WATERCARE SERVICES LIMITED

AGENDA	BOARD MEETING	Tuesday, 1 June 2021
Venue	Watercare Services, Level 3 Boardroom, 73 Remuera Rd, Remuera	
Time	9.15am	

Open Public Meeting

	Item	Spokesperson	Action Sought	Supporting Material
1	**Opening Karakia**	Brendon Green		
2	**Meeting Administration**	Chair	For discussion	Verbal update
3	**Apologies**	Chair	Record apologies	Verbal
4	**Minutes of Meeting**	Chair	Approval of minutes of the meeting of 29 April 2021	Minutes of the meeting of 29 April 2021
5	**Public Deputations**	Chair	For information	Verbal
6	**Enterprise Model Update**	Graeme Johnson CEO NZ - Fulton Hogan & Peter Reidy CE Construction - Fletcher Building	For discussion	Presentation
7	**Chief Executive's Report**	Jon Lamonte	For discussion	Report
8	**Health, Safety and Wellbeing Report**	Bronwyn Struthers	For discussion	Report
9	**For Information**			
9.1	April 2021 Central Interceptor Report	Shayne Cunis	For information	Report
9.2	Drought Update	Steve Webster	For information	Presentation
9.3	Iwi Relationships	Richie Waiwai	For information	Report
9.4	CCO Review Update	Rob Fisher	For information	Report
10	**For Approval**			
10.1	Asset Management Plan 2021-2041	Steve Webster	For approval	Report
11	**For Discussion**			
11.1	Board Committee Updates	Committee Chairs	For discussion	Verbal
12	**Directors' Corporate Governance Items**			
12.1	Board Planner	Chair	For noting	Report
12.2	Directors' Appointment Terms and Committee Memberships and meeting attendances	Chair	For noting	Report
12.3	Disclosure of interests	Chair	For noting	Report
13	**General Business**	Chair	For discussion	Verbal update

Date of next meeting	Monday, 5 July 2021

MINUTES

SUBJECT WATERCARE SERVICES LIMITED BOARD MEETING

VENUE Watercare, Level 3 Boardroom, 73 Remuera Road, Remuera

DATE 29 April 2021

TIME 9.15am

	PUBLIC SESSION		
	Present: Margaret Devlin (Chair) Dave Chambers Frances Valintine Nicola Crauford Brendon Green Hinerangi Raumati-Tu'ua Graham Darlow	**In Attendance:** Jon Lamonte Marlon Bridge (from 9.30am, during item 7.1) Steve Webster Nigel Toms Amanda Singleton Jason Glennon Rebecca Chenery David Hawkins Shane Morgan Shayne Cunis Bronwyn Struthers (from the start until the end of item 9.2) Richard Waiwai Mark Bourne (from the start until item 8.1) Richie Rameka (for item 9.1) Jacky Simperingham Jodie Atkin Pinaz Pithadia	**Guests:** None
1.	**Opening Karakia** Brendon Green opened the meeting with a karakia and welcomed Jon to his first Board meeting as Chief Executive.		

2.	**Meeting Administration** The Chair of the Board formally welcomed Jon to his first Board meeting in his official capacity. On behalf of the Board, she congratulated: • Hinerangi Raumati-Tu'ua on her appointment as Chair of Tainui Group Holdings. • Nigel Toms (Acting Chief Financial Officer) for winning the Risk Professional of Year award. • Shane Morgan (Chief Operations Officer) and Amanda Singleton (Chief Customer Officer), for their work on the Nerve Centre.
3.	**Apologies** Apologies were received from Councillor Linda Cooper, Claire Gomas (Principal Advisor CCO Governance and External Partnerships, Auckland Council) and Rob Fisher (Company Secretary). Marlon Bridge also apologised for his late attendance (due to conflicting Deputy Chief Executive duties).
4.	**Minutes of Meeting** The Board **resolved** that the minutes of the public session of the Board meeting held on 30 March 2021 be confirmed as true and correct.
5.	**Disclosure of Directors' Interests** Hinerangi Raumati-Tu'ua advised that she has resigned from the following positions: i) member of Venture Taranaki, and ii) Trustee of PKW Trust.
6.	**Public Deputations** There were no public deputations.
7.	**For Information** **7.1 March 2021 Central Interceptor Report** Shayne Cunis (Executive Programme Director, CI) presented this report which was taken as read. Shayne noted that March was a difficult month in relation to health, safety and wellbeing (HSW) as the report indicates. A significant effort is being made to address the problems, especially in preparation for tunnelling which will commence in June and July. He explained that staff (supervisors and engineers) who were not performing as required, specifically in relation to HSW, have left the project and have been replaced by staff who are taking greater ownership of HSW.

	The Board requested that the next monthly Central Interceptor report should include the actions being taken to reduce incidents. Shayne provided examples of the actions that have been taken which include the above-mentioned staff changes and replacing ladders with staircases. He noted that WorkSafe have been informed of incidents as required and it is satisfied that there has been no negligence on the GAJV's (Ghella Abergeldie joint venture) or Watercare's part. Shayne also explained that machinery is regularly inspected, and there are procedures are in place if machinery failures do occur. This includes the use of exclusion zones. The Board expressed its concern at the amount of crane (lifting) related incidents that have occurred and requested that Shayne and Jon Lamonte (Chief Executive) obtain an independent critical risk assessment of crane lifts by the GAJV. The Board noted that whilst the Central Interceptor project is on a critical pathway, the Board does not support cutting corners, and safety must remain paramount. The Board asked whether there are sufficient resources in place to ensure safety. Shayne advised that it is challenging to recruit and retain people. He said that at this time it is not a matter of needing more people, as the workload is insufficient to fully utilise them. At this stage we have been able to cover extended work hours with existing staff prepared to work on altered patterns. If the GAJV open more sites, this will not be possible and we are working with them to optimise productivity for both parties. The Board asked whether, in light of the recently published review of HSW at the Ports of Auckland, staff on our sites feel safe. Shayne advised that staff do feel safe and comfortable coming to work, especially following the replacement of some supervising staff (mentioned above). The new supervisors are owning problems, and providing solutions. He said the workforce is confident in the safety culture, and know that they will be looked after. He also noted that upcoming milestones for the project, such as launching the TBM (tunnel boring machine) and the MTBM (micro-tunnel boring machine) will increase morale. The Board requested that Francesco Saibene (project director of GAJV) attend the 29 July Board meeting, following the launches of the TBM and MTBM. Bronwyn Struthers (Head of HSW) advised that following the crane rigging incident at the Haycock Rd site, two new specialists have been brought in (by the contractor) to conduct an internal review of the lifting operations. In response to a question from the Board, regarding whether this is done on other Watercare projects, both Bronwyn and Steve Webster (Chief Infrastructure Officer) confirmed it is standard for contractors across New Zealand to have such specialists in place. The Board noted the need to ensure that responsibility is taken for safety procedures to be followed as it is not sufficient to merely have procedures. The report was noted. *Marlon Bridge (Deputy Chief Executive Officer) joined the meeting during this item*.

7.2 Drought Update

Mark Bourne (Head of Servicing & Consents) presented this paper, which was taken as read. He also tabled the latest drought related figures.

In particular he noted that lake levels were stable throughout April. He advised that demand remains very low which indicates the domestic sector is maintaining low demand. This resulted in the need to decrease storage production, and at Ardmore WTP (water treatment plant) production will move to low-flow as of next week.

Mark advised that a new winter forecast will be provided as of next month. He said NIWA has forecast normal rainfall over the winter.

Mark spoke to the graphs, noting that actual demand is significantly below what it was at this time last year. This is a result of the cumulative effect of all the levers pulled by the business since May last year. He explained that, had the interventions (augmentation projects, water restrictions, increased leak detection) not been undertaken, lake storage would now be at 28% (they were at 52.5% at the end of March, with April figures not final at the date of the meeting). He noted that it is the long-term, cumulative effect that is significant; short-term measures do not have such substantial impacts.

In response to a question from the Board, there was discussion regarding the reductions and deferrals of works under the AMP due to Council debt constraints. Mark explained that Management are undertaking a prioritisation process.

The Board noted that a change to reporting on leakage figures had previously been discussed. Shane Morgan advised that a working group is currently working on the use of a factor that will enable international comparisons to be made. This will involve a short-term SOI target and a longer-term water strategy target. A paper will be provided to the Board next month.

The Board noted the need to communicate any change in reporting to Auckland Council. It was also noted that we need to facilitate increased water literacy across all our stakeholders, in line with one of the Aurecon recommendations.

The Board asked if there were any delays due to Covid-19. Shane advised that supplies are generally being delayed by several weeks due to stevedoring issues but nothing on the critical pathway to date.

The report was noted.

7.3 Iwi Relationships

Richard Waiwai (Poutiaki, Tikanga Māori (Principal Advisor)) presented the report which was taken as read.

He explained that two iwi (Ngāti Paoa Iwi Trust and Te Ara Rangatū o Te Iwi o Ngāti Te Ata Waiōhua Incorporated) have been introduced together because over the past two years, leadership for both iwi has been uncertain.

The new leader of Ngāti Paoa (Glen Tupuhi) has now been decided and has requested a meeting with our Chair and Chief Executive (CE). In 2019 Watercare and Ngāti Paoa signed a relationship agreement.

Ngāti Te Ata also has a new chair (Riki Minhinnick) and he also would like to meet with our Chair and CE.

	In response to questions from the Board, Richard advised that iwi are experiencing resourcing instability and representation. He advised that Ngāti Te Ata Waiōhua are concerned about discharge from the Māngere WWTP (wastewater treatment plant). Marlon Bridge explained that Ngāti Te Ata Waiōhua are passionate about the Manukau Harbour and the mixing of water from the Waikato River into the Manukau Harbour. He explained that Watercare needs to take a long-term view of this, perhaps across three generations, but the important thing is to have a blueprint to address this concern. The report was noted.
8.	**For Approval** **8.1 Water storage response forecast for winter 2021** Mark Bourne spoke to this paper, which was taken as read. David Hawkins (Chief Corporate Affairs Officer) advised that the paper is being covered in the media by Todd Niall of Stuff. The Board discussed the conditions under which restrictions could be lifted. As these involve reliance on rainfall, it was thought that a decision on lifting restrictions cannot be made at this time. The Board also discussed the need for the messaging around water use to be clearly conveyed to our stakeholders. Mark explained that over the winter months, there is less water used outdoors and so the messaging will focus primarily on indoor use. The Board suggested that we need to be communicating the reasons behind the need for continued water restrictions and our investment in bringing new sources of water online. It was noted that we need to ensure water literacy among our stakeholders, especially around reducing demand because water is precious. The Board had a discussion around the need for behavioural change in relation to water use, just as we have seen with the use of plastic bags. Amanda Singleton (Chief Customer Officer) advised that this behavioural change has begun, and can be seen in people self-reporting that they are taking shorter showers. The Board agreed that this is a good paper, however, it will not approve the lifting of water use restrictions at this time. The Board requested a monthly update on the position, including an update in relation to the development of a narrative addressing water literacy. *The Board **declined to approve** the recommendation, at this time, that Watercare request Auckland Council remove the current Stage 1 restrictions when: storage remains consistently above the voluntary savings band; forecast rainfall does not indicate ongoing drought conditions; and the Waikato 50 project has been commissioned and available for full production.*

9.	**For discussion** **9.1 Safety Moment** Amanda Singleton (Chief Customer Officer) introduced Richie Rameka (Head of MSN) who presented the safety moment. Amanda explained that MSN had seen a huge improvement in relation to health, safety and wellbeing ((HSW) following initiatives implemented by Richie and his team. Richie attended the meeting to explain the initiatives and improvements. Richie explained that MSN had undertaken a re-set journey over the previous nine months. He said the engagement was overwhelming, with the whole team rallying behind the "extreme ownership" campaign. The initiative came from within the teams, and included engaging a motivational speaker to talk about his journey of change, supporting Men's Health Week, a planking challenge, and an 8-week weight loss challenge. As a result, injury results declined by 30% and lost time injuries declined by 90%. He also said that they are seeing more reporting of injuries and early notification of pain and discomfort, and the eNPS (employer net promoter score) score is now the highest it has ever been. The Board thanked Richie for his presentation that demonstrates what can be done in HSW. **9.2 Chief Executive's Report** Jon Lamonte presented this report which was taken as read. Jon advised that this is the last time the CE's report will be presented in the current format. He also advised that he will be instituting changes to the Board papers, which will be more succinct in future. The HSW report will also be changed and will be a stand-alone report as of next month. The Board confirmed that Jon's intended changes are in line with what the Board's thinking. Jon noted that our customer service scores look good but we cannot be complacent. The Board noted the Nerve Centre opening, and the fact that Auckland Council's Healthy Waters would like to utilise the Nerve Centre. Jon confirmed that he sees opportunities to work more closely with Auckland Council's Healthy Waters. The Board noted that Watercare is engaging with Northland, and Western Bay of Plenty. In relation to consideration of the smart water meter programme, the Board noted the need to find the right balance between the right amount of data and the cost of acquiring it. Jon advised that he is meeting with staff across Watercare to get a firm understanding of what a smart network is, how it is owned and how it works. The Board asked who is on the Three Waters Reform Team. Marlon advised that the team consists of Mark Bourne, Carl Tucker, Anin Nama, Priyan Perera, James Davies, Evan James, and Sarah Phillips. He explained that other members of staff will also be brought into the team. In response to a question from the Board, Steve Webster advised that all evidence has been presented at the Huia resource consent application hearing. We are now waiting on a decision.

The Board had a brief discussion about the possibility of water demand on the metropolitan network decreasing if people increase the use of their own water supply (such as through the use of rainwater tanks).

The Board also enquired about the status of compliance at the Ardmore WTP. Shane Morgan confirmed that inspections have been done and very good results were achieved, although there are few non-compliances remaining.

The report was noted.

Bronwyn Struthers left the meeting at this point.

9.3 Board Committee Updates

AMP and Major Capex Committee

The Chair of this committee (Nicki Crauford) advised that an additional meeting was held on 16 April to discuss the AMP document, noting that the AMP envelope itself was approved by the Board on 23 December 2020. This meeting concerned the content of the document detailing what we are doing and how we are doing it.

Steve advised that the AMCC provided comprehensive feedback and explained that there is now further work to do before the AMP goes back to the AMCC for the meeting on 20 May for approval.

The AMP is scheduled for review and approval at the Board meeting on 1 June 2021.

Te Tangata Komiti

The Chair of this committee (Dave Chambers) advised that it had met the day prior to the Board meeting. Among the topics discussed were: workforce planning to deliver the AMP; the external review into HSW; retaining and developing Watercare staff in the current employment environment; and the development of a 'people dashboard' to convey human resourcing figures such as staff numbers, and development being undertaken.

He also advised that he has arranged a HSW tour with the Head of HSW, and he will be attending an Institute of Directors conference in the coming week (the Chair is also attending this conference).

Audit and Risk Committee

The Chair of this committee (Hinerangi Raumati-Tu'ua) advised that this committee will meet again next month on 26 May.

Committee for Climate Change Action

The Chair of this committee (Brendon Green) advised that papers for its next meeting are currently being prepared. He acknowledged the use of electric trucks on the CI projects as a great initiative.

10.	**Directors' Corporate Governance Items** **10.1 Board Planner** The Chair advised that the Board will review the Board Planner. She also noted that sites visits are being planned and HSW visits are underway. **10.2 Disclosure of Senior Executives' Interests** The report was noted. **10.3 Directors' Appointment Terms and Committee Memberships and Meeting Attendances** The report was noted. The Chair advised that final confirmation is being sought, but it is highly likely that Nicki Crauford will serve for another year which will provide Board stability. The Chair also noted that she was absent from the additional AMCC meeting on 16 May due to her prior commitment to meet with Waikato-Tainui regarding Watercare's application for a second take from the Waikato River.
11.	**General Business** There was no general business to discuss**.**
12.	**Closing karakia** The closing karakia was performed by Richard Waiwai. The meeting closed at 10.35am.

CERTIFIED AS A TRUE AND CORRECT RECORD

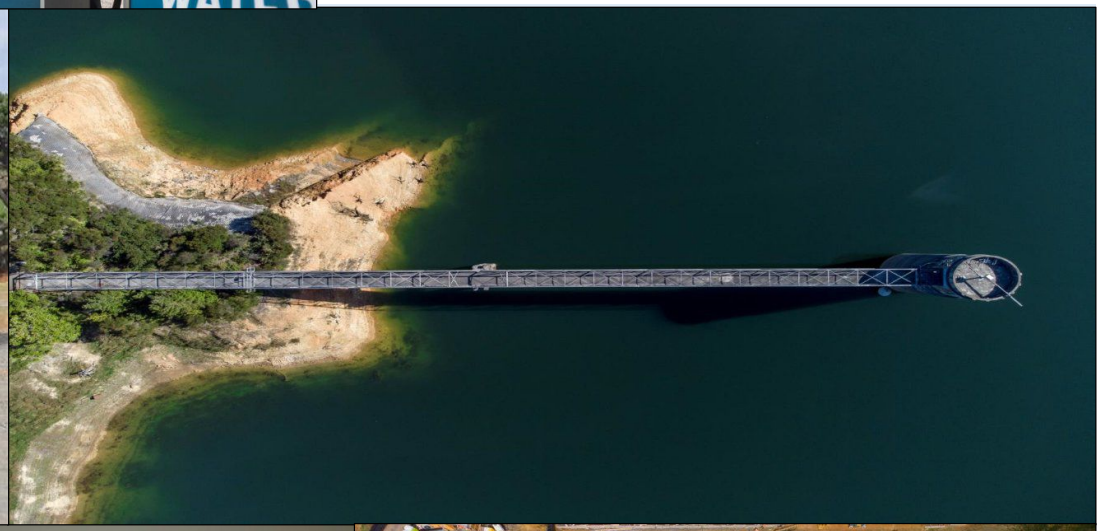
.....

Margaret Devlin, Chair

Chief Executive's Report – April 2021

Presented by: Jon Lamonte

Watercare
An Auckland Council Organisation



1. Current significant issues

The most immediate issue facing the organisation is water resilience management. This month the dam levels dropped below 50%, when typically they should have been circa 76%. Although slightly higher than last year, stakeholder and public concerns over dropping below this totemic level re-emerged. Though the Waikato 50 project should provide a safety net over and above other new or reinvigorated sources, the low level of Lake Taupo reminds us that source too is not immune from long term low rainfall.

Organisational reputation continues to be a focus. We are engaging with Auckland Council at all levels and are attempting to ensure closer engagement on a range of issues, notably Watercare performance as part of the Statement of Intent, the emerging findings of the Water Industry Commission for Scotland (WICS) review as reported to Council via the Department of Internal Affairs (DIA), and the development of the Auckland Water Strategy led by the Council. Elsewhere, our engagement with iwi spreads beyond the Auckland boundary and has recently included those bodies located towards the source of the Waikato River, who want to see a more holistic approach taken towards river management. We continue to develop our more comprehensive message around use of water, and the factors affecting it from climate change to cost of extraction, to better inform and engage the public.

Three waters reform is entering a crucial stage with decisions likely at national level. We are supporting the Council's working group to allow them to advise Council, whilst providing information as needed to DIA and others. Internally, we have an outline plan and created a small team to plan for various scenarios of how this may play out and to consider the potential effects on the organisation. I have spoken to my counterpart at Wellington Water on the issues as they see them and will continue to develop relationships over coming weeks. The Council Healthy Waters (HW) team have moved a small group of people who are now collocated at Watercare's offices. The intention of this is to continue to build operational interfaces and a joint understanding across the teams.

2. Update on strategic plan implementation

A Board strategy day is planned for 27 July 2021. This will cover the purpose and role of Watercare, our values, a review of the external environment going forward, from climate change to the future of work and growth in Auckland, which should help the Board to review its strategy, and agree on new strategic objectives, which will help us shape a risk appetite for the Board.

In order to make that happen, the Executive will have two half-day facilitated sessions in advance to try to set out some of the issues we are likely to face.

3. Update on progress on recommendations

The table set out at **Appendix 1** provides an update on Watercare's progress against the recommendations it has received from various reviews, including the Aurecon review. An update on the CCO review will be given separately.

4. Major Key Performance Indicators (KPIs)

Watercare has a number of performance indicators set out in our Statement of Intent. **Appendix 2** sets out Watercare's performance against the current Statement of Intent measures for April 2021.

In addition to the Statement of Intent measures, an outcome of the Board strategy day could include a decision on the major KPIs that the Board would like to be updated on every month in this report.

In the meantime, we set out the following update (some of these are Statement of Intent measures):

- Current staff numbers are 1,113 full time equivalents (excludes contractors filling full time positions). Sick hours lost was at 3.18% as at 30 April 2021. The voluntary turnover as at 30 April 2021 was 6.11%, and average leave liability was 194 hours.
- Our trust score (12-month rolling average) remains at 51%. However, the month of April took a 9% dip driven by negative perceptions on signals of our prices increasing while Aucklanders' water use remain restricted. Customer service experience had a positive influence on the overall trust score. "The miracle of having fresh water on tap is undervalued and takes a lot of hard, dedicated work to continue this. All my contacts with Watercare staff had been friendly and helpful."
- Aucklanders continue to report a high level of water efficient attitudes and behaviours, with this metric remaining stable at 72% (12-month rolling average).
- The Extreme Ownership mindset and the investment in cross-functional training to improve first contact resolution are contributing to a continued improvement in NPS, with the rolling 12-month average now at +43 and an agent satisfaction of 77% (12-moth rolling score). The last couple of months we have seen the agent satisfaction score exceeding 80%.
- The 12-month rolling average of complaints closed within SLA at 98.2% well above target, despite the increase in the volume of complaints with the introduction of our new reporting methodology.
- With our continued efforts to capture customers' email addresses and converting them to e-billing, 62% of customers are now receiving their bills electronically.

5. Risk and compliance update

5.1 Update on risk and compliance management

Work has commenced on the revision of the Risk Policy and Framework. This will include a Risk Appetite statement which will be developed and tested at the forthcoming Board/Executive strategy day.

While the risk position has not changed significantly since the last quarterly risk report, the following risks are of note:

- Increased cost of doing business – We are starting to see cost increases due to shipping and raw materials. NZ Steel has indicated a price increase from mid-June 2021 and Humes has indicated price increases from 1 July 2021 of 3–5% with increases of 7–10% for plastic products.
- Third year of drought – The latest MetService weather forecast indicated normal rainfall for the remainder of winter, followed by a dryer spring. As always, these are forecasts until realised and actions to increase supply and suppress demand are continuing.

There are issues with global shipping capacity which is resulting in delays and increasing lead times. As a result, the logistics associated with resupply of specialist chemicals for water and wastewater operations are being impacted and the risk profile is rising. The position is being closely monitored and action is underway to ensure the continuing resilience of these chemicals.

5.2 Risk and compliance incidents

Health, Safety and Wellbeing

Watercare wish to acknowledge the 10-year anniversary of the Onehunga incident which took place on 4 June 2001. A valued member of staff, Philomen Gulland, lost her life, and Ian Winson, Harry Barnett and James Millard were severely injured. Ten years on, this tragedy is a solemn reminder for Watercare to do all within its power to ensure all who work for it, and their contractors, go home safely at the end of their working day.

Health, Safety and Wellbeing incidents are reported separately. The Board will note that we are trying to make more use of lead indicators, and to identify focus areas, relating to current patterns of incidents and future workload.

Non-compliance with resource consents

There were 13 resource consents with non-compliances in April. The Helensville Wastewater Treatment Plant consent has a high risk of enforcement if the actions Watercare is taking are not successful. **Appendix 3** sets out Watercare's consent compliance.

LGOIMA Requests

In April, we received six requests for information under the Local Government Official Information and Meetings Act 1987 (the Act). Four requests were transferred from Auckland Council and two requests were received from the Office of the Ombudsman. Watercare has complied well within the 20-working-day requirement for a response (which is set out in the Act) for all of these requests.

Legal action

- RMA related:
    - Waikato River – BOI: Watercare's evidence has been filed. Awaiting submitter evidence which is due to be filed 18 June.
    - Huia Water Treatment Plant: the hearing has been formally closed. A decision is expected on 31 May.
- Non-RMA related:
    - There are currently no legal proceedings above the value of $400K.

Whistleblowing

There are three whistleblowing reports currently being investigated. These are reported to the Audit and Risk Committee.

6. Update on business areas

The Propero report recommended an in depth look at each area of the business over time. This month, we have the partners involved in the Enterprise Model, Fulton Hogan, Fletcher Building and ourselves to discuss progress on this model to date, deliverables, and what we need to do to improve this going forward. Whilst the AMP will form the underpinning basis for a project programme, there may well be areas we could work on from a single named brand, to closer collaboration through shared workspace, to using the scale of the enterprise to create a combined training academy for water sector employees.

7. Cyber Update

58778	153	100 %	1	0	0
Phishing and Malware emails blocked this month	Malware identified and cleaned	Business Systems patched in line with policy	Critical Vulnerabilities identified and patched *April Microsoft Exchange critical*	Data breaches / data ex-filtration of confidential information	User account Compromise

8. Matters for noting

Significant meetings: CEO Wellington Water; Te Arawa River Iwi Trust in Rotorua; Te Kotahitanga o Ngāti Tūwharetoa Trust in Turangi; CCO CEs; Met Services; PwC; McKinsey; Fletcher Construction; Fletcher Building.

The Board asked for an update on the completion rate of the Watercare Way (code of conduct) training. The completion rate advised at the 30 March 2021 meeting was incorrect. At the end of March, the completion rate was 70%, and as at the end of April the completion rate was 74%. This includes all employees, relevant contractors and those on long-term leave. Since the module was launched in January, we have taken an approach of encouraging completion through business wide communication and through people leaders. We are now targeting people directly who have yet to complete the training.

Jon Lamonte
Chief Executive

Appendix 1

Update on progress following Aurecon, Senate and Propero recommendations – April 2021

Recommendation		Status	Commentary
AURECON			
Water Strategy theme (addressing recommendations 5, 6, 15, 25, 26 and 27)		Ongoing.	As set out in the CE's report at the 29 April 2021 Board meeting, Watercare is working with Auckland Council on the water supply and demand workstream of the Strategy. Watercare has committed to key investments towards the 2030 targets which are a residential smart meter programme and reducing leakage below 13%, aiming for 11%. It is important to note that these targets still imply the need to secure additional water for Auckland, and therefore Watercare's 2020 application to the Board of Inquiry to take water from the Waikato Awa is still required in order to be a prudent water provider for the city of Auckland. Auckland Council are in support of this application.
Customer engagement theme (addressing recommendations 2, 6, 9, 12, 14, 20, 22 and 23)	Mass media (owned, paid and earned)	Ongoing.	There will be two papers at the 1 June Board meeting (narrative, and reputational equity and trust) which will outline our approach and story going forward. We are meeting with communications staff from the Mayor's Office and Council to get their feedback on our narrative. The narrative is broader than our drought response – it looks at water security and safety, investment in capital programmes, and pricing. In terms of specific tactics we have delivered since receiving the Aurecon report: - The current Tapped In gave a thorough overview of our drought response and, in particular to Aurecon, outlined how we are performing against our drought standard. Our next Tapped In will align with the narrative currently being put before council and the board. - Jon Lamonte received media training and extensive messaging about our drought response. He is now the spokesperson, highly capable of talking about our drought response, capital programme/AMP and pricing. - The winter campaign is being confirmed at the moment, focusing on indoor messaging. We are planning less paid advertising and more partnerships. For example, Eden Park will continue to run our messaging at all events and Countdown will distribute a further 30,000 shower timers. We are trying to arrange further on-product messaging, such as stickers on shampoo bottles. We are liaising with Auckland Council so that our collateral is used in its digital channels. - Our stakeholder updates, which go to local and central government officials, are continuing. - We will celebrate the opening of the Waikato A Water Treatment Plant in July, which media engagement beforehand.
	Targeted face to face (forums)	Ongoing.	The targeted face to face forums are ongoing based on the relevant issues. For example, commercial plant tours and top 50 customer breakfasts are scheduled for late June, and the developer forum is scheduled for 1 June.
	Co-design	Ongoing.	This is done as required. Recent examples include My Account and smart meter dashboards.
	Bespoke research	Ongoing.	Currently we are undertaking research on commercial customers and their willingness to pay for future resiliency.
	Deliberative democracy	Ongoing.	Update provided in 1 June 2021 Board pack.
Building trust		Ongoing.	A paper on rebuilding our trust and reputation in response to the drought and other issues is included in the 1 June 2021 Board papers. This paper identifies key issues eroding trust and reputation and develops consistent messaging in response.
Water literacy		Ongoing.	We aim to move our engagement with customers from one-way information flows to include more inclusive and collaborative engagement. This is addressed in the board paper on rebuilding trust and reputation.
Stakeholders relationships		Ongoing.	We have analysed our key stakeholders, their areas of interest and the nature of the relationship as well as the effective channels for communication.
Drought standard and restrictions		Ongoing.	Watercare is working to update its Drought Management Plan (referring to national and international learnings, and lessons learnt from our current drought). The work will include a review of communication with our customers (in the form of focus groups) and with Auckland Council (which will be aligned with the work set out above). The timeline for completion is December 2021.
SENATE			
Definition of new relationship responsibility	Appointment and job description of new relationship role.	In progress.	The Deputy CE will take responsibility for this role identified by Senate. It will be included in the job description.
Creating internal strategy and support to make happen	Develop the strategy	In progress.	This will be discussed at the 5 July Board meeting.
	Put in place in plan to support the implementation of this strategy.	In progress.	This will be discussed at the 5 July Board meeting.
Roadmap for implementation		In progress.	This will be discussed at the 5 July Board meeting.
Establish Rangatira to Rangatira forum	Cement close links, drive change from top of the operational arms	In progress.	The chair and CE currently meet every 6 weeks with the Mayor. There has been discussion of including the Watercare liaison councillor at these meetings. The Council and CCO CEs meet every 2 weeks and a separate meeting between the Council and Watercare CE has recently been setup. There has been discussion whether the respective committee chairs should meet their Council committee equivalents on a 6 monthly or annual basis. This is still to be determined.
	CEs co create succinct relationship charter	In progress.	There has been a respective CE discussion on the topic.
	More effective communication with councillors	In progress.	The current situation will be presented to the Executive and Board for discussion as to appropriateness and relevance.
Make water reform the first step in a new legacy	Agree joint and separate involvement in DIA / government briefing	In progress.	The Deputy CE will raise this with the Chief Strategy Officer at Auckland Council (who has responsibility for the Group water reform outcome).
	Chair to lead recommended joint approach with Mayor	In progress.	To be led by the Chair.

Update on progress following Aurecon, Senate and Propero recommendations – April 2021

Invest in change, create new momentum	Create a new strategic Council relationship leadership role	In progress.	Discussed above.
	Create and embed the future Watercare Council story	In progress.	There will be two papers at the 1 June Board meeting (narrative, and reputational equity and trust) which will outline our approach and story going forward. We are meeting with communications staff from the Mayor's Office and Council to get their feedback on our narrative.
	Confirm new working relationship on external communications	In progress.	Appointment and job description of new relationship role is set out above.
	Identify and advance opportunities for operational and relationship gains (e.g., Watercare as consenting customer)	In progress.	The Chief Infrastructure Officer is involved in a joint committee with Auckland Council and Auckland Transport to improve consenting outcomes. This was established as a result of the recent CCO review. This is the largest interaction between Watercare and Auckland Council.
Build relationship intelligence: invest in and use digital technology	Relationship data and management	In progress.	Watercare is working with the CCO Governance group as to the most effective manner to capture and store information.
	Shared Watercare Council data portal	In progress.	Watercare is working with the CCO Governance group as to the most effective manner to provide information to Councillors and Local Board members. This was an outcome from the recent CCO review. This is being led by the Communications team and will be tested with Local Board members and Councillors before creating the solution.
	Leverage virtual meetings technology	In progress.	The Chief Digital Officer will liaise with the CIO at Auckland Council to understand what steps can be taken to drive the adoption of the existing online meeting technology.
	Bespoke Watercare Council Microsoft Teams or Facebook	In progress.	The Chief Digital Officer will liaise with the CIO at Auckland Council to understand what steps can be taken to drive the adoption of the existing online meeting technology.
PROPERO			
Setting up the new CE for success	Ensure the CE has clarity on the Board's view of critical / priority areas of focus	Complete.	Conversations have been held between the CE and Chair as well as with Board members.
	Keep providing feedback to the CE on what is working well, areas of continuing concern, etc.	Noted.	
	Reduce management presence (in some areas of Board meetings) to assist the lift in strategic focus and ability to hold candid conversations with the CE	To be started.	Discussion only at this point as scope is to be confirmed.
	Work with management to build greater insight in customer reporting	In progress.	Plan to be provided next month by Chief Customer Officer. Work already completed on further reporting measures available. Chief Customer Officer to refine with the CE as to what could be reported in the Board pack.
	Jon is to immerse himself in the company and industry to quickly develop his operational knowledge and awareness of stakeholder and customer needs	Noted.	Key focus has been 'business as usual' with initial focus on customer facing roles and interactions.
	The Board is to provide a key support role – providing clarity of expectations around strategy and management interaction and setting a framework for this engagement	Ongoing.	Regular conversations are being held between the Chair and CE. Work has also started on a strategic plan for the company. This will be agreed with the Board at the 2 July 2021 workshop between Board and Management.
	Regular feedback (and small 'course corrections' as needed) is required early in his tenure as his key strategic, personal, interpersonal, and operational capabilities develop	Noted.	
Focus on core performance	Build future meeting agendas around the "big rock" areas of strategic focus to carve out high-quality focus / dialogue on these key topics. Seek to streamline public meeting time to support this rebalancing of time	In progress.	Forward months agendas are being developed. CE to finalise approach with the Chair.
	Ensure clarity on the "golden metrics" – the most critical performance objectives	To be started.	Post Board strategy day, this will be identified and reported on.
	Increase visibility of risk and performance, especially around H&S	In progress.	Work has started on a different approach to reporting HSW information. The first stage is consolidating all the reported information into one part of the Board pack. For the company, the focus is on lead indicator reporting.
	Reset the CE performance evaluation, and clarify KPIs (especially early in his tenure)	In progress.	The Chair is in discussion with the CE.
	Continue streamlining reporting – address the concern of a bias towards 'good news', use an excellent CE report to frame meetings with a depth of strategic insight	In progress.	First iteration of streamlining the reporting in the 1 June Board pack. Various report templates have been provided as a template for future reporting.
Continue the rebuild of relationships and perceptions of Watercare	Develop a stakeholder engagement plan to track relevant groups and clarify the Board and management's role in leveraging and strengthening these relationships	In progress.	A board paper on "Rebuilding Trust", which is largely about stakeholder relations, is in the 1 June Board pack. A plan for improving the Council stakeholder relationship will be presented at the 5 July Board meeting.
	Maintain communication with the Council through regulatory reforms for clarity on shareholder expectations, potential changes in strategic direction, and upcoming risks and opportunities	In progress.	For Water reform, Watercare is engaged in a fortnightly Steering group meeting with Council officers (Led by Megan Tyler – Chief Strategy Officer). This involves sub-groups in Finance, Iwi relationships, possible legislative impacts and Day 1 operations (working with the Northland Councils).
	Engage with Council around future capability needs (led by the Chair)	In progress.	

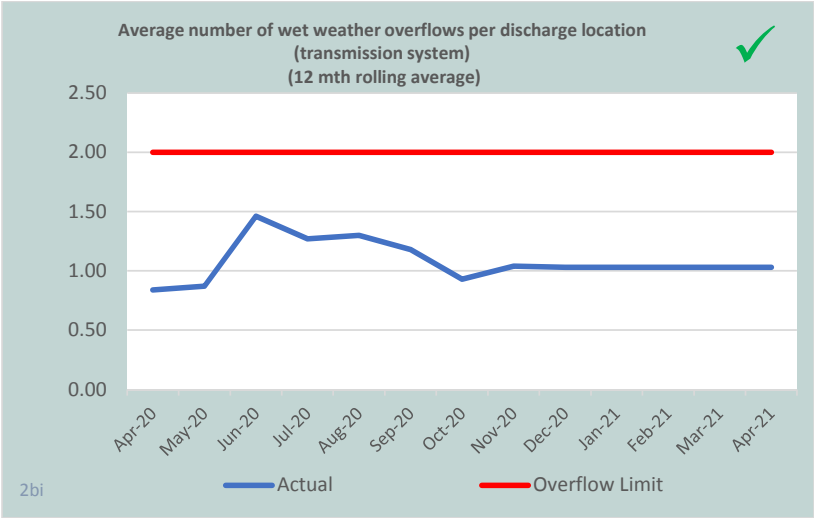
Update on progress following Aurecon, Senate and Propero recommendations – April 2021

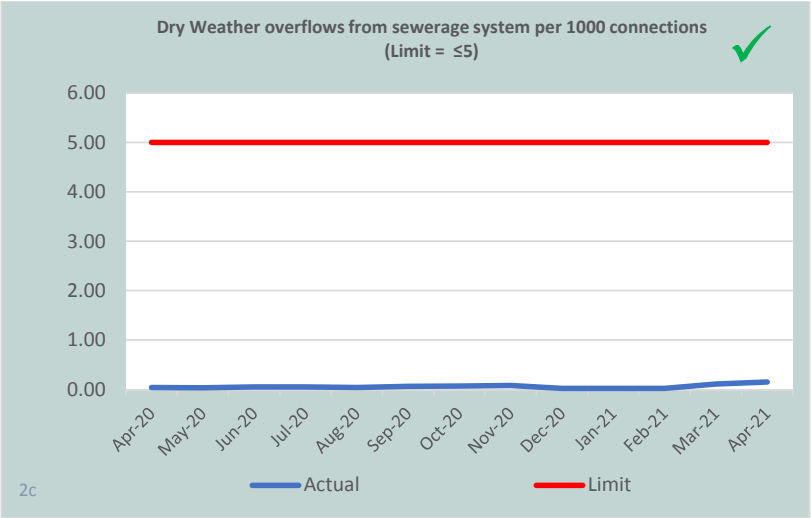
Step out of 'activist mode' and shift to 'thought partnership mode'	**With the CE, reset the Board-management relationship – clarify Board expectations and priorities, reduce management's defensiveness, and build greater collaboration and transparency**	Noted.	
	Management to ensure they are adopting an open stance and sharing a "warts and all" view with the Board	Noted.	
	Board members to focus on constructive challenge / inquiry / debate and ensure they provide a safe environment for management to openly share their challenges	Noted.	
	The Chair-CE relationship will be critical to frame the wider dynamic, and both report a commitment to 'setting a tone from the top'	Noted.	
	Board to demonstrate confidence and provide clarity around expectations to the team	Noted.	
	Board and management commit to providing clear feedback on what is / is not working, increasing transparency and open communication, and decreasing defensiveness	Noted.	
Shift to a thought partnership update	**Clarify key goals and align on the company's core focus**	In progress.	A strategy day has been setup between the Board and management for27 July 2021. The Executive have meeting planned, prior to the Board strategy day, to revisit/ reinvigorate the goals and values of the company. Frances Valintine will be providing support through this process, prior to potentially facilitating the Board strategy day.
	Set clear, aspirational, and realistic goals	In progress.	A strategy day has been setup for 27 July 2021.
	Board and CE-only time	Complete.	A half hour session has been established prior to the start of confidential sessions.
CCO REVIEW			
A number of recommendations set out in the bi-monthly Board update		Ongoing.	Continue to work on the actions that come out of the number of recommendations from the CCO Review. CCO Review update reported to the Board bi-monthly by exception.

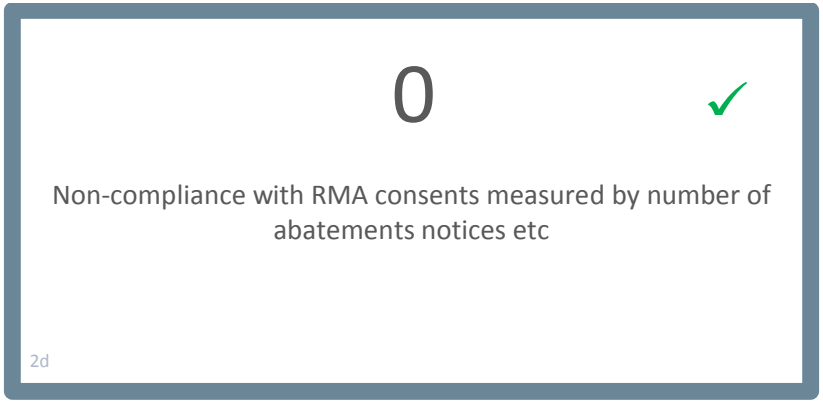
7.1

Appendix 2 – Performance against Statement of Intent measures

SOI MEASURES —Natural Environment







SOI MEASURES — Assets and Infrastructure

100%

Volume of water complaint with standards

1a

100%

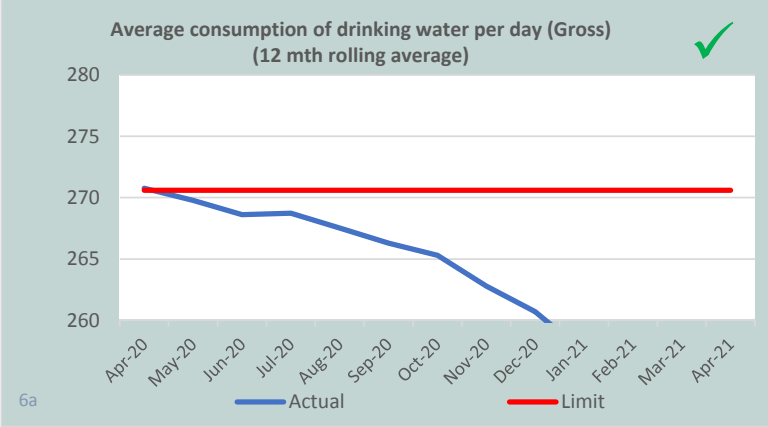
Compliance with Part 4 of the Drinking Water Standards (bacterial)

1a

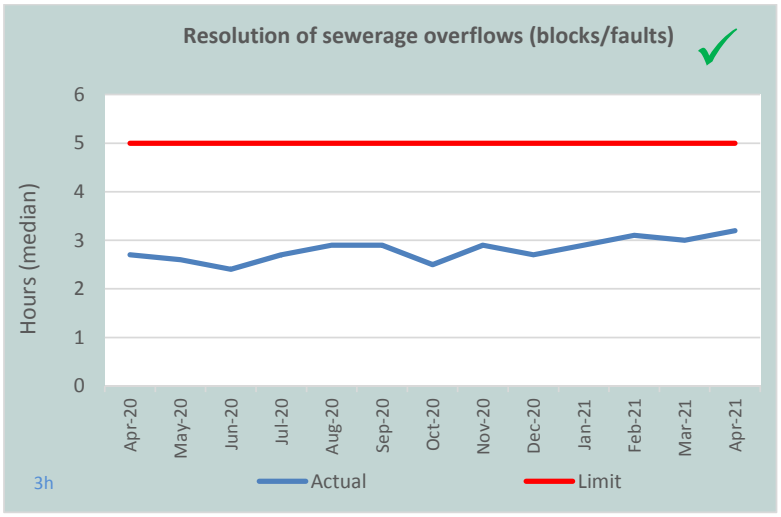
100%

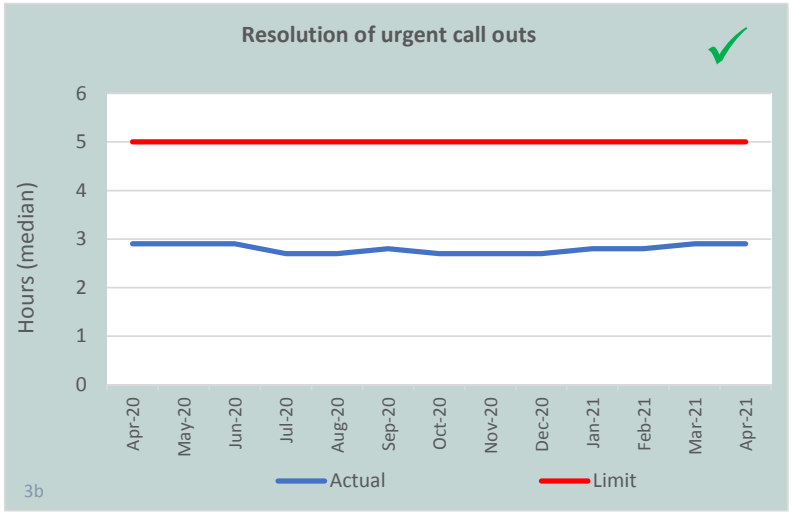
Compliance with Part 5 of the Drinking Water Standards (protozoal)

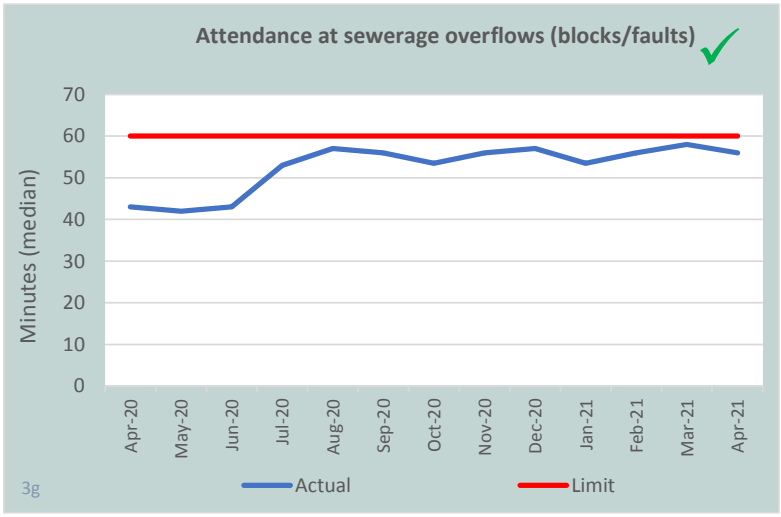
1b

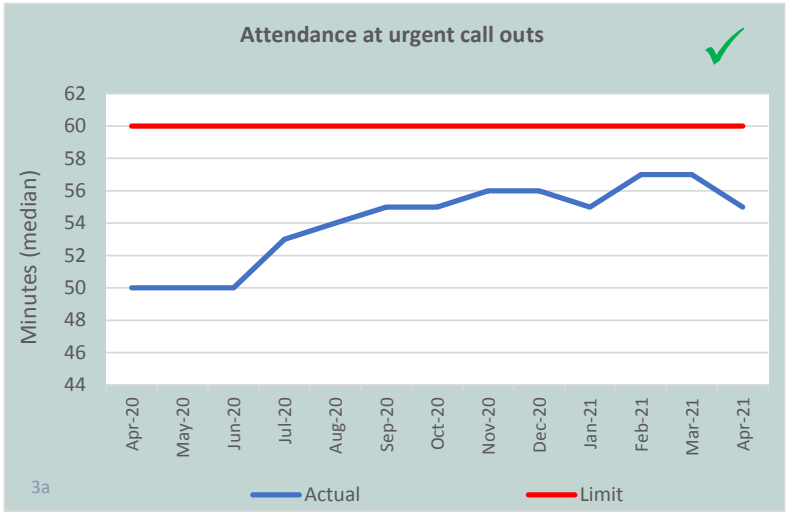


SOI MEASURES – Community and Stakeholder Relationships

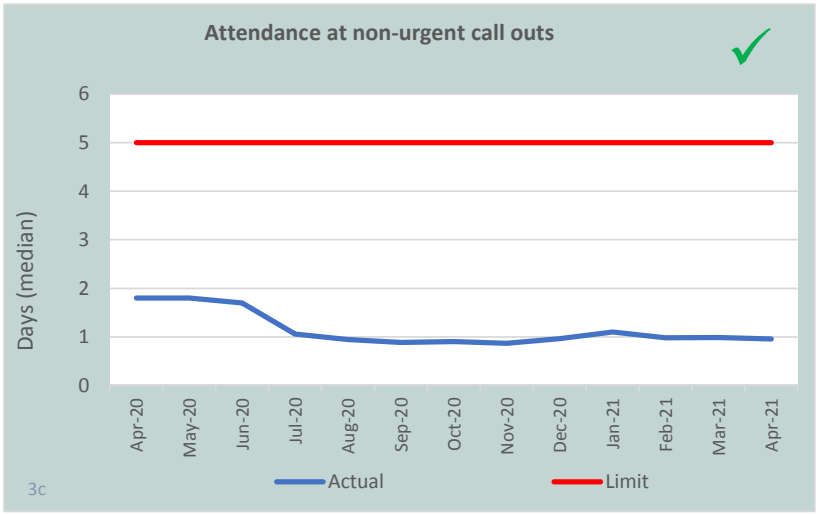


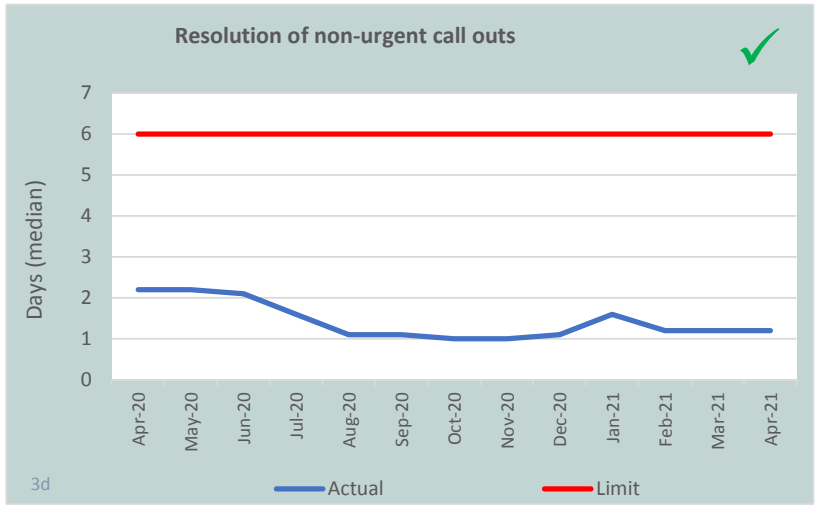


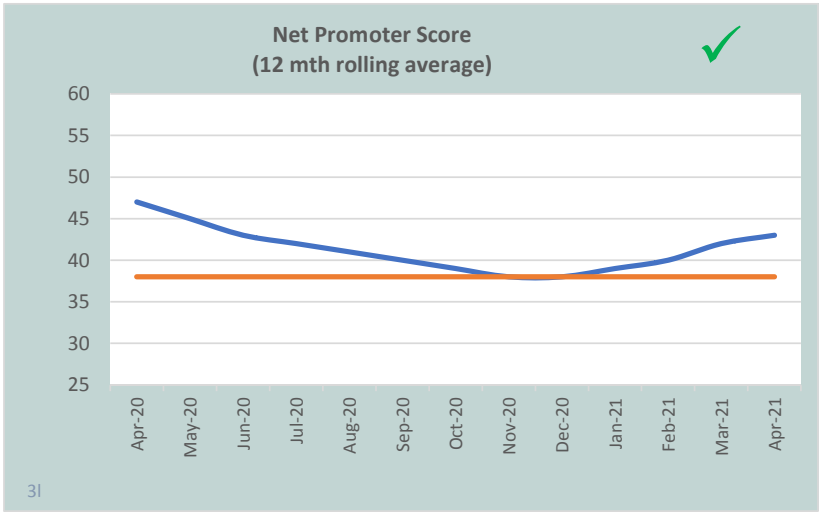




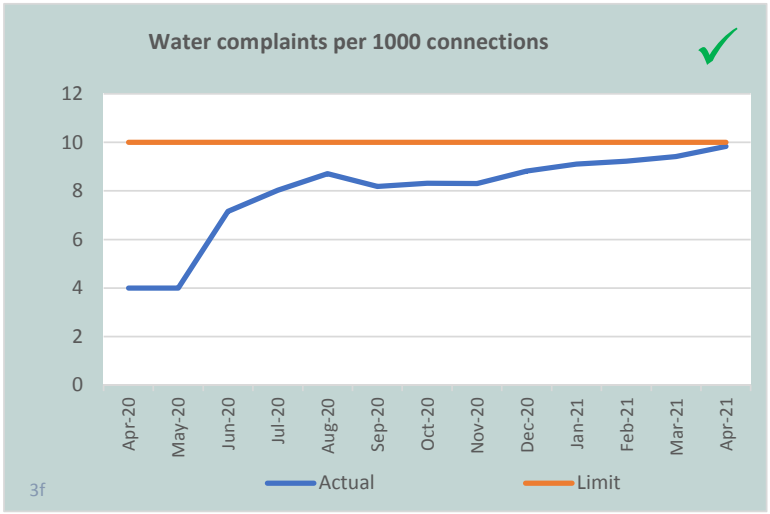
SOI MEASURES – Community and Stakeholder Relationships

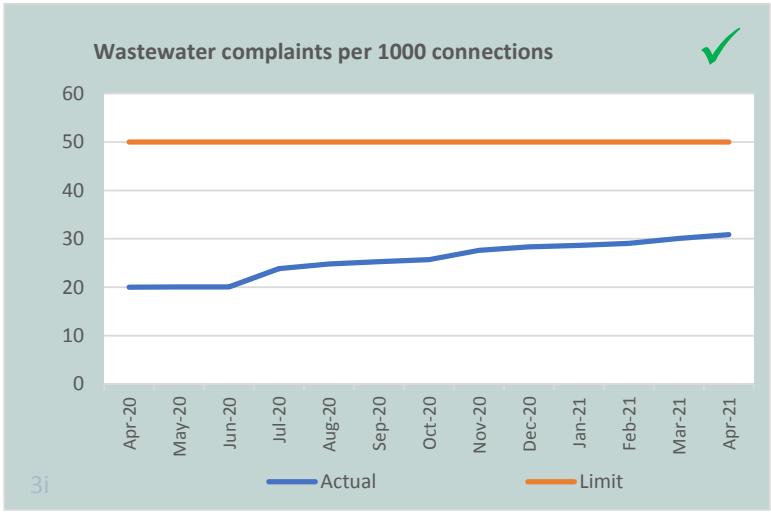






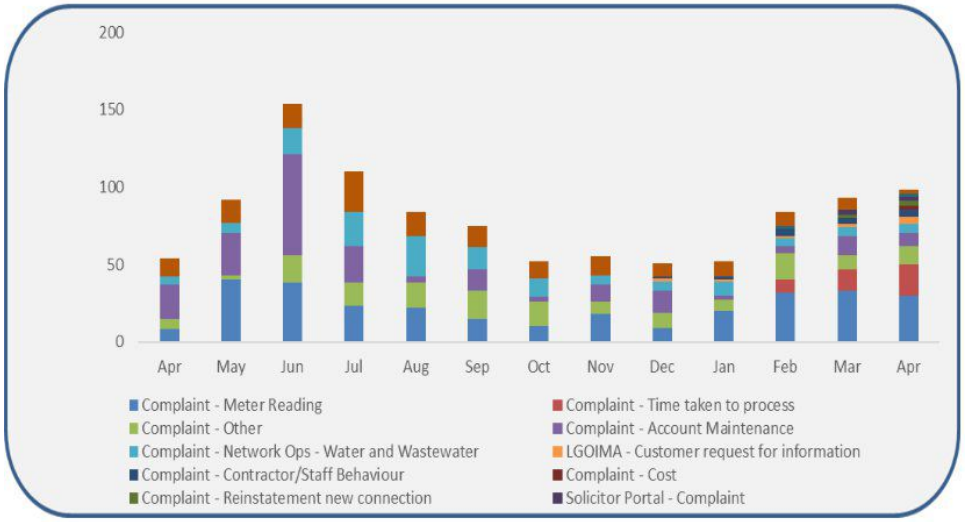
SOI MEASURES – Community and Stakeholder Relationships





7.2

Complaints Performance – April 2021



- We continue to see increasing complaints as we are capturing them across Watercare and introduced new codes like solicitor portal, LOGOIMA, etc to drive more insights
- Rolling average of complaints resolved within SLA is 98.2%
- We are seeing a new theme regarding time taken to process / delays driving complaints

Main Drivers of March 2021 complaints are:

BILLING - Meter readings: False access and meter readings are being submitted by readers, also readers not having appropriate tools on arrival or gate keys. (Solutions are being table & discussed during monthly meetings with MRO,

BILLING - Customers disputing our Policy/Process: Leak allowance value, estimation methodology, high bill triage, point of supply: private leak, SNOT charges during building phase. *(A new high bill triage page has been designed to help agents and customers talk through common causes of unexpected high bills, this is also discussed in weekly stand ups).*

BILLING - Watercare errors/Process errors: Meter reading exemption process is the main driver here, this is being tabled by Insights and Billing to understand where the gap is.

