cartridge filter and UV system complete with labour for installation	17	No	$ 6,300	$ 107,100	To meet acceptable solution
Daycare, campground and marae cartridge filter and UV system complete with labour for installation	3	No	$ 11,500	$ 34,500	To meet acceptable solution
Plumbing Labour	20	No	$ 2,500	$ 50,000	
Electrical Labour	20	No	$ 1,100	$ 22,000	
Building consent for rainwater tanks	20	No	$ 2,500	$ 50,000	Allowance
Commissioning	1	LS	$ 2,000	$ 2,000	
Subtotal				**$ 697,900**	
Construction contingency	30%	%	$ 697,900	$ 209,370	
Total				**$ 909,270**	
Rounding	1	LS	$ 730		
Total (Rounded)				**$ 910,000**	

Onewhero

Item	QTY	UNIT	RATE	TOTAL	Comment
Households:					
Household tank supply and delivery with sand base	26	LS	$ 8,050	$ 209,300	25000L tank x 2 per supply
Pump and base	13	LS	$ 1,300	$ 16,900	
Connection to roof and collection system	13	LS	$ 1,000	$ 13,000	
Inlet, outlet valve and connections	13	LS	$ 800	$ 10,400	
Household cartridge filter and UV system complete with labour for installation	13	LS	$ 6,300	$ 81,900	To meet acceptable solution
Plumbing Labour	13	LS	$ 2,500	$ 32,500	
Electrical Labour	13	LS	$ 1,100	$ 14,300	
Building consent for rainwater tanks	13	LS	$ 2,500	$ 32,500	Allowance
Commissioning	1	LS	$ 2,000	$ 2,000	
Subtotal				**$ 412,800**	
Construction contingency	30%	%	$ 412,800	$ 123,840	
Total				**$ 538,640**	
Rounding	1	LS	$ 1,360		
Total (Rounded)				**$ 540,000**	

Port Waikato

Item	QTY	UNIT	RATE	TOTAL	Comment
Water take consent	1	LS	$ 50,000	$ 50,000	Allowance
pH analyser and control upgrade	1	LS	$ 10,000	$ 10,000	Supply and installation of new treated water pH analyser as well as control system modifications to control dosing
UV spectrometer and modified control	1	LS	$ 30,000	$ 30,000	Supply and install of UV spectrometer plus coagulant controller
New membrane plant	1	LS	$ 1,040,000	$ 1,040,000	Based on simple membrane plant, duty/standby, including CIP systems
Waste buffering/nuetralisation	1	LS	$ 25,000	$ 25,000	Allowance
New turbidimeters	2	No	$ 15,000	$ 30,000	One for each membrane train
Coagulant storage and dosing package	1	LS	$ 20,000	$ 20,000	Grundfos dosing station complete with 200 L vessel, plastic retaining bund, DDA pump, supply only
Poly storage and dosing package	1	LS	$ 20,000	$ 20,000	Grundfos dosing station complete with 200 L vessel, plastic retaining bund, DDA pump, supply only
Hypo storage and dosing package	1	LS	$ 20,000	$ 20,000	Grundfos dosing station complete with 200 L vessel, plastic retaining bund, DDA FCM pump, supply only
Soda ash storage and dosing package	1	LS	$ 30,000	$ 30,000	Package system with hooper and dry feeder, could consider replacement with caustic
Mechanical and pipework installation	1	LS	$ 200,000	$ 200,000	Allowance for connections to and from membrane skids
Electrical installation	1	LS	$ 200,000	$ 200,000	Allowance
New building	150	m²	$ 5,000	$ 750,000	To fit membranes, chemical systems and MCC room. Civil works including earthworks, pavements, fencing, stormwater etc not included as assumed exisitng is adequate
Software	1	LS	$ 50,000	$ 50,000	Allowance
Telementry	1	LS	$ 10,000	$ 10,000	Trio radio
Commissioning	1	LS	$ 20,000	$ 20,000	
Subtotal				**$ 2,505,000**	
P&G and margin	30%	%	$ 2,505,000	$ 751,500	
Subtotal				**$ 3,256,500**	
Design and supervision	20%	%	$ 3,256,500	$ 651,300	
Subtotal				**$ 3,907,800**	
Design and estimating contingencies	20%	%	$ 3,907,800	$ 781,560	
Construction contingency	10%	%	$ 3,907,800	$ 390,780	
Total				**$ 5,080,140**	
Rounding	1	LS	-$ 140		
Total (Rounded)				**$ 5,080,000**	

Exclusions:
- intake and reticulation pipework, assume existing can be reused and only replacement of treatment plant pipework is included
-assume part of Watercare telementry network
-assume no generator required
-assume adequate power supply
-chemical storage and delivery not reviewed
- new dosing pumps have been assumed although it may be possible to reuse the existing Qdos pumps

Onewhero

Item	QTY	UNIT	RATE	TOTAL	Comment
pH analyser and control upgrade	1	LS	$ 10,000	$ 10,000	Supply and installation of new treated water pH analyser as well as control system modifications to control dosing
Run to waste pipework and valve	1	LS	$ 15,000	$ 15,000	Assume local discharge point, not requiring consent
Raw water turbidimeter	1	LS	$ 10,000	$ 10,000	To stop and start run to waste, including installation
Hypo dosing package	1	LS	$ 20,000	$ 20,000	Grundfos dosing station complete with 200 L vessel, plastic retaining bund, DDA FCM pump, supply only
Pre reservoir chlorine and pH analyser	2	LS	$ 15,000	$ 30,000	Supply and installed, pre and post reservoir
Reservoir or pipe loop for chlorine contact time	1	LS	$ 15,000	$ 15,000	25 m³ PE including installation and instrumentation
Controls and software	1	LS	$ 30,000	$ 30,000	Allowance for Kingfisher RTU in cabinet with battery and software
Telementry	1	LS	$ 10,000	$ 10,000	Trio radio
Mechanical and electrical in	1	LS	$ 10,000	$ 10,000	Allowanace
Commissioning	1	LS	$ 10,000	$ 10,000	
Subtotal				**$ 160,000**	
P&G and margin	30%	%	$ 160,000	$ 48,000	
Subtotal				**$ 208,000**	
Design and supervision	20%	%	$ 208,000	$ 41,600	
Subtotal				**$ 249,600**	
Design and estimating contingencies	20%	%	$ 249,600	$ 49,920	
Construction contingency	10%	%	$ 249,600	$ 24,960	
Total				**$ 324,480**	
Rounding	1	LS	-$ 4,480		
Total (Rounded)				**$ 320,000**	

Exclusions:
- intake and reticulation pipework, assume existing can be reused and only replacement of treatment plant pipework is included
-assume part of Watercare telementry network
-assume no generator required
-assume adequate power supply
-chemical storage and delivery not reviewed
-have not completed a review of run to waste location (capacity, consent and environmental effect)

Waikato District Council
Te Kaunihera aa Takiwaa o Waikato

Open

To	**Waters Governance Board**
Report title	**Exclusion of the Public**

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 2.1 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 information avenue remains open, when it is in the public interest for it to do so
	7 (2) (c) (ii)	To protect information that is subject to an obligation of confidence and to protect the public interest
	7 (2) (i)	To enable negotiations to carry on without prejudice or disadvantage
Item 3.3 Proposal to Vary Agreement due to the Three Waters Reform	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.

Date:	7 June 2022
Report Author:	Matt Horsfield. Democracy Advisor
Authorised by:	Gaylene Kanawa, Democracy Team Leader