BILLING - Solicitors Portal: Filter changes not obvious to users, causing frustration with booking display *(Watercare responds with a step-by-step information guide demonstrating how to navigate the changes) This is also being discussed with front line staff during stand ups and is being received well by Solicitors.*

NETWORKS/OPERATIONS: Point of supply disputes (increase in customers wanting us to fix their private leaks), Customers claiming damage to their network while reactive work is carried out.

CONNECTIONS: Application handling time (Watercare exceeding application timeframe), lack of response to emails/phone calls, staff behaviour *(Connections will have their own process to manage)*

Additional SOI Measures included in the 2020-2023 Statement of Intent

Capital	Measure	SOI Target	Commentary/Result
Customer & Stakeholder Relationships	We contribute to the delivery of Māori outcomes and deliver on the joint outcomes agreed by Council and CCOs (At least one kōrero with each of the 19 iwi every year and work with them to develop meaningful measures for Māori outcomes)	At least one kōrero with each of the 19 iwi every year	Pending dates and invitations from Chairs and Chief executives of mana whenua entities to meet with Watercare Chair Board and the new Watercare Chief Executive with Te Ahiwaru, Ngāi ki Tāmaki, Ngāti Tamaoho, Ngāti Paoa, Ngāti Whātua Ōrākei, and Te kawerau a Maki. High level meetings with Waikato Tainui continue.
Customer & Stakeholder Relationships	Watercare will operate responsibly. We will meet the 10 DIA targets that relate to customer and stakeholder relationships (refer Appendix E, numbers 3–12). (Meet 100% of DIA targets) (Complaints, Response/Resolution, Bacteria & Protozoal)	Pass/Fail	Pass
People & Culture	We will improve our employee engagement. eNPS	≥20	eNPS survey will be sent to the business on 25 May 2021.
People & Culture	Watercare has committed to the Diversity Agenda Accord. Improve gender workforce split in departments where the split is uneven (Identify 2020/21 baselines and improve on baseline)	10%	Overall female representation at Watercare remains at 35%. From June 2020 to March 2021 female employees in Operations increased by 10% and Infrastructure by 8%. From June 2020 to March 2021, female employees in Digital have decreased.
People & Culture	Watercare has committed to the Diversity Agenda Accord. Attract a more diverse range of applicants to apply for jobs at Watercare (Identify 2020/21 baselines and improve on baseline)	10%	From July 2020 to March 2021, 6% of job applications were received from Māori and Pasifika applicants. From January to March 2021, 8% of applications were from Māori or Pasifika applicants.
Financial Capital & Resources	We manage operations efficiently, keeping costs to customers (collectively) at minimum levels. Percentage of household expenditure on water supply services relative to the average household income	≤1.5	0.85%

Capital	Measure	SOI Target	Commentary/Result
Financial Capital & Resources	We are a financially sustainable business. Watercare group's debt headroom (Set measure in conjunction with Council and establish baseline)	Baseline is 3.54	Financial Control has obtained the financial reporting calculation used in Auckland Council's group financial statements for the debt to revenue ratio and created their own template that automatically draws data from the monthly Management Reports. The Oct-20 debt to revenue ratio was 3.46, Nov-20 ratio was 3.26, Dec-20 was 3.07, Jan-21 was 3.1, Feb-21 was 3.06, Mar-21 was 3.03 and April21 is 2.99.
Intellectual capital	We create new value in our infrastructure supply chain through the Enterprise Model. Establish and implement an Infrastructure Carbon Portal and corresponding toolkit to assess ways to reduce carbon emissions during the construction of water and wastewater assets. (Deliver and implement portal and toolkit. For the Enterprise Model, monitor and report on the target of a 40% reduction post 2024.)	Establish Baseline	Carbon portal progress being made through internal and external feedback sessions. Training modules continue to be completed with 235 sessions taken (across 3 modules) and there are now 88 users with access to the Carbon Portal.
Intellectual capital	We create new value in our infrastructure supply chain through the Enterprise Model. Establish and implement an Infrastructure Cost toolkit across the programme and project to deliver new ways to reduce costs during the construction of water and wastewater assets. (Deliver and implement the toolkit. For the Enterprise Model, monitor and report on the target of a 20% reduction post 2024).	Establish Baseline	An EM Toolkit structure has been set up. Recent tools added to the toolkit include a project scorecard and value capture process to measure, capture and share performance and 40:20:20 ideas/progress.
Assets and infrastructure	Watercare will operate responsibly We will meet the 2 DIA targets that relate to assets and infrastructure (refer Appendix E, numbers 14 and 15). (Meet 100% of the DIA and Auckland Plan targets) (Dry Weather and Wet Weather Overflows)	Pass/Fail	Pass

Capital	Measure	SOI Target	Commentary/Result
Assets and infrastructure	We will develop and use talent, processes and technologies to manage non-revenue water and ensure optimal supply efficiency. (Establish baseline and demonstrate continuous improvements on previous year) by 30 June 2021	Establish Baseline by 30 June 2021	Leak detection of 6000km/year is being conducted with the intention to train the capability in house. Pressure management and smart metering trials are underway citywide. A study to determine the baseline targets matched against international water utilities is underway. Baseline targets will be formed by 30 June 2021. Planned Targets: • Maintain Real losses below 13.7% • By 2025 achieve 136 L/C/d
Natural Environment	Watercare will operate responsibly. We will meet all DIA natural environment targets (refer numbers 1 and 2 in Appendix E). (Meet 100% of DIA targets) (Compliance, PCC)	Pass/Fail	Pass
Natural Environment	We will implement Mitigation measures in line with our responsibility to keep global warming within 1.5oC. We will reduce annual greenhouse gas emissions from Scope 1 and Scope 2 emissions (operational mitigation). (• 2020/2021: Complete work on a plan to achieve a 45% reduction in operational emissions by 2030 • June 2021: Finalise targets in line with ACAP • 1 March 2022: Baseline established and roadmap targets published in our next SOI. These targets will consider the contribution to the region's interim 2030 and 2050 targets. • 30 September 2022: Report on first target and publish targets through to 2024 in the 2021–2024 SOI)	Finalise Targets by June 2021 Establish Baseline by 1 March 2022	Phase two initiated. Gap analysis planning initiated with a focus on people responsibilities and funding approach. Auckland Council 50% reduction target applied in reduction pathway. Input to WaterNZ project for understanding wastewater process emissions in NZ, due for completion by July. Results may impact pathway.
Natural Environment	Water is precious – We continue to encourage our customers to be mindful of their water use The average consumption of water per residential connection. (• 1 March 2021: Baseline established, and sector targets published in our next SOI • 30 September 2021: Report on target and publish targets through to 2024 in the 2021–2024 SOI)	Establish Baseline by 1 March 2022	Connections data and targets for residential water use have been identified, although we need to work through the requirement to ensure we capture apartment usage data as residential use, where and when it is appropriate (particularly as Auckland housing is densifying). This litres per dwelling per day measure is intended to provide greater granularity in performance i.e. where we need to make better progress (i.e. leakage, residential or commercial water efficiency) in order to meet our 2025 target of 253 litres per person per day (gross per capita consumption). This measure will be consistent with our 2021-2025 Water Efficiency Plan.

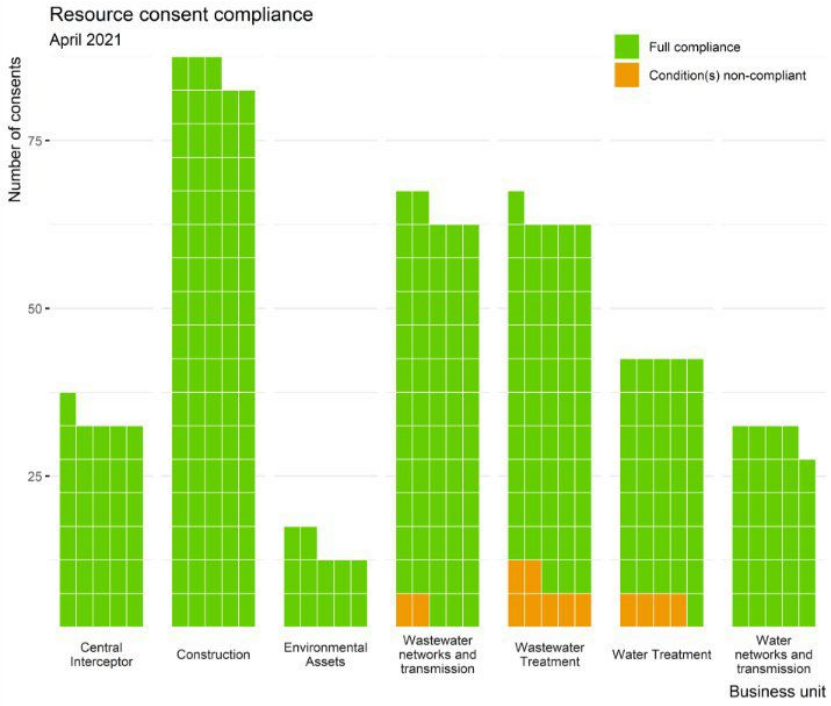
Capital	Measure	SOI Target	Commentary/Result
Natural Environment	Water is precious – We continue to encourage our customers to be mindful of their water use The average consumption of water per non-domestic connection. (• 1 March 2021: Baseline established, and sector targets published in our next SOI • 30 September 2021: Report on target and publish targets through to 2024 in the 2021–2024 SOI)	Establish Baseline by 1 March 2022	Three key areas have been selected for this measure, covering over half of commercial water usage in Auckland. Sector-appropriate water efficiency targets and methodology have been created and documented for these three sectors and the source data has been identified. This measure will take a long-term (5 year) rolling measure of water efficiency. This measure will be consistent with our 2021-2025 Water Efficiency Plan.

Appendix 3 – Resource consent compliance

Resource consent compliance – Watercare (Auckland populace)

Arrows indicate changes from previous month (- indicates no change)

Consents with non-compliances	**13** ↑
Unique conditions non-compliant	**13** ↓
Rolling 6-month average (non-compliant consents)	**13 -**
Consents at risk of enforcement	**1 -** Helensville WWTP



Non-compliances for April 2021

Facility/Asset	Consent	Condition(s)	Issue(s)	Actions	Potential consequence
Auckland-wide wastewater network	R/REG/2013/3743 R/REG/2013/3755	51	Type 1 inspections are not completely in line with consent	Review current inspections and make changes as necessary. Collaboration between Watercare and contractors.	**Minor:** Reporting issue
Helensville WWTP	22225	17	High ammoniacal nitrogen in the discharge (above consented limit). High E. coli in discharge.	Pond desludging to increase residence time and improve treatment; completed winter 2021. Investigation into high E. coli underway.	**High:** Risk of enforcement if actions not successful.
Huia WTP	26979	03 (i)	High aluminium in lagoon	None – upstream value was higher than measured in lagoon so effect of natural processes.	**Minor:** Technical issue due to natural circumstances
Kingseat WWTP	24255	21	High *E. coli* in discharge and historical high ammoniacal nitrogen (winter)	Investigation into high E. coli underway. Plant has addition aeration for next winter.	**Moderate:** Annual non-compliance, ultimate solution (Southwest) is four-five years away.
Māngere WWTP	30962	11	Missing calibration records	Internal procedure issue. Investigating options for replacement or recalibration.	**Minor:** Procedural issue
	33167	37,39,40	Results from former Pond 2 monitoring not reported	Reports in preparation.	**Minor:** Reporting issue

Facility/Asset	Consent	Condition(s)	Issue(s)	Actions	Potential consequence
Omaha WWTP	DIS60050490 DIS60050606	24	UV dose not approved	Engineering investigation into dose application before external review.	**Minor:** Procedural issue
Waikato WTP	120246	06	High sediment and aluminium in discharge	Business case approved for buffering tank. Waikato 50 consent has allowance for more tolerant limits until solution in place.	**Moderate:** Increased reliance on Waikato has increased frequency of non-compliances, but there is a solution in place.
	960101	03 iii)			
Waiuku (Cornwall bore)	WAT60071034	21	Water strategy due September 2020	All supporting information available. Report will go to Council this month (May)	**Minor:** Reporting issue
Waiuku WWTP	DIS60334129	14	High nutrients in discharge during winter	None – Issue is annual percentile calculation	**Moderate:** Repeat annual non-compliance, ultimate solution (Southwest) is four-five years away.

Report to the Board of Watercare Services Limited
Prepared for the 1 June 2021 Board meeting

Watercare
An Auckland Council Organisation

HSW Report April 2021

HSW Update April 2021

Following consultation with Board and Executive members, the Board report format has been revised. Change came from a desire to provide the Board with improved information and understanding of Watercare's HSW issues and risks at Watercare, and the effectiveness of control of those risks. This format is intended to inform and to support discussion. Key points to note:

- Focus on trends rather than individual incidents
- Use of lead indicators as well as lag indicators
- Look ahead to up-and-coming activities and associated risks

What we've seen

Lifting: Lifting can involve two critical risks: working with suspended loads; and working with mobile plant. Over recent months we have had a number of lifting incidents and have initiated an external specialist review of both the CI and W50 projects. The reviews will be conducted in May and will be reported in next month's report.

Critical Risks & Back to Basics: We have identified the need for workers (including contractors) to better understand critical risks and improve controls and their implementation. As the client, Watercare has an opportunity to support alignment within the contractor group to create industry consistency.

We have used the successful Back to Basics campaign format to design a critical risk focus programme with our contractors which will be extended across the Operations and Customer teams.

Vehicle use: While injury numbers related to vehicle use are very low, there are a significant number of close calls and incidents involving vehicle damage reported every week. In addition, e-Road records show speeding in fleet vehicles. The Fleet Management team is working to collate lead indicators for leaders to use to identify issues and address risks of vehicle incidents.

Manual Handling: Manual handling is Watercare's most common mechanism of harm, leading mostly to muscular-skeletal and hand injuries. These injuries account for more than 60% of Watercare's lost time and can lead to long-term pain and loss of function.

The Industrial Athlete programme has completed its discovery phase at Rosedale. A number of activities have been identified that have poor ergonomic design. The next step for the programme is to use learning teams to develop solutions to eliminate or minimize risk. This is expected to be complete by August.

Current Activities

Audit: The annual ISO 4801 audit was conducted in May. We received accreditation for the next two years with six minor non-conformances. Areas of focus include:

- Reporting and document management
- Training records management

The auditor noted, 'clear areas of improvement and evidence of a foundation being laid for future progress' as well as a 'softening of silos' within the organization.

Our ISO 4801 accreditation remains in place for two years. Currently, organisations are phasing into the updated ISO 45001 standard. Following discussion with the auditor, our recommendation is to remain with ISO 4801 until we have clarity of requirements under water reform.

Human Synergistics HSW Review: Human Synergistics have presented the business results to the Executive and are presenting to the Board in the confidential section of this month's meeting. Results are currently being cascaded through business units.

Champions are being identified in each business unit who will work with specialists from the People and HSW teams to develop specific business unit plans. Champions and specialists are currently being trained.

Looking Ahead

Tunnelling: We are entering the tunnelling phase of the CI Project. There has been a significant uplift in training both in specialist skills and equipment (eg. hyperbaric work) and general underground inductions and familiarity. A pipe-jacking training facility is being built at Māngere and will be online in August. Tunnelling safety management plans have been accepted by WorkSafe and reviews of all stages of works are being conducted on site. Equipment testing is underway and emergency response plans and teams are being exercised.

Leadership engagement: Work is underway to increase leadership and Watercare visibility on our sites. This includes providing leaders and Project Managers with clarity of responsibilities with overlapping PCBUs and communication tools. We are recording leadership walks in iCare and will have data from that in next month's report.

HSW Resources

Reporting: Visibility of information and extracting reports from the iCare system remains problematic. HSW is working with a team from Digital to improve access to data and to develop reports. We are also working on providing wider access and visibility of incidents to enable business unit leads to view and manage current incidents.

HSW structure and resources: The Watercare HSW team structure is under review in consultation with the Executive, to ensure appropriate support. Current gaps:

- Systems and reporting
- Training delivery and management
- Work with Infrastructure and Operations support functions, eg. Design, Operations Excellence
- Succession

From the regulator

New Zealand has adopted a new classification system for hazardous substances

On 30 April 2021, New Zealand adopted a new classification system for hazardous substances under the Hazardous Substances and New Organisms Act 1996 (HSNO). This new system is the Globally Harmonised System (GHS).

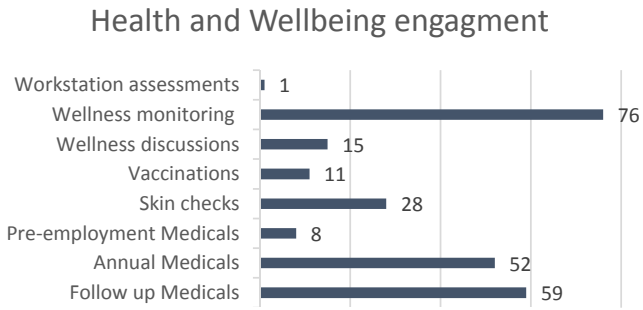
This change mainly affects the rules for importers, manufacturers, and suppliers of hazardous substances.

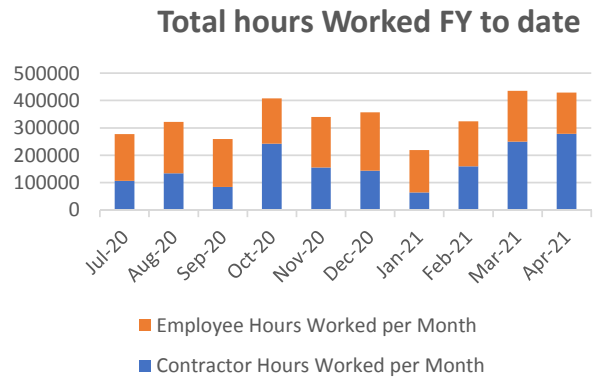
Watercare is working with Responsible Care to provide communication to workers and ensure compliance with the new system.

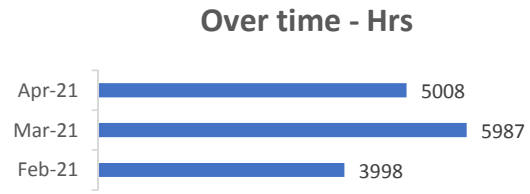
Wellbeing Quarterly

Employee Assistance Program April 21

Total no. of clients	Total no. of sessions	Top 5 work issues
12	22	Discrimination, Harassment, Performance, Relationship with Manager







Health and Wellbeing initiatives for next 6 months

- **Health monitoring and records –** An electronic system is being sought to replace paper records. This will enable us to meet legislative requirements, improve service to staff, and ensure information is available when required.
- **Pre-employment and mid-employment functional screening and functional job demands requirements** – We are mapping functional requirements of physical jobs for inclusion in employment agreements. We are also trialling methodology to assess potential employees' functional capacity for work.
- **Psychosocial & psychological hazards** – We are using the HSW review survey and the Auckland Council Hauora review to identify psychosocial hazards for our workers.
- **Injury management training** – Training is underway to improve compliance with pain, discomfort and injury management process to assist with improved handling of claims. This will support best outcomes for our workers, help us meet legislative requirements and manage injury management costs.
- **Development of resources, education and workshops** – Currently developing material regarding EAP services to help improve wellbeing and work performance and reduce absenteeism.
- **Flu vaccination**s to be rolled out in May 2021.

8

HSW Metrics April 2021				
Context	**No. of employees** 1100	**Total Hours worked** 429172 WSL – 35% Contractor – 65%	**No. days overtime** 626 days	**Leave Liability** 22320 days Or 20 Days on average per employee
System	**Average days to incident completion – iCare** 47	**Current No. of cases open older than 3 months in iCare** 992	**Number of inspections** 125	**Number of Close Calls** 10
Engagement	**H&S Representative Numbers** 38	**# of Safety Committee meetings held** 8	**Feedback received via iCare** 132	**Senior Leadership Safety Walks** 5 Tier 1,2,3 & Board
Safety	**LTIFR** 8 A 20 % decrease on the previous quarter Benchmark ≤5	**TRIFR** 16 A 15% decrease on the previous quarter Benchmark ≤20	**Number of people hurt** 11 9 – WSL 2 – Contractors	**Total days lost:** 16 10 days attributed to a single injured thumb
	No. of over speeds exceeding 10% of Speed Limit 7546 40% decrease on the previous month	**Safety Training YTD** 286 unique training	**Contractor Inducted** 1374 Contractors inducted online since August 2020	**Critical risk exposure** 32 From 25 incidents recorded in iCare

1: Shorting of battery during lift

Contractor: McConnell Dowell
Infrastructure – Newmarket Viaduct
iCare number HRC0019160
Critical Risk – Working with or near live energy

What happened:
During this a lift of a battery pack, a lift hook made contact with the battery terminals causing a short and damage to the battery. The circuit breaker on the charger engaged, shutting down the system.

Our Actions

- Procedure modified to include a master link for the battery lifting process incorporating shackles and soft slings.
- Add rubber shield on top of the batteries and the lid before the slings are attached to lift.
- Hooks and slings checked and tested by a rigging inspector to ensure integrity post-incident.
- Create a step-by-step photo process to be placed on the inside of the lid of the charging box highlighting the process steps of changing over batteries.

Our Learnings

- Batteries need to be considered an electrical hazard.
- In the same manner as live electrical works batteries should be isolated or controls put in place to reduce contact with a conductive surface.

2: Excavator Rollover

Contractor: McConnell Dowell
Infrastructure & Operations Pukekohe WWTP
iCare number HRC0019309
Critical Risk – Working with mobile plant

What happened: Whilst removing a stockpile of soil, a plant operator accidentally put pressure on the foot pedals and tipped off the face of the stockpile. The excavator landed on its cab. The incident was notified to WorkSafe.

Our Actions

- The operator was taken for medical assessment (no injuries).
- The operator returned a negative drug and alcohol test.
- Review of procedure and equipment found that as the size of the stockpile reduced, the operator did not change the procedure resulting in them working on a small area.

Our Learnings

- Change is ongoing and we need to be alert to it at all times.

3: Chlorine – accidental minor release

Watercare
Operations – Huia WTP
iCare number HRC0018962
Critical Risk – Working with Hazardous Substances

What happened: Whilst working on a chlorine dose line that was not in service, some residual chlorine was released in the form of chlorinated water. The maintenance delivery (MD) employee working on the line was not affected by the release, but the amount was sufficient to trigger the alarm. The Chlorine rose to 1.5ppm for 2 min before dropping to zero. Emergency services attended site.

Our Actions

- Two Plant Operators wearing breathing apparatus went to the chlorine building to check the line and established that the levels had returned to normal.
- Emergency planning was reviewed.
- Assessment of whether the alarm will need to be deactivated for maintenance work in future.

Our Learnings

- IXOM, our chlorine provider, will provide the chlorine maintenance work going forwards. Though MD are capable of delivering chlorine maintenance services, the experience of IXOM is best placed to deliver this service.
- This was an excellent test of the emergency procedures relating to a chlorine leak.

4: Uncontrolled pipe slip

Contractor: Fletcher
Infrastructure – Waikato 50
iCare number HRC0018945
Critical Risk – Working with suspended loads

What happened: A 250T crawler crane was being used to move a length of 710OD HDPE pipe 2-3m. When the crane took the weight, the pipe started to move due to gravity. While the pipe was sliding, it collided with, and damaged, a cable cap that was connected to an RCD box. There was an exclusion zone set up, all workers were out of the trench before the lift and the plan was communicated amongst those on site.

Our Actions

- Made site safe.
- Reviewed lift plans and reassessed lift.
- Removed pipes and assessed damage.

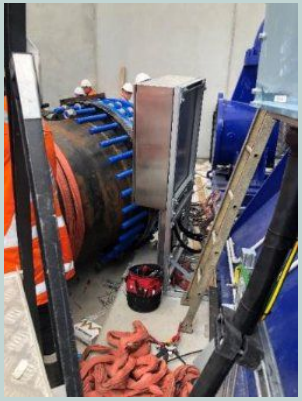
Our Learnings

- Exclusion zones are an important means of mitigating risk during a lift.
- Include a pre-lift meeting to discuss lift plan in general methodology.
- Better communications between dogman and other parties during lift.

5: Spool piece fell off stand

Watercare
Infrastructure – Waikato Drought Project / Boost PS
iCare number HRC0019227
Critical Risk – No. Manual handing

What happened: Two workers were moving a 4m long spool piece utilising the load skates. They had not taken into account the additional weight of a dismantling joint making one end of the unit a lot heavier than the other. When the spool piece was pushed, it fell off its supports against the pump upstand. The spool piece contacted an electrical cabinet, damaging one of the legs.
NB the cabinet was not live.



Our Actions

- Post-incident drug and alcohol testing undertaken.
- The load was re-rigged and test fit completed.
- Reducer installation plan revisited, and method changed to ensure improved access via roof for direct crane installation.
- Review use of load skates during reducer installation.

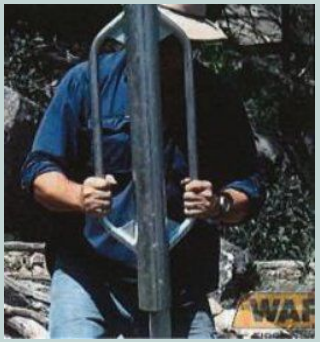
Our Learnings

- There can be a gap between a lifting plan and installation plan.
- Planning of any activity needs to take into account the whole end-to-end process.

6: Injured thumb

Contractor: Fletcher
Infrastructure – Waikato 50
iCare number HRC0019141
Critical Risk – No. Use of hand tools

What happened: A worker was using a waratah driver to hammer a waratah into the ground. They lifted the driver above the top end of the waratah and on the downward drive, caught their thumb between the waratah and the hammer. Appropriate gloves were being worn at the time.



Our Actions

- First aid applied on Site.
- Worker was taken for medical treatment.
- All waratah drivers now have a fabricated protection skirt.
- Safety Alert issued by our contractor.

Our Learnings

- Review tools on Watercare sites.
- Ensure only tools that are fit for purpose are used on site.
- Workers should be trained and competent to assess the risks related to the use of equipment.

7: Risk Control Failure

Contractor: Fulton Hogan
Infrastructure – Rosedale – Digester 3 Refurbishment
iCare number: HRC0019117
Critical Risk – Working in explosive/flammable areas

What happened: It was observed by Operations staff that during the cutting of a pipe, subcontractors failed to wear gas detectors.
Wearing of gas detectors was an agreed control between Ops, Infrastructure and the contractor, to manage the ongoing risk of gas leaks from the remaining 3 operational digestors.

Our Actions

Operations reported to the onsite Infrastructure team which in turn reported this to the contractor.
The contractor stopped work and reissued gas detectors.
FH has reviewed the event with their subcontractor, particularly communication of site risks and controls with their subcontractors.
The contractor has introduced a 'hold point' of taking and recording gas readings before commencing each task on the digester.

Our Learnings

Never assume that a control has been implemented.
When identifying risks make sure that any minimum expectations are communicated and then checked for compliance.

8: Trend analysis – concrete cutting

Contractors: March Cato, BPC, Fletcher, FH
Infrastructure – Glendowie & Waikato Drought Project
iCare numbers: HRC0018981, HRC0019073, HRC0018970 &HRC0019001
Critical Risk – Working with Hazardous Substances

What happened:
During April there were four separate incidents where it was noted that our contractors were not using water suppression whilst cutting concrete. Without sufficient water suppression the exposure to dust for both those cutting and those nearby is significantly increased.

Our Actions

In each case the contractors were directly engaged by the person observing the action and the correct methodology was put into place.

Our Learnings

Risks from concrete dust are not well understood by workers, and the importance of water as a control must be communicated across the industry.

8

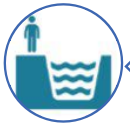
Appendix 1 Watercare – Critical Risks

Working with flammables or in explosive/flammable areas

Working with hazardous substances

Working with fixed plant and equipment

Working alone or isolated



Working around waterbodies

Stacking, racking and storage of materials

Working with suspended loads

Working in or near live traffic (includes road corridors, construction and operational sites)

Digging and working in excavations (includes tunnelling)

Working in confined spaces

Working with or near live energy (electrical, mechanical, pneumatic, hydraulic, etc)

Working with mobile plant

Working at height

Report to the Board of Watercare Services Limited
Prepared for the 1 June 2021 Board meeting

Watercare
An Auckland Council Organisation

Central Interceptor Report for April 2021

Purpose:

Information

Team

Prepared	Signature	Recommended	Signature	Submitted	Signature
Michael Webster Contract Manager Central Interceptor		**Shayne Cunis** Executive Programme Director Central Interceptor		**Jon Lamonte** Chief Executive	

Natural Environment	People and Culture	Customer and Stakeholder relationships	Assets and Infrastructure	Intellectual Capital	Financial Capital and Resources

9.1

1. Recommendation

It is recommended that the Board notes the report.

2. Future outlook

The launch of the micro tunnel boring machine (MTBM) for Link Sewer C was due to occur in May. The first drive is to Haycock Avenue.

Following the discovery of a number of fossils including a whale vertebra while excavating the Māngere Pump Station shaft in late 2020, Watercare is entering into a partnership with Auckland Museum and mana whenua to collect and house these taonga as well as telling their stories. Museum staff will be conducting additional research on the spoil pile at Greenwood Road over the coming months.

The Electric Spoil Haulage Truck proposal is to be reviewed, and the business case will be submitted to the Chief Executive for approval in June. The proposal covers spoil haulage for shaft sites near sensitive stakeholders, along with reducing the projects greenhouse gas footprint.

3. Health, Safety & Wellbeing

From this month there will be a separate Health Safety and Wellbeing Report which will incorporate CI.

Critical Risk Assessment into Lifting Activities

To address the request received from the Board, an independent subject matter expert has been engaged by the GAJV to carry out a risk review of lifting activities across the project. The exercise will assess existing controls against local legislative requirements, GAJV internal processes and industry wide best practices. The draft report was due to be made available on 21 May 2021.

A Level 2 emergency response drill was held at May Road to test the effectiveness of the Central Interceptor's Incident Management Plans. The exercise was planned and overseen by Mines Rescue who were present on site during the drill. Worksafe were also informed, keeping it as realistic as possible. The initial feedback was very positive, especially considering this was the first full scale Level 2 drill on the project. Learning points included further training for the scribe, additional signage at the Incident Control Point and improvement in the initial time taken to assemble the response team. A further exercise is being planned for late May at the Māngere site.

Members of the project team, including the HSW Manager, visited the CRL project. Various aspects of how CRL are managing work and hazards were discussed, along with a visit to its training facility. It was noted that both projects have similar approaches to hazard management. Going forward we intend to measure ourselves using the same tool (Risk Management Maturity Model RM3) so we can highlight potential areas of focus and improvement.

4. Delivery

Due to delays primarily resulting from Covid-19, there has been an extension of time of 100 days to the completion of Section 1 (MPS operational – now May 24) and Section 2 (Southern system fully operational – now 24 October). However, the overall contract completion date remains December 2025.

The Watercare quality team have continued to work collaboratively with the GAJV in developing quality KPIs and audit schedules. Particular focus has been applied to shaft lining at Māngere Pump Station, jacking pipe production (Hynds) and concrete segment production (Wilsons), which are critical to ensuring the success of the project, in particular achieving the 100-year design life.

4.1 Māngere Pump Station

The site continues to develop, with work on many fronts (photo below) as we are near the commencement of tunnelling.

In summary:

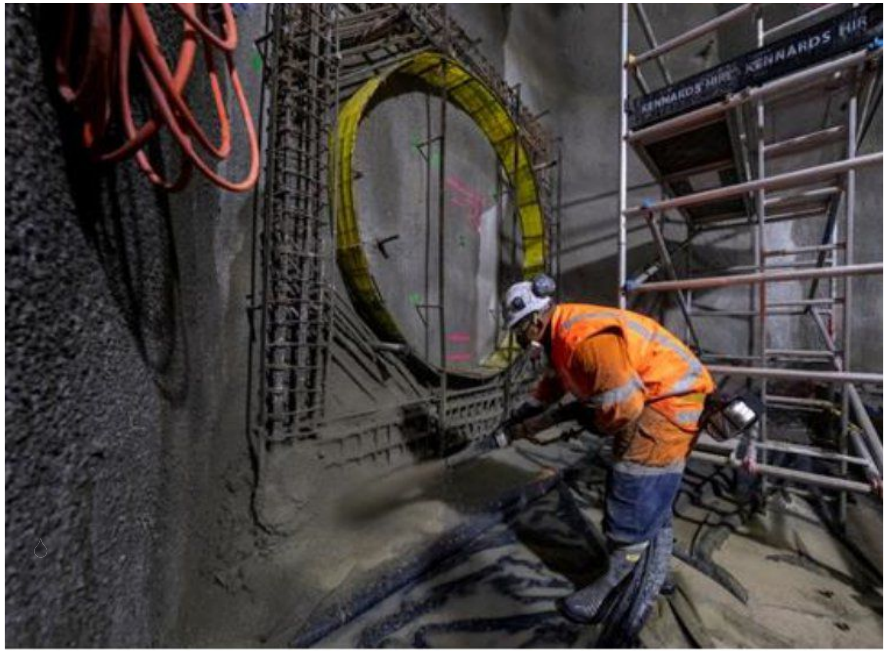
- Shaft dewatering remains ongoing and unchanged with no evidence of environmental impact or movement to structures within the Wastewater Treatment Plant (WWTP).

- Permanent walls installation on the inlet shaft and main pump station (photo below) are now 70% and 55% complete respectively. The main pump station shaft lining works was expected to halt following the lift in May to prepare for the TBM launch.

- Assembly of the TBM and gantry crane continues. The gantry crane and remaining two electric locomotives for the main TBM have been delivered to site, along with grout plant and TBM water plant which are now being assembled.
- Installation of the rising main continues, with works to cross the effluent channel and odour beds, is continuing.
- 11kV ring main ducting installation has now been completed and hauling of electrical cable has begun. Demolition of Odour Bed 4 inside the Māngere Wastewater Plant also began with reinstatement which was to begin in May.

4.2 May Road

Shaft A excavation has been completed, the base slab poured and the tunnel launch eye installed (photo below).



The gantry crane has been lifted into place over the shaft and the noise shed construction has commenced (photo below).

Construction of the Roma Road accessway and bridge has been completed. This has passed Auckland Council inspection and we are awaiting issue of the building consent from Council before it can be made operational and improve traffic management onsite.

4.3 Other Sites

Construction of the Branch 9B diversion chamber is ongoing in Keith Hay Park. Soft ground conditions have been encountered which will lead to a GAJV claim.

Excavation of the shaft at Haycock Avenue is continuing and has reached a depth of 26.4m below ground level.

Preparations for shaft excavation at Dundale Avenue is continuing.

Minor construction works continue in Miranda Reserve and Wal Walmsley Park.

5. Consents & Approvals

There were three incidents involving the discharge, or potential discharge, of high pH liquid at May Road on 14, 16 and 17 April. Formal notice to the contractors has been served regarding our concern with the current standard of concrete management on sites and that we will not tolerate it going forward. We continue to work with them to improve concrete management on the project beyond standard construction practices.

6. Stakeholder & Communications

Consultation continues with local residents regarding the draft design of the new play-space in Glenavon. Good progress is being made incorporating as many of their suggestions as possible.

The quarterly meeting of Meola Creek Community Liaison Group (CLG) was hosted, with a construction update from the contractor and progress report by Watercare on pest removal plans for Norgrove Reserve, as part of the Waitītiko Enhancement Plan.

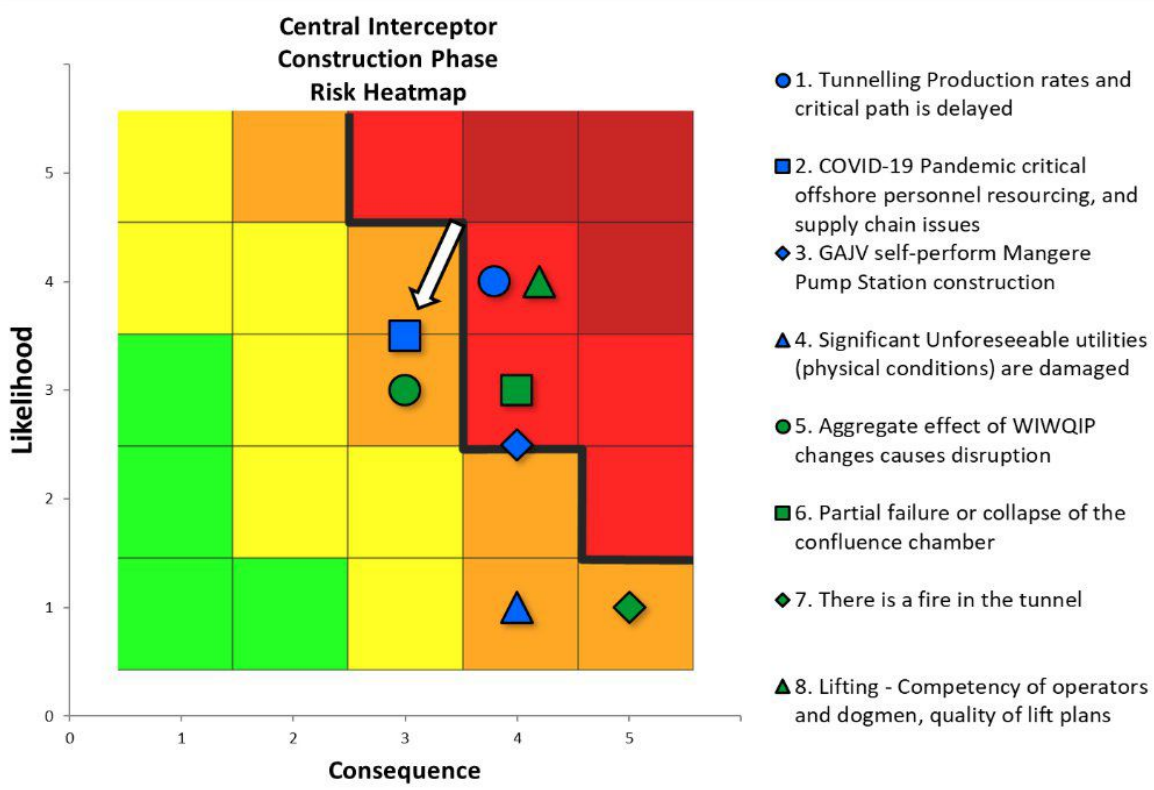
Planning has commenced for the main TBM (Hiwa-i-te-Rangi) 'cutting-through' celebration in the shaft at Māngere Pump Station.

We worked with the contractor to deliver its very successful local residents' and schools' walking tour of the May Rd construction site, with some 120 attendees, culminating in hand-printing of the MTBM, Domenica (photo below).


SMITH
Domenica
Domenica
DANIELO
Watercare

7. Risks

While there have been no significant movements in any of the existing risks over the month, focus continues to be placed on the preparation for MTBM and TBM launch. Planning continues, with workshops and planning with GAJV to continue managing these risks appropriately.
April saw the opening of the Australia/New Zealand “travel bubble” which permits quarantine free travel between the countries which has facilitated staff movement between the two countries. While this will streamline the process for bringing in resourcing from Australia, there remains significant local and now international (from Australia) competition in the labour market which continues to present risks and challenges to the project.
The GAJV has been in the process of updating their Risk Management Plan and processes to account for organisational changes. This update has been facilitated through joint workshops to ensure compatibility with Watercare’s risk management process. A draft issue of the updated report was received at the end of April.



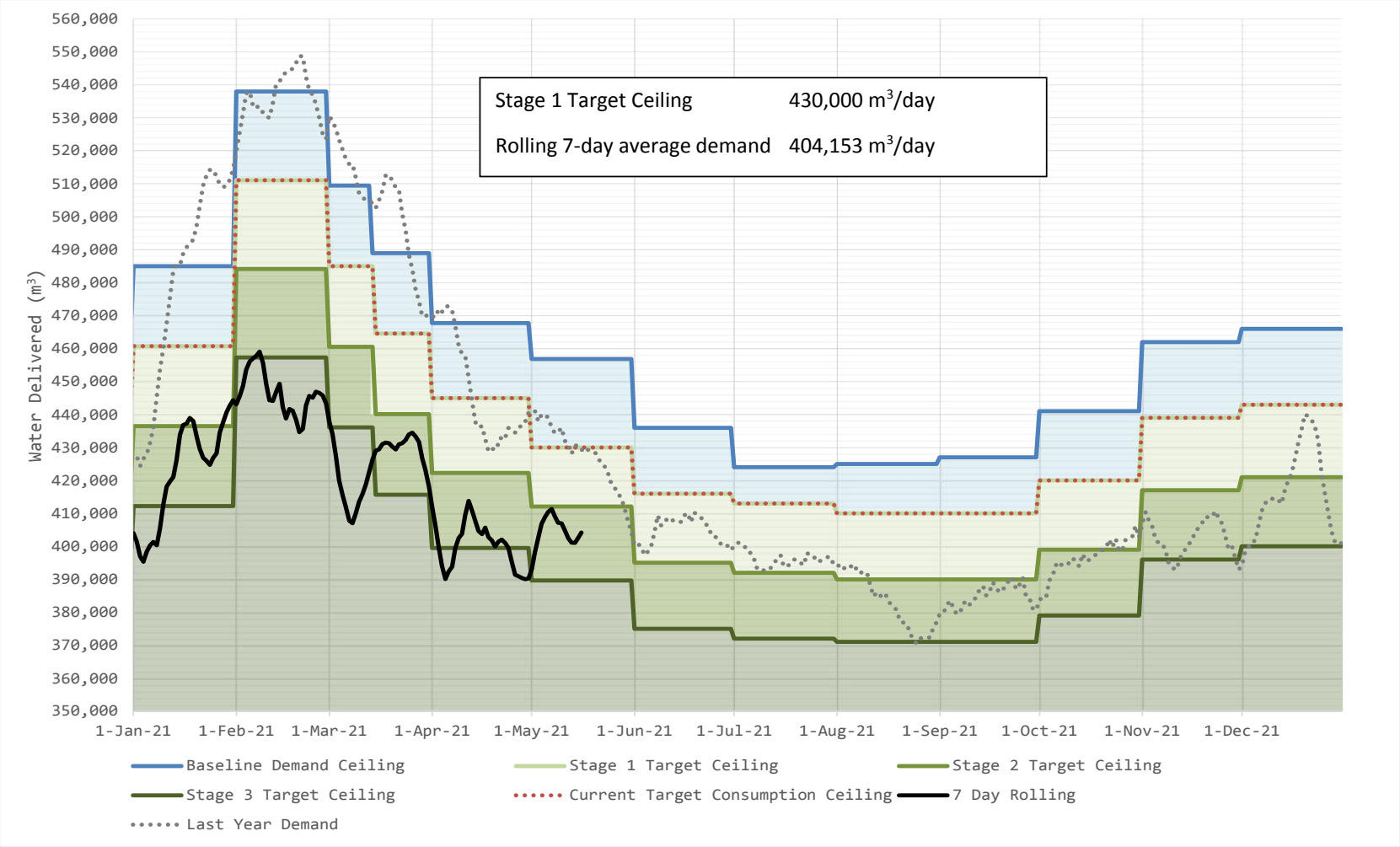
Risk Description	Risk Reduction Actions
Tunnelling production rates and critical path is delayed Ground conditions are more adverse than baselined in GBR results in delays to programme and additional costs.	Additional probe drilling for specific ground conditions. We will actively monitor ground conditions and tunnelling rates during operation. TBM has facility for real-time monitoring.
COVID-19 Pandemic critical offshore personnel resourcing and supply chain issues Resourcing – critical staff not able to obtain exemptions to be able to enter New Zealand. Now presents a critical risk to the project.	$5M expenditure to procure TBM from Germany instructed in late February 2020. Engagement with GAJV for critical resourcing requirements from overseas. WSL can offer endorsements if necessary, to pass government requirements. GAJV have recruited a number of local resources for critical roles. Close monitoring of supply chain impacts due to COVID-19 incl. engagement with suppliers.
GAJV self-perform Mangere Pump Station construction Contractor proposing to self-perform delivery of Mangere Pump Station works. Quality and/or commissioning issues arising from Insufficient capability within Contractor to successfully deliver works.	Approval process and in-depth review of contractor capabilities. Engagement of appropriate sub-consultants where required. The GAJV presented their delivery plan, but it had significant areas of concern. At this time, we have not approved and highlighted that any delays in delivery are, in our view, a result of the contractor's performance.
Significant utilities (unforeseeable physical conditions) are damaged Utilities not shown on drawings or with visible evidence on site. Inadequate investigations	Ensure services investigations are undertaken by the Contractor Review Contractor method statements and risk assessments for utility location.
Aggregate effect of WIWQIP changes causes disruption Sum of WIWQIP changes impacts GAJV scheme procurement activities. Limited internal WSL resource availability to manage additional workload causes delays.	Change management process in place. Considering all viable options for delivery of WIWQIP work, and impact of timeframe for delivery of works without impacting CI performance warranties. Jacobs resourcing available to support CI team members.
There is a fire in the tunnel Construction with pre-installed liner, some incident e.g. electrical fire causes the lining to catch fire. Fire in the tunnel impedes evacuation and rescue operations.	Tunnel management controls around ignition sources. Electric locomotive to reduce flammable risk. Detection and suppression systems. PHMPs being agreed with Worksafe. Early contractor engagement with mines rescue AME system - real-time personnel tracking Limiting visitor and personnel access to essential only.
Partial failure or collapse of the confluence chamber A lack of understanding/underestimation/inaccurate assessment of the existing asset condition The Contractor's methodology is unsuitable, or a deviation from the approved approach.	Provisional Sums removes cost pressure for condition survey and investigation to provide the most appropriate solution. Work will proceed on least risk option. Shutdown works to be programmed for dry season/periods of low flow. Workshop between contractor, designers, and treatment plant to identify the most appropriate solution
Lifting Suspended loads pose a risk of being dropped and causing injuries to staff.	Competent operators and dogmen, operating with high quality lift plans. Establishment of critical rules, with a specific rule to eliminate workers under suspended loads.

Report to the Board of Watercare Services Limited
Prepared for the 1 June 2021 Board meeting

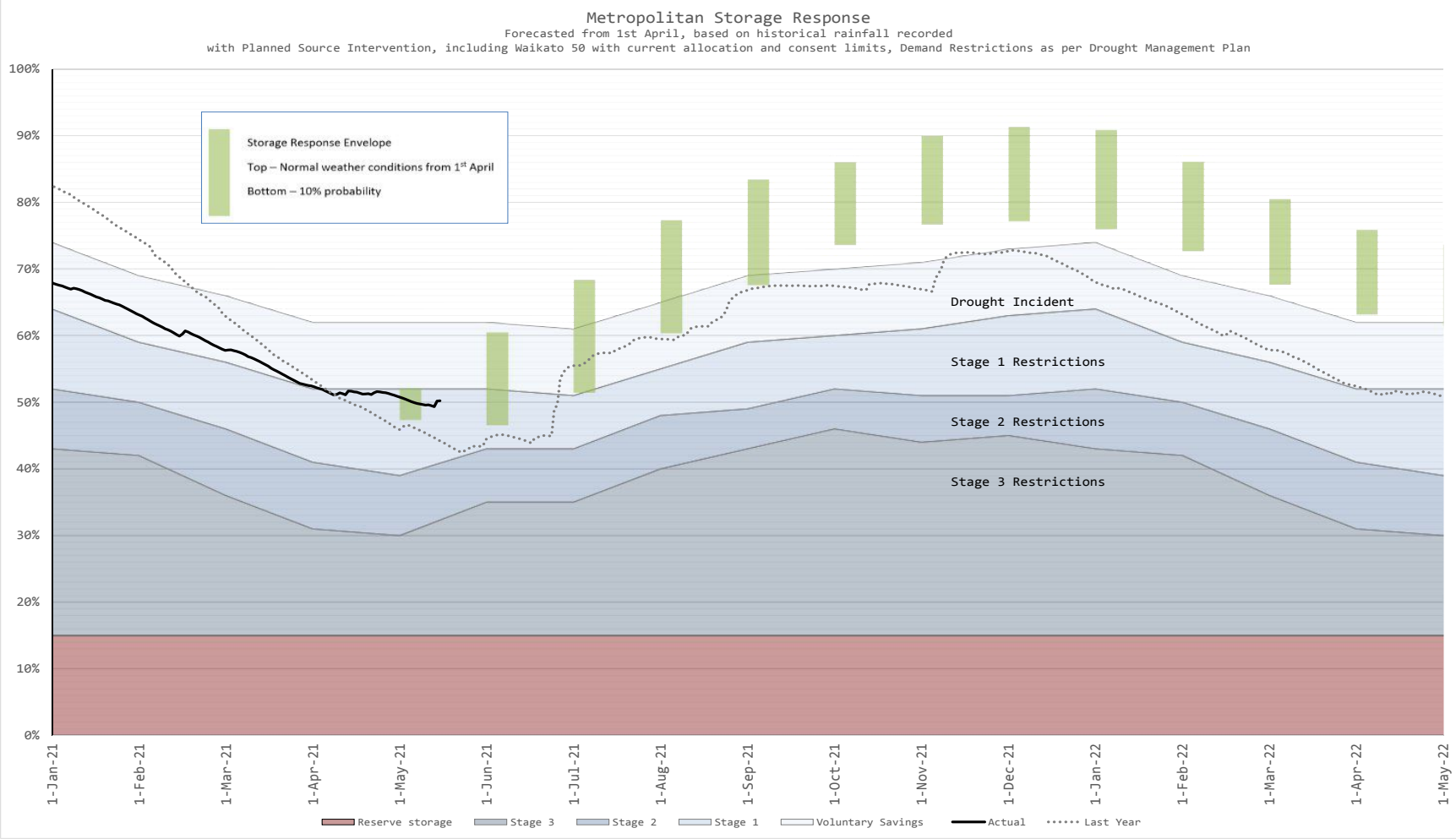
Drought Report April 2021

Watercare
An Auckland Council Organisation

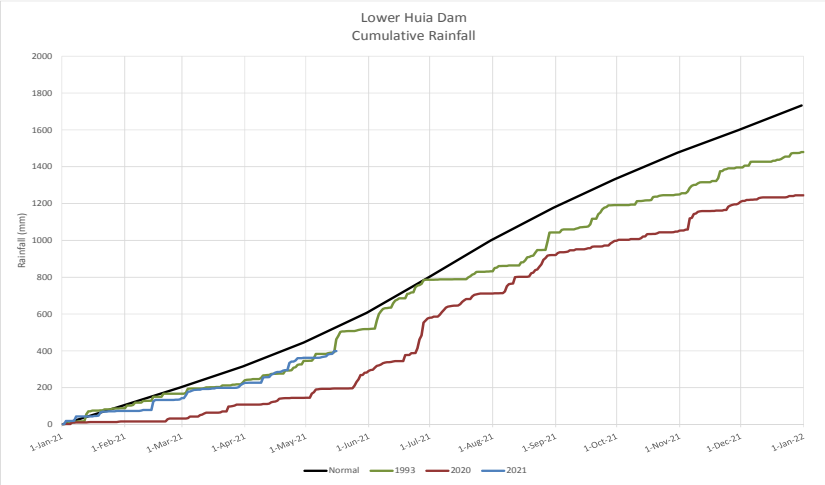
Auckland Metropolitan Total Water Demand

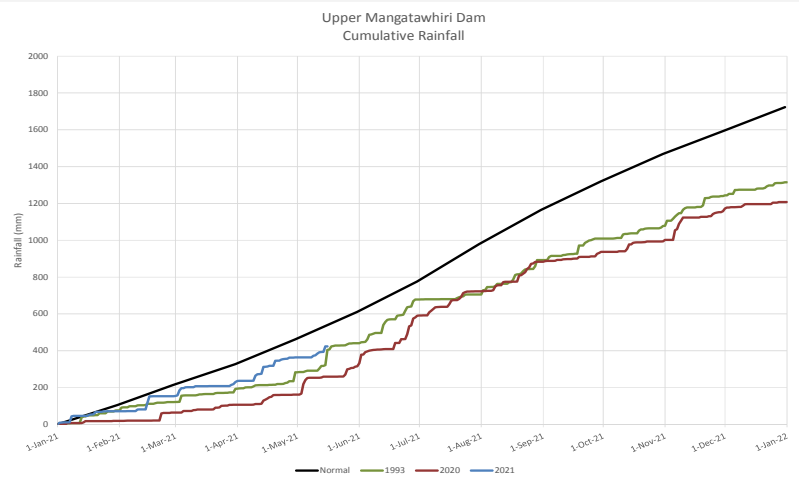


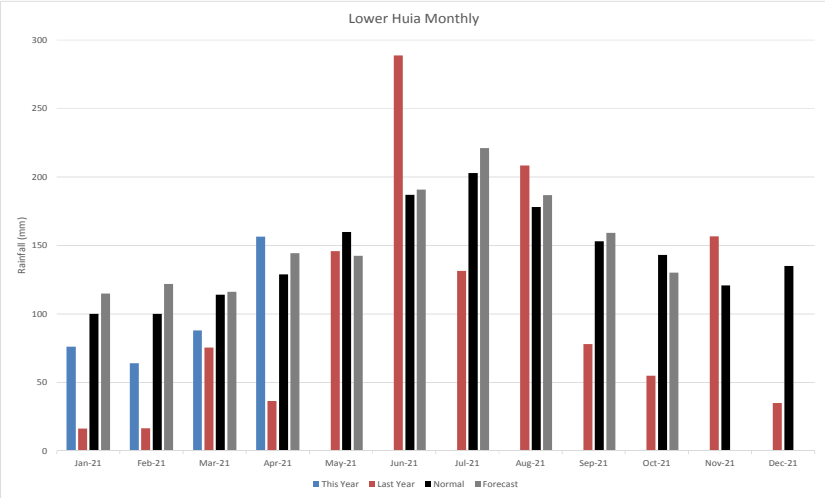
Auckland Metropolitan Storage Response

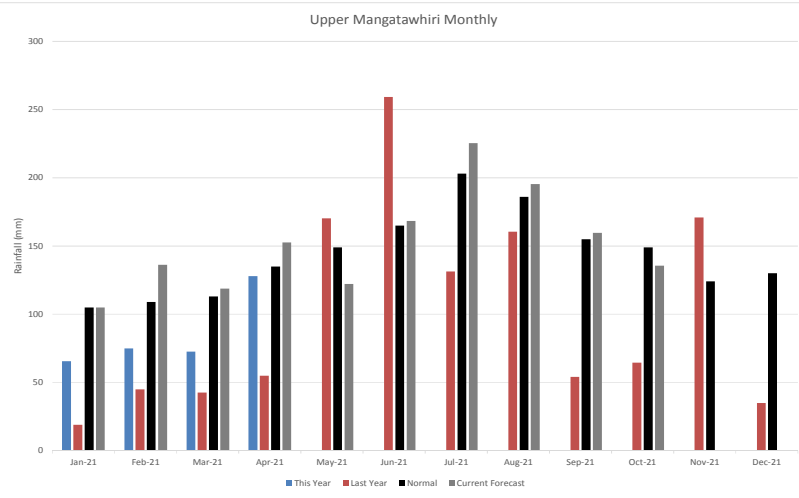


Rainfall Summary









AUGMENTATION STATUS UPDATE

Location	Pukekohe Bore	Hays Creek dam in Papakura	Waitākere Water Treatment Plant
On track			
Update	5MLD in service	Stage 1 = 5MLD in Service from 5 February Stage 2 = 12MLD Commissioning due by December 2021	8MLD increase in service by August 2021

Location	Waikato Water Treatment Plant (existing plant)	Ardmore Water Treatment Plant	Onehunga Water Treatment Plant
On track			
Action	Additional 25MLD in service	Low flow operation reconfigured to 80MLD – 250MLD	Stage 1: 22MLD completed January 2021 Stage 2: 24MLD May 2021

Location	Waikato 50
On track	
Action	Stage 1 = 50MLD will be in service on 14 July 2021 Waikato No.1 water main boost pump station in beneficial service since 12 May 2021 with some final testing ongoing

NON-REVENUE WATER STATUS UPDATE

Activity	Creating Smaller District Metered Areas and Pressure Management
On track	
Action	Target is to develop district meter areas with less than 10,000 connections for 65% of the city • Stage 1 Waitākere – rezoned from 6 DMAs to 24 DMAs, 95% complete • Stage 2 Maungakiekie – rezoned from 1 DMAs to 4 DMAs, 80% complete

Activity	Leakage Control
On track	
Action	• Increase ground surveying of leak detection to 6,000km a year • Fix all moderate to major leaks detected within 5 days • 4500 km surveyed to date • 3402 leaks found • 7.41 MLD saved to date

Activity	Meter Replacements
On track	
Action	Improve accuracy of customer meters • 26,911 domestic meters replaced YTD, target 30,000 • 450 commercial customer smart meter loggers installed to date, target 2000 by August 2021

Report to the Board of Watercare Services Limited
Prepared for the 1 June 2021 Board meeting

Watercare
An Auckland Council Organisation

Iwi Relationships

Purpose	**Team**			
	Prepared & recommended	Signature	Submitted	Signature
Approval	**Richard Waiwai** Poutiaki, Tikanga Māori (Principal Advisor)		**Jon Lamonte** Chief Executive	

Natural Environment	People and Culture	Customer and Stakeholder relationships	Assets and Infrastructure	Intellectual capital	Financial Capital and Resources
					

9.3

1. Ngāti Whanaunga, Whanaunga Kītahi

General Background

Ngāti Whanaunga and its associated hapu number 620 according to the latest census number. The tribal rohe of Ngāti Whanaunga is defined by the traditional coastal markers – mai Nga Kuri a Wharei ki Te Arai o Tahuhunuiarangi (from Mahurangi harbour, near Warkworth, to Waihi Beach, Bay of Plenty). Ngāti Whanaunga is one of the iwi of Ngā Mana Whenua o Tāmaki Makaurau (the Tāmaki Collective). It is also a member of the Pare Hauraki Collective and the Marutūāhu Collective.

Ngāti Whanaunga has received collective redress as part of the Tāmaki Collective Redress Deed and will receive collective redress as part of the Pare Hauraki Collective Redress Deed. It is also intended Ngāti Whanaunga will receive redress through the Marutūāhu Iwi Collective Redress Deed (yet to be initialled).

On 29 June 2011, the Crown recognised the mandate of the Ngāti Whanaunga Incorporated Society and the mandated negotiators to negotiate a comprehensive settlement of the historical te Tiriti o Waitangi/the Treaty of Waitangi claims of Ngāti Whanaunga with the Crown. The mandated negotiators and the Crown entered into an agreement in principle equivalent on 22 July 2011. On 25 August 2017, Ngāti Whanaunga and the Crown initialled a Deed of Settlement (the Deed). The Deed is subject to ratification by the members of Ngāti Whanaunga and conditional on the enactment of the settlement legislation. Subject to ratification by the members of Ngāti Whanaunga, the Ngāti Whanaunga Rūnanga Trust will manage the settlement assets on settlement.

Chair – Mike Baker

General Manager – Honey Renata

- The offices of Ngāti Whanaunga are situated in Coromandel
- Ngāti Whanaunga kaitiaki are active influencers throughout Watercare projects
- Ngāti Whanaunga are active in the fisheries and aqua-culture space

Ngāti Whanaunga engagement with Watercare

- Warkworth, Snells Algies
- Westhaven Pump Station
- Central Interceptor Project
- Hunua Ranges
- Waikato River
- Mana Whenua working group

http://www.ngaatiwhanaunga.maori.nz/home/

2. Te Patukirikiri Iwi Trust

Moehau te maunga ki Te Aroha

Tīkapa te moana

Marutūahu te tangata

Background

Te Patukirikiri is an iwi whose area of interest stretches from East Auckland, including Waiheke Island, across to the western shores of the Hauraki Gulf and the north of the Coromandel Peninsula.

Te Patukirikiri is one of the iwi of Ngā Mana Whenua o Tāmaki Makaurau (the Tāmaki Collective). It is also a member of the Pare Hauraki Collective and the Marutūāhu Collective.

Te Patukirikiri has received collective redress from the Ngā Mana Whenua o Tāmaki Makaurau Collective Redress Deed and will receive collective redress through the Pare Hauraki Collective Redress Deed. It is also intended Te Patukirikiri will received redress through the Marutūāhu Iwi Collective Redress Deed (yet to be initialled).

Interim Chair – Wiremu Peters

Kaitiaki Representative – Paulette Reidy

- Te Patukirikiri are an active member and participant at the Watercare Mana whenua Managers kaitiaki forum
- Te Patukirikiri tribal office is are situated in Thames
- Patukirikiri are made up of 3 marae

Te Patukirikiri engagement with Watercare

- Central Interceptor project
- East Coast Bays branch sewer
- Westhaven Pump Station
- Grey Lynn tunnel
- Beaumont street gravity sewer
- Wairau (North Shore) wastewater pump station

http://www.patukirikiri.iwi.nz

Report to the Board of Watercare Services Limited
Prepared for the 1 June 2021 Board meeting

Watercare
An Auckland Council Organisation

CCO Review Recommendations

Purpose: Information

Team			
Prepared and recommended	Signature	Submitted	Signature
Rob Fisher Company Secretary		**Jon Lamonte** Chief Executive	

Natural Environment	People and Culture	Customer and Stakeholder relationships	Assets and Infrastructure	Intellectual capital	Financial Capital and Resources
					

9.4

1. Purpose and context

Reporting bi-monthly to provide an update on progress implementing CCO review recommendations.

- Continuing to engage with the CCO Monitoring Group to progress and participate on recommendations as their scope and timeframes are confirmed.
- Status updates are provided by exception, where notable progress has been achieved or where progress is slower than expected.
- **CCOs and local boards reset how they engage with one another (R-34).** The CCO CE group has approved a combined template for use with local boards. Twenty one Local Board workshops are scheduled, to review the CCO forward works programme and outline the degree of engagement expected for each initiative including opportunities for community input (links with R-45, lead agency). Management attendance has been requested at the workshops, with final approval by all local boards expected in July 2021.
- **CCOs make more effort to co-ordinate how they consult the community on and implement local projects (R-53).** Implementing combined engagement plans (R-34) will highlight opportunities to improve community consultation, supported through joint communication activities (links with R-45, 'lead' agency).

2. Progress made

Recommendations that can be actioned now are:

2 of 24 are specific to Watercare.

- **The Council formulates a three waters strategy (R-15).** Long term demand targets have now been agreed at the Environment and Climate Change Committee in April. We are progressing three areas to support the overall strategy;
    - Developing a plan for network wide residential smart metering.
    - Investigation of potential savings that can be 'locked in' as a result of lower demand currently experienced through restrictions and the drought campaign.
    - Investigation into an economic level of leakage and further review of the measurement approach for leakage to align with international best practice.
- **Watercare (and AT) submit their AMPs and detailed supporting information (R-16).** Confirmation from Council for the submitted AMP is expected in May 2021.

Non-Watercare specific.

- **Council reviews the way it requires CCO's to monitor and report on risks and risk mitigation measures (R-19).** Continuing to work with Council and CCO Risk Managers. A summary of further opportunities to improve risk reporting is being prepared for discussion at the CCO CE's meeting in June 2021.
- **The council establishes a small team to draw up detailed, implementable strategies that give CCOs more strategic direction, starting with strategies on water, economic development and stadiums (R-20).** Continuing, being progressed in parallel to R-21.
- **Council establishes a strategic planning process in which CCO boards and the governing body hold workshops to discuss CCO work programmes and priorities, with the results fed into each CCO's letter of expectation and statement of intent, as well as into the annual budgeting and planning processes (R-21).** Discussions underway with CCO CE's to identify areas of improve the strategic planning process. Agreement to form a small team with representation to be confirmed by each CCO.
- **The council prepares a letter of expectation setting out its expectations of each CCO and of CCOs generally (R-22).** A draft was presented at the Board meeting in April with feedback submitted to the CCO Monitoring group. All feedback will be discussed at the CCO Oversight Committee in May 2021. Upon completion, a revised governance manual (R-29) and 'no surprises' policy (R-31) will follow.
- **The governing body spends half a day each year visiting each CCO to better understand its business and culture and to informally build relationships (R-27).** All CCOs have provided availability options for visits. Watercare is tentatively scheduled for August 2021.

- **The council draws up a protocol governing information requests between the governing body and CCO's (R-32).** Council have developed a policy and protocol for the sharing of confidential information with governing body members. This will form the basis of the protocol for CCOs, expected to be completed by the end of May 2021.
- **The quarterly meetings of council and CCO executive leadership teams have a formal agenda (R-49).** A forward agenda programme is being developed, scheduled for completion by June 2021.
- **New council and CCO staff receive instruction during their induction on the need for CCOs to operate at arm's-length but also to be accountable to the council (R-50).** In progress with the Council Governance Capability team. Development of learning modules is underway with input from across the Council Group and will be available to all CCO staff who engage with Council and elected members.

Pending

- **The council rewrites its governance manual so the focus is squarely on its expectations of CCOs, removing policies to a separate document and requiring incoming directors and senior managers to read the manual (R-29).** Pending statement of expectation (R-22). Expected that the governance manual will no longer be required in its current form.

Recommendations that require CCOs and Council to work together:

2 of 18 are specific to Watercare.

- **Resolve consent processing delays (R-17) and clear measurable minimum performance levels when reviewing consent applications and formal mechanism for objections (R-18).** The steering group have reviewed the final recommendations from the working group. Following alignment with Council's Regulatory Services plan, a CCO delivery team is being established, with the steering group to remain in place.

Non-Watercare specific.

- **The council and CCOs review the quality of the service their call centres provide, including by ensuring an up-to-date, group-wide phone directory is on hand containing job descriptions and contact details of all staff (R-41).** Currently finalising requirements with council, estimate June 2021 completion.
- **CCOs appoint a lead agency when working jointly on projects (R-45).** Workshop held to identify areas for improvement, with a focus on increasing visibility of cross CCO projects with local boards to achieve greater efficiencies and minimising disruption. The 'lead' agency to have a clear role, governance and comms mandate. Tabled for discussion at the CCO CE group in June 2021.

- **CCOs report regularly on the nature of the complaints they receive and how long they take to resolve them (R-54).** CCOs have shared their current practices, with notable similarities (defining and managing complaints) and differences (use of systems, reporting capability and established service levels). Watercare's approach compares favourably, Priya Thuraisundaram is evaluating the different CCO approaches to advise on a more consistent outcome.
- **CCOs' statements of intent contain a key performance indicator on complaint-handling (R-55).** Progressing in line with R-54 above. Agreement to include a 10-day SLA for complaint resolution, with a further workshop to determine the KPI for % resolution within SLA. The industry standard is 80% with Watercare currently exceeding a self-imposed 95% target. Estimated completion by July 2021.
- **Council updates its brand guidelines to ensure clear and consistent use (R-57).** Rachel Hughes is continuing to engage with Council. Updated brand guidelines will be submitted for committee approval in June 2021.
- **CCOs follow the Council's quality advice standards and encourage staff to participate in its quality advice training (R-59).** A Quality Advice programme is being established by the Council Governance Capability team. Watercare staff have been identified to attend a workshop, tentatively scheduled for June 2021.
- **The Council and CCOs work together to draw up group policies on shared services, the development of leadership talent and remuneration (R-61)**.
    - **Remuneration**. The draft policy received feedback at the board meeting in April. The Chief Executive is managing feedback directly with Council.
    - **Shared Services**. A workshop between Council and CCO leadership was held to discuss scope, principles and the need for a business case. Ongoing

Recommendations that require further work.

Non-Watercare specific.

- **The Council makes compliance with the procurement policy mandatory on all CCOs to reduce costs and minimise duplication (R-64).** The CCO CE meeting in April identified additional changes required; the ability to escalate non-compliance and a recognition that all procurement is covered by the policy, with flexibility to accommodate specialist procurement. The final draft will be discussed by the Strategic Procurement Committee and will submitted for approval at the Finance and Performance in June 2021.

Report to the Board of Watercare Services Limited
Prepared for the 1 June 2021 Board meeting

Watercare
An Auckland Council Organisation

Asset Management Plan 2021–2041

Purpose	**Team**					
	Prepared	Signature	Recommended	Signature	Submitted	Signature
Approval	**Jock Lay Yee** Asset Management Plan Manager		**S Webster** Chief Infrastructure Officer		**Jon Lamonte** Chief Executive	

Natural Environment	People and Culture	Customer and Stakeholder relationships	Assets and Infrastructure	Intellectual capital	Financial Capital and Resources

10.1

1. Recommendation

It is recommended that the Board approve the Asset Management Plan 2021–2041 (AMP) (**Appendix 1**) subject to final proof reading and confirmation from Auckland Council that there are no changes required to the AMP arising from the Mayor's proposal and decision-making meeting on 25 May 2021.

2. Key points

AMP capital investment profile

The capital investment programme and funding plan, presented in this AMP document, was approved by the Board for input to the Auckland Council's draft 2022–2031 Long Term Plan (LTP), at the 23 December Board meeting.

There has not been any indication from Council that changes are required. Confirmation will be sought from Council following the Mayor's proposal and decision-making meeting on 25 May 2021.

AMP document

The AMP document has undergone two reviews by the AMCC. The latest was on 20 May 2021. Their feedback has been incorporated in the final document.

The document incorporates:

- **Section 1** – Visual Executive Summary highlighting AMP deliverables.
- **Section 2** - Asset Management Plan 2021-2041
    - an Introduction that highlights delivering value for our customers and delivering Māori outcomes.
    - a discussion of
        - asset management principles
        - enterprise risk management
        - AMP development process
    - Water asset strategy
    - Wastewater asset strategy
    - asset renewal strategy
    - operations and maintenance strategy
    - shared services and technology programmes.
    - AMP capital investment breakdown.
- **Section 3** - Funding Plan
    - Watercare's vision and strategic priorities
    - Funding Plan preparation
    - Application of funds
    - Sources of funds
    - Growth infrastructure funding
    - Revenue and financing framework
    - Financial projections

3. Next Step

The AMP and Major Capex Committee endorses and recommends that the Board approve this Watercare Asset Management Plan 2021–2041, subject to final proof reading and confirmation from Auckland Council that there are no changes required to the AMP arising from the Mayor's proposal and decision-making meeting on 25 May 2021.

Asset Management Plan

2021-2041

1 July 2021 to 30 June 2041

www.water.co.nz

Watercare
An Auckland Council Organisation








Contents

10.1

Section 1

Executive summary

What is the AMP and Funding Plan?

The Asset Management Plan is Watercare's future-focused investment plan that will meet the water and wastewater needs of Auckland.

- Contributes to Auckland Council's Long-Term Plan (LTP) and infrastructure strategy
- Gives effect to Auckland Plan outcomes for the people of Auckland
- Directs how we will operate, maintain and renew existing water and wastewater assets
- Outlines how we will provide new assets to meet demand as Auckland grows
- Covers a 20-year period.

The Funding Plan describes how Watercare will fund the Asset Management Plan and its ongoing implementation.

- Outlines the sources of funds and how Watercare will use revenue and debt to pay for assets
- Determines the organisation's cash requirements which informs our price path.

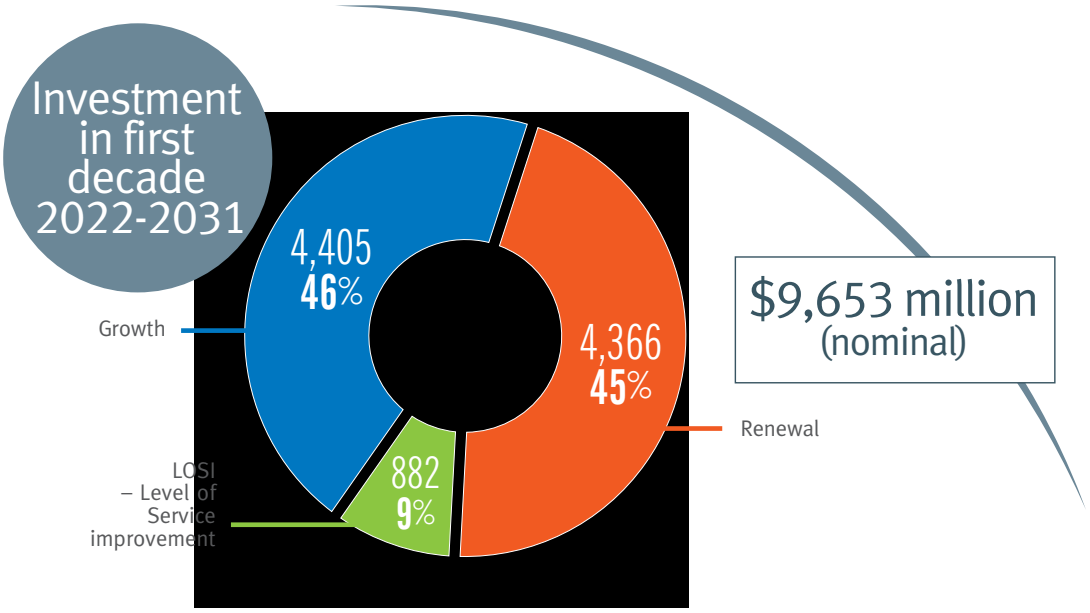
The purpose of our AMP

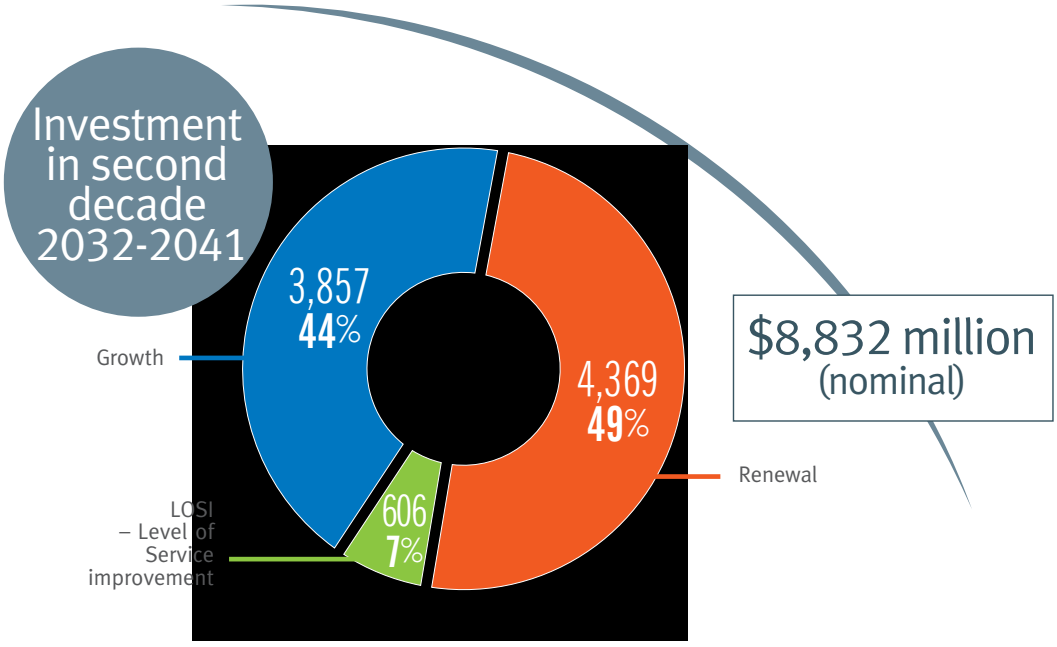
The AMP sets out programmes of works to enable beneficial outcomes for our customers across Auckland by:

- Catering for a growing Auckland
- Developing a resilient and diverse water system for tomorrow
- Protecting our environment
- Adapting to climate change impacts and reducing emissions
- Delivering value for money by running an efficient operation.

AMP at a glance

Over the next twenty years we will invest about $18.5 billion to build and maintain water and wastewater infrastructure for Aucklanders.





Catering for growth

Our customers will have safe, guaranteed services into the future as Auckland's population, business and industry continue to grow:

- Over the coming 20 years, Auckland's population is expected to grow 29 per cent, adding another 476,000 people to our current population of 1.7 million
- During this time, we will invest $8.26 billion to provide additional water and wastewater capacity to meet this growth.

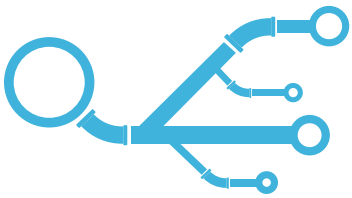
Catering for growth – water projects

Some of the strategic water projects we will deliver include:

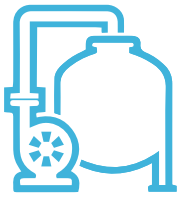
- Waikato A, the staged construction of a new water treatment plant (WTP) that will treat additional water from the Waikato River to cater for Auckland's water supply needs over the next 20 years

- Waikato 2 Watermain, a new watermain that will allow for growth and add resilience to the existing Waikato 1 watermain

- North Harbour 2 Watermain will service growing communities in the west and north, provide redundancy and improve transmission capacity



- Boost pumping of the Ōrewa 1 and 2 watermains and a new Ōrewa 3 Watermain will increase capacity to the north and meet forecast growth in Silverdale, Dairy Flat and Wainui areas.



- Encouraging efficient water use through an enhanced demand management programme and expansion of the smart metering programme.

Catering for growth – wastewater projects

Some of the strategic wastewater projects we will deliver include:

- Central Interceptor, the 14.7km-long wastewater tunnel, will run underground from Grey Lynn to our Māngere Wastewater Treatment Plant (WWTP), provide additional conveyance capacity, reduce overflows and clean up local beaches and waterways

- The Northern Interceptor wastewater pipeline will divert flows currently treated by the Mangere WWTP, to the Rosedale Wastewater Treatment Plant, supporting growth in the north, west and southern regions of Auckland

- Māngere WWTP capacity upgrade will support growth, optimise performance and reduce carbon emissions and waste

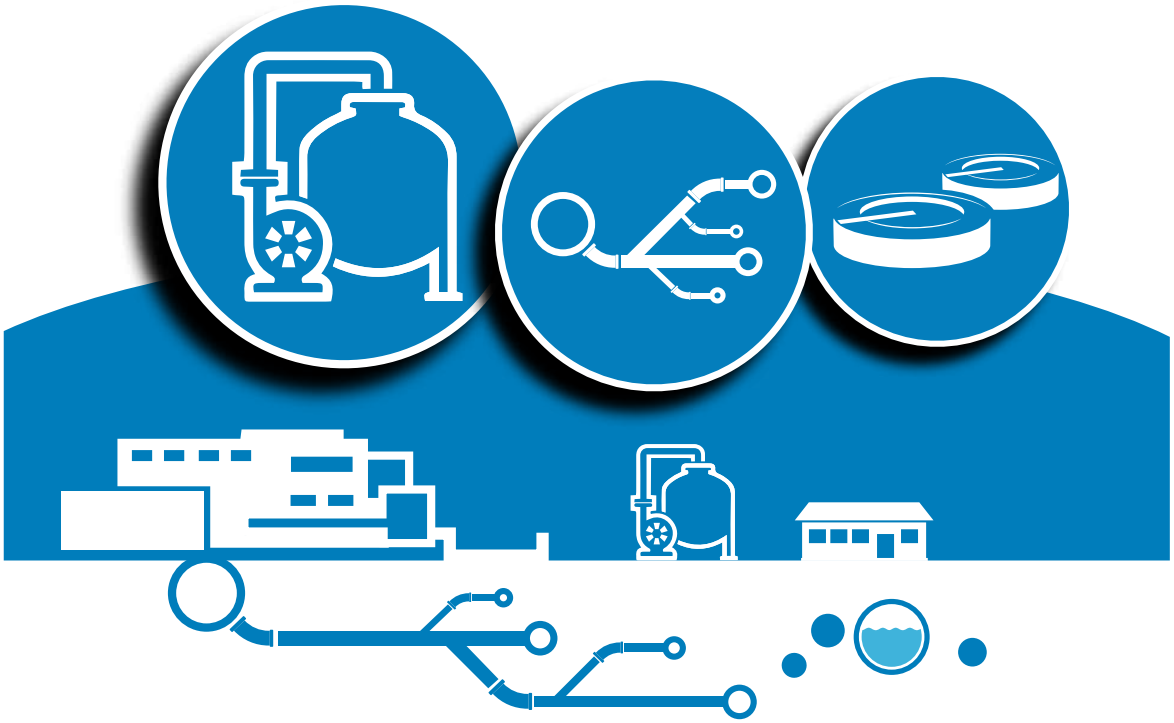
- Rosedale WWTP upgrade will enable process optimisation, improve performance and reduce carbon emissions and waste.

Developing resilience for tomorrow

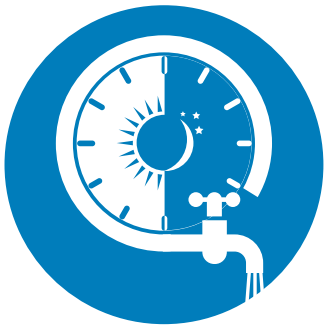
Our customers expect safe and reliable services every day. This means:

- investing sufficiently so our water and wastewater networks can withstand disruptions and meet growth
- operating with minimal impact on our customers or the environment.
- being resilient to changing conditions and climate change impacts.

To build a resilient water and wastewater system, and ensure reliability of service, we will invest about $10.2 billion in renewing and upgrading critical assets, over the next 20 years.



Developing a resilient water system



We will replace the ageing Huia Water Treatment Plant with a new 140MLD capacity plant to help meet peak demand and improve the system resilience.

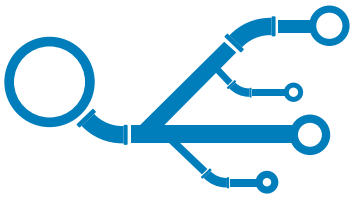
- ☑ We will build two additional reservoirs (2 x 25ML each) as part of the new Huia plant to increase storage and resilience for the region.

Our water renewals and level of service improvement programme ($4.58 billion) includes:

- ☑ Ōrewa 1 watermain replacement
- ☑ Huia 1 and Nihotupu 1 watermains replacements

- ☑ Domain Reservoir replacement
- ☑ Khyber 3 Reservoir replacement

- ☑ Huia 2 watermain replacement
- ☑ Hunua 1 watermain which will be replaced by the extension to Hunua 4 Watermain



- ☑ Other local water network renewals.
- ☑ Investing in projects to unlock water reuse as a source for future water supply.

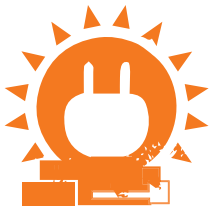
Developing a resilient wastewater system

Timely renewal and upgrade of our plants, pipelines and network will ensure service reliability for customers and reduce overflows and blockages on the wastewater network.

Apart from the Central Interceptor and Northern Interceptor, resilience will be developed through our wastewater renewals and level of service improvement programme ($5.64 billion) that includes:

- Transmission network replacements
- Local network renewals

- Wellsford WWTP upgrades
- Sub-regional WWTP upgrades



- Rosedale WWTP upgrades
- Pukekohe WWTP upgrades
- Māngere WWTP upgrades

- Helensville WWTP upgrades.

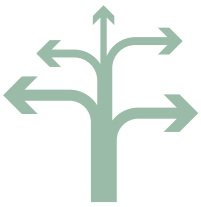
Developing resilience to climate change impacts

Our Climate Change Strategy sets out a direction for monitoring and understanding the impacts and risks to provision of water and wastewater services in the future. It includes:

- two ambitious targets for emissions reductions to align with keeping the global temperature increase within 1.5 degrees Celsius:
  - Net Zero emissions by 2050
  - Reduce operational greenhouse gas emissions by 45% by the year 2030

- a work plan that consists of 14 portfolios across climate change adaptation and mitigation

- climate change considerations integrated in the delivery of infrastructure projects through planning and impact assessments.



Climate change mitigation

A number of projects in the AMP will reduce emissions, carbon footprint and waste:

- Enhanced sludge processing at Māngere and Rosedale wastewater treatment plants to reduce biosolids generation

- Cogeneration engine replacements at Māngere WWTP to remove the need for natural gas

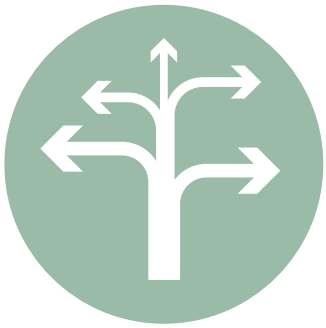
- Process upgrades and modifications to primary and secondary processes to reduce energy requirements at Māngere WWTP

- Improved aeration control and second cogeneration engine at Rosedale WWTP to reduce energy requirements

- Ongoing introduction of electric vehicles in our fleet

- A targeted reduction of “built carbon” by 40% in new infrastructure.

Long-term climate adaptation



Infrastructure will be delivered using dynamic adaptive planning which is a tool used to manage uncertainties. The tool:

- creates multiple long-term pathways, considering a range of pathway triggers
- enables short-term commitment without locking in long-term decisions that may not be optimal.

Protecting our environment

Our customers place a lot of value on clean harbours and waterways and expect us to act as guardians of the environment.

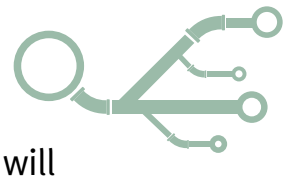
Over the next 20 years, we will invest $10.9 billion in our wastewater system and assets to:

- improve treatment processes
- discharge high-quality wastewater
- reduce wet-weather overflows
- build resilience and improve the quality of beaches and waterways
- cater for growth.

Programmes to protect our environment

- The 14.7km Central Interceptor Wastewater Tunnel will run underground from Grey Lynn to our Māngere Wastewater Treatment Plant and will reduce overflows and help clean up local beaches and waterways.

- Western Isthmus Water Quality Improvement Programme, a 10-year programme of works will improve the water quality in urban streams, and ultimately our harbours. It is jointly funded by Watercare and Auckland Council's Healthy Waters.



- Our largest wastewater treatment plant at Māngere will go through several improvements:
  - A thermal hydrolysis plant to enhance pre-treatment of wastewater sludge for improved digester performance and production of more biogas and improved quality of biosolids. This will reduce emissions, waste and optimise asset life-cycle cost
  - Peak flow treatment upgrades to handle additional wet-weather flows
  - Solids stream upgrades

- Our second-largest wastewater treatment plant at Rosedale also has a range of planned improvements, in addition to process optimisation, that include:
  - A thermal hydrolysis plant to enhance pre-treatment for anaerobic digestion to improve biosolids quality, reduce carbon emissions and waste, and optimise asset life-cycle cost.
  - Construction of new treatment processes which includes primary sedimentation tanks, biological treatment reactors, clarifiers and a separate pond discharge.

Delivering Māori outcomes

In 2020, Auckland Council approved **Kia Ora Tāmaki Makaurau**, a framework for the council group to place the aspirations of Māori in Tāmaki Makaurau at the heart of council business.

This framework identifies ten strategic priorities:

- Māori business tourism and employment
- Marae development
- Te Reo Māori
- Kaitiakitanga
- Māori housing and papakāinga
- Realising rangatahi potential
- Māori identity and culture
- Tāmariki and whānau wellbeing
- Effective Māori participation
- An empowered organisation

Delivering Māori outcomes

Broadly, Watercare's service outcomes advance all of the above strategic priorities, by providing essential lifeline services to all of the communities of Auckland, protecting public health and enabling the economy to flourish.

More specifically, our programmes and projects directly impact the below five priorities (Maori business, identity and culture, kaitiakitanga, effective Maori participation and empowered organisation):

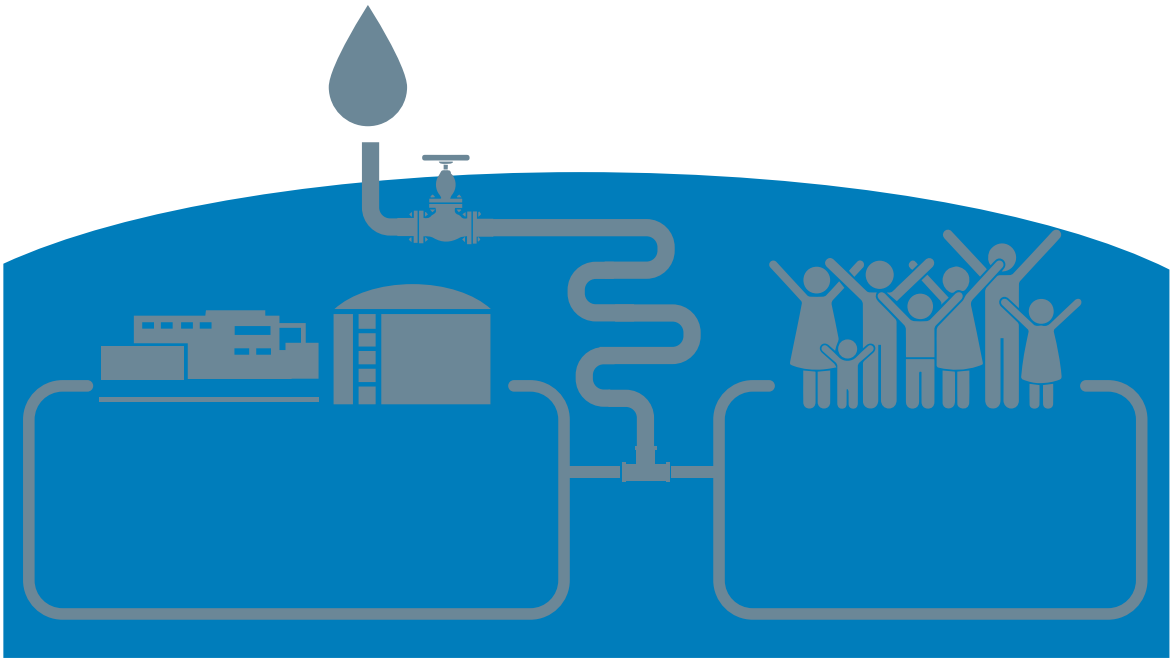
- One of our biggest programmes in this area is in the supply chain function. Our board has recently approved a programme with specific targets, to award five per cent of annual contract expenditure to Maori businesses either directly through Watercare or indirectly through our partner organisations by 2025. This programme will actively advance **Māori business, identity and culture**.

- We work closely with the Mana Whenua Kaitiaki Forum for all of our projects across the region, engaging with appropriate iwi for projects within their rohe. This includes water take, treated wastewater discharge, network improvement and options assessments across the region. We include value discussions around Te Ao Maori in our project assessment criteria. This enables the advancement of **kaitiakitanga and effective Māori participation**.

- We offer our employees many opportunities to learn, understand and apply **Māori tikanga, values and te reo** through free courses from Te Wānanga o Aotearoa, in-house programmes and marae visits. Our waiata group participates in all site blessings and milestones relating to our projects. These initiatives help build an empowered organisation that understands and appreciates the Maori worldview.

Delivering value for money

- Investing for today and tomorrow
- Cost-efficient operations
- Large programme of capital works each year
- Usage-based charging
- Structured pricing and funding so costs can be shared equitably between generations
- Invest in proactive asset maintenance to reduce operational expenditure
- Encourage innovation, new thinking and collaboration through "Enterprise Model", our integrated way of delivering infrastructure.

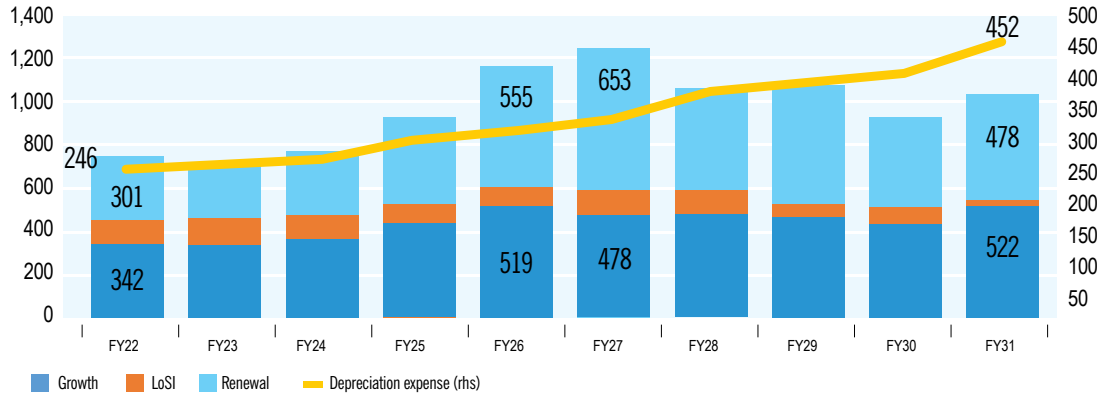


Funding and pricing

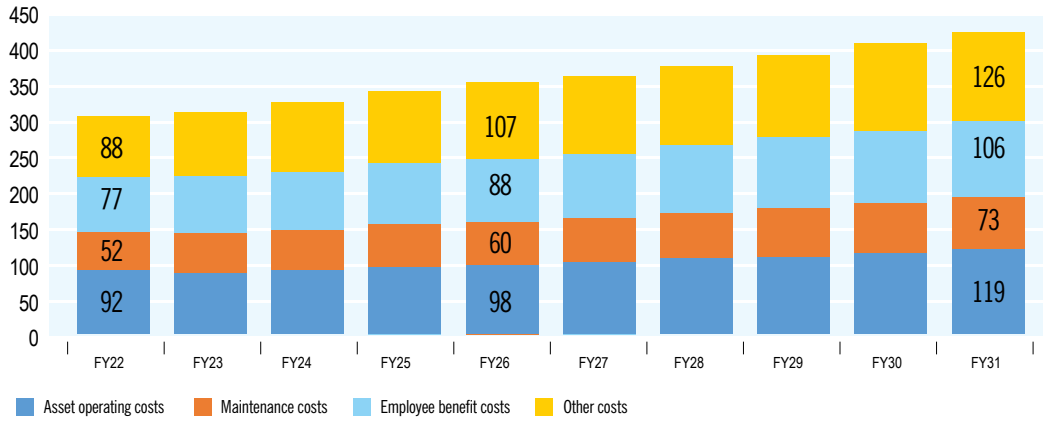
- We fund our operations and infrastructure using money from water and wastewater service charges, infrastructure growth charges and borrowings.
- Currently, the average Auckland household spends $89.01 a month on average (less than 1% of their monthly income).
- Financing constraints from Auckland Council limit the amount of money Watercare can borrow to invest in renewing and developing Auckland water infrastructure.
- Shortfalls in borrowing need to be financed through revenue from increases in customer pricing. Watercare has announced price increases over the next few years to fund this shortfall.
- With a 7% rise in July 2021 households will pay on average around $6.25 more a month.
- Prices increase by 7% again in July 2022 followed by 9.5% increases from 2023 – 2029. Current modelling indicates that from 2030 annual price increases required will be in the range 3% - 3.5%.

Our capex and opex forecast – 10 years

Capex and depreciation ($m nominal)



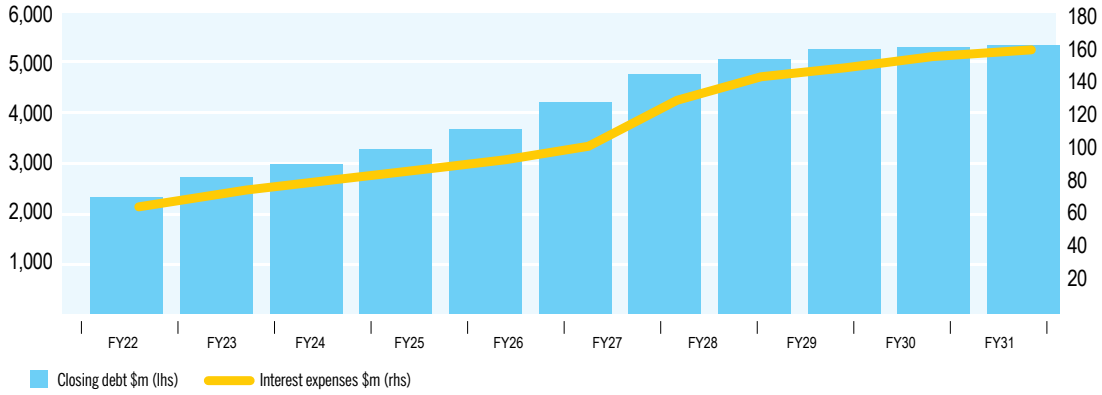
Operating expenditure ($m)



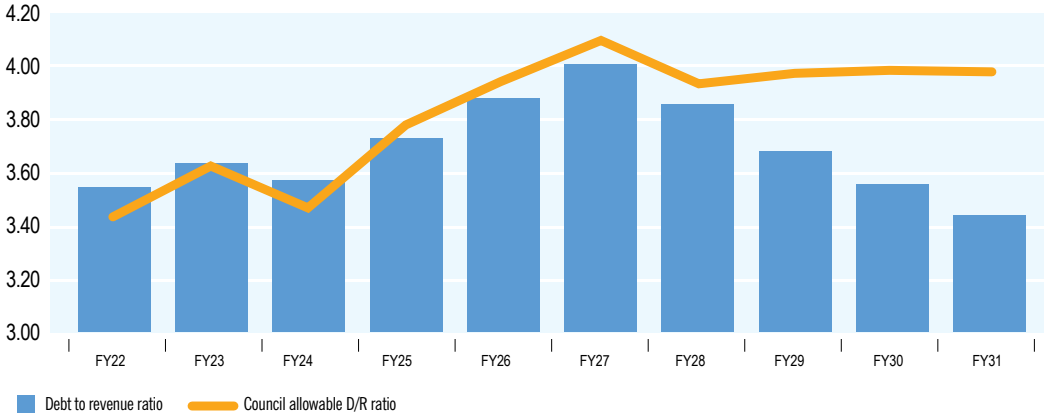
- For the 10 years 2022 – 2031 the AMP Capital programme has increased from $5.3B to $9.7B (nominal) when comparing the 2018 LTP to the 2021 LTP.
- As our assets increase in value (coupled with three yearly asset revaluations), depreciation expense increases significantly.
- Annual increases in operating expenses in line with projected inflation.

Our debt forecast – 10 years

Debt and interest expense

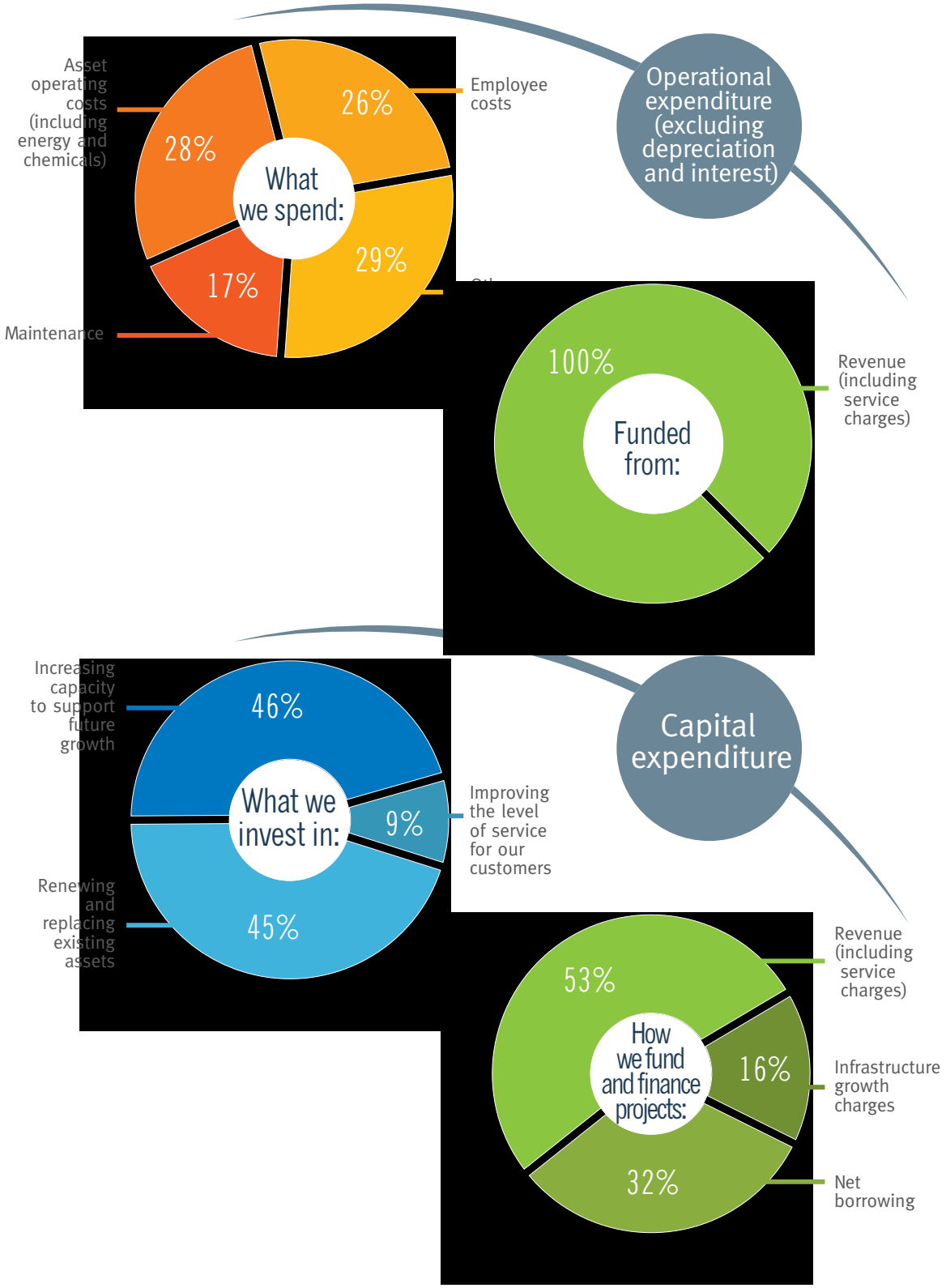


Debt/revenue ratio versus to Council constraint



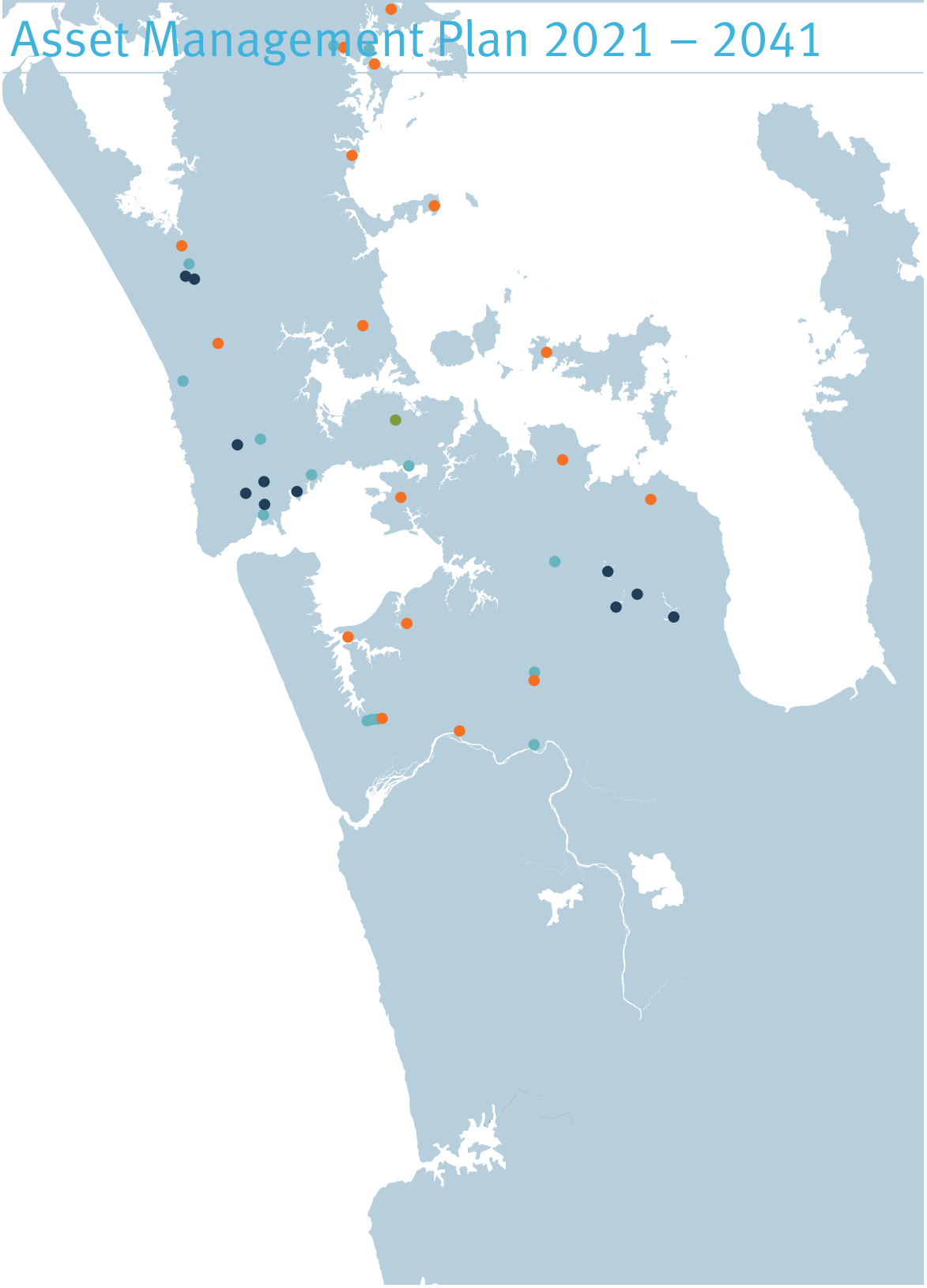
- More efficient financing would allow Watercare to better match the duration of financing against asset life. We do this as much as possible, while working within the constraints of Auckland Council's financing arrangements.
- Through the period 2022 – 2029 Watercare's investment programme will require debt funding that will take the business close to its Auckland Council debt constraint.
- If more debt could be accessed, prices could be held at lower levels than forecast
- Debt increases from $2.3B to 5.4B by 2031. Interest expense increase with debt.

Our cashflow forecast for 10 years



Section 2

Asset Management Plan 2021 – 2041



Note: All mentions of forecast expenditure are stated in nominal (inflated) dollars unless otherwise specified.

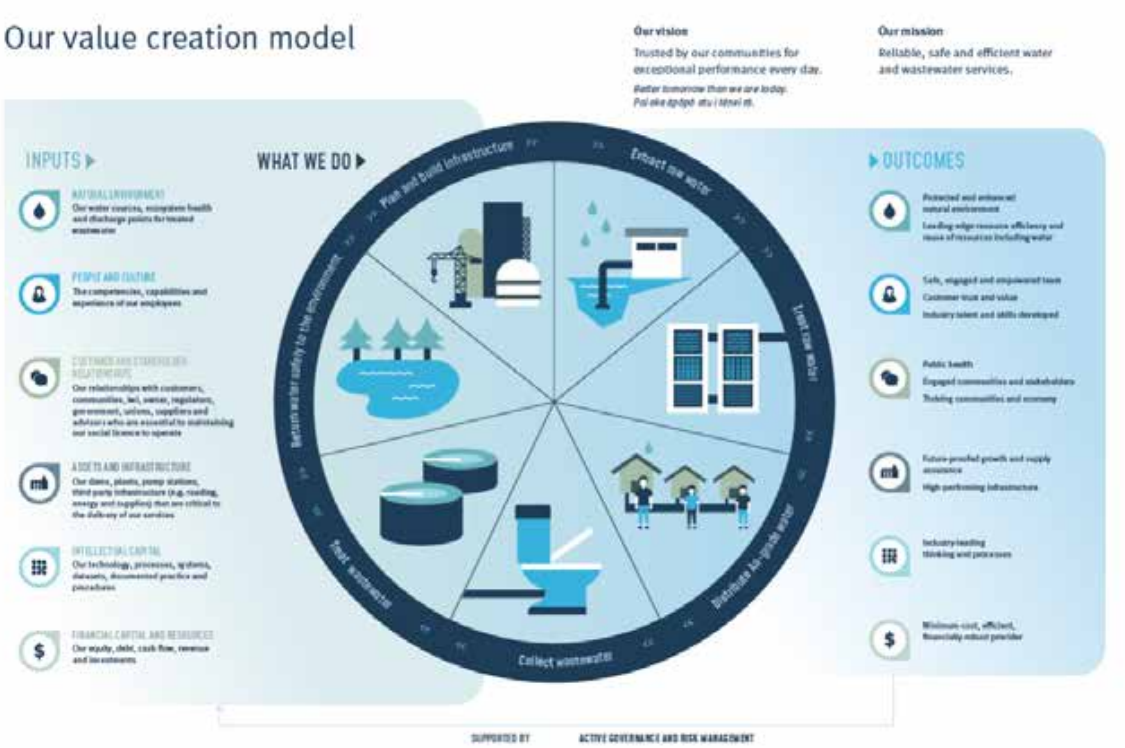
1. Introduction

Watercare Services is a lifeline utility providing water and wastewater services to 1.7 million people in Auckland. Our services are vital for life, keep people safe and help communities to flourish.

We supply reliable, high-quality drinking water to homes and businesses in the Auckland region and collect, treat and discharge their wastewater in environmentally responsible ways.

We manage water and wastewater with a gross replacement value of $15.9 billion and plan and build infrastructure to ensure we support growth today and into the future.

We are a council-controlled organisation, owned by Auckland Council. Our activities and programmes are funded through customer charges and borrowing. We are required by law to be a cost-efficient service provider and we do not pay a dividend to our shareholder.

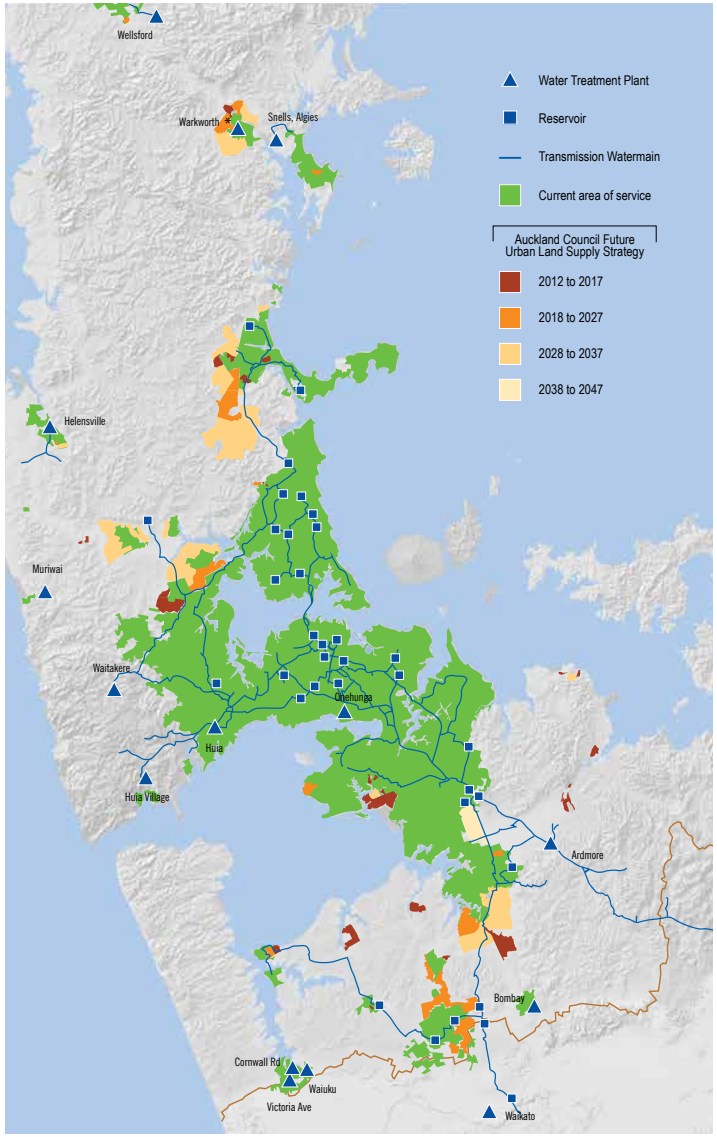


awaiting high res PDf to extract diagram

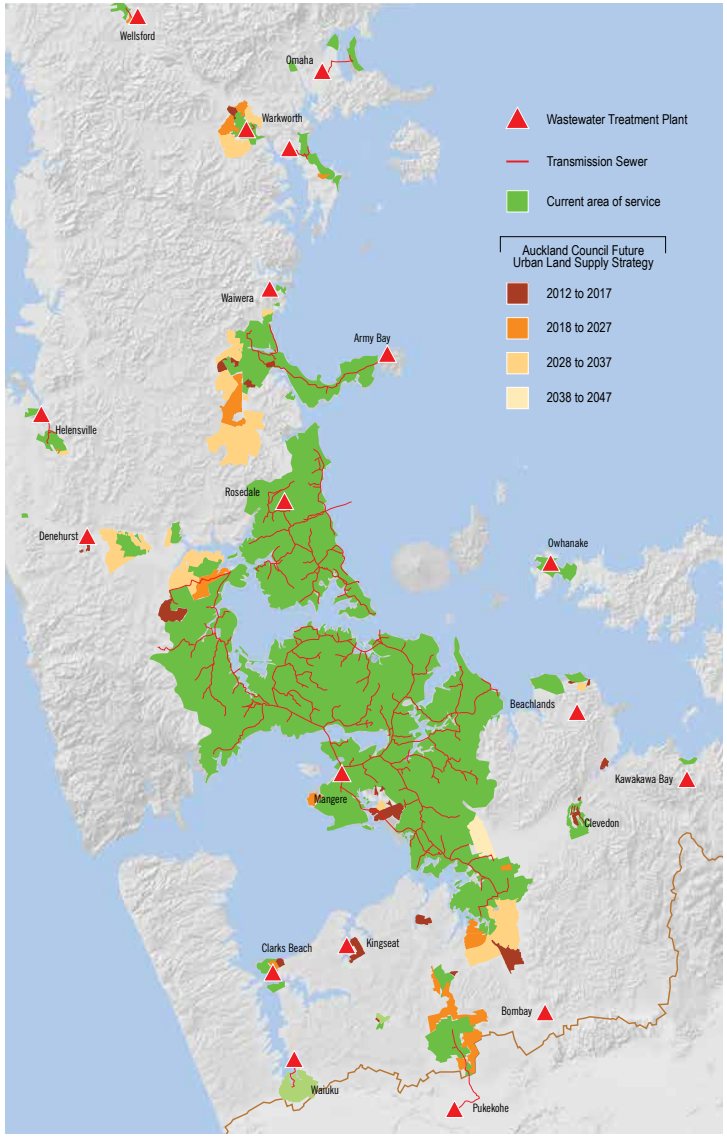
Our legislative and governance framework along with our stakeholder engagement model is outlined on our website.

Our areas of service

Water area of service



Wastewater area of service



The maps show the areas that are currently serviced by our water and wastewater transmission network assets. They also show areas where Auckland Council's Future Urban Land Supply Strategy is expecting growth to occur. These centres of forecast population growth in the north, west and south of the region, will require new water and wastewater infrastructure capacity to service them.

We also provide water and wastewater treatment services for Tūākau and Pōkeno in the Waikato, so they are included in this plan as appropriate. However, it excludes the Papakura network operated under contract by Veolia Water. Veolia Water does not own the assets but they do carry out the asset management planning functions for our assets in their area under the contract.

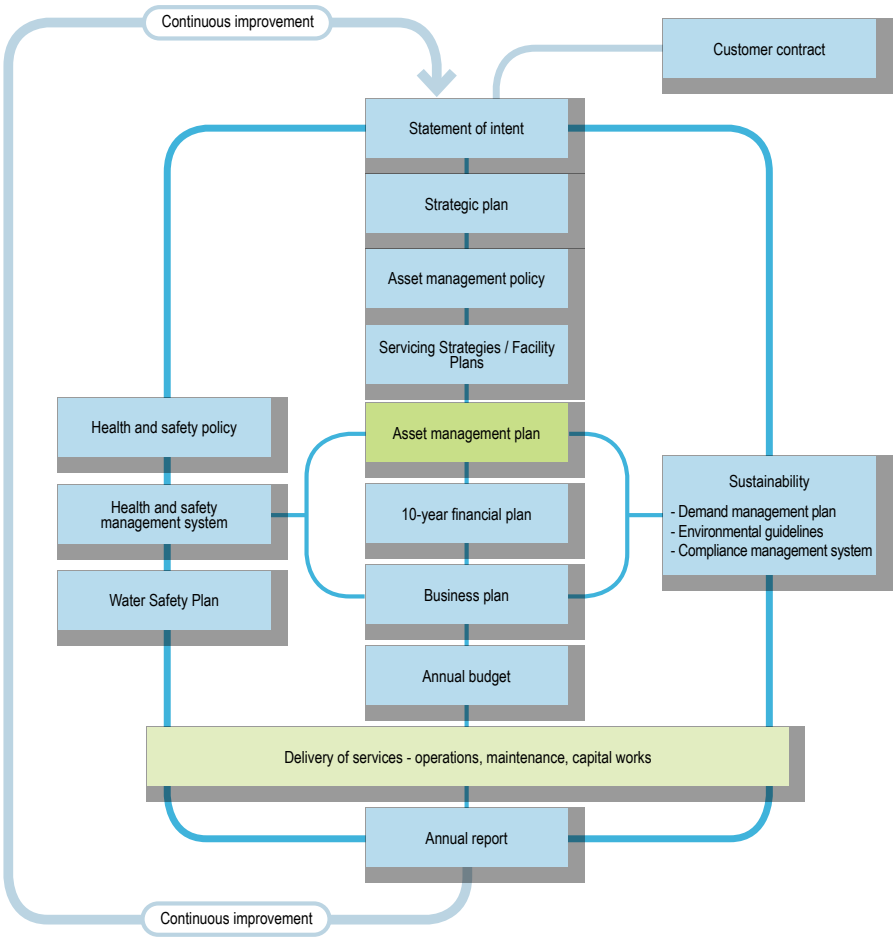
For areas outside Watercare's area of service, private supply is through rain tanks for water and septic tanks for wastewater.

10.1

AMP and our strategic framework

Watercare's AMP and the Funding Plan is a future-focused planning document that outlines how we will operate, maintain and renew existing water and wastewater assets and provide new assets to meet demand as Auckland grows. It has a 20-year horizon and contributes to Auckland Council's Long-Term Plan (LTP). The AMP and the Funding Plan will be of interest to our shareholder, infrastructure partners, suppliers and other stakeholders from local government.

This AMP covers the period beginning July 1, 2021 and ending June 30, 2041.



There are a number of key inputs that inform the AMP.

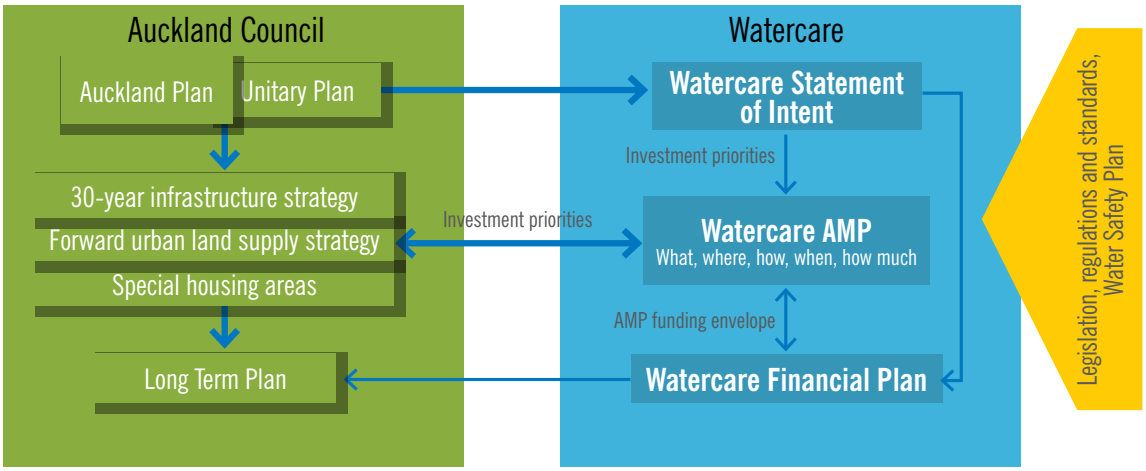
- Customer Insights
- Water Safety Plan
- Region-wide Servicing Strategies for the identified growth / development areas
- Facility Plans
- Watercare's 2017 Wastewater Network Strategies (WWNS), which are prepared in compliance with the Auckland-wide Wastewater Network Comprehensive Discharge Permit (NDC) granted on 17 June 2014. It addresses the network performance and network improvement programme specific to each of the Strategic Management Areas (SMAs):

Wellsford	Waiwera	Mangere	Waiuku
Omaha	Helensville	Oneroa	Pukekohe
Warkworth	HBC	Beachlands	
Snells	Rosedale	Clarks Beach	

- Climate Change and Adaptation Strategy

The AMP and the Funding Plan are aligned with Auckland Council's strategic plans and is an important part of the Auckland Council's planning framework, as illustrated below:

Alignment of the Watercare AMP with the Auckland Plan



Delivering value for customers

Our vision is to be trusted by customers and communities for exceptional services. We understand that our customers trust us when we have regular, open and transparent engagement on issues that matter to them, when we consistently deliver on their expectations and when they have confidence that we are well prepared for the needs of future generations. We actively engage with our partners and customers with a view to improve our service on a day-to-day basis. We consult extensively with communities and customers ahead of our infrastructure and construction projects to inform and engage with them and to ensure they understand how those projects will benefit them and what they can expect during the construction phase. We are committed to increasing our proactive engagement with customers and communities on what a resilient water supply means for them in the future and how we can fulfil those expectations. Over the next year, we will be partnering with Auckland University to engage with a cross-section of Aucklanders on future investment decisions. Broadly speaking, our customers expect us to deliver safe and reliable water supply and wastewater services seamlessly. When something does go wrong, they expect us to be responsive and accountable.

Going beyond our service commitment, our customers expect us to think and plan for the future –building a water system which will enable our city to flourish for many years to come.

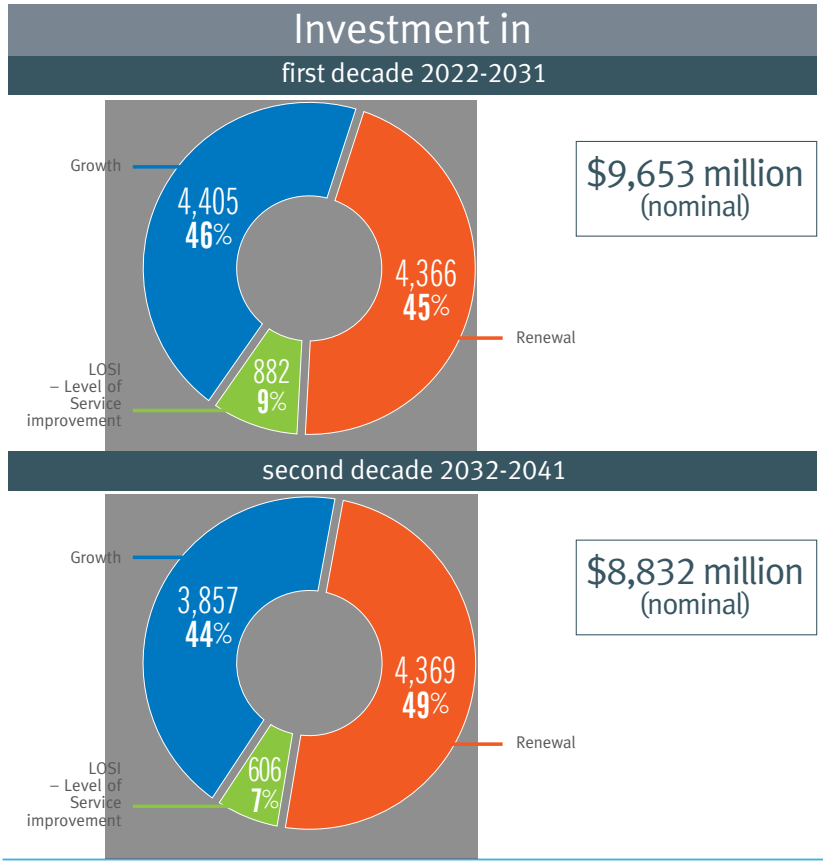
Our customers also expect us to provide leadership on matters relating to the water cycle, water use and expect us to operate sustainably and mitigate any impacts our activities might have on the environment.

Closely related to sustainability is climate change which impacts how we interact with the environment and how we operate, plan and build for a future which will see more impacts from a changing climate.

Lastly, customers expect us to provide value for money in our services, and manage a financially stable business. We undertake a large capital programme of works each year, to maintain our services and meet customer expectations. Our assets provide benefits over long periods of time, and we arrange our funding and financing so that these costs are shared equitably between generations. We are always looking for ways to become more efficient and minimise the costs associated with our work, through innovation and new technology.

How this AMP delivers benefits for our customers and communities:

Over the next twenty years we will invest about $18.5 billion to build and maintain water and wastewater infrastructure for a growing Auckland and developing a resilient water system that can serve today and tomorrow's generations effectively.



Note: All mentions of forecast expenditure are stated in nominal (inflated) dollars unless otherwise specified.

Catering for a growing Auckland

While Auckland's ever-growing population is a concern for many, our customers and communities will be guaranteed safe and reliable services into the future as Auckland continues to grow. Over the coming 20 years, Auckland's population is expected to grow 29 per cent, adding another 476,000 people to our current population of 1.7 million. During this time, we plan to invest $8.26 billion to provide capacity for population growth and the accompanying need for our water and wastewater services.

Some of our key projects to cater for growth include:

Water

- Waikato A, the staged construction of a new water treatment plant that will treat additional water from the Waikato River to cater for Auckland's water supply needs over the next 20 years
- Waikato 2 Watermain, a new watermain that will allow for growth and add resilience to the existing Waikato 1 Watermain
- North Harbour 2 Watermain will be an alternative way to service customers in the west and north, as well as provide redundancy and improved transmission capacity
- Boost pumping of the Ōrewa 1 and 2 Watermains and a new Ōrewa 3 Watermain will increase capacity to the north and meet forecast growth in Silverdale, Dairy Flat and Wainui areas.

Wastewater

- Central Interceptor - The 14.7km-long Central Interceptor wastewater tunnel will run underground from Grey Lynn to our Māngere Wastewater Treatment Plant and when complete, will reduce overflows and help clean up local waterways.
- Northern Interceptor - The Northern Interceptor wastewater pipeline will help divert flows from the upper portion of the Western Interceptor catchment (currently serviced by the Mangere WWTP) to the Rosedale Wastewater Treatment Plant balancing capacity across our treatment plants.
- Māngere WWTP capacity upgrade
- Rosedale WWTP upgrade

Developing a resilient water system for tomorrow

Our customers expect safe and reliable services 24/7. This means being resilient to changing conditions and investing sufficiently so our water and wastewater networks can withstand emergencies and droughts and operate normally with minimal impact on our customers or the environment.

The resilience of our water and wastewater networks has and will continue to be challenged by climate change impacts. To manage these impacts, and ensure reliability of service, over the next 20 years we will invest about $10.2 billion in renewing and upgrading critical assets including:

- The replacement of the ageing Huia Water Treatment Plant with a new 140MLD-capacity plant to help meet peak demand and improve the system resilience. Two additional reservoirs (2 x 25ML each) are proposed as part of this replacement project and will increase storage for the region.

- Renewal and replacement of existing distribution systems including watermains, wastewater mains and pump stations which are detailed below.

Water renewals and level of service improvement programme ($4.58 billion) include:

- Ōrewa 1 watermain replacement
- Huia 1 and Nihotupu 1 watermains replacements
- Domain Reservoir replacement
- Khyber 3 Reservoir replacement
- Huia 2 watermain replacement
- Hunua 1 watermain which will be replaced by the extension to Hunua 4 Watermain
- Local water network renewals.

Wastewater renewals and level of service improvement programme ($5.64 billion) include:

- Transmission network replacements
- Local network renewals
- Wellsford WWTP renewals
- Sub-regional WWTP renewals
- Rosedale WWTP renewals
- Pukekohe WWTP renewals
- Māngere WWTP renewals
- Helensville WWTP renewals.

Protecting our environment

We know our customers and communities place a lot of value on clean harbours and waterways and expect us to act as guardians of the environment.

Our activities are intrinsically linked to the health of the natural environment. Auckland's water sources must have sufficient volume and reliability to provide water for the region, and they must be protected from overuse. For the wastewater system, receiving environments must have the capacity to accept treated wastewater discharges without adverse effects, and overflows from the network must be minimised.

We fulfil our environmental responsibilities through a regulatory framework. Meeting our legal and regulatory obligations are baseline requirements for our organisation. Our assets are subject to a large number of consent conditions, and we work to comply with these conditions at all times.

Beyond compliance with consent conditions, we also further improve the quality of the receiving environment through riparian restoration programmes, flora and fauna protection and the use of advanced treatment processes to discharge high-quality treated wastewater.

Integrating environmental considerations into everything we do is key to our role as a trusted iwi partner and community organisation.

Over the next 20 years, we plan to invest $10.9 billion in our wastewater system and assets to improve treatment processes, reduce wet-weather overflows and build resilience so that the wastewater we discharge into the environment is of a high-quality and will ultimately improve the water quality of the waterways.

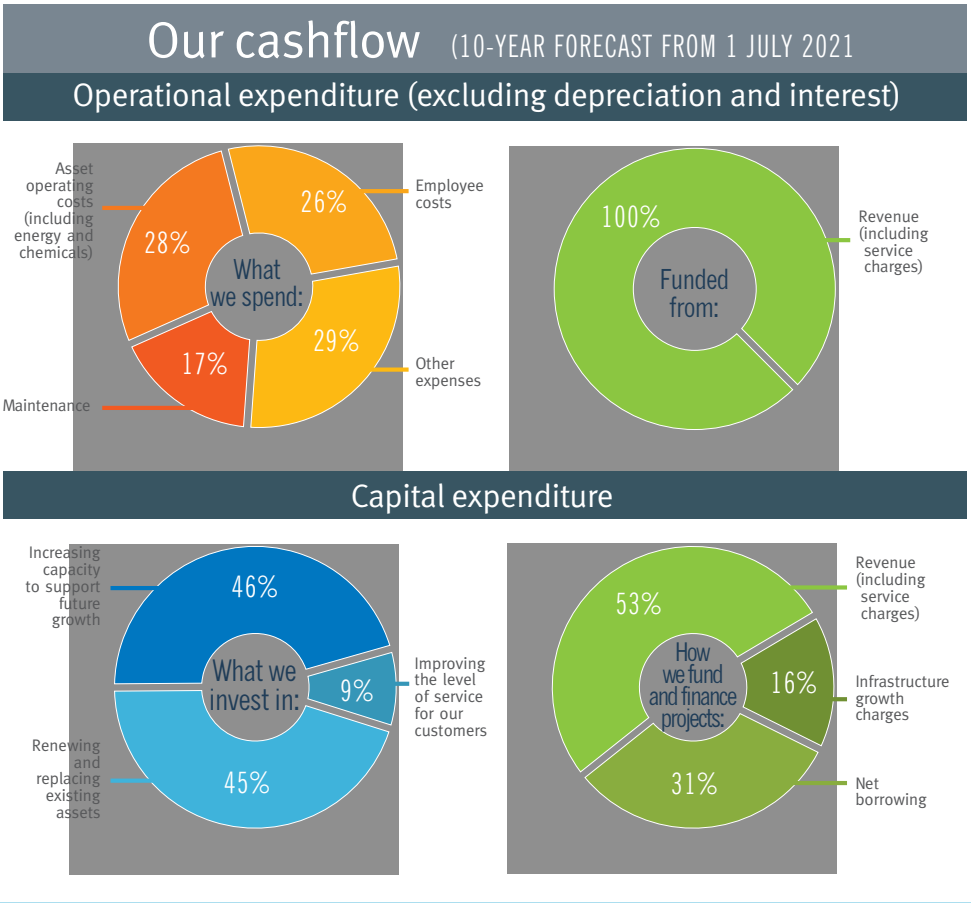
- The 14.7km Central Interceptor Wastewater Tunnel will run underground from Grey Lynn to our Māngere Wastewater Treatment Plant and when complete, will reduce overflows and help clean up local waterways.
- Western Isthmus Water Quality Improvement Programme, a 10-year programme of works will improve the water quality in urban streams, and ultimately our harbours. It is jointly funded by Watercare and Auckland Council's Healthy Waters.
- Our largest wastewater treatment plant at Māngere will go through several improvements:
    - A thermal hydrolysis plant to enhance pre-treatment of wastewater sludge for improved digester performance and production of more biogas and improved quality of biosolids. This will reduce the plant's carbon footprint, waste and optimise asset life-cycle cost
    - Peak flow treatment upgrades to handle additional wet-weather volumes following the completion of the Central Interceptor wastewater tunnel
    - Commencement of the Māngere Wastewater Treatment Plant discharge consent renewal process ahead of its expiry in 2032.
    - Solids stream upgrades
- Our second-largest wastewater treatment plant at Rosedale also has a range of planned improvements: In addition to process optimisation and improvements, the programme of works and investment planned for the Rosedale Wastewater Treatment Plant include:
    - A thermal hydrolysis plant to enhance pre-treatment for anaerobic digestion to improve biosolids to class A quality, reduce carbon footprint and waste, and optimise asset life-cycle cost.
    - Construction of new treatment processes which includes primary sedimentation tanks, biological treatment reactors, clarifiers and a separate pond discharge.
    - The consent renewal process for the Rosedale Wastewater Treatment Plant.

Providing value for money

Water is a universal resource, essential for thriving communities and cities. As a public-sector company delivering lifeline services for the Auckland region, we take our financial responsibilities seriously.

We are mandated by legislation to be a cost-efficient service provider, allowing for the efficient operation and maintenance of our assets. While keeping costs low is one part of our fiscal obligations, we must also ensure that we invest in providing safe and reliable services not just today but for decades to come.

We undertake a large capital programme of works each year to maintain our services and meet customer expectations. Our assets are built to service communities over long periods of time, and we plan and arrange our funding and pricing so that these costs are shared equitably by generations over that time. These concepts are described fully in the Funding Plan section of this document.



Note: All mentions of forecast expenditure are stated in nominal (inflated) dollars unless otherwise specified.

Delivering Māori outcomes

In 2020, Auckland Council approved **Kia Ora Tāmaki Makaurau**, a framework for the council group to place the aspirations of Māori in Tāmaki Makaurau at the heart of council business. This framework identifies ten strategic priorities for the group to advance Maori identity and wellbeing. These ten priorities are:

- Māori business tourism and employment
- Marae development
- Te Reo Māori
- Kaitiakitanga
- Māori housing and papakāinga
- Realising rangatahi potential
- Māori identity and culture
- Tāmariki and whānau wellbeing
- Effective Māori participation
- An empowered organisation

Broadly, Watercare's service outcomes advance all of the above strategic priorities, by providing essential lifeline services to all of the communities of Auckland, protecting public health and enabling the economy to flourish.

More specifically, our programmes and projects directly impact the below five priorities (Maori business, identity and culture, kaitiakitanga, effective Maori participation and empowered organisation):

- One of our biggest programmes in this area is in the supply chain function. Our board has recently approved a programme with specific targets, to award five per cent of annual contract expenditure to Maori businesses either directly through Watercare or indirectly through our partner organisations by 2025. This programme will actively advance **Maori business, identity and culture.**
- We work closely with the Mana Whenua Kaitiaki Forum for all of our projects across the region, engaging with appropriate iwi for projects within their rohe. This includes water take, treated wastewater discharge, network improvement and options assessments across the region. We include value discussions around Te Ao Maori in our project assessment criteria. This enables the advancement of **kaitiakitanga and effective Māori participation**.
- We offer our employees many opportunities to learn, understand and apply **Māori tikanga, values and te reo** through free courses from Te Wānanga o Aotearoa, in-house programmes and marae visits. Our waiata group participates in all site blessings and milestones relating to our projects. These initiatives help build an empowered organisation that understands and appreciates the Maori worldview.

2. Our asset management approach

We are committed to best-practice asset management across our business. Our aim is to align our asset management systems with the international standard ISO 55000:2018 - Asset Management System, and follow the guidelines of the International Infrastructure Management Manual.

Our asset management policy outlines how we plan, design, construct, acquire, maintain, operate, rehabilitate and dispose of our assets. We keep in mind both present and future customers by considering the assets in a manner that:

- Protects the public health of the community and provides a defined level of service to our customers
- Takes an asset life-cycle approach
- Develops cost-effective management strategies for the long term, including optimising the cost of maintaining and operating our networks
- Manages risks associated with asset failure
- Uses physical resources sustainably and cares for the natural environment
- Continuously monitors and improves our asset performance and management practices.

Our high-level asset management objectives are as follows:

- To operate and maintain the water and wastewater systems in an efficient manner
- To ensure there is sufficient infrastructural capacity to meet growth in demand
- To meet regulatory requirements and levels of service
- To replace assets as they reach the end of their economic lives
- To respond and adapt to climate change.

Our service standards

We manage and maintain assets to ensure we maintain our levels of service for customers. These service standards are specified below.

Water supply pressure	Minimum normal service target: 200 kilopascals (kPa)
Water supply flow rate	Minimum normal service target: 25 litres per minute*
Water quality	Maintain Ministry of Health drinking water standard
Restoring water shutdowns	96 per cent restored within 5 hours
Enquiries and complaints	Respond to enquiries within 3 working days of receiving them. Respond to complaints within 10 working days of receiving them.

**Based on 15mm residential water meter*

Asset management principles

The principles applied to the management of the water and wastewater systems and their associated strategies are as follows:

- We engage with our customers, partners and stakeholder to understand their needs and expectations
- We are required to manage water and wastewater operations efficiently to keep costs to customers, collectively, at a minimum while maintaining effective management and maintenance of the long-term integrity of our assets
- We are required by legislation to give effect to Auckland Council's plans and strategies as set out in the Auckland Plan and associated documents.
- We will plan and seek resource consents to operate and construct plant and transmission assets, and stage construction to match demand.
- A risk-based philosophy will be applied for the replacement or rehabilitation of critical water and wastewater assets

and provision of new assets to service growth.

- Non-critical assets will be utilised until they no longer provide the expected levels of service to the customer, at which time they will be replaced. This will not preclude a planned approach to ensure assets are replaced before they fail as asset criticality changes over time.

Water-specific principles

- To help us provide safe and secure supply of drinking-water to our customers we develop and implement site specific water safety plans that comply with legislative requirements.
- The current drought security standard is that the metropolitan water supply dams will be operated to a 1:100-year event (with a 15% residual storage at the end of the drought event) with additional water sources planned to meet the medium growth forecast.
- Future water sources will be secured with sufficient lead-in time to enable the delivery of water which meets the Drinking Water Standards New Zealand 2005 (Revised 2018) (Ministry of Health, (2018), before the average and/or peak demand exceeds the available supply.
- Follow international guidance protocols to develop a water resources strategy which identifies water supply solutions and delivery systems which have sufficient resilience to service the water requirements of Tāmaki Makaurau / Auckland over a 35-year period.
- Provide water supply solutions which recognise and balance the cultural, environmental, carbon, social and financial impacts at both local and regional levels and takes account of the potential effects of climate change.
- Water treatment plant expansions will be implemented to meet peak demand in conjunction with regional treated water storage.
- Metropolitan water treatment plant resilience will be managed to enable an outage of a single water treatment plant, excluding the Ardmore Water Treatment Plant, without a reduction in water supply.
- Water demand management will be implemented to achieve the average day consumption should the Ardmore plant be limited to the minimum production of 140MLD. Further restrictions will be implemented if the Ardmore plant is out of service and contingency reservoir storage cannot be maintained.
- To achieve resilience we will maintain an average minimum of 24-hour treated water reservoir storage.
- In conjunction with water treatment and treated water reservoir storage capacity, the overall water transmission system will provide, wherever possible, redundancy against a transmission asset failure.
- The system will be designed to maximise the use of gravity supply of drinking water. Where distribution system capacity and capability can be enhanced to meet customer demand without compromising drinking water quality, boost pumping will be implemented to maximise the use of existing assets.

Wastewater-specific principles

- Wastewater treatment plant capacity will be augmented to match growth in demand and to maintain compliance with the facilities discharge consents.
- Augmentation of the wastewater transmission and local networks will be carried out prior to the peak dry-weather flow exceeding the capacity of the network and in accordance with discharge consent conditions.
- We must recognise that the network discharge consent sets the performance standard for the wastewater network and the investment required.
- We will not permit cross connections from the stormwater system to the separated wastewater network.
- The wastewater system is for the conveyance of wastewater only; therefore, as much as practical, stormwater and groundwater will be diverted from the system.
- An inflow and infiltration (I&I) reduction programme will be progressed and enhanced to maximise the use of existing assets.
- As the transmission system reaches capacity, we will augment the interceptors[1] by truncating the catchment or diverting flow to an adjacent interceptor.
- High-risk rising mains[2] and inverted siphons[3] will be duplicated to provide redundancy.
- Wastewater treatment plants will be regarded as “resource recovery plants”. This means that where possible and practicable, energy, bio-solids and other resources will be beneficially reused.

Footnotes see next page

Delivering our capital infrastructure

Our integrated model of delivering the majority of our infrastructure will leverage the size and scale of the AMP to deliver benefits in three areas - sustainability, cost and safety (40:20:20).

Our targets are:

- **Reduce** carbon in construction or **"built carbon" by 40%** across Watercare by 2024
- **Reduce** the **cost** to deliver our infrastructure programme by **20%** by 2024
- **Reduce** the number of **injuries** recorded during construction by **20%** year on year.

These targets will encourage innovation and new thinking from across the business and increased collaboration with external service providers. Some of the tactics that will support delivery of 40:20:20 targets include standard product designs, integrated programme delivery mechanism and challenging our standards and ways of delivery.

The high rate of growth in Auckland along with the need to renew ageing assets makes this a challenging target.

2 An **interceptor** is a component of a wastewater network. It is a pipe network that receives flow from trunk wastewater pipes and sometimes stormwater run-off and directs it to the wastewater treatment plant. It is among the larger pipes of a wastewater network and is categorised as a transmission asset.

3 A **rising main** is a type of wastewater pipe through which wastewater is pumped from a pump station, typically from a lower ground level to a higher ground level to join with the main wastewater network.

4 **Inverted siphons** allow wastewater pipes to pass under obstructions such as rivers. Unlike the main wastewater pipe, the siphon pipes flow under pressure and must have flow velocities greater than 0.9 m/s to keep any solid material suspended so it can continue to be conveyed to a wastewater treatment plant for collection and disposal.

3. Our risk management process

Risk management is an integral part of managing infrastructure assets through their life cycle to ensure that we minimise service disruptions and their impact on our customers and the environment.

Watercare takes an enterprise-wide approach to managing risks and opportunities through a formal enterprise risk management framework and by supporting processes which align with AS/NZS ISO 31000:2018 (Risk Management – Principles and Guidelines).

The continued application of risk management processes ensures that we identify the risks to achieving our business objectives. Risks are analysed, prioritised for treatment, and then appropriate risk mitigation measures are applied.

Risk Management Policy

Watercare maintains a Risk Management Policy, the aim of which is to direct the risk management function. The policy focuses risk management onto those risks that are material to the achievement of our organisation's principal objectives.

This framework defines the management policies, procedures and practices to be applied to the risk management tasks of identifying, analysing, evaluating, treating and continuing to monitor risk to provide enterprise-level information.

Where Watercare is required to comply with specific legislative requirements that prescribe additional risk assessment components, Watercare will incorporate these into the risk assessment programme

As part of the risk management framework, we have established a Risk and Resilience Steering Committee, which meets quarterly to monitor emerging risk and risk mitigation actions and strategies. The committee comprise the chief executive, senior management team and the head of risk and resilience.

Regular monitoring, review and reporting of risks is an important component of the Watercare Risk Management Framework, as it ensures new risks and changes to existing risks are identified and managed, and that risk mitigation plans are developed and implemented. Business processes are in place to ensure that the priority a project takes in the AMP is aligned with the level of risk being managed (along with a measure of the relative importance of each).

Significant risks are monitored by the Board at least quarterly, or as required. In addition, external reviews are carried out to ensure we meet and exceed good-practice measures in risk management.

Our enterprise risks reflect the interdependencies that we are faced with in delivering our services.

Emergency management and contingency planning

In providing our water and wastewater services, we use an incident escalation system to manage emergency incidents. This system defines roles, responsibilities and processes for response. It is documented in our incident management plan, which aligns with a number of other plans including the:

- Our Water Safety Plan
- Our risk management framework
- Our pandemic response plan
- Our drought response plan
- Our business continuity plan
- Auckland Council's crisis management plan
- Our water contamination communication plans

For the management of wider-scale incidents, we are also a participant in the Auckland Lifelines Group (ALG). The ALG is made up of all the essential utilities in the Auckland region which work together to improve the resilience of Auckland's infrastructure to major hazards such as volcanic eruptions or earthquakes. Working with the AELG improves our understanding of the risks to the water and wastewater assets and services during major natural incidents. The ALG also works alongside Civil Defence and Emergency Management (CDEM) during emergencies to restore essential services. Lifeline procedures are included in our incident management plan.

At an operational level, we also have contingency plans to manage planned or emergency events as well as issues with specific critical assets. These plans are key components of our water safety framework and include:

- Water safety plans for each WTP
- Water safety plan for distribution network
- A drought response plan.
- Shutdown procedures for bulk water mains

- Site specific incident response and contingency plans
- Site specific business continuity plans that set out procedures we must follow in order to maintain services levels and minimise disruption to our customers

Risk evaluation

Within our risk management framework, risks are evaluated using a semi-quantitative model that explicitly considers the likelihood of various adverse consequences occurring.

Consequences are scored according to the impact that the risk may have on the achievement of the following objectives:

- Providing for the health and safety of staff, customers and the public
- Delivering safe and secure supply of drinking-water for consumers, protecting public health
- Achieving environmental compliance and minimising third-party damage
- Effective management of systems, assets, project performance and service delivery
- Minimising financial losses
- Maintaining our professional reputation.

The likelihood of adverse consequences is also scored based on a number of contributory factors. These include the asset's location, the operating environment, assessment of the asset's condition and the forecast remaining life of the asset.

Our risk management framework assesses each risk across these five classifications. Each risk is categorised according to the magnitude of the risk score and the magnitude of the potential consequences.

All high and very high risks are defined as enterprise risks. Very low, low and medium asset risks may be considered tolerable if risk reduction is impractical or if the cost of treatment exceeds the improvement gained. Very low risks are considered to be of minor significance with the asset generally being run to failure before being replaced.

The process of evaluating risks involves considering the scope and effectiveness of existing risk control measures in terms of prevention, protection and recovery. Where further risk reduction is warranted, new business projects are identified, investigated and defined for inclusion in the AMP.

The nature of many of Watercare's infrastructure projects means that time for implementation is significant with detailed studies required before the project can be fully developed and delivered. As a result, major projects can take 3 to 5 years to approve, develop and implement. Some strategic projects may take even longer.

This combined with the forecast timeframe for the risk to reach an unacceptable level will be key factors guiding the positioning of projects within the AMP.

The enterprise risks are reported to the Board on a quarterly basis. An overview of these risk areas is below:

Enterprise risk description	Potential consequence	Integrated reporting capitals showing dominant capital	Key controls and mitigation strategies
Health and Safety (H&S) – Operational Hazards Watercare's work involves significant operational hazards, which include: Confined Spaces, Working at Height, Trenching and Excavations, Working Alone, Working near/on Bodies of Water	Workers may be exposed to serious harm	o Financial o Natural o **Human** o Social and Relationships	o Clear standards for work involving significant operational hazards o Training of staff to industry standards o Using qualified, well-trained contractors o Ongoing monitoring of relevant lead and lag H&S indicators
Health and Safety – Process Safety A catastrophic failure of a major Watercare plant such as an explosion, fire or chemical leak which carries significant H&S risk	Workers, the public or the environment may be exposed to serious harm	o Manufactured o Financial o Natural o Human o **Social and Relationships**	o Plant design, operation and containment systems to address this risk o Regular plant condition assessments and specific regulation-driven compliance reviews undertaken

Enterprise risk description	Potential consequence	Integrated reporting capitals showing dominant capital	Key controls and mitigation strategies
Insufficient Treated Water Supply to Meet Demand The risk could arise from: Protracted drought conditions, the loss of a major storage dam or the loss of water treatment capacity which could arise from climate change (including extreme-weather events)	Inability to supply sufficient treated water to meet Auckland's demand	o Manufactured o Financial o Natural o Human o **Social and Relationships**	o Water Safety Plan o Risk mitigation is inherent in the design of the water systems, from source to treatment o Integrated source management model for water abstraction o Geographically separated dams o Drought Management Plan
Failure to Treat Wastewater to the Required Standard and Convey Wastewater Flows This includes the impact of stormwater overflows in wet-weather events and longer-term climate change	Environmental impacts or failure to meet consent conditions that impact stakeholders	o Financial o **Natural** o Human o Social and Relationships	o Wastewater treatment plant upgrades o Asset management renewal and upgrade programmes o Transmission and network upgrades to convey required stormwater and wastewater flows o Network upgrades to address capacity constraints
Major Water Quality Event The quality of treated water supplied is compromised	Compliance with DWSNZ and/or public health is adversely impacted	o Manufactured o Financial o Natural o **Human** o Social and Relationships	o Water Safety Plan o Operation within well-established water treatment protocols following Ministry of Health/DWSNZ requirements o Disinfection and testing of all water prior to entering supply o Chlorine levels are maintained in the distribution system o Water safety and contamination notification in place o Staff training and competencies framework o Quarterly compliance reviews by the Drinking Water Assessors
Cybersecurity for Business and Control Systems Malicious acts compromising SCADA control systems, noting the cyber-threat environment continues to grow globally and in New Zealand	Cybersecurity for Business and Control Systems Malicious acts compromising SCADA control systems, noting the cyber-threat environment continues to grow globally and in New Zealand	o Manufactured o Financial o Natural o Human o Social and Relationships o **Intellectual**	o Comprehensive cybersecurity policies in place o Regular staff training and awareness o Deployment of specialist cybersecurity to reduce overall risk o Independent experts used to advise on an enhanced cybersecurity roadmap and tools
Failure to Meet Developer Service Commitments Poor processes, engagement and slow delivery of Watercare's AMP	Failure to meet developer service commitments	o Manufactured o **Financial** o Natural o Human o Social and Relationships	o Proactive developer relationship engagement o Digital Strategy - enable online connection service o Consenting Service Level Agreement with council o Improving transparency and working closely with developers on delivery of growth-related capital projects

Enterprise risk description	Potential consequence	Integrated reporting capitals showing dominant capital	Key controls and mitigation strategies
Availability of Trained Staff, Contractors and Suppliers Failure to attract and retain sufficient direct or supporting skilled and qualified resources	Watercare employees, contractors, suppliers and consultants not resourced to deliver Watercare's objectives	o Manufactured o **Financial** o Natural o Human o Social and Relationships o Intellectual	o Staff training and competencies framework o Operational succession planning o Ensure sufficient numbers of skilled and qualified resources are available o Market resources are identified and retained to support business deliverables
Major Project Cost Overrun Actual cost of delivery is higher than anticipated	The funding requirement is outside the AMP envelope	o Manufactured o **Financial** o Human o Social and Relationships o Intellectual	o Procurement strategies to minimise capital and whole-of-life costs on new assets o Monitoring of projects costs and delivery time

Note: In addition to the enterprise risks, Watercare has a project risk framework to address risks associated with delivery of specific projects.

Risks evaluated by asset group

We try to identify the likely cause of asset related events that might have an adverse impact on the provision of services to our customers. The following table provides an example of, but not limited to, the things we look for.

Asset group	Risks evaluated
Water system	
Water sources	• Structural failure of embankment, valve tower and cut-off wall • Failure of control valves, pipework and power supply • Contamination to groundwater source • Land instability
Raw water transmission	• Structural failure of aqueducts, tunnels, portals and raw water mains • Land instability
Water treatment plants	• Structural failure and land instability • Failure of dosing systems, clarification, filtration, disinfection or power supply
Water pump stations	• Structural failure and land instability • Failure of pumps, valves, pipework, power supply, motors, drives and controls
Water reservoirs	• Structural failure and land instability • Failure of control valves, pipework and power supply

Asset group	Risks evaluated
Wastewater system	
Wastewater treatment plants	• Structural failure and land instability • Failure of screens, primary tanks, reactor-clarifiers, filters, ultraviolet plant, discharge pumps, digesters and centrifuge dewatering • Failure of outfall
Wastewater pump stations	• Structural failure and land instability • Failure of overflow, odour control, pumps, valves, pipework, ventilation, power supply, motors/drives and controls
Wastewater pipes	• Failure of rising mains, exposed pipes (including pipe bridges), grit chambers, gravity pipes, overflows, manholes, chambers, valves/penstocks, ventilation/ odour, and mechanical issues

Risk mitigation

Efficient and effective risk mitigation does not necessarily eliminate the potential for adverse consequences. Risk mitigation is delivered through the combined application of a number of different forms of risk control, including risk minimisation, risk transfer, operational initiatives and engineered infrastructure solutions.

Wherever possible, and economically feasible, engineered infrastructure solutions are put in place to minimise or mitigate risks. This is particularly important in areas of Auckland with ageing infrastructure and growing demand.

In situations where the risk cannot be avoided, we carry out operational initiatives including:

- Asset condition assessment programmes
- Authorisation and monitoring of third-party works
- Inspection regimes
- Modelling of emergency network management and failure scenarios
- Capture, retention and distribution of incident and engineering knowledge
- Development and exercising of emergency management and contingency / continuity response plans.

These initiatives are aimed at providing us with the information to forewarn and prepare us to handle any unavoidable risk event effectively.

Contractual agreements and insurance cover are used as well, where it is appropriate and cost effective to transfer responsibilities for the control of risks and liabilities.

4. The AMP development process

Factors shaping the AMP

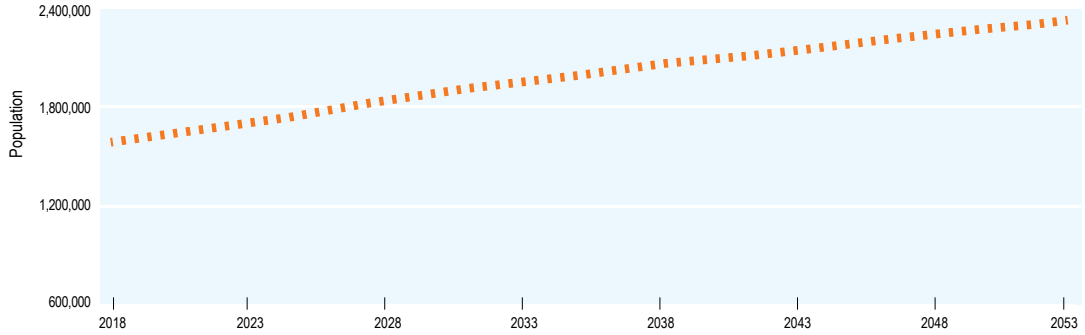
Delivering beneficial outcomes for customers is the foundation for our AMP. These outcomes include supply and service assurance, catering for growth, compliance and resilience against climate change impacts. The below factors have influenced when, where, what and how much we will invest.

4.1. Growth

Regional growth in population, industry and commerce has a direct impact on our ability to provide reliable services and protect public health and environment.

Over the coming 20 years, Auckland's population is expected to grow 29 per cent, adding another 476,000 people to our current population of 1.7 million. (Auckland Council's medium growth scenario i11v6, September 2020).

Auckland metropolitan serviced population forecast – 30 years



Growth on this scale is significant and optimal planning for growth requires certainty around how much expansion there will be and where it will take place so that infrastructure can be built on time, and in the right location to meet desired service levels.

The National Policy Statement (NPS) for Urban Development Capacity (August 2020) sets clear expectations around council planning for growth and the provision of capacity to allow additional housing. It advocates using the most recent Statistics New Zealand population projections, where the medium projection is considered the most suitable for assessing future population changes.

Accordingly, we have used medium growth population projections to size, stage and plan the timing of infrastructure requirements for the region. We will constantly review and adjust for changes to population growth trends.

If, over time, population projections are higher than estimated, projects will be brought forward and accelerated. If population projections are lower than estimated, projects would be deferred until the need arises. Consequently, changes in the timing of projects may impact on cost estimates and the Funding Plan.

We develop our bulk infrastructure in line with the Auckland Council Future Urban Land Supply Strategy (FULSS) in terms of location and timing. Any land development which is not aligned to the location or timing of our bulk infrastructure is likely to increase the inefficiencies in provision of infrastructure.

For example, early land development ahead of Watercare's network rollout puts pressure on timing of bulk investment and requires decisions on upsizing or bringing forward projects ahead of planned funding provisions.

Ideally, efficient infrastructure development occurs when land develops concentrically from the existing networks to optimise value of investment. If developers wish to develop ahead of planned infrastructure they will be required to pay for connecting their infrastructure to our existing networks.

An important consideration when planning for growth is demand management. Water is a finite resource and growth of population and industry has a direct impact on demand. Our water and wastewater networks are not built for unconstrained demand so effective demand management and networks management will be vital for a resilient water system in the future.

We will continue our network initiatives which involve developing our oversight of water flows from source to tap so that we can proactively reduce water loss in our network. Our customer initiatives involve growing customer awareness of water use and potential rainwater and re-use opportunities where drinking water is not necessary, such as watering the garden or washing the car. We will continue to work with our commercial partners to improve their productivity per litre of water used, and our partner schools and organisations as we communicate the value of water conservation.

4.2. Resilience

With the expectation of reliable services 24/7, we must be resilient to changing conditions. In practical terms, this means analysing critical facilities and assets and minimising both the number of service interruptions and the effects on our customers during those interruptions. This starts right from the raw water sources, and progresses through the raw water network, water treatment facilities and treated water networks, into the wastewater network and treatment facilities and on to the receiving environments.

The resilience of our water and wastewater networks has and will continue to be challenged by climate change impacts. Over the last five years, Auckland has experienced extremes in weather, ranging from storm events with record rainfall to severe droughts depleting our water storage.

For example, the prolonged drought in 2020 has resulted in a huge deficit in rainfall and depletion of the water stored in the main supply dams servicing the region. This necessitated an emergency investment of $224 million to augment water supply and improve network performance. Demand was managed through voluntary savings as well as the imposition of Stage 1 restrictions on outdoor water use.

The frequency of these extreme weather events are expected to increase in the future so it is important to diversify our sources of water to increase resilience. While still conceptual, we have been investigating two alternative options for new water sources in the long term: the reuse of purified recycled water and desalination of seawater for potable use. (Read more about this on page 58)

For wastewater, there are several projects that will enable us to strengthen the resilience of the wastewater network, including treatment process upgrades and new wastewater conveyance systems. The Central Interceptor wastewater tunnel and the first phase of Northern Interceptor wastewater pipeline are two such projects; while these two projects will provide capacity for growth, they will also contribute to the overall resilience of the network by reducing overflows during wet-weather events.

4.3. Compliance with regulatory requirements

Our activities are intrinsically linked to, and directly dependent upon the health of the natural environment. Water sources must have sufficient volume and reliability to provide water for Auckland, and they must be protected from overuse. For the wastewater system there are two main considerations: receiving environments must have the capacity to tolerate treated wastewater discharges without adverse effects, and overflows from the network must be minimised.

We fulfil our environmental responsibilities through a regulatory framework. Meeting our legal and regulatory obligations are baseline requirements for our organisation. Our assets are subject to a large number of consent conditions, and we work to comply with these conditions at all times.

Beyond compliance with consent conditions, we also work to improve the quality of the receiving environment. Integrating environmental considerations into everything we do is key to our role as a trusted iwi partner and community organisation.

As Auckland's lifeline service, we have resource consents associated with:

- Water abstraction from various sources for the purposes of potable water supply
- Discharges from our water and wastewater treatment plants
- Discharges from our water and wastewater networks
- Our infrastructure construction activities.

Legislation governs where and how water and wastewater services are delivered, and how the water and wastewater networks are managed, to ensure that public health and the environment are both protected.

Overall, our water supply complies with the requirements of the current Drinking Water Standards New Zealand and Heath Act. From 1 July 2021, the Water Services Regulator Act 2020 will take effect. This means the principal regulators of our water quality will include the Ministry of Health and Taumata Arowai (the Water Service Regulator).

In preparation for this, our focus has shifted beyond compliance with Drinking Water Standards New Zealand to water safety planning, and a commitment to drinking water quality management. Water safety planning strengthens the focus on preventive measures across the whole drinking-water supply system, promotes a multi-barrier approach to managing risks and supports continuous improvement to guide day-to-day activities now and into the future.

Under the revised regulatory framework, Watercare will undertake annual internal audits of Water Safety Plans (WSP) to:

- Ensure we follow the prescribed practices and procedures in our WSP for the treatment and management of water services operations. This is to be further validated by external audits carried out at any time by the regulator(s).

- Ensure evidence is gathered to support Watercare operations and compliance. Where there is non-compliance, we will specify reasons for non-compliance and the impact on ensuring safe and secure drinking-water.
- Confirm stated improvements are being actioned and potential new risks are identified.

We have established a dedicated team to actively progress these recommendations.

4.4. Pricing of services

We are mandated by legislation to be a cost-efficient service provider, allowing for the efficient operation and maintenance of our assets. While keeping costs low is one part of our fiscal obligations, we must also ensure that we invest in providing safe and reliable services not just today but for decades to come.

We undertake a large capital programme of works each year to maintain our services and meet customer expectations. Our assets are built to service communities over long periods of time, and we plan and arrange our funding and pricing so that these costs are shared equitably over that time. We are committed to ensuring that the cost of growth is borne by those creating the growth.

Before the COVID-19 pandemic, we developed a comprehensive asset management plan that identified the need to invest $10.44 billion over the next 10 years to accelerate projects that would further reduce leaks in our network, improve beach water quality, cater for population growth and make us more resilient to climate change.

We pay for projects in three ways: using money collected from our existing customers through monthly bills, through infrastructure growth charges collected from new customers and from borrowings.

We are financially constrained because our ability to borrow is linked to the Auckland Council group, which operates under the local government framework. The group's revenue has been significantly reduced because of COVID-19, which has reduced the amount of financing available to us. This has prompted us to review our original plan.

Our revised plan has reduced our 10-year expenditure by around $800 million to $9.65 billion but requires us to increase our prices to continue to deliver the outcomes expected of us. This means the average household will pay around $1.50 more per week from 1 July this year, based on a 7 per cent increase in service charges for residential and commercial customers. Infrastructure growth charges will also increase by 12 per cent.

This amended asset management plan will see projects that are underway continue, such as the Central Interceptor and Northern Interceptor developments. However, some projects are likely to be postponed for a few years. These include the replacement of the Huia Water Treatment Plant and the next Rosedale Wastewater Treatment Plant upgrade.

By doing this, we are pushing the investment peak into the three-year period between 2025 and 2027, whereas we had hoped to spend more heavily over the first three years to boost service performance and realise the benefits sooner.

We are working collaboratively with Auckland Council and government to find a way to remove our financial constraints, ahead of the water industry reform.

4.5. Climate change

Climate change is one of the largest challenges that we face as a business and as a country. As we have experienced over the last few years, the frequency of extreme-weather events is increasing.

In 2019 we launched our first **Climate Change Strategy** which set out a direction for monitoring and understanding the impacts we are already seeing today whilst taking action to reduce the risk to provision of water and wastewater services in the future.

The strategy establishes two ambitious targets for emissions reductions from our operations which align with keeping the global temperature increase within 1.5 degrees Celsius:

- Net Zero emissions by 2050
- Reduce operational greenhouse gas emissions by 45% by 2030.

It also comprises a work plan that consists of 14 portfolios across both adaptation and mitigation.

There are climate change risks that could impact our water and wastewater services:

Delivering drinking water: Catchment land instability, water scarcity, deteriorating raw water quality, on-site flooding, power/access road failures to plants, increasing pipe breakages, impacts on assets due to sea-level rise, dramatic changes in demand for water services with increasing peak demands, potential 'stranded assets' following land-use changes and sea-level rise.

Treating wastewater: Decreased effectiveness of oxidation ponds, increasing probability of wastewater bypasses, on-site flooding, impacts on critical third-party services, changes to assimilative capacities, increased instances of consent non-compliances, submerged outfalls, migratory bird impacts, greater corrosion/odour issues, a greater number of overflows, increased pumping costs, increased saltwater intrusion and flotation of assets due to increases in the water table.

Incorporating climate change considerations

Climate change considerations are also woven into the way we deliver infrastructure projects. As our projects undergo individual planning assessments, where there are vulnerabilities to a changing climate these will be taken into consideration through the design and construction process These will provide greater granularity of the likelihood and impact of climate change under different climate projections to decide which planning response is most appropriate.

The most visible challenge of climate change is rising sea levels. Rising sea levels have the potential, especially when coupled with storm surges, to impact low-lying communities. Watercare has a number of water and wastewater plants and networks in those areas. Reviewing the potential impacts of sea level rise in localised areas is something we already do when planning for the upgrade of new assets.

For example, we know that Watercare's current largest facility, the Mangere wastewater treatment plant, is situated at near sea-level in the Manukau Harbour. We have established a specific consideration of this challenge in the 30-year planning horizon, indicating the future risk, though more work will be required to monitor and understand the actual sea level rise to define exactly what the response will entail.

Long-term climate adaptation

Watercare's climate change strategy recognises that the decisions we make today in the planning, design and location of infrastructure will impact the future service levels and operability of the network. The infrastructure that will be delivered through this AMP will last for many decades. Therefore we need to use the best knowledge available today to ensure that it is resilient to climate change impacts.

We are using a technique called 'dynamic adaptive planning' to support our planning approach to long-term climate adaptation. A series of long-term pathways have been proposed that provide various adaptation-related options mapped out with climate and growth-related trigger points to support the direction we might take today whilst keeping options open for the future. The deep uncertainties associated with climate change make the adaptive pathways approach highly applicable.

If, for example, the rate of sea-level rise is faster than anticipated, any associated management or design actions within the long-term pathways can be initiated earlier than originally planned and be continuously reviewed at various 'trigger' times. This approach provides flexibility and reduces surprises that can occur if planning processes and outcomes are locked in using more traditional planning methods.

The planning responses to areas that are susceptible to the impacts of climate change-related sea level rises are typically as follows:

- Retreat – This involves no effort to protect the asset or the land. In the most extreme cases, entire areas may be abandoned or not developed.
- Accommodate –This option involves elevating buildings and implementing operational as well as emergency evacuation procedures. The asset will continue to be used though there will be potential impacts.
- Protect – This involves erecting hard structures, as well as soft solutions, such as dunes and vegetation to protect assets and communities from the impacts of extreme events.

Within this AMP, the primary planning approaches are likely to be 'accommodate' and 'protect'. However ongoing monitoring and awareness of climate issues will be undertaken.

Climate change mitigation

Watercare's AMP includes a number of infrastructure upgrades that are designed to meet wastewater processing outcomes as well as having positive impacts on electricity consumption, natural gas and biosolids production.

Some of these projects include:

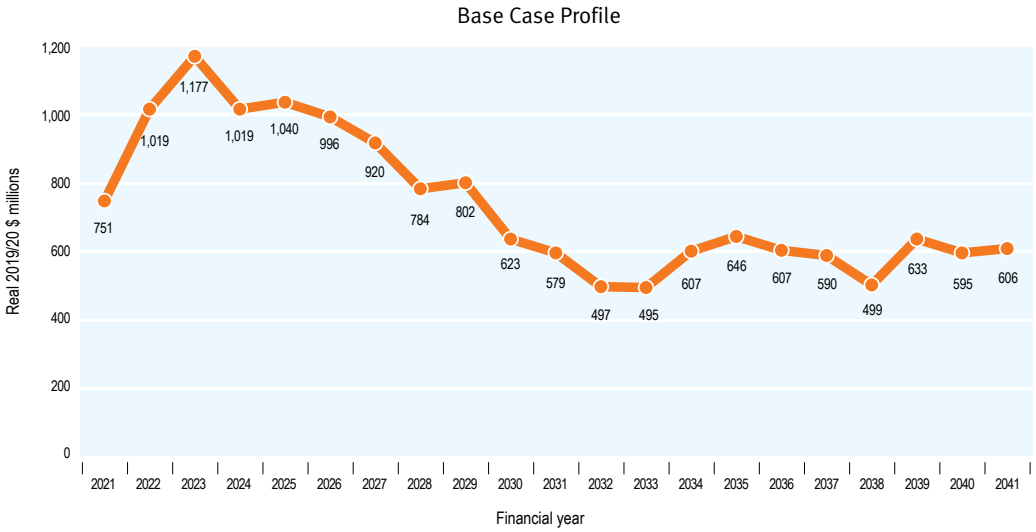
- Enhanced sludge processing at Mangere and Rosedale wastewater treatment plants to reduce biosolids generation
- Cogeneration engine replacements at Mangere WWTP to remove the need for natural gas
- Process upgrades including co-digestion and modifications to primary & secondary processes to reduce energy requirements at Mangere WWTP
- Improved aeration control and second cogeneration engine at Rosedale WWTP to reduce energy requirements

The base case for investment

In late 2019 Watercare embarked on the development of a revised AMP to support the Long-Term Plan 2021 – 2031. This approach was different from previous AMP processes and aimed at determining the true size of the capital investment required to plan for a 20-year period, without the consideration of debt limits and constraints.

The process for generating the AMP capital investment profile was iterative and challenged across the business. It was reviewed by the Capital Oversight Panel (Executive Team) and progressively challenged by the Asset Management Capex Committee (AMCC Board Committee). Following the recommendation of the AMCC, this was approved by the Board, as the preferred investment profile for Watercare. This profile is the base case investment programme and is summarised in the graph below. Values are in Real 2019/20 $ millions. Throughout this AMP, we use real $ to show the changing programme of work without the influence of inflation.

Base case capital investment profile



The peak in investment 2022 – 2025 was a function of concurrent projects such as:

- the Central Interceptor
- Huia Water Treatment Plant and associated raw and treated water network renewal
- the revised asset replacement strategy for linear local assets (pipes)
- delivery of the Western Isthmus programme
- extension of the Waikato Water Treatment Plant to provide a resilient additional water supply for growth
- North Harbour No.2 watermain
- preparation for the Māngere Wastewater Treatment Plant upgrades to meet the expected 2032 consent requirements
- meeting the growth projections for the north east (Warkworth, Snells and Wellsford)
- continuation of the Rosedale Wastewater Treatment plant upgrades

External Influences that impact pricing and the capital programme

There have been two significant events during the 2020 calendar year that have influenced the direction of the capital programme. These are COVID-19 and the Auckland region's drought.

COVID-19

The impacts of COVID-19 have resulted in significant loss of revenue to the Council Group, forecast to exceed $1b over the next 3 years. Combined with this, sister entities within the Auckland Council Group have reasseesed their investment requirements.

These factors impact Auckland Councils ability to access debt and pass on that debt as an intercompany loan to Watercare.

Watercare's only other source of funding is from customer charges. This means that when Watercare needs to build new infrastructure, where funds are not available from intercompany borrowing, we must either increase prices or defer the investment. Where investment is deferred risk to the supply of services increases, as does maintenance costs and future Capex requirement.

These factors are fully discussed in the Funding plan section of this document.

Auckland region drought

During the 2020 calendar year Auckland experienced continuing drought. In response Watercare has brought forward investment for future water supply and treatment, costing $209m in the financial year to June 2021. This has resulted in forecast debt at the start of the LTP period being $209m higher than previously planned.

The risks associated with the recommended pricing scenario

Ultimately, the Watercare Board needs to determine a path that balances investment with debt restrictions, customer price impacts as well as the risk associated with the failure of critical assets or being unable to supply the infrastructure to support Aucklands rapid growth.

This process has resulted in the affordable AMP investment profile. The two AMP profiles are compared in the table below.

Real 2019/20 $ millions	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Base case (preferred)	1019	1177	1019	1040	996	920	784	802	623	579	8960
Affordable profile (recommended)	720	671	704	822	999	1044	863	849	703	758	8132
Variance	-299	-506	-315	-218	3	124	79	47	80	179	-827

Note: Totals will not add exactly due to rounding

Over the 10-year period the overall investment is $827 million lower in the recommended v preferred scenario. However, of particular note is the profile in the first 4 years where $1,338 million of capex has been deferred.

The implications of this reduction is that there are some key projects that will need to be deferred. These are:

- a portion of planned network renewals
- Huia Water Treatment Plant replacement and associated raw and treated watermain renewals including the North Harbour 2 Watermain
- the commencement of some of the Western Isthmus projects will be postponed but will be completed by due date.
- Warkworth and Wellsford growth, aligned with Auckland Council Group priority areas
- Warkworth/Snells, Waiuku/Clarks Beach, and Wellsford wastewater treatment plant
- Aspects of the Waikato A WTP project will be delayed
- Rosedale WWTP upgrades

As we move forward and gain a better understanding of how the "post-Covid" environment affects us, we will also monitor our programmes closely and take any opportunity to deliver all or part of key programmes through staging and/or reprioritisation of projects.

Notwithstanding the fact that we are faced with deferring key projects, we will be able to continue delivery on the following:

- Committed and in-flight projects. $1,167 million (real $) in FY22 to FY24, 56% of the base case capital programme
- The Central Interceptor, this is 34% of the capital programme in FY22 to FY24
- Approximately 50% of the Base Case Planned network renewals
- Redhills / Whenuapai HIF programme will continue
- 80% of the planned Base Case growth investment for the first 5 years
- Smart meter and new connection installations continue
- Planned control system and major electrical renewals and upgrades
- The second Waikato River intake structure delivered to programme
- Water quality projects

Prioritisation of AMP projects

Watercare has a large capital expenditure programme, prioritised to address business risks. Due to the significant constraints on funding, particularly over the short term, we are improving our prioritisation framework. The improvements will make the prioritisation more transparent, objective and repeatable. This last point will become critical in light of the water reforms, leading us towards external regulation from both an environmental and economic perspective.

The framework ranks our projects and programmes according to the consequences of a failure, identifying which projects and programmes can be addressed in any given year based on funding constraints. Currently projects and programmes that address level 4 and 5 consequences are included in our prioritised list. A number of level 3 consequence projects are also included. We have also included some of those projects and programmes that are identified as business as usual and always require funding allowances year on year. The prioritisation process is ongoing and is constantly being refined as required by business need.

Concurrently, we are also undertaking a programme optimisation process. Our Enterprise Model team will look broadly across our capital programme, to identify potential efficiency, cost and carbon savings to the prioritised baseline through more refined segmentation of the programme. These two processes are influenced by each other, requiring constant adjustment to maintain currency to realise both prioritisation and optimisation benefits.

WICS and options to address rating agency constraints on level of debt

During 2020 Watercare engaged the Water Industry Commission for Scotland (WICS) to undertake an independent review of our performance. WICS's report found that Watercare was the clear leader in performance in the New Zealand water sector. However, when benchmarked against world leading water services providers there are greater gains to be made, contingent on Watercare's ability to invest more in renewals, resilience and technology to lower costs.

The review found Watercare had achieved much in its first ten years with the delivery of reliable services and a comprehensive capital works programme while charging its customers $100 million less per year than was forecast by previous councils.

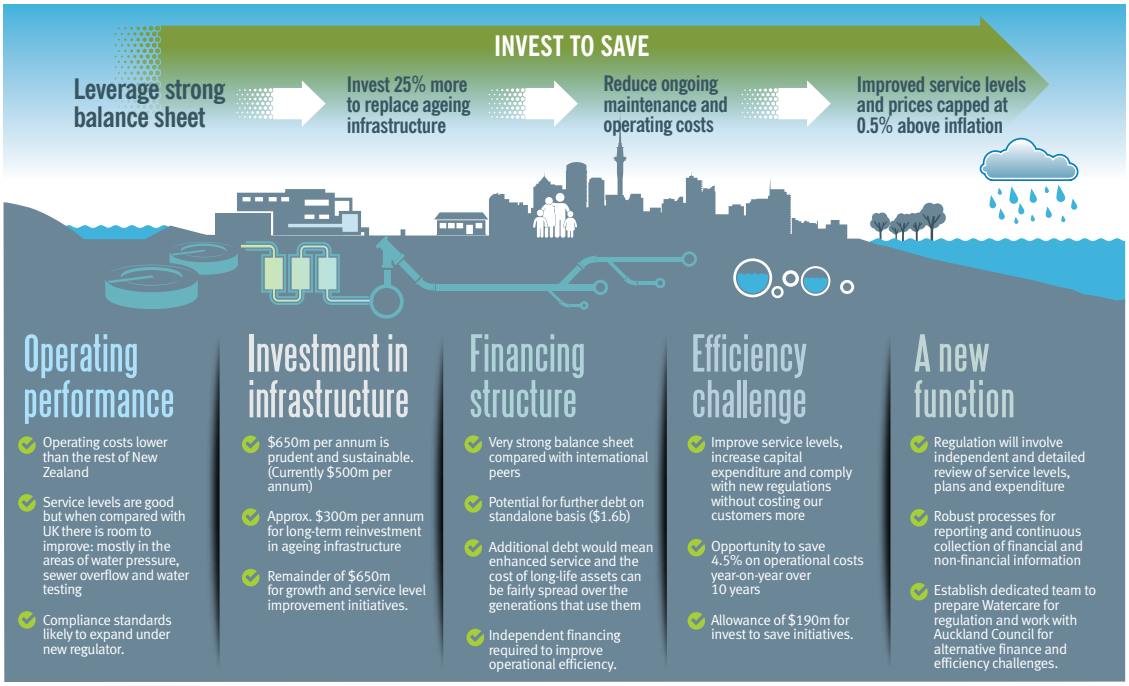
Watercare's unit costs compare very favourably with other parts of New Zealand. Other metropolitan areas report unit operating costs that are 50% to 100% higher than ours.

However these unit costs were still higher than those of leading UK providers who had been able to undertake a much higher level of investment through greater access to borrowing.

The WICS analysis recommended that Watercare:

- Should be looking to increase its level of capital expenditure by around 50%
- Should seek to improve its operating expenditure efficiency by 4.5% a year in real terms
- Achieves these outcomes with economically efficient pricing for customers along with a need to address Watercare's current constraining financing structure.

Draft determination from Water Industry Commission for Scotland (WICS) for Watercare Services



Addressing rating agencies view of Watercare's debt

Enabling rating agencies to treat Watercare debt as if we were a stand-alone water utility would allow us to invest more in both asset renewal and resilience as well as initiatives to drive further operating costs efficiencies.

Work has been underway with both council and Government agencies to identify ways to achieve this outcome for the benefit of customers. The current options available are:

- An interim Crown indemnity of Watercare debt until the national 3 Waters Reform process establishes new delivery models for water services, this would enable immediate relief to increase the investment programme without substantial increases in customer prices.
- Waiting for the Three Waters Reform process which may be two to three years away. It is critical that this process provides for economically efficient borrowing structures to ensure prices to customers and the level of investment can be managed.

Work is underway on assessing the viability of these options, so no assumptions have been made to include the outcome of these workstreams in our price path financing.

We feel the recommended pricing scenario of 7% for 2 years followed by a 9.5% increase gives the right balance between our legal obligations to keep cost to our customers at minimum levels while maintaining the long-term integrity of our assets.

5. Water asset strategy

Our water asset strategy outlines the significant programmes required to meet Auckland's future growth. These programmes include source augmentation, water treatment upgrades and water transmission initiatives. They have been grouped by geographic area and first and second decades.

This infrastructure programme will be supplemented by demand management initiatives which are outlined in the Auckland Water Strategy (AWS). The AWS highlights a pathway to reduce Aucklanders' use of drinking water by around 20 per cent over the next 30 years to create a city more resilient to impacts of drought and climate change.

Auckland Water Strategy

Auckland is expected to grow to 1.9 million people by 2031; 2.1 million by 2041 and 2.3 million by 2051.

As Auckland grows, its demand for water grows as well.

Currently, the gross per capita water consumption, which includes both residential and non-residential, is around 268 litres per person per day (Litres per day or L/p/d). We are implementing demand management initiatives to reduce this to 253L/p/d by 2025 and further programmes to bring down consumption to 225L/p/d by 2051.

In April 2021, Auckland Council and Watercare jointly committed to adopting the next set of targets designed to reduce Aucklanders' use of drinking water by 20 per cent by 2051 to create a city more resilient to impacts of drought and climate change.

The move is a significant step forward in the demand management aspect of council's water strategy 2021 – 2050, which aims to protect and enhance te mauri o te wai/the life supporting capacity of water, to create a future of water security for Tāmaki Makaurau.

One of the key principles used to develop the long-term water usage targets was ensuring we did not use water pricing as a lever to reduce customer demand. Instead, the aim is to educate people and create a more efficient and smarter system that allows for new technologies over time, leading to behaviour change in our customers.

Technology is a key component of the council group's water demand management strategy for us. Key technology initiatives include installing smart meters in all homes by 2034, and investing in a smart, efficient network monitoring to keep leakage less than 13 per cent of water volume treated.

Other measures that the Council group will adopt as part of the AWS include:

- increasing water efficiency education to change behaviour
- requiring new homes to be water efficient
- requiring new homes with storm water tanks to be plumbed in for internal and external non-potable use by 2025.

Demand management is designed to operate in tandem with infrastructure investment, including securing alternative drinking water sources for the long term.

Prior to the 2020 drought, we supplied water to 1.7 million Aucklanders, providing an average of 440 million litres of high-quality drinking water each day.

Auckland's metropolitan water supply network provides water to around 98 per cent of Auckland's regional population while the remaining population is served by smaller self-contained supply systems in the north and south.

The metropolitan network has a diverse range of water sources which feed into an integrated distribution system. These sources include:

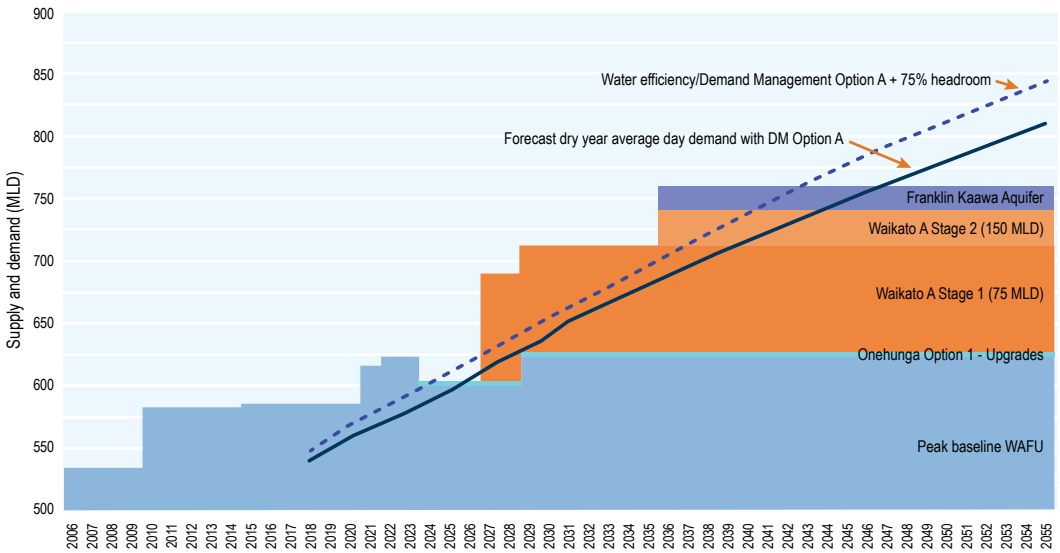
- water storage lakes at high elevation in the Waitakere and Hunua Ranges providing gravity supply into the system
- underground aquifers in Onehunga and Pukekohe
- the Waikato River

This diversity provides increased resilience against drought and other interruptions to supply.

To add to this diversity of sources, Watercare has commenced investigation into the reuse of purified recycled water and desalination as sources of potable water. These are covered under "Water sources beyond 2041", further on in this section.

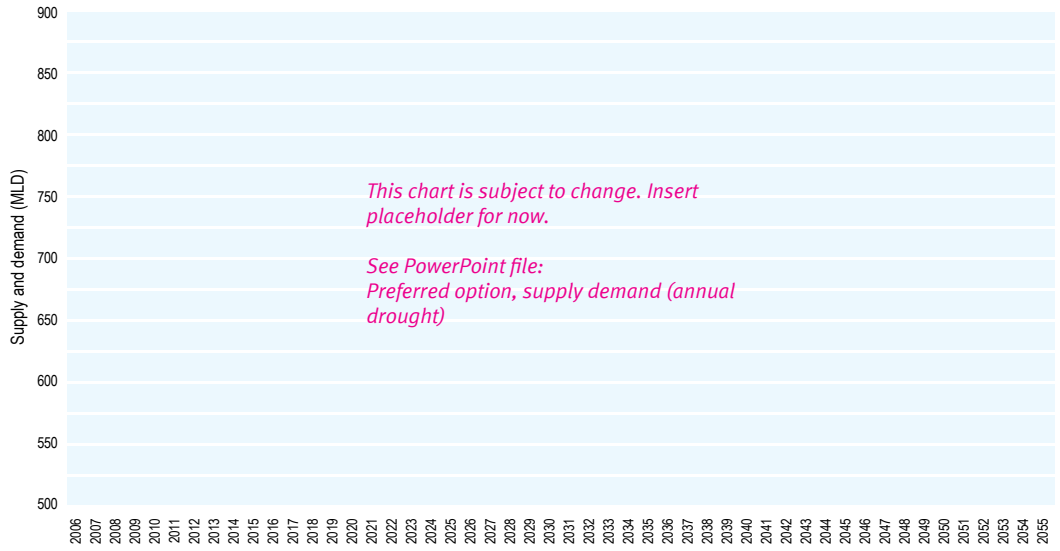
The graph below shows our planned augmentation of existing water sources as well as potential new sources over the next 30 years.

Preferred option, supply demand balance (peak)



replace with high res graph

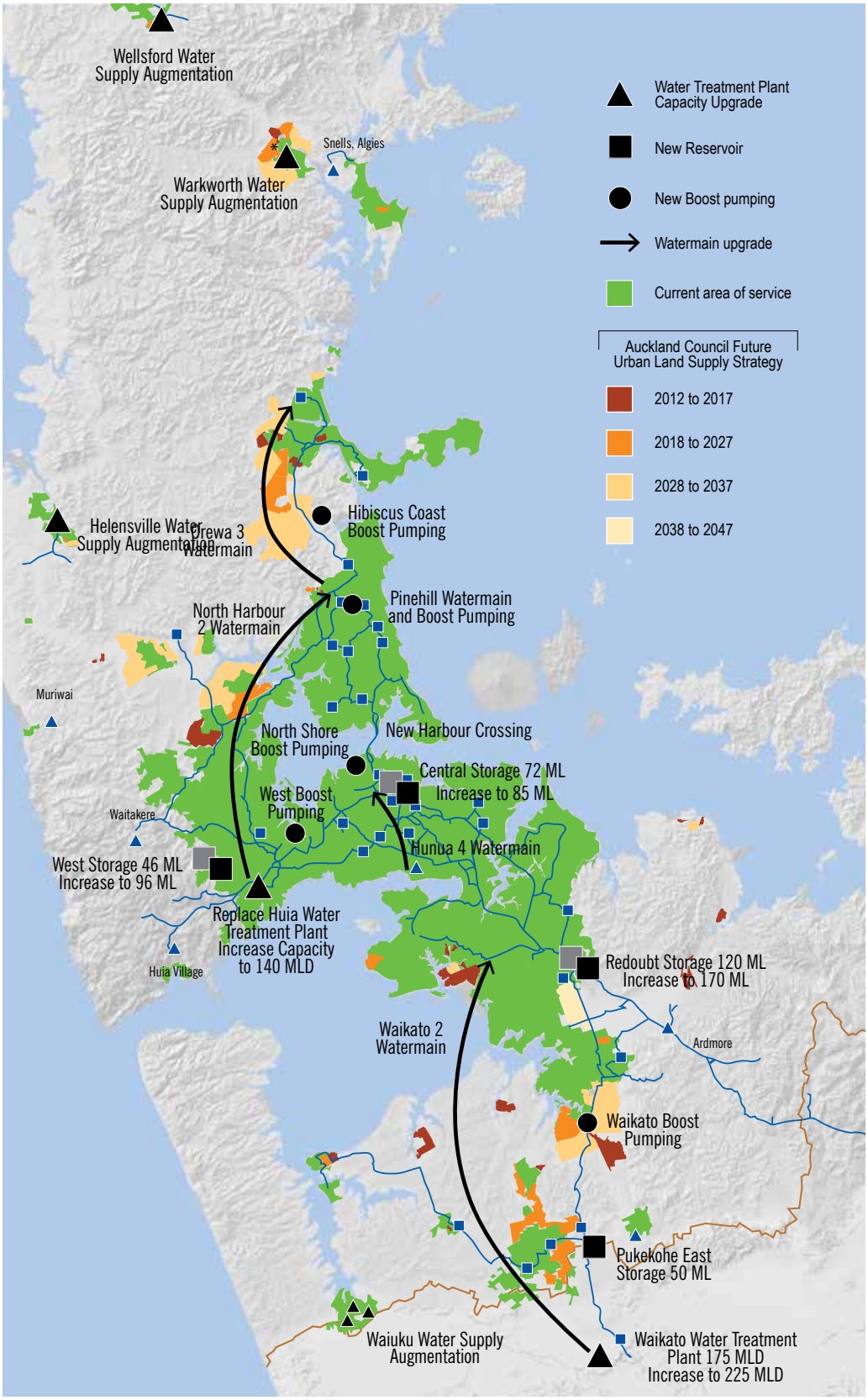
Preferred option, supply demand (annual drought)



replace with high res graph

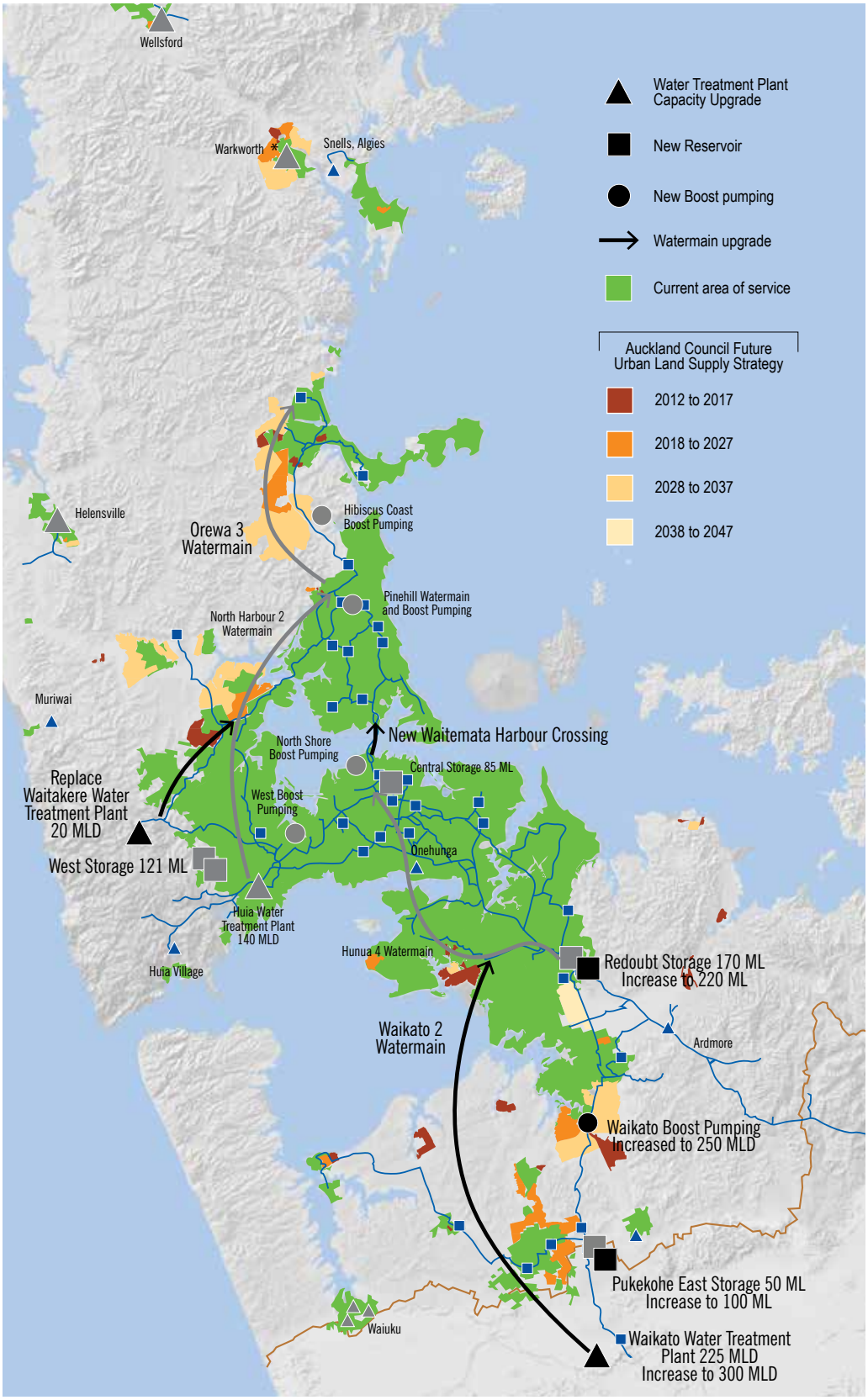
Strategic water programmes 2022 – 2031

replace with high res map



Strategic water programmes 2032 – 2041

replace with high res map



Note: All mentions of forecast expenditure are stated in nominal (inflated) dollars unless otherwise specified.

Metropolitan water supply network improvements

South

2021 - 2031	2031 - 2041
The majority of Auckland's annual water supply needs have historically been met by the rainfall-dependent dams in south and west Auckland. We take climate change impacts into consideration while planning for the future and these impacts are projected to include more frequent dry periods and extended droughts. Therefore, The Waikato River is the preferred source to meet additional water needs during the next 30 years. A consent application has been lodged for an additional take of 150MLD and will be heard by a Board of Inquiry (BoI) during 2021. 75MLD of treatment capacity will be built in the first decade with an additional 75 MLD of treatment capacity added in the second decade. A treatment plant with a capacity of 50 MLD is currently in construction and due to be in service in the winter of 2021. The plant will reduce the impact of the prolonged drought on the Auckland region in the summer of 2022. This will be followed by a solution to bring treatment capacity up to 75MLD. Pumping extra water in the existing Waikato 1 Watermain will increase the volume of water to the Redoubt Road reservoirs, while a new treated water reservoir at Redoubt Road (50ML) will increase strategic storage to provide buffer for peak demands.	An increase in the Waikato River take by a further 75MLD (up to a maximum of 150MLD as per the recent application) is required to maintain Watercare's security of supply standard. The current drought security standard is that the metropolitan water supply dams will be operated to a 1:100-year event (with a 15 per cent residual storage at the end of the drought event) with additional water sources planned to meet the medium growth demand. A new, 75MLD water treatment plant to treat this additional volume will be required along with the construction of the Waikato 2 watermain and associated reservoirs. This watermain will allow for growth and provide resilience to the existing Waikato 1 watermain, protecting our ability to use this source. The building of additional treated water reservoirs at Runciman Road (50ML) and Redoubt Road (50ML) will provide further strategic storage to buffer peak demands. Watercare will continue to explore the reuse of purified recycled water and /or desalination as alternatives to manage increased demand.

North-West

2021 - 2031	2031 - 2041
The ageing Huia Water Treatment Plant will be replaced with a new 140MLD-capacity plant to help meet peak demand and improve the current system resilience. Two additional reservoirs (2 x 25ML each) associated with the new Huia plant will be essential to increase the treated water storage for West Auckland. Extra pumping to take water from the south to the west will be required to provide redundancy against a Huia plant outage. The North Harbour 1 Watermain is currently our only transmission watermain conveying water from the west to the north across the Greenhithe Bridge. The North Harbour 2 Watermain will be an alternative way to service customers in the west and north, as well as provide redundancy and improved transmission capacity.	The replacement of the ageing Waitākere Water Treatment Plant is scheduled for completion during this period. Additional treated water storage (25ML) will assist in meeting peak demand periods and improve the system resilience in the western region.

Central

2021 - 2031	2031 - 2041
The completion of the Hūnua 4 Watermain to the Khyber reservoirs will improve our ability to move water from the southern region to the central region, while providing additional resilience for the Hūnua 3 Watermain. Reinstatement of the Khyber 2 Reservoir (12.5ML) will increase the strategic storage within the central region and help to buffer peak demand.	A planned upgrade of Ponsonby reservoirs (13ML) will provide additional resilience to the central business district's (CBD) supply zone.

North Shore

2021 - 2031	2031 - 2041
Devonport 2 watermain will be replaced. Planned boost-pumping of the existing North Shore watermains across the Auckland Harbour Bridge will improve the conveyance of water to the North Shore until the new Waitematā Harbour crossing is available. The area serviced by the Pinehill Reservoir has very high local demand. A new transmission watermain connection with boost pumping from Albany reservoirs to Pinehill reservoir has been built to provide additional resilience to this supply zone.	A new harbour crossing for transmission watermains, leveraging on the planned New Zealand Transport Agency (NZTA) Waitematā Harbour crossing, will improve the conveyance of water from the central region to North Shore and provide resilience to the existing North Shore watermains on the Auckland Harbour Bridge.

Hibiscus Coast

Increased boost-pumping of the Ōrewa 1 and 2 watermains will allow for shorter term growth in the Silverdale, Dairy Flat and Wainui areas. A new Ōrewa 3 watermain will increase transmission capacity to the north and meet forecast growth.

Non-metropolitan supply network improvements

Warkworth

In 2018, a new groundwater source was consented to supply 4.3MLD of water and thereafter connected to a new water treatment plant at Sanderson Road. Further water source augmentation is likely to be required within the next 30 years to meet the long-term population growth projections.

Wellsford

Wellsford is currently supplied from the Hoteo River. A new ground water source has been identified but yet to be consented. A new water treatment plant will be designed and delivered on a new site adjacent to the source beginning in the first decade but likely to extend into the second decade.

Additional reservoirs for Te Hana and Wellsford will be required in the second decade for security of supply and to cater for expected growth.

Snells/Algies

Snells/Algies is supplied from a groundwater source at present. Further water source augmentation is likely to be required within the next 30 years to meet the long-term population growth projections.

Helensville, Muriwai, Waiuku and Bombay

Source augmentation to service these communities will require further investigation.

Helensville is currently supplied from surface water (Mangakura Dam) and a spring (Sandhills). The consent expires in 2026, and will be renewed in line with growth expectations. A new source is likely to be required late in the first decade to match growth.

At present, Waiuku is supplied from a groundwater source via three water treatment plants. A new water take consent has recently been granted, covering all three bores. We have investigated the water demand in Waiuku and have implemented a leak reduction scheme to make the best use of the current supply sources. Design of a new treatment solution will be completed in the first decade to meet growth requirements.

The Muriwai water take consent has been renewed, allowing for minimal demand increases in the area, as projected.

The Bombay water take consent expires in 2027. We will be renewing this consent in accordance with statutory timeframes, taking into account any expected growth in the area.

Clevedon is not currently serviced by Watercare. A scheme to take water from Ardmore is currently being constructed. The funding costs are being distributed in accordance with the infrastructure funding agreement with the developers. The project costs will be reimbursed through development interest in the Clevedon community.

Water sources beyond 2041

As we plan for the future, there are two options for new water sources that will become increasingly significant.

Reuse of purified recycled water for potable use

Reusing purified recycled water (or highly treated wastewater) will enable the effective use of a finite resource. It will also guarantee a reliable source of potable water as Auckland continues to grow.

A report we commissioned in November 2020 *(Source Options Assessment for the Metropolitan Supply – Purified Recycled Water Scheme Concept Report"- Beca)* considers two concept schemes:

1. **Indirect potable reuse:**
    - treated wastewater from Rosedale wastewater treatment plant is treated by an advanced water treatment plant (AWTP) on site
    - this purified recycled water is suitable for drinking
    - the purified recycled water is pumped to a new seasonal storage dam at Campbell Road
    - a new 150MLD water treatment plant at Campbell Road treats the reservoir water and is pumped to new treated water reservoir at Schnapper Rock.

2. **Direct potable reuse:**
    - treated wastewater from either Rosedale or Mangere wastewater treatment plant is treated by an advanced water treatment plant (AWTP) on site
    - this purified recycled water is suitable for drinking
    - the purified recycled water is pumped directly to the treated water network
    - new pipeline from Rosedale to Schnapper Rock, with new 25ML treated water storage at Rosedale
    - new pipeline from Māngere to Hūnua 4 watermain, with new 50ML treated water storage at Māngere

Desalination

The source options report also investigated desalination as a source of potable water.

The report summarises the concept design of a desalination scheme based at Rosedale WWTP from an intake in the sea, treatment at a desalination facility and transmission of the treated water to connect into the wider Auckland transmission system.

The concept desalination scheme is described below:

- new intake pipeline (~2m diameter) extending from an intake located about 3-4 km offshore to a desalination plant located at the Rosedale WWTP site. The precise location and route of this pipeline has not been determined.
- the seawater is treated at a desalination plant at the Rosedale WWTP site
- brine from the reverse osmosis (RO) process would be discharged through the existing ocean outfall from Rosedale WWTP.
- treated water from the desalination plant would be pumped to new treated water storage at Schnapper Rock.

The current drinking water standards and other statutory provisions do not support a utilisation of purified recycled water or desalination as a potable source. Changes to legislation and standards would be necessary along with public education to support adoption of these options. In the interim, we are building a 1MLD pilot advanced water treatment plant at Māngere Wastewater Treatment Plant to trial reuse of purified recycled water. This water will be used for the construction of the Central Interceptor and will provide valuable operational experience for these facilities.

Watercare will continue to utilise demand management as a tool to maximise the utilisation of existing and future water sources and will work closely with Auckland Council to meet the water security needs of Tamaki Makaurau.

6. Wastewater asset strategy

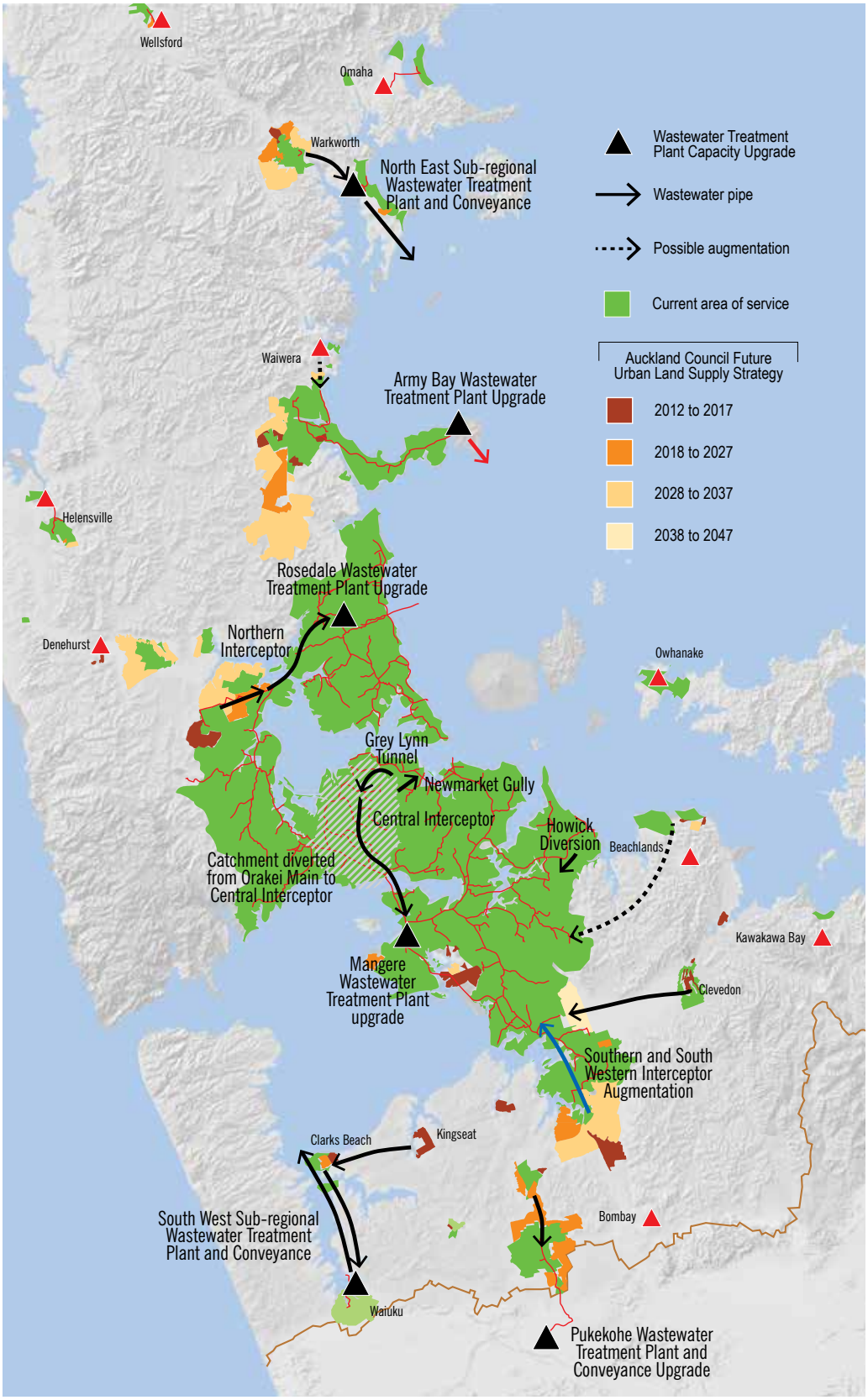
One of our key asset management principles is to optimise the use of existing assets. An important consideration when it comes to effective use of the wastewater network is stormwater. Stormwater is managed and overseen by Auckland Council and therefore, outside the mandate of Watercare.

Stormwater and groundwater entering the wastewater network reduces the hydraulic capacity (the ability to maintain or pass a given flow rate) that could be used to service growth and to provide better levels of service to existing customers. The overall principle guiding our wastewater planning is that the wastewater system is for the conveyance of wastewater only; therefore, as much as practically possible, stormwater and groundwater will be removed from the system through sewer separation and inflow and infiltration programmes.

The Wastewater Asset Strategy[4] over the next few pages outlines our significant programmes required to meet Auckland's future growth. These initiatives include regional and sub-regional connectivity, wastewater treatment and transmission upgrades. They have been grouped by wastewater catchment area and first and second decades.

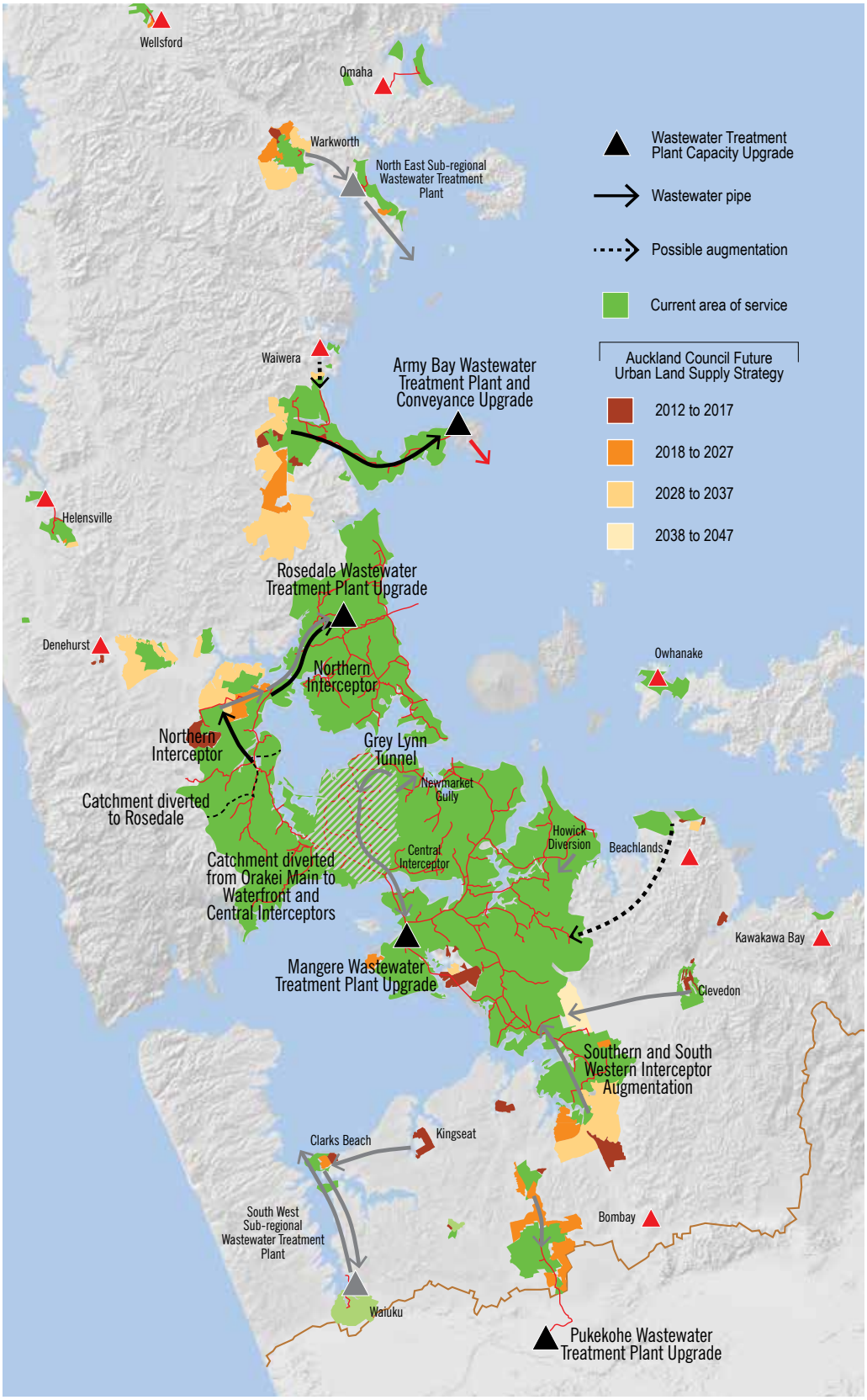
4 The Wastewater Asset Strategy, prepared in 2018 to achieve the outcomes of the Auckland Regional Network Discharge Consent (NDC), is still current. The NDC is renewed every 6 years. The next revision will be in 2023. Wastewater planning assumptions and statistics outlined in this AMP remain unchanged.

Strategic wastewater programmes 2022 – 2031



replace with high res map

Strategic wastewater programmes 2032 – 2041



replace with high res map

Māngere Wastewater Treatment Plant

The Māngere Wastewater Treatment Plant treats and disposes of wastewater from approximately three quarters of Auckland's population (1.275 million). In the recent drier years, these flows have been around a daily average of 330,000 cubic metres per day (m^3/d).

The treatment plant has a current discharge consent that includes the following limits:

- Maximum daily inflow and discharge volume of 1,209,600m^3/d
- Instantaneous maximum discharge flow rate of 25 cubic metres per second (m^3/s)
- Annual daily average inflow volume of 390,000m^3/d.

Using the current gross per capita production of around 290 litres per person per day and the average daily inflow limit, this equates to a population capacity of approximately 1.34 million people.

Our Māngere discharge consent is valid until 2032. Under the medium growth scenario, a consent renewal is currently likely to be driven by population pressures rather than consent expiry date, as the plant will reach its estimated consented average discharge before the consent expires.

The currently available capacity to service population growth is significantly affected by rainfall. Wetter years typically increase the average daily discharge volume, while drier years typically reduce it. To allow for growth in metropolitan Auckland as the population increases, wastewater flows will be diverted via the new Northern Interceptor wastewater tunnel to utilise the spare discharge capacity at the Rosedale Wastewater Treatment Plant. Over the period of the AMP, wastewater flows of around 160,000 people will be diverted from the Māngere catchment to the Rosedale plant. At the same time, hydraulic processes at the Māngere plant will be upgraded to continue meeting the discharge requirements of the consent.

We are collaborating with NIWA to develop a hydrodynamic model for the Manukau Harbour. This model takes into account nutrient and contaminant loads from all sources and enables us to analyse how our treated wastewater discharges affect the harbour and how the harbour environment will respond to future changes. A working group comprising Auckland Council and mana whenua representatives oversee the project, and we aim to have all the outputs from the model available for access by the public.

2021 - 2031	2031 - 2041
In addition to plant renewals, process optimisation and improvements, our programme of works and investment planned for the Māngere Wastewater Treatment Plant includes: • A thermal hydrolysis plant to enhance pre-treatment of wastewater sludge for improved digester performance and production of more biogas and improved quality of biosolids. This will reduce the plant's carbon footprint, waste and optimise asset life-cycle cost • Peak flow treatment upgrades to handle additional wet-weather volumes following the completion of the Central Interceptor wastewater tunnel • Commencement of the Māngere Wastewater Treatment Plant discharge consent renewal process ahead of its expiry in 2032.	The second decade will include: • Further solids stream upgrades • Additional wet weather treatment facilities if required.

Māngere catchment

The Māngere catchment currently extends from Redhills - Whenuapai in the north-west, Howick in the east and Drury in the south. The older parts of this catchment are serviced by a combined wastewater and stormwater network. About 3% of our customers are on a combined system. This leads to frequent occurrences of wet weather overflows.

Wet-weather overflows are caused by heavy rain and are a mixture of stormwater (rainwater run-off from roofs and roads) and wastewater. In heavy rain, the stormwater that drains from the average roof is equivalent to the wastewater flows from more than 40 households.

Our Central Interceptor (CI) wastewater tunnel is a vital infrastructure project for Auckland. The CI is a 14.7-kilometre tunnel and is part of our wider wastewater strategy to protect and enhance the natural environment. It will increase the capacity of our wastewater system to deal with population growth, help protect our environment from overflows and ensure Aucklanders can enjoy clean and healthy beaches for generations to come.

The CI will carry wastewater – currently being conveyed by the Western Interceptor, Ōrākei Main Sewer and the Eastern Interceptor – to the Māngere Treatment Plant.

This will not only create capacity in the Ōrākei Main Sewer but also free up capacity in the downstream Eastern Interceptor and allow for growth in central and south Auckland which are serviced by the Howick, Tāmaki East and Southern interceptors.

To make the best use of the conveyance capacity the Central Interceptor will provide, we are working with Auckland Council's Healthy Waters to develop a 10-year programme of works to improve the water quality in Auckland's western isthmus urban waterways, streams and harbours.

The Western Isthmus Water Quality Improvement Programme uses the enabling works of the Central Interceptor to implement a combination of wastewater and stormwater options in each catchment to reduce the volume and frequency of overflows from the combined and wastewater networks. This will primarily involve removing as much stormwater from the wastewater network as possible. In addition to the $1.3 billion in capital works we are funding and undertaking in this area over the next 10 years, Auckland Council has allowed $300 million during this period for their share of the separation works to reduce overflows to the environment. This is to be funded through Auckland Council's water quality targeted rate. The programme will be extended to cover the Eastern Isthmus with an investment contribution of $300 million from Watercare. Auckland Council will have to contribute a similar amount as part of Healthy Waters funding requirements.

We are anticipating significant growth in the south of the region in line with council's FULSS. The southern area has also been identified by Auckland Council and central government as a potential area to build houses quickly.

The Hingaia Peninsula and Drury West will be serviced by the Hingaia Pump Station, which is connected to the Southern Interceptor. Augmentation of the Southern/South-Western Interceptor with additional capacity from Bremner Road via Hingaia to Manurewa will be timed to service growth. We will also be investigating the potential to integrate purified treated wastewater reuse to provide greater resilience in the water and wastewater networks.

Tamaki Regeneration Company (TRC) and Kainga Ora (KO)

There is significant intensification occurring in our eastern and central city catchments. The Tamaki Regeneration Company (TRC) and Kainga Ora (KO) are significantly increasing dwellings in the Tamaki, Glenn Innes, and Panmure areas in the east, and Mt Roskill, Owairaka and Oranga more centrally. They are targeting at least a three-fold increase in dwelling numbers while they maintain the existing social housing stock in the area and provide additional housing for rent and private sale.

Watercare is working with TRC/KO, especially around the wastewater capacity, to manage any adverse effects of the redevelopment on our network and the environment. In particular, we are looking at replacing old wastewater pipes that connect each house to our network, as the wastewater flows from this area are highly influenced by wet weather. Where the public wastewater pipes are under capacity, even after reductions in wet-weather flows, we are working with TRC/KO to undertake necessary upgrades.

2021 - 2031

- The construction of the Central Interceptor started in 2019. The project is scheduled for completion by 2027.
- A stormwater/wastewater separation programme within the Western Isthmus catchments will be implemented to reduce wet weather overflows to the environment.
- A stormwater/wastewater separation programme within the Eastern Isthmus catchments, to reduce wet-weather overflows to the environment. This will commence in this decade and be completed in the second decade.
- As part of the Southern Interceptor augmentation, the Hingaia Pump Station and initial network upgrades will be constructed. A new pump station at Bremner Road, to allow Drury West servicing, is underway. This will allow continued growth in the southern areas of the region.

Additional programmes to solve residual capacity issues will be identified and carried out during this period including:

- Howick diversion to provide for growth and mitigate wet-weather overflows
- Ōtara catchment upgrades to mitigate wet-weather overflows
- Newmarket Gully to mitigate impact of overflows.

2031 - 2041

The below programmes will continue into the second decade as follows:

- Further augmentation to the Southern Interceptor, including an upgrade of the Bremner Road Pump Station and duplication of the pump station's rising mains.
- Further Ōtara and Newmarket network upgrades.
- Eastern Isthmus catchment improvements to reduce combined sewer overflows to the environment and will be completed in the second decade.
- Additional programmes to solve residual capacity issues will be identified and carried out during the period.

Rosedale Wastewater Treatment Plant

The Rosedale Wastewater Treatment Plant treats and disposes of wastewater from approximately 15 per cent of Auckland's population, currently estimated to be 251,000 people. The plant discharges, on average, around 68,000 m3/d of highly treated wastewater through an outfall pipe into the Hauraki Gulf (off Mairangi Bay).

Based on the existing consent limits, we expect that the outfall pipe has capacity to treat the flows of around 578,000 people.

The discharge consent is valid until 2030. As growth occurs across the region and flows are diverted from the Māngere Wastewater Treatment Plant catchment to the Rosedale plant, treatment processes and hydraulic capacity at the plant will be upgraded to maximise the use of the existing outfall pipe.

2021 - 2031	2031 - 2041
In addition to process optimisation and improvements, the programme of works and investment planned for the Rosedale Wastewater Treatment Plant include: • A thermal hydrolysis plant to enhance pre-treatment for anaerobic digestion to improve biosolids to class A quality, reduce carbon footprint and waste, and optimise asset life-cycle cost. • Construction of new treatment processes which includes primary sedimentation tanks, biological treatment reactors, clarifiers and a separate pond discharge. • Start the consent renewal process for the Rosedale Wastewater Treatment Plant.	• Further upgrades to the plant to provide additional capacity for growth and diversion of flows from Māngere • Improvements to meet new discharge consent requirements • Investigate reuse options.

Rosedale catchment

The Rosedale catchment covers the area from Albany across to Long Bay in the north to Chatswood across to Devonport in the south and is served by a fully-separated wastewater network. Currently some parts of this catchment experience wet-weather overflows so there is a significant programme of works to address this issue.

As part of the North Shore trunk sewer and pump station upgrade programme, the following work is planned or underway to resolve overflows at the locations identified above:

- Wairau Pump Station and rising main upgrade
- Sidmouth Pump Station and rising main upgrades, including the East Coast Bays Branch Sewer upgrade
- Fred Thomas Drive Pump Station and rising main upgrades
- Alma Road Pump Station diversion
- Northcote Sewer upgrades
- Chelsea Pump Station upgrades
- Shoal Bay inflow and infiltration investigation.

The Northern Interceptor wastewater tunnel will be built to divert flows from the upper portion of the Western Interceptor catchment to the Rosedale Wastewater Treatment Plant. The first phase of the Northern Interceptor will take flows from the existing Hobsonville Pump Station to Rosedale by 2022. The second phase, from Westgate to Hobsonville Pump Station will enable growth in Whenuapai and Redhills, and is being advanced as part of the Government's Housing Infrastructure Fund. Further boost pumping and extensions to the Northern Interceptor will be phased to accommodate growth, and the Concourse storage tank flow will be diverted from the Western Interceptor to the Northern Interceptor currently programmed for 2036. We will build a second Hobsonville Pump Station and duplicate the rising main from Hobsonville to Rosedale, timed to start in 2036.

2021 - 2031	2031 - 2041
• The Northern Interceptor from Westgate through to Rosedale will be completed. • The North Shore trunk sewer and pump station upgrade programme will continue in the Wairau Valley, Castor Bay, Stanley Point and Birkdale wastewater catchments • An interim pump station will be constructed to service the first stages of the Redhills SHA development. • A new transmission pump station will be constructed on Brighams Creek Road and be connected to the phase2 Northern Interceptor network to service growth in Whenuapai, Redhills, Kumeu, Huapai and Riverhead.	• Further phases for the Northern Interceptor programme will be completed. • Network upgrades will be identified and completed as required across the decade • Investigate reuse.

Army Bay Wastewater Treatment Plant

The Army Bay Wastewater Treatment Plant treats and disposes of wastewater from around 3% of the Auckland's population, servicing communities from Orewa, Silverdale, Wainui and extending east to Whangaparaoa Peninsula. The population is currently estimated to be 49,300 people. The plant discharges around 12,000 m^3/d of treated wastewater off the Whangaparaoa Peninsula (Tiri Tiri Matangi Channel).

The recent replacement of the treatment plant's outfall pipe has increased flow capacity to around 1000L/s. Wet-weather flows can now be treated and discharged without causing bottlenecks in the network.

The treatment plant has an existing discharge consent that limits the maximum daily discharge to 32,147m^3/d. Allowing for high wet-weather flows, this equates to the flows of approximately 60,000 people.

Treatment plant and process upgrades will be timed to accommodate growth based on the limits of the recently granted discharge consent.

Army Bay catchment

The Army Bay catchment is serviced by the Army Bay Wastewater Treatment Plant.

Significant future growth areas in this region include Wainui South and Silverdale West. Residential land in Wainui is programmed for immediate development. The structure plan for this area was adopted in 2020, with development expected in the first decade of our AMP period. These developments will be enabled by staged upgrades across our wastewater network.

Pukekohe Wastewater Treatment Plant

The Pukekohe Wastewater Treatment Plant treats and disposes of wastewater from approximately 2% of Auckland's population, currently estimated to be 33,800 people. The plant currently discharges on average, around 10,000m^3/d of highly treated wastewater into a tributary of the Waikato River. The plant's catchment also includes the north Waikato towns of Tūākau and Pōkeno, including a large industrial customer base in Pōkeno discharging trade waste.

We will be carrying out treatment process upgrades to expand the plant capacity to an equivalent population of around 60,000 people, which will be completed by the end of 2021. Further expansion will occur in the second 10-year period, timed with growth in the connected communities.

Pukekohe and north Waikato catchments

The Pukekohe catchment is serviced by a dedicated 'wastewater-only' network; the recent upgrades to the Pukekohe Trunk Sewer and Pukekohe Pump Station have helped to maintain compliance even during wet weather.

There is significant growth projected for this catchment, within the future urban zoned land. A plan change is currently underway, amending the Unitary Plan in accordance with the structure plan adopted in 2019. There is also substantial expansion predicted in both Tūākau and Pōkeno with a considerable number of trade-waste discharging industries in both of these townships.

We will continue to plan staged upgrades to keep up with growth in this catchment.

Warkworth and Snells/Algies wastewater treatment plants

The Warkworth and Snells/Algies wastewater treatment plants together treat and dispose of wastewater from approximately 0.6% of Auckland's population, currently estimated to be 8,500 people. By 2040 this population is expected to grow to 35,000. The following programme is underway to service the projected growth.

The North-East sub-regional Wastewater Treatment Plant is currently in design. The basic concept includes wastewater being pumped from Warkworth to the new plant, which will be located adjacent to the existing Snells/Algies plant. The scheme includes a new larger-diameter outfall pipe to the inner channel of the Hauraki Gulf, off Martins Bay. The sub-regional plant will have staged capacity upgrades, from an initial 18,000 people equivalent to an ultimate capacity of around 35,000 people. Our existing Warkworth and Snells/Algies plants will be decommissioned as part of the project works.

Warkworth, Snells Beach and Algies Bay catchments

The Warkworth and Snells catchments are separate wastewater-only systems with only one pump station and one network EOP that exceeds the NDC target.

There is significant growth proposed in the Warkworth catchment, within the future urban zoned land. This land is located at both the northern and southern edges of the catchment. A plan change is currently underway, amending the Unitary Plan in accordance with the structure plan adopted in 2019. In view of the high growth expectations, a network model will be built to enable network solutions to be developed.

Programmes to resolve capacity issues will be identified and carried out as required during the AMP period.

Waiuku, Clarks Beach and Kingseat wastewater treatment plants

At present the Waiuku, Clarks Beach and Kingseat wastewater treatment plants serve these respective communities.

The Waiuku, Clarks Beach and Kingseat wastewater treatment plants together treat and dispose of wastewater from approximately 0.7% of Auckland's population, currently estimated to be 10,800 people. Although these plants are broadly effective now, the steadily growing population will soon bring them to capacity.

A resource consent application for a South-West Sub-regional Wastewater Treatment Plant has been granted, enabling Waiuku, Clarks Beach and Kingseat to be serviced by a new wastewater treatment plant, to be located at Clarks Beach. The scheme is in design currently and includes wastewater being pumped from Kingseat and Waiuku to an upgraded plant at Clarks Beach that will discharge a high-quality of treated wastewater. The existing plants will be decommissioned as part of the project works.

Waiuku, Clarks Beach and Kingseat catchments

The Waiuku and Clarks Beach catchments are serviced by dedicated 'wastewater-only' networks that are fully compliant even during wet weather.

The wastewater networks have some capacity to accommodate growth but will require planning studies to optimise the use of the individual networks.

Waiwera, Beachlands/Maraetai and Clevedon

The Waiwera and Beachlands/Maraetai areas are currently serviced by local wastewater treatment plants.

The Waiwera wastewater network will be diverted to connect with the Hatfields Beach and the Army Bay catchment. The treatment plant will be partially decommissioned as part of this project.

Our Beachlands plant currently has capacity for 10,000 people. If development exceeds this capacity, a consent variation will be required to increase the discharge allowance. The consent expires in 2025 regardless, and will need to be renewed. Further process expansion and upgrade would then enable the plant to service around 14,000 people. Between 2021 – 2041, growth expectations for the area are within the estimated tolerances of the plant. However, if growth is allowed to exceed current expectations, upgrades will be scheduled and undertaken as required, including the possibility of connecting the community back to metropolitan Auckland.

Clevedon is not currently serviced by Watercare. A scheme to convey wastewater back to Takānini is currently being constructed. The funding costs are being distributed in accordance with the infrastructure funding agreement with the developers. The project costs will be reimbursed through development interest in the Clevedon community.

7. Asset renewal strategy

As infrastructural assets age, we normally see a decline in their performance, sometimes to the point of asset failure. Asset failures can cause service interruptions and may pose a risk to public health and safety. We have developed asset replacement and rehabilitation programmes to monitor the condition and performance of critical assets in order to estimate the end of their useful economic lives. Asset renewal decisions for these assets are based on a risk assessment of the likelihood and consequence of failure, taking into account the asset's age and life expectancy, condition, performance, system resilience and criticality.

Renewal of treatment plant assets are undertaken based on the observed performance of the assets in operation and regular inspections.

For local network assets which are currently subject to a 'run-to-failure' philosophy, a probable failure rate is applied based on the diameter, pipe material and expected life. The statistical modelling of local network asset replacements will continue to be refined as further fault analysis and condition assessments are undertaken.

Over the time of this plan we will move towards a proactive rather than reactive approach to renewal of our local network assets, with a proportionate increase in investment in this area to ensure a positive customer experience is maintained. Proactive renewal has benefits by reducing leakage in water pipes and reducing infiltration into wastewater pipes, preserving water volumes and network and treatment capacity for customers.

As part of the findings in the WICS report, it was noted that Watercare assumed a higher useful life than some international Industry leading water companies and that access to efficient funding could potentially lead to more proactive renewal of assets resulting in lower operating costs and more efficient delivery of services.

Investment in asset renewals and level of service improvement

Over the next 20 years, $10.2 billion (or 45 per cent of our total AMP investment) will be spent on renewing and upgrading existing assets across our network.

Water renewals and level of service improvement programme ($4.58 billion) include:

- Ōrewa 1 watermain replacement
- Huia 1 and Nihotupu 1 watermains replacements
- Domain Reservoir replacement
- Khyber 3 Reservoir replacement
- Huia 2 watermain replacement
- Hunua 1 watermain which will be replaced by the extension to Hunua 4 Watermain
- Local water network renewals
- Other programmes - Renewing and replacing critical assets near the end of their useful lives and non-critical assets that have failed.

Wastewater renewals and level of service improvement programme ($5.64 billion) include:

- Transmission network replacements
- Local network renewals
- Wellsford WWTP renewals
- Sub-regional WWTP renewals
- Rosedale WWTP renewals

Note: All mentions of forecast expenditure are stated in nominal (inflated) dollars unless otherwise specified.

- Pukekohe WWTP renewals
- Mängere WWTP renewals
- Helensville WWTP renewals
- Other programmes renewing and replacing critical assets near the end of their useful lives and reactive renewal of non-critical assets.

Critical facilities and assets

Our critical facilities and assets are those which cannot be allowed to fail because the consequences of a failure are too high. Criteria to identify which facilities and assets are critical include:

- Health and safety risk
- Number, type and duration of customers affected
- Environmental consequence of the asset failure
- Regulatory, resource consent and drinking water quality compliance
- Size and location of the asset
- Complexity of repair and outage duration.

We have adopted the following approach to the renewal of assets:

- Renewal programmes are developed for critical assets
- Non-critical assets are replaced on failure.

Plant assets

Plant assets include water source assets, treatment plants, transmission pump stations and reservoirs. These are generally accessible assets and have inspections and planned maintenance programmes. The plants have dual process streams to provide redundancy and resilience, where feasible. Mechanical and electrical assets in these facilities have duty and stand-by provision to reduce the criticality of individual assets. Renewal of plant assets are planned based on the observed performance of the assets in operation and as a result of regular inspections.

Transmission pipeline assets

The transmission assets convey substantial quantities of water or wastewater across the region. The failure of these assets can have a significant impact on a large number of customers, the environment or on public health and safety. All transmission assets are classed as critical assets. They are assessed and scheduled for renewal based on age, condition, performance and risk of failure, on an individual basis.

Local network assets

The local network assets generally comprise smaller-diameter pipes. The impact of these assets failing is typically much lower than a transmission asset failure, due to the limited number of customers affected and reduced environmental or public health and safety impact. Water networks are inherently less vulnerable because of the advantages afforded by cross-connections. Most network assets are considered to be non-critical and are allowed to fail a number of times before they are replaced. The consequence of failures is managed via the maintenance contracts' response KPIs.

A subset of network assets is regarded as critical based on their location and the type of customers serviced. We treat these assets in the same way as our transmission assets.

This asset management plan introduces a proactive renewals programme for local pipe assets based on age and condition of the asset. The intention of the programme is to improve customer service and reduce whole-of-life costs.

Condition assessments are carried out when local network pipes are exposed as part of a repair or during operational routines like carrying out a CCTV inspection due to a wastewater pipe blockage or as part of a request to build over the asset.

Pipe asset age profiles

Pipes make up more than 64% of the gross replacement value of our infrastructure assets. It is important that we have a renewal strategy which addresses the uncertainty surrounding these buried assets.

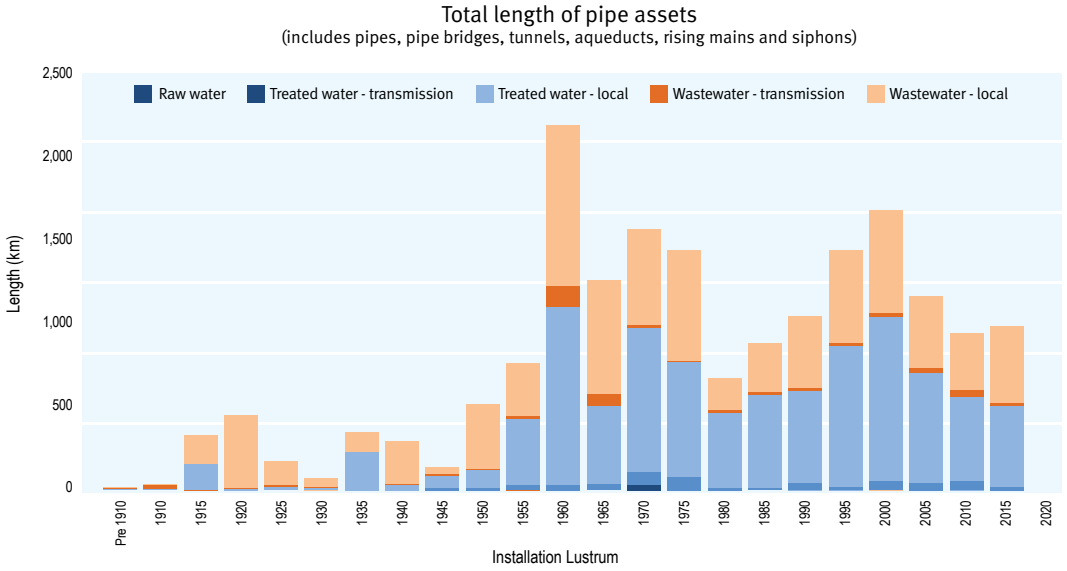
The charts below provide an overview of the age class distribution of our pipe assets as at 30 June 2020.

Major development occurred in the 1960s due to the construction of the trunk interceptor system to take wastewater to the new Māngere Wastewater Treatment Plant and following the opening of the Auckland Harbour Bridge and development of the North Shore area. This can be seen in the age and cost profiles shown below.

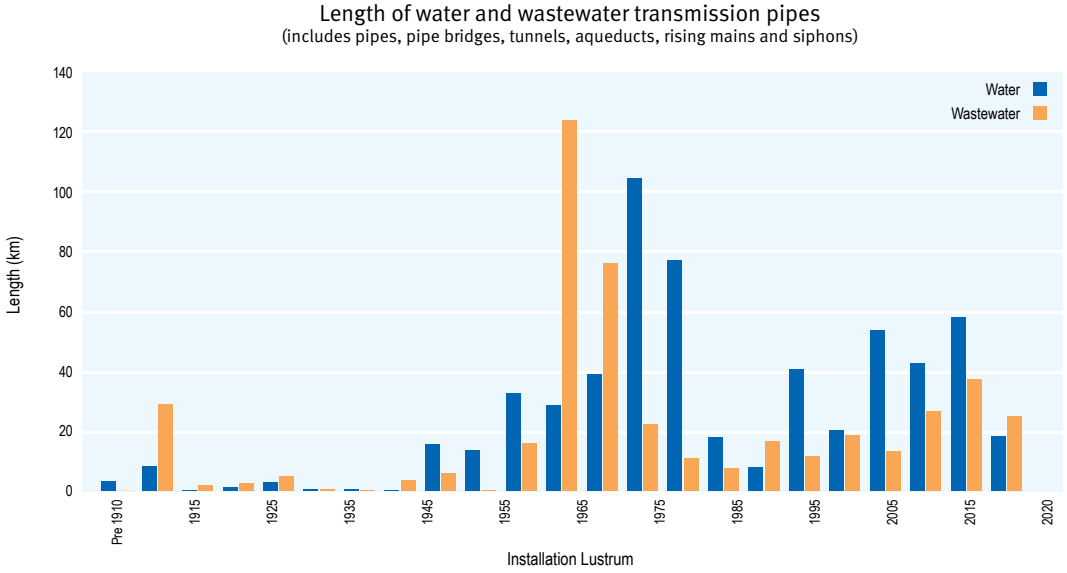
The weighted average age (by length) of transmission water pipes is 36 years and that of local water network pipes is 37 years.

The average age (by length) for both wastewater transmission and local network pipes is 46 years.

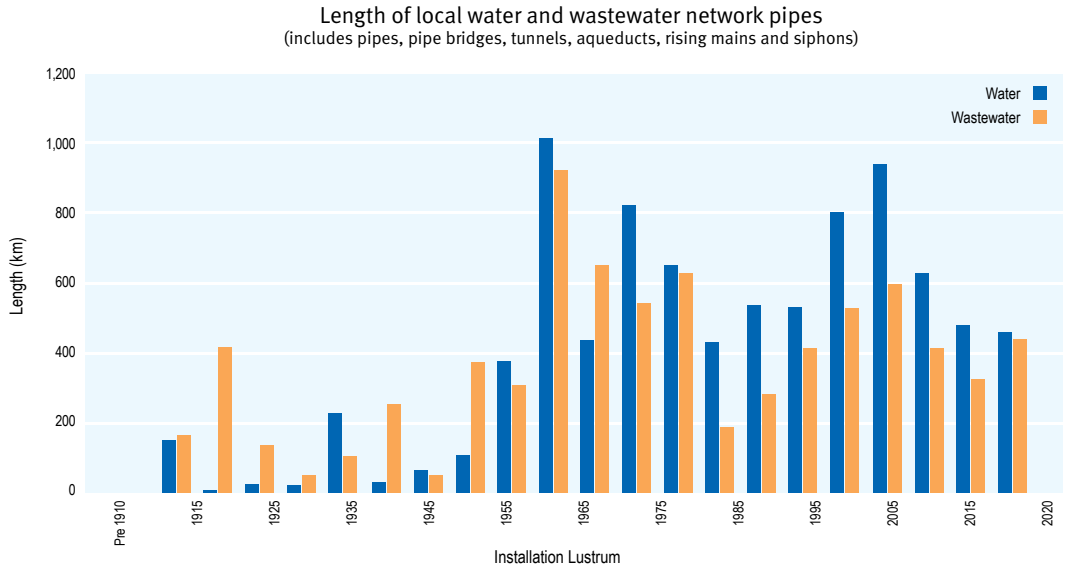
All Watercare pipe assets



Water and wastewater transmission pipes



Water and wastewater network pipes



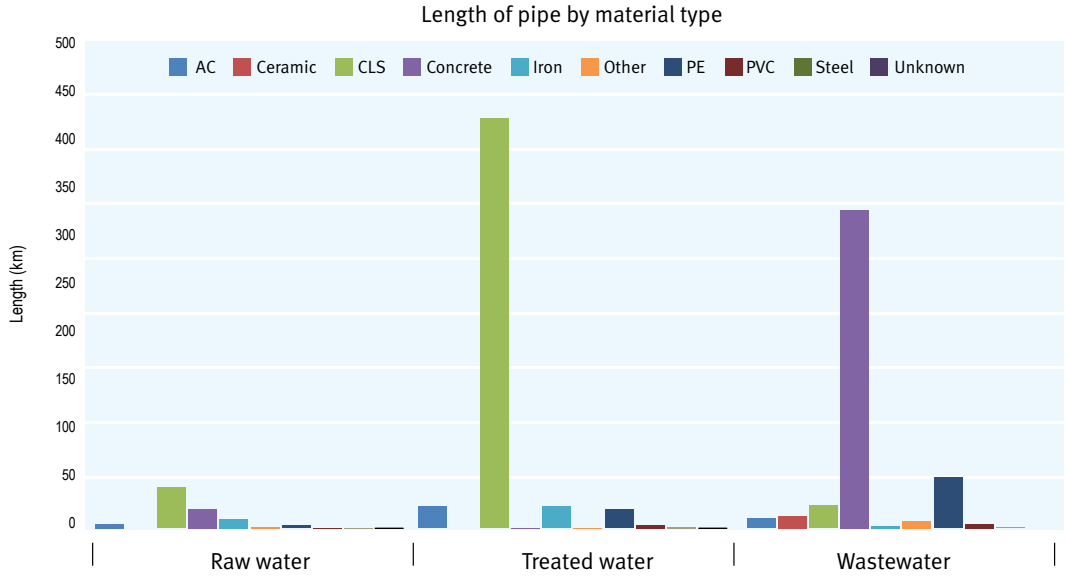
Pipe materials

Pipe material has a bearing on the pipe performance and renewal timeframe.

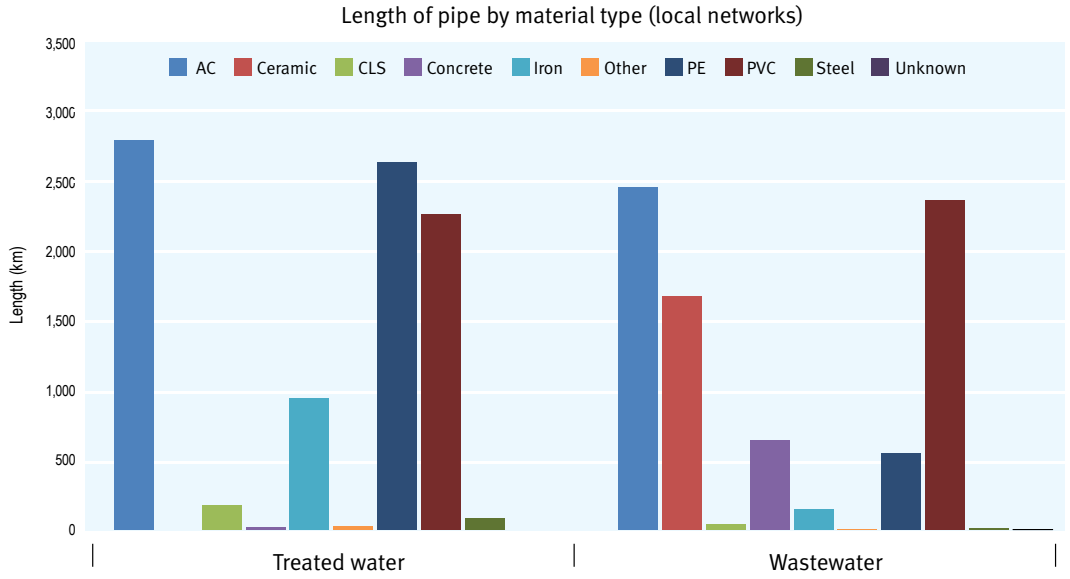
The below figure shows the materials most commonly used for water and wastewater transmission are Concrete Lined Steel and Concrete respectively. In recent times the use of large diameter PE pipes for bulk transmission is increasing.

In contrast, as shown in local network water distribution pipes have been constructed using cast iron (CI) followed by asbestos cement (AC) as preferred materials. The first local wastewater networks used ceramic pipes which have stood the test of time. Much of it still exists today. AC became the preferred material for small diameter wastewater pipes in the 1950-1960s. These pipes are reaching the end of their useful life and will be replaced with modern materials. PE and PVC pipes are being used more in recent times.

Length of pipe by material type for bulk transmission



Pipe length by material type for local networks



8. Operations and maintenance strategies

Enterprise Asset Management (EAM)

Watercare has an EAM which forms part of part of the efficiency and productivity focus. This system improves asset operation and maintenance efficiency. It integrates asset maintenance plans, operational intelligence and work order management.

With improved asset data, access to better analytics and improved processes to manage work, EAM reduces the manual effort to plan and manage maintenance work.

Water supply pressure, flow and water source levels monitoring

This includes remote and manual monitoring of bulk meters and flow meters for billing, network analysis and modelling, operations and leak detection. Pump stations, reservoirs and treatment plants are alarm-monitored for low/high pressure and water levels, faults, power failures and water quality deterioration. The system enables remote control of pumps based on reservoir levels. Rainfall stations, dam-level recorders and in-stream weirs record water levels for use in dam safety surveillance, consent compliance reporting, headworks operation and drought security analysis.

Water supply interruption management

During unplanned outages, customers are supplied with bottled water or water from our 'Oasis' trailers or water tankers. Customers are notified in advance, where possible, of planned water supply shutdowns.

Water source management

Watercare has an Integrated Source Management model (ISMM) to optimise source allocation. We operate our water sources to ensure compliance with consent conditions (regarding allowable volumes of water takes), to optimise the use of energy by minimising pumping and water treatment costs and maximising hydro-generation potential, and to provide volumes within the capacity limitations of the treatment plants, pipelines and pump stations.

We operate our water sources in accordance with our water safety plans. The Water Services Bill will require water suppliers to have source water risk management plans once it becomes the Water Services Act.

We also manage our water sources to minimise the effects our operations have on the environment.

In addition, we manage our dams according to their characteristics. The Hūnua dams are of a large-capacity type, with relatively small catchments. They fill slowly but sustain use for longer. The Waitākere dams are the opposite, with small capacities and large catchments, filling quickly, but unable to sustain prolonged use. We actively manage the dams to make best use of these characteristics.

Pressure management

Pressure management across our water supply zones ensures that our water networks work within minimum and maximum water pressures to protect the network and reduce leakage. Pressure management initiatives will be further considered as part of our demand management and leak reduction programmes.

Water quality management

Watercare's water safety plans have been developed to manage our drinking-water supply system to ensure provision of safe and secure drinking-water through commitment to drinking-water quality management. Watercare adheres to the six principles of drinking-water safety. These are:

- Embrace a high standard of care
- Protect source water
- Maintain multiple barriers against contamination
- Change precedes contamination
- Suppliers must own the safety of drinking-water
- Apply a preventive risk management approach

To deliver on these principals, our water supply system is collaboratively operated and managed by a variety of teams within the Operations group to ensure understanding, implementation, maintenance and continuous improvement of the drinking-water quality management system.

The water quality parameters include both online instrument readings and the results of laboratory analyses. We carry out compliance and operational sampling and analyses throughout the region in accordance with the DWSNZ and our Water Safety Plan. Reactive water quality tests and flushing are carried out in response to customer water quality complaints. Routine flushing is undertaken in areas where we know repeat problems are likely to occur.

Backflow prevention

All of our commercial and industrial customers have to have a certified backflow prevention device installed at the boundary of the property, to prevent contaminants entering the public network from private connections. Additionally, some residential connections (e.g. those with rainwater tanks or irrigation meters have backflow devices fitted as they carry a higher risk. We carry out a monitoring, testing and enforcement role for these devices, to meet the requirements of the DWSNZ, the Health Act Section 69ZZZ and the new Water Services Bill.

Leak detection and management

Active leak detection is carried out through handheld acoustic monitoring of pipelines across 6000km of the network each year. This enables Watercare to find and fix a substantial number of underground leaks that are invisible to the public.

The monitoring of over 60 district metred areas (DMAs) across the city informs Watercare which regions have the highest levels of leakage. These are then targeted for active leak detection. The creation of an additional 5 DMAs is currently underway with a further 5 in design. The intention is that these areas will also be pressure managed, which will further reduce background leakage and the number of breaks in each zone.

Water leaks are a primary cause of non-revenue water or water losses. The management of non-revenue water volumes is a key focus for us, as significant water loss would require us to invest in new water supply capacity earlier than otherwise would be necessary.

Water meter management

Commercial water meters are monitored (some remotely) and replaced proactively, based on consumption and age. Residential water meters are replaced when they fail or when they reach 20 years, which is when they start to rapidly decline in accuracy. 30,000 of these meters are proactively replaced every year to ensure they keep pace with the rate of failure.

An additional smart meter rollout has been approved across the top 100 commercial customers and schools. This will provide the benefit of greater visibility of leaks and usage patterns across these larger users. Smart meters will also be rolled out to all residential customers by 2034.

Wastewater flow monitoring and control

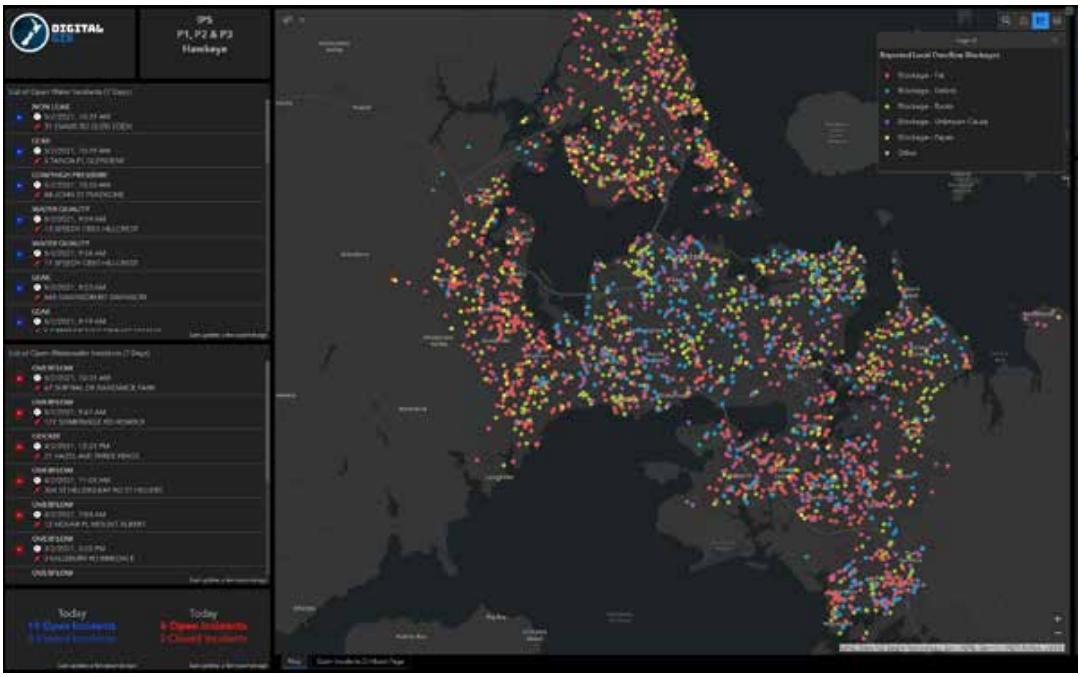
Our wastewater pump stations are continuously monitored for pump run-times, flows, wet-well levels, storage operation and overflow activation. Monitoring allows for pumping rates to be adjusted according to downstream conditions and enables us to use the storage to minimise issues. It also allows us to respond quickly to potential overflow incidents and to facilitate clean-up if needed.

Wastewater overflow management

Overflows are caused by stormwater and groundwater entering our wastewater pipes thus reducing their capacity for wastewater. Additionally blockages (caused by fat build-up or root intrusion) or collapses, or breaks in the pipes from third-party damage also cause overflows. We use a number of methods to avoid and minimise overflows, including I&I detection and education campaigns, regular pipe flushing, enzymes to reduce fat accumulation, strict trade-waste management and monitoring, network enhancements and investigation of repeated blockages.

We are able to monitor open water and wastewater incidents and where overflows have occurred and what their causes are. The below screenshot shows, on the left, the number open incidents. In the centre we can see the reported overflows over time (from the time this system was implemented) and their cause. Drilling down on a dot takes you to individual events. Armed with this information we are better able to target remedial programmes and customer communications.

Location of overflows and their causes



Inflow and infiltration control

Auckland has sewer networks in some of the earliest established suburbs on the isthmus where a single pipe network transfers both stormwater and wastewater. This is known as the combined network. Today this represents about 3% by number of properties serviced by Watercare. The combined network was built in the early 1900s in accordance accepted practice at the time and remains in service today.

Whilst the combined network has the advantage of requiring only one pipe to convey both stormwater and wastewater; it has only a limited capacity to convey storm flows and as such it was designed to regularly overflow during rainfall events. To ensure that these overflows occur in a controlled manner, rather than occurring in private homes or on private properties, dedicated engineered overflow structures were constructed at points along the network so that during rainfall events, the excess flow could be safely discharged to the local receiving environment and prevent surface flooding.

The remainder of the Watercare wastewater system is designed to modern standards and separates wastewater flows from stormwater flows by providing separate pipe networks. However, we design for low levels of stormwater or groundwater infiltration into the wastewater pipe system as pipe networks age and deteriorate. The additional stormwater can increase flows to an extent where the capacity of the network is no longer sufficient. This can result in excess flows which need to be discharged to the environment during significant rain events to prevent backup of wastewater in the system and overflows in houses and on private property. Such discharges normally occur at specially constructed engineered overflow points (EOPs) which are designed to overflow in a controlled way into a receiving environment, however they can also discharge unintentionally e.g. from a manhole, to either public or private property.

During wet weather periods a sewer network may receive higher levels of inflow into the system through the following mechanisms:

Inflow which is the direct entry of stormwater into private drains (private drains are private pipes that convey wastewater from buildings to the public wastewater system), either through a downpipe from the roof connected to the gully trap, or a low gully trap that allows water from the hard stand to flow into it.

Infiltration refers to the water (groundwater) that enters the wastewater pipe system through cracks, joints, broken or poorly constructed pipes. This occurs in both public and private wastewater pipes.

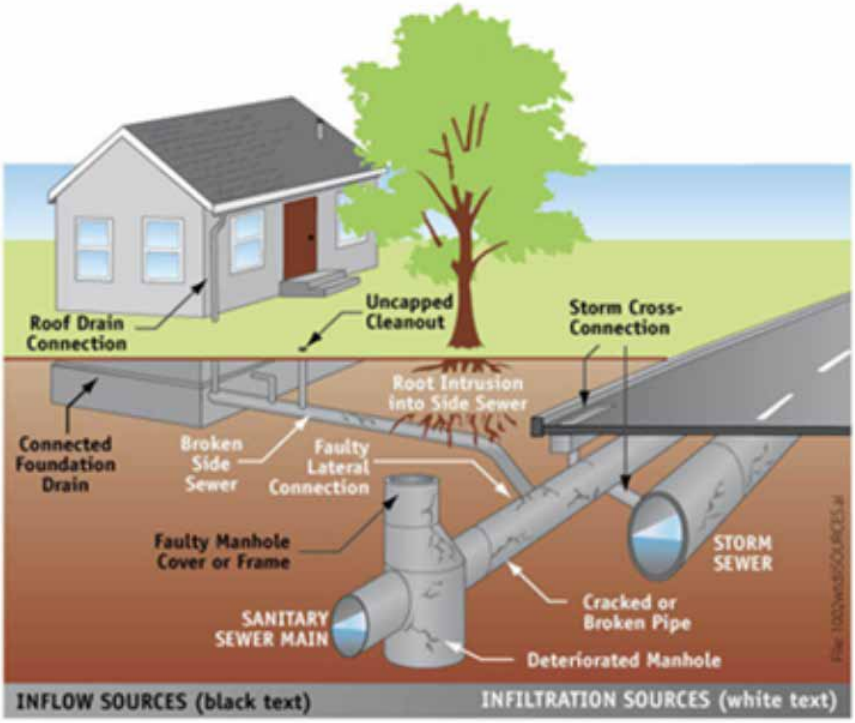
The extent of I&I usually depends on the location and age of the pipes, the pipe material used and the ground conditions.

Experience within Auckland has shown that between 50-60% of I&I comes from private drains (also known as “laterals”), and that correcting these defects is necessary to achieve a reduction in wet weather flows through the implementation of an I&I programme.

The figure below shows the sources of inflow and infiltration.

Sources of Inflow and Infiltration

Please supply higher res, or this can be redrawn



For separate sewer networks, a dedicated network improvements and I&I, team has been set-up to proactively remove stormwater and improve network performance.

The reactive I&I programme targets wet weather overflows which cause operational issues that need to be addressed urgently. It targets illegal stormwater connections to the wastewater network and low-lying gully traps. That is, sources of direct inflow which are able to be rapidly and inexpensively identified and remedied.

The planned I&I programme follows a more detailed catchment investigation and analysis and involves the identification of all private defects (both above ground and private drains) and also a full investigation and rehabilitation of the public network and manholes.

For I&I control through the removal of stormwater runoff in combined sewer networks, we are building on our foundation programmes of work. These include the Central Interceptor and Newmarket Gully projects which will provide additional wastewater transmission capacity to alleviate the high frequency combined sewer overflow (CSO) discharges. A complimentary programme of work called the Western Isthmus Water Quality Improvement Programme (WIWQIP) has been implemented as a joint initiative by Watercare and Auckland Council's Healthy Waters and are jointly developing catchment specific improvement programmes to:

- provide new stormwater enhancements to enable separation and local catchment augmentation
- alleviate local catchment uncontrolled discharges
- optimising the benefits of the wastewater transmission solutions to meet growth needs
- achieve discharge consent targets

Maintenance activities

Asset group	Maintenance activities	Standards and specifications
Planned maintenance		
Water networks	Meter testing	Manufacturer's specifications
	Valve and hydrant inspections	Operated to identify maintenance needs
	Pump station and reservoir inspections	Bulk network – RCM-based programme logged in asset management system Local networks – routine pump/electrical testing to manufacturer's specifications
	Pipe and structural condition surveys	Planned programmes
Wastewater networks	Sewer cleaning and siphon flushing	Planned programmes
	Pipeline closed-circuit television (CCTV) inspections	Planned programmes
	Inflow and infiltration testing	Flow model calibration Planned programmes for inspections of properties
	Critical asset inspections (pipe bridges, suspended sewers, control valves, outfalls, siphons)	Planned inspection programmes
All pump stations and treatment plants	Planned preventative maintenance programmes	Bulk network – RCM-based programme logged in the asset management system Local networks – routine inspections/ cleaning
	Pump overhauls and electrical testing	Manufacturer's specifications
	Safety inspections of lifting beams and backflow preventers	Manufacturer's specifications
Unplanned maintenance		
Water network asset	Repair broken mains/pipes	Reactive maintenance is carried out in accordance with the key performance indicators (KPIs) set in the maintenance contracts
	Repair/replace broken/under-reading meters	
	Repair/replace leaking valves and hydrants	
	Flushing in response to water quality complaints or identified problems	
Wastewater network assets	Repair broken pipes and blockages	
Treatment plants/ reservoirs/ pump stations	Repair plant/equipment failures	Manufacturer's specifications

Condition and performance assessment

Condition assessment practices have been developed to assist with renewals planning and are described below.

Asset group	Condition assessment practices
Water system	
Water supply dams	• Annual investigation and inspection of each dam to report on its safety performance • Five-yearly independent dam safety assurance audit to evaluate dam condition • Routine monitoring and assessment to ensure dam condition is maintained
Asset group	**Condition assessment practices**
Water treatment plants	• Visual inspections • Detailed, scheduled condition inspections
Treated water reservoirs	• Visual inspections trigger in-depth condition assessments, such as structural assessments
Water pump stations	• Regular routine inspections (in conjunction with maintenance work) • Vibration monitoring, thermography and leak detection testing to determine likely failure of bearings in motors and pump units • Monitoring of motor insulation to ensure integrity and detect evidence of potential early failure • Testing of pump station efficiency, in terms of actual pump rate compared to design pump rate • Annual inspection of all lifting beams and gantry cranes to check the integrity of the fixing bolts, supports, wire ropes and chains to comply with statutory requirements
Water transmission pipes	• Pipe sample analysis (pipe samples are cut when the pipe is exposed during maintenance or repairs) • Condition grade assessment when maintenance or repairs are undertaken • Analysis of pipe performance (breaks/leaks) to interpret condition • Use of condition assessment technology called JD7 for pressurised watermains while in service
Water network pipes	• Spot inspection and condition grade assessment as part of pipe repair works • Analysis of pipe performance (breaks/leaks) to interpret condition
Valves and hydrants	• Tested (operated) and maintained at varying intervals • NZ Fire Service hydrant inspections
Wastewater system	
Wastewater treatment plants	• Visual inspections • Detailed, scheduled condition inspections
Wastewater pump stations	• Regular routine inspections (in conjunction with maintenance work such as wet-well washing to remove fat build-up) • Vibration monitoring, thermography and leak detection testing to determine likely failure of bearings in motors and pump units • Monitoring of motor insulation to ensure integrity and detect evidence of potential early failure • Testing of pump station efficiency, in terms of actual pump rate compared to design pump rate • Annual inspection of all lifting beams and gantry cranes to check the integrity of the fixing bolts, supports, wire ropes and chains to comply with statutory requirements
Wastewater transmission pipes	• Scheduled inspections • Pipe sample analysis (pipe samples are cut when the pipe is exposed during maintenance or repairs) • Condition grade assessment when maintenance or repairs are undertaken • Analysis of pipe performance (breaks/leaks) to interpret condition • Specialist pipe bridge and rising main inspections • CCTV, sonar, laser profiling and walk-through inspections
Wastewater network pipes	• Spot inspection and condition grade assessment as part of pipe repair • Analysis of pipe performance (breaks/blockages) to interpret condition • Pipe bridge inspections • CCTV inspections

Asset groups by operation and standards

Asset group	Operational activities	Standards and specifications
Water sources and treatment plants	Water abstraction rates monitored through telemetry	Resource consent conditions
	Water quality monitoring	• DWSNZ • Watercare's water safety plans
	Process monitoring to allow optimisation of processes and cost minimisation	• Critical Control Points (CCPs) • Functional descriptions
	Treatment plant operation	Standard operating procedures
Water networks	Reducing non-revenue water • Leak detection • Theft management • Minimum night-flow analysis • Create smaller district metered areas • Meter replacement programme • Pressure management	
	Water quality monitoring	• DWSNZ • Water Safety Plan
	Flushing	In accordance with flushing programmes and operating manuals
	Backflow prevention auditing	• AS2845.1:2010 • Water New Zealand Backflow Group – Backflow Code of Practice for Water Suppliers • Health Act 1956, Section 69ZZZ
Wastewater treatment plants	Receiving environment monitoring	Resource consent conditions
	Resource consent conditions	Monitoring of wastewater discharge
	Discharge monitoring	Resource consent conditions
	Process monitoring to allow optimisation of processes and cost minimisation	
	Treatment plant operation	Standard operating procedures
Wastewater networks	Overflow monitoring (via telemetry) of pump stations and designated manholes	Resource consent conditions
	Response to and clean up of wastewater overflows	Agreed levels of service
	Reducing wastewater overflows from illegal connections	Inflow and infiltration investigation
	Trade-waste monitoring	Inspections at trade-waste customer properties
	Modelling to ensure overflow minimisation	Resource consent conditions

Summary of assets managed

*As at 30 June 2020

	Unit	Transmission	Local	ALL
Water Assets				
Water Supply Dams	No.	11	-	**11**
Groundwater Sources	No.	14	-	**14**
River Abstraction	No.	3	-	**3**
Raw Water Aqueducts	No.	13	-	**13**
Raw Water Tunnels	No.	23	-	**23**
Raw Water Pump Stations	No.	18	-	**18**
Raw watermains (pipe length in km)	km	83	-	**83**
Water Treatment Plants	No.	16	-	**16**
Treated Watermains (pipe length in km)	km	507	8,922	**9,428**
Treated Water Pump Stations	No.	25	52	**77**
Water Reservoirs	No.	56	31	**87**
Valves	No.	6,815	97,256	**104,071**
Hydrants	No.		53,127	**53,127**
Meters	No.		450,636	**450,636**
Wastewater Assets				
Sewer mains (pipes) (pipe length in km)	km	455	7,872	**8,327**
Manholes	No.	3,671	166,556	**170,227**
Wastewater Treatment Plants	No.	18	-	**18**
Wastewater Pumping Station	No.	68	460	**528**
Wastewater Storage Tanks	No.	3	5	**8**

NOTE: New sources and treatment plants brought into service as part of the drought response. These are additional to the table above:

- Hays Creek Dam (included in the table above) was brought back into service along with a new 12MLD treatment plant.
- Pukekohe water supply augmented by the reinstatement of two bores along with a new 5MLD treatment plant
- Waikato 50 MLD Water Treatment Plant.

Approximate gross replacement cost of key infrastructure asset classes

As at December 2020 ($ millions)

	Transmission	Local	All
Water Assets			
Water Supply Dams	559		**559**
Groundwater Sources			
River Abstraction			
Raw Water Aqueducts	358		**358**
Raw Water Tunnels			
Raw watermains			
Raw Water Pump Stations	8		**8**
Water Treatment Plants	497		**497**
Treated Watermains	1630	3,229	**4,859**
Treated Water Pump Stations	60		**60**
Water Reservoirs	399		**399**
Valves	17	192	**209**
Hydrants		143	**143**
Meters	11	199	**210**
Total water assets			**6,377**
Wastewater Assets			
Sewer mains	2,191	4,106	**6,297**
Manholes	98	1,516	**1,614**
Wastewater Treatment Plants	1,196		**1,196**
Wastewater Pumping Station	414		**414**
Wastewater Storage Tanks			
Total wastewater assets			**9,521**

*Pipe assets make up 70% of total asset value.

9. Shared services and technology programmes

In the AMP, we categorise assets and activities into those that support water services and those that support wastewater services. There are also assets and activities that support both water and wastewater areas of the business. These are called shared services and include capital investment in services such as information systems, control systems, energy systems, general plant and equipment and motor vehicles.

In this AMP we have earmarked $155 million (nominal) in the first decade and $336 million (nominal) in the second decade, for investment in shared services.

Information systems and control systems are essential for the efficient and effective running of our business. Continuing innovation in the area of digital technology can drive productivity and efficient operations. As an example, our Enterprise Asset Management (EAM) system forms part of the productivity focus. This system improves asset operation and maintenance efficiency. It integrates asset maintenance plans, operational intelligence and work order management. With improved asset data, access to better analytics and improved processes to manage work, EAM will reduce the manual effort to plan and manage maintenance work.

Another example of innovation is the Nerve Centre. The Nerve Centre, which was introduced in April 2021, is our way of bringing together operational information, insights and various teams to help us be more responsive and deliver better customer outcomes.

We continuously monitor the industry in New Zealand and overseas to identify emerging technologies and systems that would enable us to improve the way we deliver services, operate more efficiently and engage more effectively with customers.

10. AMP investment breakdown

Our Revenue and Financing Policy is built upon principles which are consistent with those adopted by Auckland Council. These can be found in our Funding Plan along with our funding strategies and price path calculation methodology. Our major strategic projects and programmes and our capital and operational expenditure expectations are highlighted here.

Strategic projects and programmes

The following tables show the forecast capital expenditure for the water and wastewater strategic programmes discussed in the earlier sections.

Water strategic programmes - $ millions (nominal)

Water - strategic programme	Financial years 2021 - 2031	Financial years 2031 - 2041
North of Albany • Wellsford water supply • Warkworth water supply • Helensville water supply • Hibiscus Coast boost pumping • Ōrewa 3 Watermain • Ōrewa 1 Watermain replacement	325	9
North Shore • North Shore boost pumping • New harbour crossing	6	199
North-West • Huia Water Treatment Plant • Nihotupu raw watermain replacement • Woodlands Park reservoir • North Harbour 2 Watermain • West boost pumping • North West storage • Waitākere water supply • Huia 1 and Nihotupu 1 Watermain replacement	952	161
Central • Hūnua 4 Epsom to Khyber Pass • Khyber 2 Reservoir reinstatement • Ponsonby reservoirs upgrade • Domain Reservoir replacement • Khyber 3 Reservoir replacement • Other programmes	87	67
Southern • Waikato boost pumping • Pukekohe East Reservoir at Runciman Road • Pukekohe water supply • Redoubt Road Reservoir complex expansion • Waiuku water supply • Waikato A WTP to 250MLD • Waikato 2 watermain • Waikato A WTP to 325MLD	607	556

Note: All mentions of forecast expenditure are stated in nominal (inflated) dollars unless otherwise specified.

Water - strategic programme	Financial years 2021 - 2031	Financial years 2031 - 2041
Other water programmes		
Growth • TRL and KO programme • Additional water sources • New transmission watermains • Other programmes increasing capacity to support growth	487	613
Renewals • Local water network renewals • Huia 2 watermain replacement • Hunua 1 watermain replacement (H4) • Other programmes - Renewing and replacing critical assets near the end of their useful lives and non-critical assets that have failed	1,610	1,731
Level of service improvements • Improving the level of service to our customers	40	62
Total	4,114	3,398

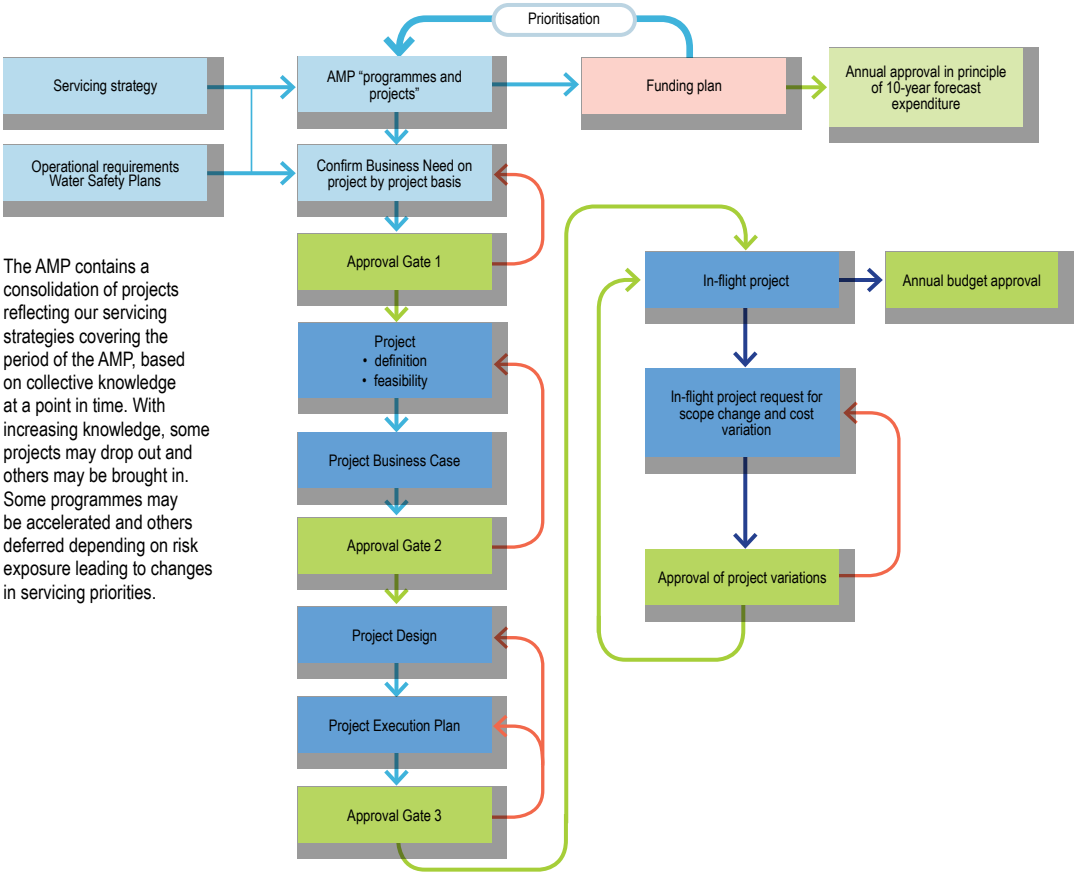
Wastewater strategic programmes - $ millions (nominal)

Wastewater - strategic programme	Financial years 2021 - 2031	Financial years 2031 - 2041
Treatment plants and catchments		
Māngere **Treatment plant** • Mangere WWTP capacity upgrades • Other programmes	494	980
Catchment • Central Interceptor • Southern Interceptor augmentation • Howick diversion • Ōtara network upgrades • Newmarket Gully • Eastern Isthmus programme	1,841	478
Rosedale **Treatment plant** • Treatment upgrades • Other programmes	377	87
Catchment • Northern Interceptor • North Shore trunk sewer and pump station upgrades • Other programmes	359	694
Army Bay **Treatment Plant** • Treatment plant upgrades	69	148
Catchment • Provision for growth	300	177
Pukekohe **Treatment Plant** • Treatment upgrades	116	171
Catchment • Pukekohe trunk sewer upgrades	111	52
Warkworth and Snells/Algies **Treatment plants** • North-East Sub-regional Plant and conveyance	232	126
Catchments • Network upgrades	87	14
Clarks Beach and Waiuku **Treatment plants** • South-West Sub-regional Plant and conveyance	216	23

Wastewater - strategic programme	Financial years 2021 - 2031	Financial years 2031 - 2041
Other wastewater programmes		
Growth • TRL and KO programme • Other programmes increasing capacity to support growth	414	877
Renewals • Other programmes renewing and replacing critical assets near the end of their useful lives and non-critical assets that have failed	681	1,264
Level of service improvements • Improving the level of service to our customers	153	149
Total	5,450	5,240

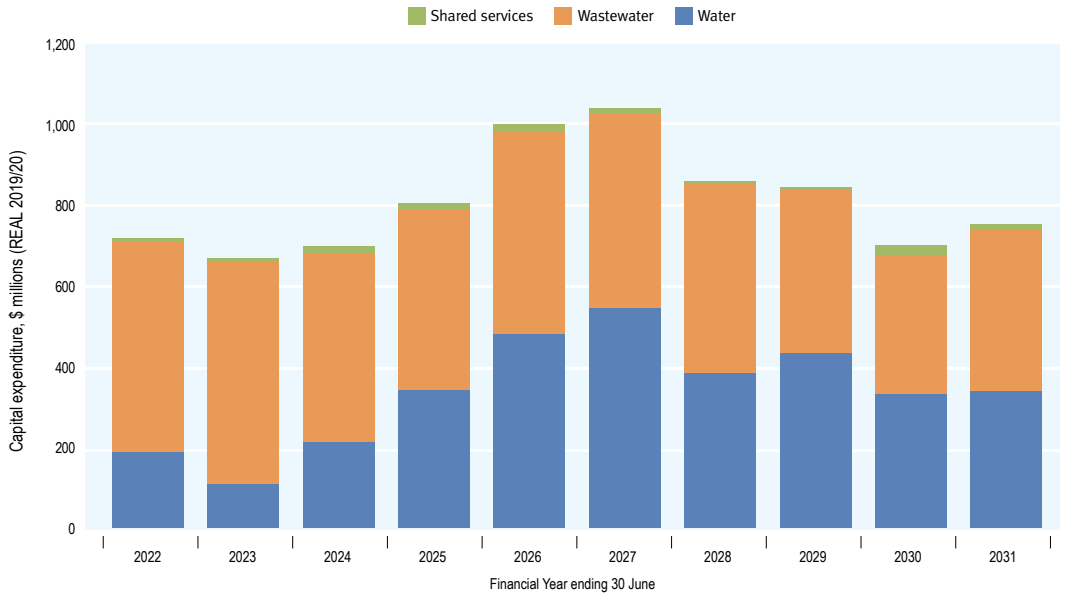
It is important to recognise that the presence of a programme or project in the AMP does not mean automatic approval to proceed. The capital projects approval process is set out in our Project Management Framework. There are a number of approval gates providing extra levels of governance and oversight. This capital expenditure approval is reflected in the below figure with approval gates shown by the green boxes.

Capital expenditure approval process



The AMP contains a consolidation of projects reflecting our servicing strategies covering the period of the AMP, based on collective knowledge at a point in time. With increasing knowledge, some projects may drop out and others may be brought in. Some programmes may be accelerated and others deferred depending on risk exposure leading to changes in servicing priorities.

Forecast capital expenditure by business area 2021 - 2031 $ millions (Real 2019/20 base)



The following tables provide further details of the proposed capital investment.

In the asset management plan we categorise assets and activities into those that support water services and those that support wastewater services. There are also assets and activities that support both water and wastewater areas of the business. These are categorised as shared services and include capital investment in services such as information systems, electrical and control systems, energy, general plant and equipment and motor vehicles.

Watercare capital expenditure forecast summary - $ millions (real – 2019/20 base)

replace with high res table

Business Area	Contributing Driver	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total 2022-2031	Total 2032-2041	20-Year Total
WATER	Growth	77.5	40.6	104.7	166.3	207.1	177.9	160.8	149.9	152.6	185.1	1,422.5	839.2	3,101.8
	Renewal	108.3	65.3	96.0	160.1	262.1	362.5	225.4	277.0	188.5	170.0	1,915.1	1,186.7	70.3
	LoSI	3.4	3.9	11.5	14.7	9.2	5.0	0.3	0.2	0.2	0.2	48.6	21.7	2,261.7
WATER Total		**189.1**	**109.8**	**212.2**	**341.1**	**478.4**	**545.4**	**386.5**	**427.1**	**341.4**	**355.3**	**3,386.2**	**2,047.6**	**5,433.8**
WASTEWATER	Growth	252.8	279.8	231.4	225.8	239.7	222.2	234.0	212.6	186.3	206.7	2,291.4	1,512.8	2,932.6
	Renewal	173.2	160.1	157.7	171.5	205.4	175.9	148.2	147.7	123.1	175.0	1,637.8	1,294.7	1,008.9
	LoSI	94.1	111.6	83.1	55.9	63.6	89.3	89.6	46.4	33.8	18.5	685.9	323.0	3,804.2
WASTEWATER Total		**520.2**	**551.5**	**472.2**	**453.3**	**508.6**	**487.4**	**471.8**	**406.8**	**343.1**	**400.2**	**4,615.1**	**3,130.6**	**7,745.7**
SHARED SERVICES	Growth	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.4	2.6	3.8	279.0
	Renewal	9.0	8.9	17.9	10.1	10.1	9.1	4.6	5.0	7.2	15.0	96.9	182.0	48.8
	LoSI	1.7	-	0.0	1.8	1.7	1.6	1.8	1.9	17.1	1.9	29.6	19.2	6.4
SHARED SERVICES Total		**11.0**	**9.1**	**18.2**	**12.2**	**12.0**	**10.9**	**6.6**	**7.2**	**24.7**	**17.3**	**129.1**	**205.1**	**334.2**
Grand Total		**720.3**	**670.4**	**702.5**	**806.5**	**999.0**	**1,043.7**	**864.9**	**841.1**	**709.2**	**772.8**	**8,130.5**	**5,383.2**	**13,513.7**

10.1

Watercare capital expenditure forecast summary - $ millions (nominal)

replace with high res table

Business Area	Contributing Driver	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total 2022-2031	Total 2032-2041	20-Year Total
WATER	Growth	80.2	43.3	114.9	188.3	240.5	212.2	197.2	190.1	200.1	250.9	1,717.7	1,361.2	3,078.9
	Renewal	112.2	69.6	105.4	181.2	304.5	432.4	276.4	351.2	247.1	230.3	2,310.2	1,928.9	4,239.1
	LoSI	3.5	4.2	12.6	16.6	10.6	6.0	0.4	0.2	0.3	0.3	54.8	36.5	91.3
WATER Total		**195.9**	**117.0**	**232.9**	**386.1**	**555.6**	**650.6**	**474.0**	**541.5**	**447.4**	**481.5**	**4,082.7**	**3,326.7**	**7,409.3**
WASTEWATER	Growth	261.9	298.3	254.1	255.7	278.4	265.1	286.9	269.6	244.2	280.0	2,694.2	2,489.9	5,184.1
	Renewal	179.5	170.7	173.1	194.2	238.6	209.8	181.7	187.3	161.3	237.2	1,933.3	2,141.3	4,074.6
	LoSI	97.5	119.0	91.2	63.3	73.8	106.5	109.9	58.9	44.3	25.1	789.5	538.1	1,327.6
WASTEWATER Total		**538.9**	**587.9**	**518.5**	**513.2**	**590.8**	**581.4**	**578.5**	**515.7**	**449.8**	**542.3**	**5,417.0**	**5,169.3**	**10,586.3**
SHARED SERVICES	Growth	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.4	0.5	0.5	3.1	6.3	9.4
	Renewal	9.3	9.5	19.7	11.4	11.7	10.9	5.6	6.3	9.5	20.3	114.3	298.6	412.8
	LoSI	1.8	-	0.0	2.1	1.9	1.9	2.2	2.4	22.4	2.6	37.4	31.5	68.8
SHARED SERVICES Total		**11.4**	**9.7**	**20.0**	**13.8**	**13.9**	**13.0**	**8.1**	**9.1**	**32.4**	**23.4**	**154.7**	**336.3**	**491.1**
Grand Total		**746.2**	**714.7**	**771.4**	**913.0**	**1,160.4**	**1,245.0**	**1,060.6**	**1,066.3**	**929.6**	**1,047.2**	**9,654.5**	**8,832.2**	**18,486.7**

Water supply capital expenditure forecast - $ millions (real – 2019/20 base)

replace with high res table

Business Area	Operational Area	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total 2022-2031	Total 2032-2041	20-Year Total
WATER	Water Sources	15.8	0.2	4.9	6.4	47.2	14.9	1.9	5.2	1.5	1.5	99.5	40.5	140.0
	Raw Water Network	-	-	-	2.7	4.0	74.8	-	-	-	8.2	89.7	102.9	192.7
	Water Treatment	24.7	8.3	78.2	125.2	121.0	109.0	90.0	70.9	22.2	5.5	654.8	278.6	933.4
	Treated Water Networks	129.6	101.3	122.6	202.0	303.2	344.9	294.5	350.9	315.6	338.1	2,502.6	1,613.0	4,115.6
	Control Systems	3.4	-	3.2	0.3	0.4	0.7	-	-	-	-	8.0	1.4	9.4
	Electrical Systems	15.7	-	3.2	4.4	2.5	1.1	0.2	0.2	2.1	2.1	31.5	11.1	42.6
WATER Total		**189.1**	**109.8**	**212.2**	**341.1**	**478.4**	**545.4**	**386.5**	**427.1**	**341.4**	**355.3**	**3,386.2**	**2,047.6**	**5,433.8**

Water supply capital expenditure forecast - $ millions (nominal)

replace with high res table

Business Area	Operational Area	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total 2022-2031	Total 2032-2041	20-Year Total
WATER	Water Sources	16.4	0.2	5.4	7.2	54.9	17.8	2.3	6.6	2.0	2.0	114.7	72.2	186.9
	Raw Water Network	-	-	-	3.0	4.7	89.3	-	-	-	11.1	108.1	146.6	254.7
	Water Treatment	25.6	8.8	85.9	141.7	140.5	130.0	110.4	89.9	29.0	7.4	769.2	463.0	1,232.2
	Treated Water Networks	134.3	108.0	134.7	228.7	352.1	411.4	361.1	444.8	413.7	458.1	3,046.8	2,624.0	5,670.8
	Control Systems	3.5	-	3.5	0.4	0.5	0.8	-	-	-	-	8.7	2.6	11.3
	Electrical Systems	16.3	-	3.5	5.0	2.9	1.3	0.2	0.3	2.8	2.8	35.1	18.3	53.4
WATER Total		**195.9**	**117.0**	**232.9**	**386.1**	**555.6**	**650.6**	**474.0**	**541.5**	**447.4**	**481.5**	**4,082.7**	**3,326.7**	**7,409.3**

Wastewater capital expenditure forecast - $ millions (real – 2019/20 base)

Replace

Business Area	Operational Area	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total 2022-2031	Total 2032-2041	20-Year Total
WASTEWATER	Wastewater Networks	391.2	413.3	315.8	284.1	384.0	327.6	249.0	241.6	230.3	279.1	3,116.1	2,099.6	5,215.7
	Wastewater Treatment	126.1	135.7	149.5	160.3	116.2	157.7	220.4	162.8	112.4	120.7	1,461.8	1,011.8	2,473.6
	Trade Waste	-	-	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.5	1.9	3.3
	Control Systems	1.4	-	1.3	1.6	3.1	0.7	-	-	-	-	8.2	3.3	11.5
	Electrical Systems	1.4	2.5	5.3	7.1	5.2	1.2	2.2	2.2	0.2	0.2	27.6	14.0	41.6
WASTEWATER Total		520.2	551.5	472.2	453.3	508.6	487.4	471.8	406.8	343.1	400.2	4,615.1	3,130.6	7,745.7

Wastewater capital expenditure forecast - $ millions (nominal)

Replace

Business Area	Operational Area	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total 2022-2031	Total 2032-2041	20-Year Total
WASTEWATER	Wastewater Networks	130.7	144.7	164.2	181.4	134.9	188.1	270.2	206.4	147.4	163.6	1,731.6	1,714.5	3,446.1
	Wastewater Treatment	405.2	440.6	346.7	321.6	446.0	390.8	305.4	306.3	301.9	378.2	3,642.9	3,423.1	7,066.0
	Trade Waste	-	-	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	1.8	3.1	4.8
	Control Systems	1.5	-	1.5	1.9	3.6	0.8	-	-	-	-	9.2	6.0	15.2
	Electrical Systems	1.5	2.7	5.9	8.1	6.0	1.4	2.7	2.8	0.3	0.3	31.5	22.6	54.1
WASTEWATER Total		538.9	587.9	518.5	513.2	590.8	581.4	578.5	515.7	449.8	542.3	5,417.0	5,169.3	10,586.3

10.1

Shared services capital expenditure forecast - $ millions (real – 2019/20 base)

replace with high res table

Business Area	Operational Area	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total 2022-2031	Total 2032-2041	20-Year Total
SHARED SERVICES	Shared Services Maintenance	1.2	0.8	1.2	1.1	1.0	1.0	1.1	1.7	1.9	1.9	12.9	19.2	32.1
	Shared Services Laboratory	1.7	-	-	1.8	1.6	1.5	1.7	1.8	17.0	1.8	28.8	18.2	47.0
	Shared Services IS	-	-	1.3	-	-	0.3	0.7	0.6	0.7	1.1	4.7	54.3	59.0
	Shared Services Corporate	2.6	1.8	2.4	2.2	2.2	2.1	2.4	2.3	4.3	4.2	26.5	27.0	53.5
	Control Systems	5.3	6.5	13.0	6.7	6.7	5.6	0.3	0.3	0.3	7.7	52.4	81.3	133.7
	Electrical Systems	0.2	-	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	3.7	5.1	8.9
SHARED SERVICES Total		**11.0**	**9.1**	**18.2**	**12.2**	**12.0**	**10.9**	**6.6**	**7.2**	**24.7**	**17.3**	**129.1**	**205.1**	**334.2**

Shared services capital expenditure forecast - $ millions (nominal)

replace with high res table

Business Area	Operational Area	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total 2022-2031	Total 2032-2041	20-Year Total
SHARED SERVICES	Shared Services Maintenance	1.2	0.8	1.4	1.2	1.2	1.2	1.3	2.1	2.5	2.6	15.6	31.3	47.0
	Shared Services Laboratory	1.8	-	-	2.0	1.8	1.8	2.1	2.3	22.3	2.4	36.4	29.8	66.2
	Shared Services IS	-	-	1.5	-	-	0.3	0.8	0.8	0.9	1.5	5.9	88.7	94.6
	Shared Services Corporate	2.7	2.0	2.7	2.5	2.5	2.5	2.9	2.9	5.6	5.7	32.0	44.1	76.2
	Control Systems	5.5	6.9	14.3	7.5	7.8	6.6	0.4	0.4	0.4	10.4	60.3	133.9	194.2
	Electrical Systems	0.2	-	0.2	0.6	0.6	0.5	0.6	0.6	0.7	0.7	4.5	8.4	13.0
SHARED SERVICES Total		**11.4**	**9.7**	**20.0**	**13.8**	**13.9**	**13.0**	**8.1**	**9.1**	**32.4**	**23.4**	**154.7**	**336.3**	**491.1**

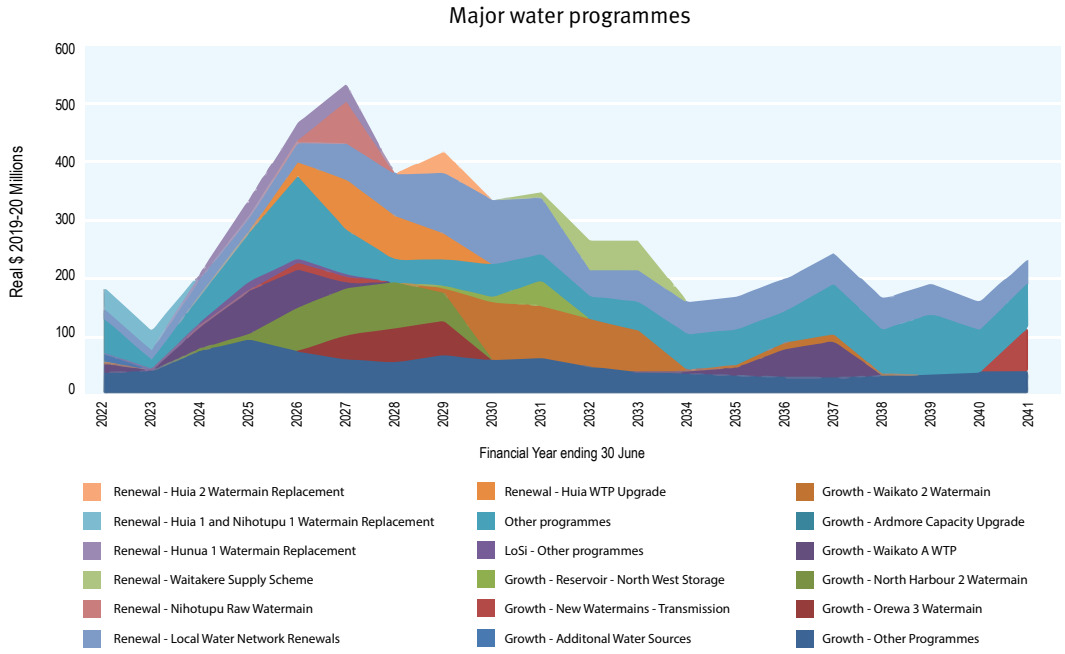
10.1

The following figures provide a 20-year view of ongoing investment in water and wastewater infrastructure. Depending on the impacts of climate change on rainfall patterns in the next few years, it is possible that investment in alternative water supply infrastructure may be required earlier than expected despite demand management measures. Current technology indicates that this could add a further $1 billion to the 20-year profile for water infrastructure.

The chart is presented in real dollar terms (base 2019/20) to represent changes in programme scope rather than inflationary trends. The scale in the 2 charts have been kept the same to indicate relative investment in the water and wastewater infrastructure over time.

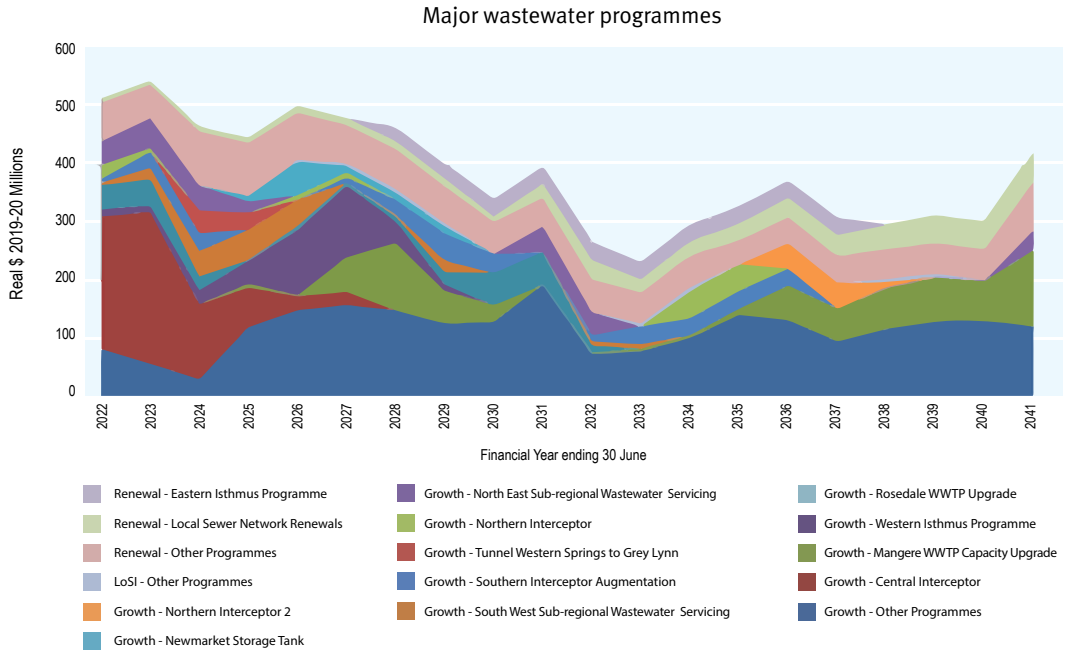
Major investment in Water infrastructure over the next 20 years

replace with high res graph



Major investment in Wastewater infrastructure over the next 20 years

replace with high res graph



Section 3

Funding Plan

1. Introduction

This Funding Plan demonstrates how Watercare intends to fund and finance our business activities over the 10-year period of the LTP. Funding is the term given to sources of revenue (fees and charges) from which expenditure (including debt repayment) will ultimately be paid. Financing is the term given to the sourcing of debt.

Watercare is the Auckland water organisation as defined under the Local Government (Auckland Council) Act 2009 (LGACA). It is a council-controlled organisation (CCO), wholly owned by Auckland Council, providing water supply and wastewater services to around 1.7 million people in the Auckland region. Auckland is growing fast, and over the next 30 years, the population we serve is forecast to grow by another 700,000 people. There will be increased demand on our water and wastewater networks, requiring the construction of new bulk and local infrastructure.

All long-term debt is sourced through Auckland Council's centralised treasury function. We do not receive any funding from Auckland Council or the Government, other than for arms-length charges for services we provide, nor do we pay a dividend to Auckland Council. All the money we receive from customers is allocated to operating, maintaining and expanding our infrastructure. Any shortfall is financed through borrowing.

This Funding Plan describes:

- The sources of funds – where the money we spend comes from (revenue and borrowing)
- The application of funds – what the money going out is spent on (expenditure and debt repayment)
- What categories of money going out are funded and financed by which categories of money coming in (revenue and financing framework).

The LGACA sets out how Watercare must manage our operations.

In short, we:

- Must balance the need to incur and recover the costs of providing our services with the need to minimise charges for those services and to maintain the long-term integrity of our assets
- Pass on to our customers any surplus or productivity gains in the form of reduced water and wastewater tariffs
- Are prohibited from paying a dividend to council
- Must support and give effect to the relevant aspects of Auckland Council's Plans.

Our focus is, and always will be, to run our operations cost-effectively and deliver value for money through our services. The financial challenge is to fund operational expenditure and expensive, long-life infrastructure while also maintaining service affordability for our customers.

Expenditure incurred by Watercare includes:

- Capital expenditure (to obtain, replace or improve long-life assets such as plant, equipment, pipes and buildings)
- Operating expenditure (incurred in carrying out normal day-to-day activities such as maintenance, energy, wages and rent)
- Interest on borrowing
- Repayment of debt
- We need to ensure these costs are covered by a combination of revenue (funding) and borrowing (financing). This requires establishing a revenue price path which strikes a balance between revenue and borrowing, to ensure that revenue from customers will be sufficient, and also fairly distributed between present and future generations.

Revenue received by Watercare includes:

- Retail and wholesale service charges for water supply and wastewater services
- Infrastructure Growth Charges (IGCs)
- User charges such as new meters and service connections, meter relocations, wastewater audits, trade-waste monitoring, laboratory services and administration fees
- Subvention income from the transfer of tax losses to the Auckland Council tax group.

2. Funding Plan preparation

The preparation of this Funding Plan is guided by legislation, pricing principles and prudent consideration of financial ratios and shareholder plans.

2.1. Legislation

Watercare has to comply with the LGACA. In particular, Watercare must:

- Under Section 57 (S57),
  - Manage its operations efficiently with a view to keeping the overall costs of water supply and wastewater services to its customers (collectively) at the minimum level, consistent with the effective conduct of its undertakings and the maintenance of the long-term integrity of its assets
  - Not pay any dividend or distribute any surplus in any way, directly or indirectly, to any owner or shareholder
- Under Section 58 (S58),
  - Give effect to the relevant aspects of the LTP (but does not authorise non-compliance with S57).

Watercare is unable to levy property rates and is prohibited under the LGACA from charging development contributions. Charges for services are made to our customers under a customer contract. By using our water and/or wastewater services or by remaining connected to our networks, customers are deemed to have accepted the terms and conditions of that contract.

Currently, water utilities in New Zealand are not subject to price regulation, unlike some other utilities (for example, electricity lines companies and telecommunications). While we have discretion as to the contractual charges we set for our services, and the methodology used to set the charges, we consult with our customers when making significant changes to our charges, as required by S57 of the LGACA.

2.2. Pricing principles

The following are the pricing principles that Watercare follows. Often these principles need to be balanced between each other. Sometimes external factors constrain the ability to apply them. Nonetheless, Watercare endeavours to apply them as consistently as possible when making decisions.

Council borrowing constraints are a good example of this, where in a perfect world we would use debt to apply the intergenerational equity principle. However, Council borrowing constraints dictate our maximum debt, forcing Watercare to pay back borrowings faster than the principle would require.

We continue to look for funding mechanisms that would remove this constraint.

Inter-generational equity

Both current and future customers benefit from investment in long-lived growth assets. The concept of inter-generational equity is for a fair balance to be struck between current and future customers paying for that investment. This means that costs are not unduly deferred to future generations, nor incurred too early by the current generation.

The principle of inter-generational equity suggests that growth-related assets with a long life span should initially be financed by borrowings. In that way, debt incurred is repaid over a long period. The spread of benefits is reflected in a distribution of cost to users over time. This avoids today's users paying for the entire cost of an asset in the year that it is acquired or built.

The inter-generational equity principle, however, needs to be balanced by consideration of other relevant pricing principles adopted by Watercare.

Other pricing principles include:

Alignment of costs with benefits

Where a service benefits a particular person or group, or where a particular person or group has caused the cost to be incurred, the corresponding person or group should pay the cost of that service as far as practicable.

Affordability for users

We are legally required to manage our business efficiently in order to keep costs to customers collectively at minimum levels. This means we must balance the need to incur and recover the costs of providing our services with the need to minimise charges for those services.

Horizontal equity

Customers across Auckland should pay similar amounts for the same service; this is achieved by the standardisation of charging frameworks across the region as much as is reasonable.

Minimising change

Customers across Auckland should expect a stable and signalled price path to ensure annual cost increases are manageable.

2.3. Financial ratios and measures

In addition to considering the pricing principles outlined above, the revenue price path needs to ensure key prudential financial ratios and measures are maintained within acceptable bands. This is in order to keep future debt at levels that will not stifle capacity to meet our S57 obligations.

Key financial ratios and measures include:

- Funds from operations ratio (the net of cash revenue and expenses divided by gross interest cost)
- Gearing
- Debt to revenue ratio

These ratios and measures are explained in Appendix 1.

2.4. Statement of intent

We are responsible for establishing a statement of intent (SOI), which sets targets and other measures by which our performance can be judged in relation to our objectives.

Every year, we consult with our shareholder, Auckland Council, to develop an SOI covering the next three-year period. The SOI represents Watercare's public and legislative expression of accountability to our shareholder. It identifies the relationship between our activities and the delivery of those outcomes sought by the Governing Body of Auckland Council and those specified within the Auckland Plan. Local boards, the Independent Māori Statutory Board and the general public are invited to comment on the final draft, before it is adopted by the board.

3. Application of funds – areas that we spend money on

We are forecasting around $3.6 billion in operational expenditure and $9.7 billion of capital expenditure over the 10-year LTP period. We expect to pay $1.6 billion of interest cost and collect around $11.8 billion worth of revenue (excluding vested asset revenue) over the same time period. Debt is forecast to increase by $3.0 billion. Our Funding Plan financials are included in the council's LTP, which was publicly consulted on in early 2021.

1. Operating expenditure

Operational expenditure (opex), excluding depreciation and interest, is the sum required to maintain, operate and deliver the services we provide. Opex is split separately into water and wastewater activities. For each activity, opex is further split into employee related costs, maintenance costs, asset operating costs and other expenses.

Both activities include allocations of shared services expenditure. Shared services comprise servicing and consents, planning and design, project delivery, customer experience, supply chain, finance and business support, digital, people and capability, communications, and risk and assurance, among other services.

Forecast opex by year is shown under the financial projections section on page 105.

2. Capital expenditure

We prepare our AMP on a three-yearly cycle to inform Auckland Council's preparation of the LTP. The AMP is reviewed internally each year, which also allows us to adjust our works programme to reflect the council's revised growth forecasts and priorities over time and to achieve the following objectives:

- To provide the necessary water and wastewater infrastructure to meet growth in the region in accordance with council's plans
- To maximise the use of existing infrastructure assets
- To ensure that level-of-service requirements are met at the least overall cost to customers collectively.

Watercare plans and builds the capital expenditure (capex) outlined in the AMP.

Forecast capex by year, as identified in the AMP, is shown under the financial projections section on page XX. This is described in both real (today's) and nominal (adjusted for inflation) dollars.

The capex programmes identified in our AMP are broadly categorised based on three strategic drivers:

- Growth
- Renewal
- Level of service.

Typically when we construct new assets, they address more than one driver. For example, if we are renewing a pipe because of its condition, we also consider the long-term requirements of the asset with respect to growth and levels of service before deciding how to proceed with the renewal. Most programmes/projects have multiple drivers. The AMP identifies the cost split for each AMP programme or project by strategic driver.

Growth capex

Growth capex is infrastructure investment undertaken to increase capacity to cater for increased population and demand.

Regional growth in population, industry and commerce has a direct impact on the demand for water and wastewater services. Auckland is anticipated to grow significantly, and as it does, the demand for water supply and wastewater services will increase.

To assess the growth component of a programme, there is a need to estimate a scenario of 'what would happen if there was no growth?'. The difference between the total programme cost and the 'no growth' scenario estimate is the growth component.

Renewal capex

Renewal capex is infrastructure investment required to renew and replace critical assets near the end of their useful lives and non-critical assets that have failed.

Asset replacement and rehabilitation programmes are in place to ensure existing levels of service are maintained. These are derived from asset age profiles and maintenance histories, as well as ongoing condition assessments and risk analysis. Capital works are prioritised according to the criticality of the asset and the probability and consequence of system failure.

Level-of-service capex

Level-of-service capex is infrastructure investment required to ensure Watercare complies with legislative and regulatory operating conditions, increase operational efficiency, and improve the quality of service we provide to the region.

Our customers expect safe, reliable service at a reasonable cost over time, and they expect us to protect our natural environment. Legislation governs where and how our water and wastewater services are delivered. From time to time, changing legislative or consenting requirements require us to adjust our operations. Further, legislation also prescribes how the water and wastewater networks are managed, to ensure that public health and the environment are protected.

Some level-of-service capex may be short-term in nature. Examples are information technology and software upgrades that increase operational efficiency. A distinction is made between short-term and long-term level-of-service capex for determining how these are funded and financed.

3. Finance costs

Finance costs consist of interest and other costs that are incurred in connection with the borrowing of funds. Interest costs are paid to Auckland council for monies borrowed and interest is recognised at interest expenses. Interest relating to infrastructural growth projects which are not yet complete is capitalised to the project and amortised through depreciation after the asset is operational.

4. Repayment of debt

In any particular period, Watercare will be raising new debt to finance a level of growth capex. In the same period, we will also be generating fees and charges to repay debt that was raised in earlier periods. In practice, however, these two cash flows will be netted.

We aim to set our revenue price path at a level so that debt incurred by a generation is fully repaid over a period of about one generation. A generation is taken to be the average period between when children are born and when they begin to have children of their own (assumed as 25 years). On average, each generation repays a generation's worth of debt. Because of the spread of ages among the population, there is always more than one generation paying water charges at any one time. However, as long as debt (taken at any point of time) is fully repaid over the period of about one generation, then, on average, each generation has repaid a generation's worth of debt.

Watercares Infrastructure programme in the early years is significant and causes the business to operate close to its borrowing constraint. Debt repayment will be sitting at 25 years in 2027 and Watercare will be close to its maximum council group debt allowance. In subsequent years Watercare will start paying down debt due largely to the price increases in the years immediately prior, which were required at that time to offset the borrowing constraints.

4. Sources of funds – where does the money we spend come from?

Funding is the term given to sources of revenue (fees and charges) from which expenditure (including debt repayment) will ultimately be paid. Financing is the term given to the sourcing of debt. Funding sources must therefore be identified to support opex as well as financing arrangements (debt repayment). If funding is insufficient to meet expenditure, the difference will need to be financed by new borrowing.

Watercare's income is sourced directly from our customers and we therefore need to ensure our overall customer charges are sufficient to fund our expenditure and debt repayment.

1. Revenue

Forecast revenue assumptions are shown in the financial projections section on page 105.

Watercare's revenue comes mainly from the following sources:

Water and wastewater charges

- Water revenue is from water supplied, charged volumetrically per kilolitre[5], measured by water meter by customer. Generally, customers pay the same volumetric rate ($1.706 per cubic metre including GST for 2021/22), regardless of the volume used. Those customers who use our service less frequently, eg Town to Tank customers or those who use our tanker filling stations pay a higher tariff, reflecting their low volumetric usage and the need to recover other fixed costs related to this service.
- Wastewater revenue is a combination of a fixed charge and a volumetric charge based on a percentage of the water used. The majority of domestic customers who have metered water pay a standard fixed charge and a volumetric charge based on 78.5%[6] of their water use. Wastewater services for non-domestic customers are charged on four different price tariffs, which allow customers to choose a combination of fixed and variable rates (refer to www.watercare.co.nz to see current prices). This is a result of significant consultation undertaken with our customers between 2012 and 2014.

Infrastructure Growth Charges

An Infrastructure Growth Charge (IGC) is applied to all new water and wastewater network connections, additional residential units at an existing connection and where a non-domestic customer increases water usage at their property by 220 kilolitres or more per year (refer to www.watercare.co.nz to see current IGC rates).

Growth from new property developments, or increased demand from existing connections, creates a requirement for us to provide, or to have provided, new or additional assets or assets of increased capacity. The IGC means that a share of the necessary growth cost is recovered from those who create the extra demand, rather than from all our customers.

IGCs are explained in more detail on page 103.

User charges

A range of user charges covers items or services such as new meters and service connections, meter relocations, wastewater audits, trade-waste monitoring, and administration fees. These are charged directly to customers who request the service (refer to www.watercare.co.nz to see current prices).

Watercare Laboratory Services, a division of Watercare, is one of the largest water, wastewater and environmental laboratories in New Zealand, operating out of Auckland, Wellington, Queenstown and Invercargill. They offer a comprehensive range of sample collection services, laboratory testing and air-quality monitoring services across New Zealand. As well as providing water and wastewater testing for Watercare, their customers also include councils, government agencies and private companies. Revenue generated by Watercare Laboratory Services also comes under "user charges".

Subvention income

Watercare has a loss offset and subvention arrangement with the Auckland Council tax group, a related party. Failure to offset our tax losses to related entities generating taxable profits would require profitable entities to make tax payments to Inland Revenue. This economic inefficiency is addressed by enabling the Auckland Council tax group to access our tax losses by way of tax loss offset and subvention payments to Watercare. The consideration we receive for tax losses is regularly reviewed by the Board to ensure it represents a reasonable return to ensuring we continue to meet our obligations under S57 of the LGACA.

5 1 kilolitre = 1,000 litres = 1 cubic meter = 1 m^3

6 Apartments are charged 95% of their water volume as wastewater on the basis they have less outdoor water usage.

2. Borrowing

Forecast debt assumptions are shown on page 106.

Current and future customers collectively benefit from investment in long-lived growth assets. The concept of inter-generational equity is that growth-related assets with long life spans should initially be financed by debt. That way, a fair balance can be struck between current and future customers paying for that investment. Debt incurred by a generation is repaid by that generation over a long period. This means that costs are not unduly deferred to future generations, nor burdened too heavily on the current generation.

Watercare is required to operate under the debt levels specified by Auckland council. This requirement on Watercare can cause inefficiencies in our funding structure and sometimes challenges the principle of intergeneration equity discussed above. Any requirement Watercare has, to fund infrastructure in excess of the available debt headroom, can only be met through a water tariff increase, even when it would be more efficient to fund the infrastructure with debt and align repayment over the actual period of customer benefit.

All new long-term debt is sourced from Auckland Council as this is currently the lowest-cost source of debt for Watercare. Watercare and Auckland Council entered into a service level agreement for the provision of treasury services post 30 June 2018 and an inter-company loan agreement for existing loans at 30 June 2018. All existing loans become one loan with a fixed maturity of 30 June 2022. The key objective of the centralised treasury function is to achieve cost savings and efficiencies across the council group and access to funding at cheaper interest rates for Watercare. We remain responsible for ensuring the company is adequately and sustainably financed on prudent terms. We do not receive any funding from Auckland Council or the Government, other than the Housing Infrastructure Fund and arms-length charges for services we provide.

5. Funding infrastructure for growth

Investment in growth infrastructure is undertaken to increase capacity for increased population and demand. As already noted, most capex programmes/projects can be categorised broadly into three strategic drivers: growth, renewal and level of service. New assets we construct may include elements of all three drivers. For example, if we are replacing a pipe in poor condition, its replacement will meet existing capacity (renewal), it may be larger in size (for growth) or be of a superior design or material (level of service improvement). To assess the growth component of a programme, there is a need to estimate a scenario of 'what would happen if there was no growth?'. The difference between the total cost and the 'no growth' scenario estimate is the growth component.

Watercare distinguishes between local network and bulk infrastructure assets, as follows:

- Local network infrastructure generally refers to the part of water and wastewater systems that customers connect to. It covers all infrastructure that is not bulk infrastructure.
- Bulk infrastructure generally refers to treatment facilities (water and wastewater treatment plants) and larger transmission pipes and associated infrastructure that the local network infrastructure connects to.

The area serviced by bulk infrastructure is extended over time by Watercare, to meet growth in accordance with Auckland Council's Future Urban Land Supply Strategy (FULSS). The FULSS identifies a programme to sequence the urbanisation of future urban land, over 30 years, through the ongoing supply of greenfields land for development. This land is predominantly rural, not previously identified for urbanisation, so may require new bulk infrastructure to be provided.

Funding sources for local network and bulk infrastructure investment for growth are different.

a. Funding for local network infrastructure investment

Generally, property developers will fund growth of the local network, sufficient to meet the water and wastewater demand from their development. Watercare funds the capital investment to renew or improve the level of service of existing local infrastructure. We will fund some growth investment in local network infrastructure where it is associated with renewal or level of service improvement of existing assets, mainly in brownfields areas.

A developer of greenfields land will obtain the required consents and will build and pay for earthworks, roading and utilities such as electricity, telecommunications, water and wastewater to service the new development. We require the developer to construct and fund the internal water and wastewater infrastructure on their land to our specifications. The developer is also required to fund any connecting infrastructure, between their internal network and our existing local network infrastructure. They may be required to fund upgrades (if any) to the local network infrastructure as well, where capacity is inadequate for their development.

Where required by consent conditions, the ownership of developer-funded infrastructure is vested to Watercare on completion of construction. After that, we take the responsibility to operate and maintain the assets to continue to provide services in perpetuity.

To this point, developers have not contributed towards investment in bulk growth infrastructure; this is made through payment of IGCs at the time properties connect to our networks.

b. Funding for bulk infrastructure investment

Watercare generally plans and pays all the cost of capital investment for bulk infrastructure, including for growth. We recover the cost of bulk growth infrastructure through IGCs. However, in some circumstances (particularly when the need for bulk investment does not align to our plan), it is appropriate for us to reach agreements with a developer (or developers) to share the cost of bulk growth infrastructure with us.

c. Infrastructure Growth Charges

An Infrastructure Growth Charge (IGC) is applied to all new water and wastewater network connections, for additional residential units at an existing connection, and where a non-domestic customer increases water usage at their property by 220 kilolitres or more per year. For domestic customer connections, one IGC is applicable per residential unit. However, where the floor area of the residential unit (includes apartments) is less than 65m2, two-thirds of the standard IGC rate will apply.

The IGC is charged at the time an approval for a connection is made. The IGC is not to be confused with a connection fee, which covers the direct cost of connecting privately-owned pipes to the local water network through a water meter.

A new property development or an increase in non-domestic demand creates a requirement for us to provide, or to have provided, new or additional assets or assets of increased capacity. The IGC means that a share of the necessary upgrade cost is recovered from those who create the extra demand, rather than from all of our existing customers.

The IGC rate a customer is billed varies depending on whether the capital investment is on the Auckland metropolitan water and wastewater networks or on the smaller, stand-alone non-metropolitan (generally rural) networks. In some areas, there may only be a water or a wastewater service, or a combination of metropolitan and non-metropolitan elements. In those cases, a hybrid IGC rate applies. However, most of our IGC revenue comes from connections to the metropolitan networks.

The metropolitan rate applies for connections made to:

- Our large, contiguous water supply network
- Any of our four major wastewater treatment plants for Auckland: Māngere, Rosedale, Army Bay and Pukekohe.

i. The method for calculating the metropolitan IGC rate

We use the term 'development unit equivalent' (DUE)[7] to mean a new connection, or unit of increased non-domestic use, that attracts an IGC at the full rate.

We have chosen to standardise water and wastewater tariffs across the region and we've taken the same approach for IGCs in the metropolitan area. This makes the method of calculation simpler, with a single IGC rate more predictable for developers and customers.

The cost of bulk growth infrastructure to be recovered from each DUE equates to the cost of bulk growth infrastructure over a period divided by the number of DUEs over the same period. We use a period of 15 years (4 past + 1 current + 10 forecast). This is deliberately an averaging approach, considering that Watercare has an ongoing growth investment need.

Cost of growth per DUE = cost of bulk growth infrastructure ÷ number of DUES (over 15 years)

However, we endeavour to recover the cost of growth per DUE, from those who connect, in two ways:

- By an IGC at the time of connection
- Through future water and wastewater service charges over time, for the portion representing depreciation and interest recovered.

The depreciation and interest recovered from each DUE over time (in today's dollars) ensures that the new customer is not charged twice for the same asset over its life. This places new customers on an equal footing with existing customers, with both groups contributing equally to the recovery of operating costs, depreciation, interest and debt repayment through a common standard tariff.

Currently, the metropolitan IGC rate is recovering close to 85% of what it should be. The reason for this is that the initial level of IGC was set around the average amount of development contributions collected by former councils prior to amalgamation of Auckland's local government on 1 November 2010. Watercare is consciously moving to increase the IGC recovery rate in line with the Productivity Commission's recommendation, so Auckland's growth is not being subsidised by customers with existing connections. The move to full recovery of ICG's requires a higher level of price increase for IGC compared to water and wastewater charges in the early years.

d. Housing Infrastructure Fund

In July 2016 the Government announced the creation of a Housing Infrastructure Fund (HIF). The aim of this fund was to provide financing capacity for local councils to deliver the infrastructure needed to support their area's growth.

Auckland Council submitted an application to this fund in March 2017 and was notified in July 2017 that $300 million of investment was supported in principle. It is estimated that the HIF investment will unlock around 6200 dwellings in the North-West area.

Through HIF Watercare has received an interest free loan from Auckland council for $125m to support development at Redhill's and Whenuapai. Repayment is forecast to be made over 2025 to 2033, to correspond with the anticipated build rate of the new dwellings.

e. Infrastructure funding and Financing Act

Watercare is investigation with Council, opportunities to utilise the Act to fund projects servicing growth in Auckland.

7 A development unit equivalent (DUE) is the equivalency factor between the full IGC rate and the IGC rate applying to the development unit. For example, a development unit which is a residential unit less than 65m2 and charged two-thirds the IGC rate is taken to be two-thirds of a DUE. Every 220 kilolitres of water used by a non-domestic connection is a DUE.

6. Revenue and financing framework

Revenue projections and price paths over the LTP period are set at a level so that, generally:

- Annual price increases are stable over time
- Prices are kept as affordable[8], within debt and risk constraints, and we appropriately balance the recovery of costs between current and future customers
- The benefit to be derived from Watercare's tax losses is balanced between making them available to the Auckland Council group and retaining them for our own use when it is more economical to do so
- Debt incurred by a generation is largely repaid by that generation.

These concepts are difficult to apply in practice because:

- Capital spends are uneven, and assets in place at any time may have excess capacity
- Capex is paid for as incurred but under the inter-generational concept we will only be reimbursed for those assets (from revenue) as they are used
- Auckland Council debt covenants cause inefficiencies in Watercare's debt structure, resulting in an artificially low debt ceiling and accelerated repayment
- Many generations are present at any one time.

We attempt to set the price path at a level that is fair by optimising funding sources through a combination of:

- Service charges paid by current users
- IGCs paid by those who create demand
- Borrowing.

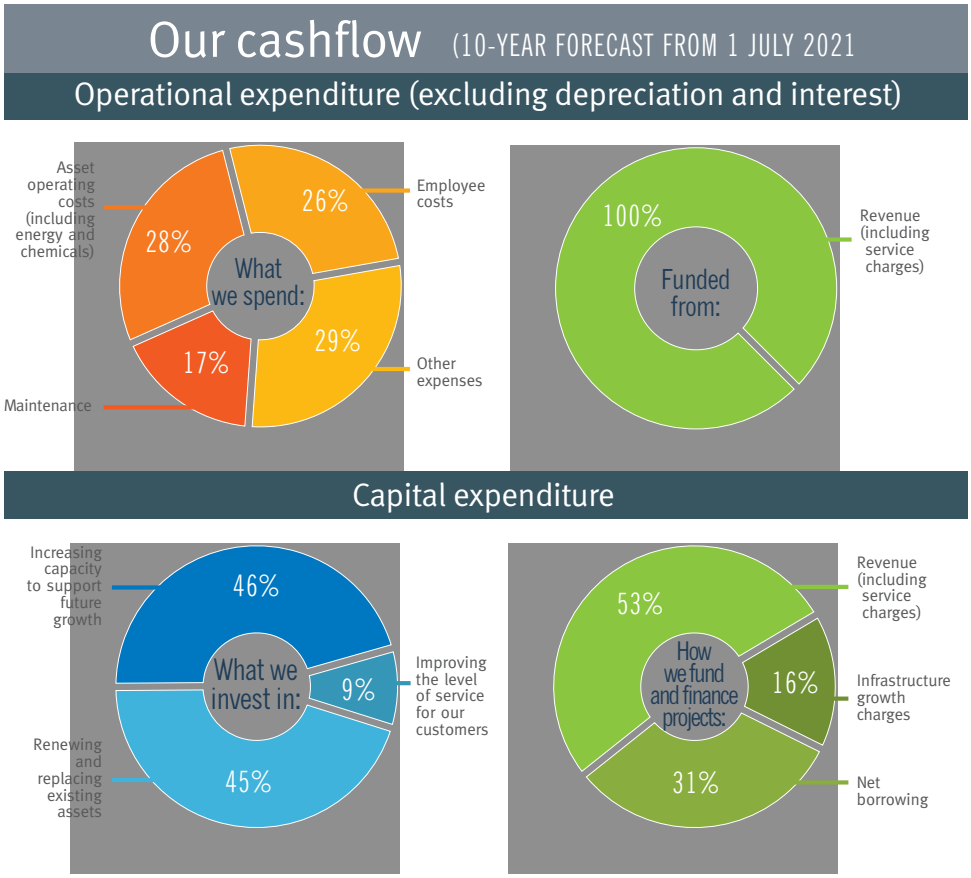
Watercare's revenue and financing framework identifies how those sources of funding are applied to opex, capex and repayment of debt.

Watercare's funding and financing framework is designed to:

- Finance capex for growth and long-term level of service improvement with debt
- Fund annual finance costs and opex through operating revenue from water and wastewater service charges and other user charges (except IGCs)
- Fund the renewal and short-term level of service components of capex by recovering depreciation through water and wastewater service charges
- Fund partial repayment of debt related to bulk growth infrastructure by IGC revenue
- Fund the repayment of remaining debt over time through revenue after paying all opex and capex for renewal and short-term level of service.

7 Watercare measures affordability by expressing the cost of water and wastewater services per household as a percentage of average household income. For the 2021/2022 financial year, the percentage was 0.895%.

7. Financial projections



7.1. Significant assumptions

All forecasts are exclusive of goods and services tax (GST).

7.1.1. Growth forecasts

Regional growth in population, industry and commerce has a direct impact on the demand for water and wastewater services, and new connections.

- Increased water demand translates into more water sold and higher volumes of wastewater discharged. This means greater revenue, but also increased operating costs. The increase in demand comes not only from people in their homes but also from increased economic activity.
- Water and wastewater revenue and opex are assumed to increase in line with water demand growth.
- All new homes and commercial premises need connections to our networks. This translates into investment in expanded infrastructure, but also revenue from IGCs.

Growth estimates are based on Auckland Council's ART i11.6 medium growth forecast dated September 2020. Our starting point is that water demand will increase in line with the rate of growth of the population connected to our networks

Specific initiatives include reducing leakage in our network, smart metering, consumer education to encourage the efficient use of water, and developing tools to understand localised demand and its causes.

Forecast growth in annual per-day demand is shown in the following table:

	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31
Population ($000)	1,692	1,716	1,741	1,765	1,791	1,820	1,849	1,878	1,903	1,930
Housholds ($000)	573	583	593	603	614	625	638	649	660	671
Retail Growth Demand	1.51%	1.56%	1.81%	1.19%	1.30%	1.27%	1.57%	1.00%	1.20%	1.17%

7.1.2. Cost adjustors

Estimates for inflation, or cost adjustors, are applied for each year of the 10-year LTP period. They are applied to estimates of future expenditure made in today's dollars (real dollars) to derive future-year expenditure with estimated inflation taken into account (nominal dollars). For the LTP, Watercare used cost adjustors provided by Auckland Council, which it reviewed against several financial institutions' projections. Our own investigation supported these rates.

The following cost price adjustors have been applied to the long-term financial projections:

	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31
Staff	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	3.0%	3.0%	3.0%
Other CPI	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	3.0%	3.0%	3.0%
Capital Goods PI	3.6%	2.9%	3.0%	3.1%	2.6%	2.7%	2.8%	3.4%	3.4%	3.4%
Operating Expenses $m	$ 308.91	$ 312.75	$ 326.28	$ 340.78	$ 353.30	$ 362.10	$ 376.38	$ 391.57	$ 407.57	$ 424.73

The cost price adjustor is applied to opex. The capital goods price adjustor is applied to capex. The rates are different because the component parts of opex and capex are inherently different. Opex includes costs such as labour, energy, chemicals, repairs and maintenance. Capex, on the other hand, can include costs such as pipes, machinery, control equipment, bespoke manufactured components, and construction costs.

The rate of inflation for these types of expenditure is different to the Consumer Price Index (CPI), commonly referred to as the rate of inflation affecting the goods that people buy day to day. CPI includes cost increases for such things as food and fridges. Inflation affecting Watercare's costs is more to do with items such as construction, concrete, pipes, equipment and bitumen; these are more accurately measured by other cost indices such as Producer Price Index (PPI) and Capital Goods Price Index (CGPI), which have generally been higher than CPI.

7.1.3. Capex - nominal and real expectations

In general, the capital investment planning process produces estimates for project costs and timing with varying degrees of precision. Uncertainty of estimates is implicit in forecasting capex programmes. Actual project costs can be more or less than initially estimated due to new technologies, materials, method of construction, processes and supply constraints.

In developing capex projections Watercare has made a best estimate of the costs. We work with our contractors in partnership and we are all tasked with reducing the costs of developments through working together in an enterprise framework. Overtime we are endeavouring to reduce the cost of developments by 20 per cent. These, where identified, are built into the project costs below.

Real capex describes the consolidated best estimate of the projects in the Asset Management Plan in today's dollars.

Nominal capex describes the consolidated best estimate of the projects in the Asset Management Plan after adjusting for the inflators described above.

Capital expenditure	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	Total
$ Nominal											
Growth	342	342	369	444	519	478	483	465	440	522	4,405
LoSI	103	123	104	82	86	114	112	61	67	28	882
Renewal	301	250	300	404	555	653	463	550	414	478	4,366
Total	**746**	**715**	**773**	**930**	**1,160**	**1,245**	**1,058**	**1,077**	**921**	**1,028**	**9,653**
$ Real											
Growth	331	321	336	392	447	400	394	367	336	385	3,709
LoSI	99	116	95	72	74	96	92	48	51	21	764
Renewal	291	234	273	357	478	548	377	434	316	353	3,659
Total	**720**	**670**	**704**	**822**	**999**	**1,044**	**863**	**849**	**703**	**758**	**8,132**

7.1.4. Asset revaluation

Asset revaluations for property, plant and equipment are carried out on a 'class of asset' basis at least every three years. The most recent valuation for all infrastructure assets was completed by 30 June 2018 by Beca Valuations Limited. This is due to be updated and will be completed by 30 June 2021. Given Watercare's business, the infrastructure assets are of a specialised nature, rarely traded in the marketplace. Therefore, fair value is assessed by the optimised depreciated replacement cost (ODRC) approach. The ODRC uses the assessment of replacement cost of an asset with a new or modern equivalent asset. It applies optimisation and depreciation to adjust for age, condition, performance and remaining useful life.

Revaluation of plant and equipment is forecast to occur every three years. Asset values are increased by the cumulative capital goods price adjustor over the relevant three-year period. Forecast depreciation is calculated on a straight-line basis on the ODRC over the assets' remaining useful lives.

7.1.5. Interest rate

All long-term debt is sourced from Auckland Council as this is currently the lowest-cost source of debt for Watercare. The following interest rate assumptions have been applied to the long-term financial projections:

	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31
Average Interest Rate	4.2%	4.2%	4.2%	4.2%	4.0%	3.9%	3.9%	3.7%	3.7%	3.7%

As noted in the section 2.d above, $125 million of interest-free debt is projected to be received from Auckland Council during the LTP period under the Government's Housing Infrastructure Fund.

7.2. Operational expenditure forecasts

Watercare's opex forecast for the period 1 July 2021 to 30 June 2031 is presented in real dollars (excluding inflation) and nominal dollars (including inflation) in the following two tables.

Inflation is applied at the cost price adjustor rate per year (refer to section 0 above). Base-line opex is assumed to increase in line with water demand growth. Approximately $4 million (real) is added progressively to baseline opex from 2018/19 through to 2024/25, to allow for increased operating costs on planned or new major infrastructure. These include the biological nutrient removal addition at the Māngere Wastewater Treatment Plant, the Central Interceptor and the replacement Huia Water Treatment Plant.

The total forecast opex for the 2021-2031 period (excluding depreciation and interest) is estimated at $3.1 billion in real terms, or $3.6 billion in nominal dollars.

Opex is split into water and wastewater activities. Both activities include allocations of shared services expenditure in proportion to water and wastewater revenue.

Over the 2022-2031 period, opex for the water activity is forecast to be $1,646 million (46%), and for the wastewater activity, $1,959 million (54%) – in nominal dollars.

For each activity, opex is split into maintenance costs, asset operating costs (including energy and chemicals), employee related costs (including labour), and other expenses.

Over the 2022-2031 period, the percentage of total forecast expenditure in each category is as follows:

- Maintenance costs –17%
- Asset operating costs –28%
- Employee related costs – 26%
- Other expenses – 29%.

Operational expenditure 1 July 2021 to 30 June 2031 - $ millions (real)

	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	Total
Water											
Asset operating costs	31.1	28.5	29.2	29.8	29.9	30.4	30.9	31.2	31.5	31.9	304
Maintenance costs	25.2	25.6	26.2	26.5	26.8	27.1	27.6	27.9	28.2	28.5	269
Employee benefit costs	26.2	26.6	27.1	27.4	27.8	28.1	28.5	28.8	29.2	29.5	279
Other costs	51.8	53.6	55.6	57.3	60.0	57.8	59.7	60.3	60.5	61.2	578
	134.3	134.3	138.0	141.0	144.4	143.4	146.7	148.1	149.4	151.2	1,431
Wastewater											
Asset operating costs	57.4	53.2	54.3	57.0	57.1	58.2	59.1	59.7	60.4	61.1	577
Maintenance costs	24.9	25.5	26.0	26.5	26.9	27.2	27.7	27.9	28.3	28.6	270
Employee benefit costs	50.1	50.8	51.8	52.4	53.1	53.7	54.6	55.1	55.8	56.4	534
Other costs	30.2	30.7	31.2	31.6	32.0	32.4	32.9	33.2	33.6	34.0	322
	162.5	160.3	163.2	167.5	169.0	171.5	174.2	176.0	178.1	180.2	1,703
WSL Group											
Asset operating costs	88.5	81.7	83.5	86.8	86.9	88.5	89.9	90.8	91.9	93.0	882
Maintenance costs	50.1	51.1	52.1	53.0	53.7	54.4	55.2	55.8	56.5	57.1	539
Employee benefit costs	76.2	77.4	78.8	79.8	80.8	81.8	83.1	84.0	85.0	86.0	813
Other costs	82.0	84.3	86.8	88.9	92.0	90.2	92.6	93.5	94.2	95.3	900
	296.8	294.6	301.3	308.5	313.5	314.9	320.9	324.1	327.5	331.3	3,133

Operational expenditure 1 July 2021 to 30 June 2031 - $ millions (nominal)

	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	Total
Water											
Asset operating costs	32.41	30.32	31.65	32.99	33.69	34.94	36.21	37.68	39.28	40.93	350
Maintenance costs	26.19	27.13	28.31	29.22	30.19	31.18	32.31	33.61	35.03	36.51	310
Employee benefit costs	26.31	27.26	28.31	29.22	30.19	31.18	32.31	33.61	35.04	36.51	310
Other costs	54.84	57.88	61.20	64.28	68.69	67.52	71.14	74.02	76.54	79.76	676
	139.75	142.59	149.47	155.70	162.75	164.82	171.96	178.92	185.88	193.71	1,646
Wastewater											
Asset operating costs	59.79	56.57	58.83	63.01	64.38	66.93	69.33	72.11	75.17	78.33	664
Maintenance costs	25.91	27.10	28.14	29.30	30.28	31.28	32.40	33.71	35.14	36.62	310
Employee benefit costs	50.30	52.11	54.11	55.85	57.71	59.61	61.76	64.25	66.97	69.79	592
Other costs	33.16	34.38	35.73	36.92	38.18	39.47	40.93	42.59	44.41	46.29	392
	169.16	170.16	176.81	185.08	190.54	197.28	204.41	212.66	221.69	231.03	1,959
WSL Group											
Asset operating costs	92.20	86.89	90.47	95.99	98.06	101.86	105.53	109.79	114.44	119.26	1,014
Maintenance costs	52.10	54.23	56.45	58.52	60.47	62.46	64.71	67.32	70.17	73.13	620
Employee benefit costs	76.62	79.37	82.42	85.07	87.90	90.79	94.07	97.86	102.01	106.30	902
Other costs	88.00	92.26	96.94	101.20	106.87	106.99	112.07	116.60	120.94	126.05	1,068
	308.91	312.75	326.28	340.78	353.30	362.10	376.38	391.57	407.57	424.73	3,604

7.3. Capital expenditure forecasts

Watercare's capex forecast in the AMP for the period 1 July 2021 to 30 June 2031 is presented in real dollars (excluding inflation) and nominal dollars (including inflation) in the following two tables.

Inflation is applied at the Capital Goods Price Index per year (refer to section 6.1.2 above).

The capex forecast for the 2022-2031 period is $8.1 billion (real) or $9.7 billion (nominal). This excludes capitalised interest.

The tables on pages 90 to 93 show capex for growth, renewal and level of service, split into water, wastewater and shared services.

Over the 2022-2031 period, capex in nominal dollars for the water activity is estimated at $4,081 million (42%), for the wastewater activity, $5,417 million (56%) and for shared services $154 million (2%).

The AMP 2021-2041 provides an in-depth view of why and where our capex programmes are being undertaken in the Auckland region.

7.4. Revenue forecasts

Watercare's forecast revenue for the period 1 July 2022 to 30 June 2031 is shown in the following table:

	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	Total
Bulk supply - wholesale	19	21	23	25	28	32	36	41	44	47	316
Bulk supply - retail	596	654	734	787	871	963	1,072	1,186	1,243	1,301	9,408
Laboratory revenue	8	8	8	8	9	9	9	10	10	11	90
Infrastructure growth charges	114	120	131	140	151	162	175	173	170	172	1,507
Subvention receipt	-	1	4	6	8	9	10	11	12	14	74
Other miscellaneous	25	26	27	28	29	30	31	32	34	35	299
Late payment penalty	2	2	3	3	3	3	4	4	4	5	33
Operating Revenue	764	831	930	998	1,099	1,207	1,338	1,458	1,517	1,584	11,727
Vested assets revenue	69	71	74	77	79	82	85	88	92	96	812
Total Revenue	833	903	1,004	1,074	1,178	1,289	1,422	1,546	1,609	1,679	12,539

7.4.1. Water and wastewater service charges

More revenue from water and wastewater service charges is required to meet the needs of renewing and developing Auckland's ageing water and wastewater infrastructure.

As outlined in the Council's 10-year LTP, our projected price increases over the period are:

- For both water and wastewater, a price increase of 7% is planned for the 2022 and 2023 Financial Year.
- This increases to 9.5% pa from 2024 to 2029 to meet Auckland's infrastructural needs while maintaining Auckland Council's debt covenants.
- Current modelling indicates that from 2030 annual price increases required will be in the range 3% - 3.5%

Refer to www.watercare.co.nz to see current water and wastewater prices.

7.4.2. Infrastructure Growth Charges

Auckland is growing in every direction and pressure on increasing the capacity of Watercare's bulk assets is intense. Additionally, the Productivity Commission has recommended that Watercare increase its IGC pricing at a higher rate than water and wastewater charges so that we move towards recovering 100 per cent of the cost of growth assets through the collection of IGC, thereby reducing any cross subsidisation between new and existing connection costs.

To implement the Productivity Commission's recommendation, we have increased IGC by 12% in 2022 followed by an 8% increase from 2023 to 2028 (refer to www.watercare.co.nz to see current IGC rates). After that, we do not expect significant increases for the remainder of the LTP period.

7.4.3. Subvention receipts

Watercare allows the Auckland Council tax group to access our tax losses by way of tax loss offset and subvention payments to us. Actual amounts of tax loss offset and subvention payments are determined post balance date when the respective income tax calculations are completed by the parties. Under the agreement with council, subvention income of 45 cents per dollar of the tax impact of the losses sold is paid to us by the Auckland Council tax group.

The consideration we receive for tax losses represents a reasonable return to enable us to meet our obligations under S57 of the LGACA.

Forecasts for subvention receipts are based on Auckland Council's estimates of taxable profit available for offset within the Auckland Council tax group.

7.4.4. Other revenue

Other revenue includes laboratory income and user charges such as new meters and service connections, meter relocations, wastewater audits, trade-waste monitoring, and administration fees. Other revenue growth is forecast to be in line with water demand growth and prices are estimated to increase at the same rate as the Cost Price Index (refer to section 0 above).

Refer to www.watercare.co.nz to see current prices for 'Other Charges'.

7.5. Debt

Watercare inherited the water and wastewater assets of the previous Local Network Operators (LNOs) and councils as a result of the amalgamation of Auckland's local councils on 1 November 2010. It also took over the debts of the LNOs and a portion of the debt of the councils. Watercare's initial debt, as an integrated provider on 1 November 2010, was $1.236 billion.

Net debt was $1.953 billion at 30 June 2020 (refer to Watercare 2020 Annual Report). It is forecast to increase to $5.355 billion by 30 June 2031.

	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31
Debt	2,705	3,018	3,314	3,711	4,260	4,830	5,150	5,358	5,386	5,442

Refer to Appendix 1 for commentary on applicable debt ratios and measures.

7.6. Asset values

The value of property, plant and equipment (PP&E) at 30 June 2020 was $10.5 billion (refer to Watercare 2020 Annual Report. The value will increase each year through capex spend, capitalised interest and vested assets, and every three years by revaluation to the Optimised Deprecated Replacement Cost (refer to section 9.1.4 above), offset by depreciation and a small provision for asset write-off. The value of PP&E is forecast to be $21.2 billion by 30 June 2031.

Total assets as at 30 June 2020 were $10.8 billion and are forecast to increase to $23.8 billion by 30 June 2031.

APPENDIX

Financial ratios and performance measures

The final revenue price path needs to result in key prudential financial ratios and measures being kept within acceptable bands. This is in order to keep future debt at levels that will not stifle capacity to continue meeting our obligations under the LGACA S57. Watercare maintains appropriate financial thresholds in the following key areas which impact the level of future expenditures, fees and charges, and borrowings.

Funds from operations ratio

Funds from operations (FFO) broadly means the net amount of cash revenue and cash expenses. The FFO ratio is the FFO divided by gross interest cost. This measures our ability to generate sufficient cash to service debt. Our established price path modelling has been based on maintaining the FFO ratio at ≥ 3.0. Our planned average FFO over the 10-year LTP period is 4.95.

Gearing

A company's gearing is the relationship between its levels of debt and equity. High gearing will normally signify reduced financial flexibility and the need to alter levels of future expenditures, fees and charges, and borrowings to reduce gearing. Gearing is usually expressed as the ratio of debt to debt plus equity. We target a debt to debt plus equity ratio of no more than 28%.

Our forward debt projections reflect a prudent debt-to-debt-plus-equity percentage, trending to 42% at the end of 2031 from 34% for 30 June 2020. This increase in debt reflects our accelerated infrastructure spending on Auckland's water and wastewater networks. The average over the 10-year period is forecast to be 41%.

Debt to revenue ratio

Our shareholder, Auckland Council, reports its financial performance in relation to various prudential benchmarks. A key measure for council is its net debt as a percentage of total revenue. The sustainable management of debt presents a major challenge for council to make progress on new investment to meet the most pressing needs of Auckland. Its approach to managing this challenge is to maintain an AA credit rating from Standard & Poor's (or similar rating from an independent rating agency). Historically, to ensure that debt levels continue to remain prudent and sustainable, the council has set a prudential limit of group debt being less than 2.7 times group revenue. However, in response to the pandemic Auckland council has increased this limit to 2.9 times group Revenue for the next 5 years. Watercare has worked closely with Auckland council, sharing debt forecasts which sometimes exceed the council thresholds, to ensure that the level of debt can be accommodated within the Auckland Council Groups overall debt to revenue target.

Watercare's debt to revenue ratio is predicted to increase from 2.6 at June 2020 to a maximum of 3.94 by 30 June 2027, there after trending downwards to be at 3.36 by 30 June 2031.

Note: All mentions of forecast expenditure are stated in nominal (inflated) dollars unless otherwise specified.

Glossary

ADWF	Average dry-weather flow
AELG	Auckland Engineering Lifelines Group
AMP	Asset Management Plan
AUP	Auckland Unitary Plan
AWTP	Advanced Water Treatment Plant
BNR	Biological nutrient removal
BOD	Biochemical Oxygen Demand
BPO	Best practicable option
CCO	Council-controlled organisation
CSO	Combined sewer overflow
DMA	District metering area
DWSNZ	Drinking Water Standards for New Zealand
EOP	Engineered overflow point
FULSS	Future Urban Land Supply Strategy
FFO ratio	Funds from operations to interest cover ratio
HIF	Housing Infrastructure Fund
IGC	Infrastructure Growth Charge
ISCA	Infrastructure Sustainability Council of Australia
km	Kilometres
kWh	Kilowatt hours
LoSI	Level of service improvement
L/c/d	Litres per connection per day
L/p/d	Litres per person per day
L/s	Litres per second
LTP	Long Term Plan
m2	Square metres
m3	Cubic metres
m3/d	Cubic metres per day
m3/s	Cubic metres per second
ML	Mega-litres or million litres
MLD	Mega-litres per day or million litres per day
mm	Millimetres
NDC	Network Discharge Consent
NIWA	National Institute of Water and Atmospheric Research
NZTA	New Zealand Transport Agency
PDWF	Peak dry-weather flow
PWWF	Peak wet-weather flow
RCM	Reliability-centred maintenance
RUB	Rural Urban Boundary
SHA	Special Housing Area
SOI	Statement of intent
TRC	Tamaki Regeneration Company
WSP	Water Safety Plan
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

Board Planner 2020			Board Planner 2021											
		December	January	February	March	April	May	June	July	August	September	October	November	December
Meetings	Board	15-Dec 8am-11am (Teleconference) 23-Dec Public Board Meeting	29-Jan	26-Feb	30-Mar	29-Apr		1-Jun (May Results)	5-Jul* (June Results) 29-Jul	30-Aug	30-Sep	28-Oct	30-Nov	14-Dec (Teleconference)
	Audit and risk committee			3-Feb			26-May			9-Aug 24-Aug		28-Oct		
	Te Tangata Komiti		27-Jan 3pm			28-Apr 10am			26-July 10am	19-Aug 10am			24-Nov 10am	
	AMP & Major Capex Committee			18-Feb 10am			20-May 10am			11-Aug 10am			18-Nov 10am	
	STP Committee													
	Committee for Climate Action			19-Feb 10am			14-May 10am			16-Aug 10am			3-Nov 10am	
	CCO Oversight Committee meetings	8 Dec (M Devlin)					18-May				21-Sep			
Events	Community and Stakeholder Relationships										TBC: Meet Diversity and Inclusion Committee			
Governance	Charter reviews		Corpoate Governance charter						A&R Charter	Corpoate Governance charter	Committee for Climate Action Terms of Reference Te Tangata Charter			
	Policy reviews												Good Employer Policy	
	Risk report due to Council		Risk report (due to Council 22 February)			Risk report (due to Council 18 May)			Risk report (due to Council 23 August)		Risk report (due to Council 13 September)		Risk report (due to Council mid-November)	
	Enterprise Risk report to Board		Report to Board			Report to Board			Report to Board			Report to Board		
	Compliance		Statutory compliance			Statutory compliance			Statutory compliance			Statutory compliance		
	Shareholder interaction	Q1 briefing to CCO Oversight Committee TBC			Presentation to CCO Oversight Committee of Q2 Report 23 March	Q3 Report to Council due 30 April	Attendance at CCO Oversight Committee Meeting of 18 May in relation to Q3 Report and SOI			Q4 Report to Council due 30 August	Presentation to CCO Oversight Committee of Q4 Report on 21 September			
	Site Visits					Water sites CI sites								
Board Training	Board training & development	Privacy Law (once new laws are in place)								Personal Security - RISQ	Directors' responsibilities in relation to Water Safety Plan	Mental Health & Wellbeing in the workplace		

12.1

Board Planner 2020		Board Planner 2021												
		December	January	February	March	April	May	June	July	August	September	October	November	December
Business strategy	**Strategic planning & Deep Dives**													
Business planning	**Key finance and business decisions**	Auckland Council Draft Annual Plan - approve Watercare input^	Approve half year accounts	a) approve financials for Draft SOI including projected 21/22 price increases, b) approve long term financials for Auckland Council modelling		Auckland Council to notify Watercare of Group Treasury Interest Rate by 30 April	Present plan for Year End to A&R Approve Insurance Proposal Approval of 2020/21 Budget & updated SOI Financials (1 June board meeting)		Auckland Council and Watercare to review 30 June Treasury Interest rates	a) approve 2020/21 accounts, b) delegate final sign off of 2021/22 Annual Report c) Approve Auckland Council Reporting Pack				Auckland Council Draft Annual Plan - approve Watercare input^
	Statement of intent		2021/22 Letter of Expectation to be received	Draft 2021-2024 SOI for Board's review	Approval of Draft 2021-2024 SOI				Present shareholder SOI feedback at public meeting on 5 July. Final 2021-2024 SOI issued to shareholder on 31 July.	Final 2021-2024 SOI adopted by Auckland Council		2020/2021 SOI Results to be presented to Board at Public Meeting. Public Deputations received.		2022/23 Letter of Expectations to be received

* Statutory public Board meeting - deputations invited

^ Extraordinary Audit & Risk and Board Meeting to meet shareholder half year and annual report timeline

12.1

Report to the Board of Watercare Services Limited
Prepared for the 1 June 2021 Board meeting

Watercare
An Auckland Council Organisation

Directors' appointment terms, committee memberships, and meeting attendances

Purpose	**Team**			
	Prepared & recommended	Signature	Submitted	Signature
Information	**Rob Fisher** Company Secretary		**Jon Lamonte** Chief Executive	

Natural Environment	People and Culture	Customer and Stakeholder relationships	Assets and Infrastructure	Intellectual capital	Financial Capital and Resources
					

1. Recommendation

This paper provides an update on:

- the tenure of the seven current directors of Watercare Services Limited
- details of the committees each director is a member of
- details of directors' attendance at Board and committee meetings over the calendar year.

12.2

2. The details

Table 1: We currently have seven directors
Our directors are appointed by Auckland Council.

Director	Original appointment date	End of term
Margaret Devlin (Chair)	1 November 2016	31 October 2022
Dave Chambers	1 November 2019	31 October 2022
Nicola Crauford	1 April 2014	31 October 2021
Brendon Green	1 November 2016	31 October 2022
Hinerangi Raumati-Tu'ua	1 August 2019	31 October 2021
Frances Valintine	1 November 2019	31 October 2022
Graham Darlow	3 February 2021	31 October 2024

Table 2: We have four committees to assist the Board in its corporate governance
Committee Chairs and members are appointed by the Chair. Attendance at Committee meetings by non-members is optional.

Director	Audit and Risk	Te Tangata	AMP & Major Capex	Committee for Climate Action
Margaret Devlin (Chair)	*	✓	✓	
Dave Chambers		Committee Chair		✓
Nicola Crauford			Committee Chair	✓
Brendon Green	✓			Committee Chair
Hinerangi Raumati-Tu'ua	Committee Chair		✓	
Frances Valintine		✓		✓
Graham Darlow	✓		✓	

**Board Chair attends in ex-officio capacity*

Table 3: Attendance at Board and committee meetings in 2021 is detailed in the table below:

Attended ✓ Did not attend ✗ Not on the committee ■ Not on the Board ☒	Attendance at Board meetings											Attendance at Audit and Risk Committee meetings					Attendance at AMP & Major Capex Committee meetings					Attendance at Te Tangata Komiti meetings					Attendance at Committee for Climate Action meetings			
Board members attendance 2021	Board 29 January 2021	Board 26 February 2021	Board 30 March 2021	Board 29 April 2021	Board 1 June 2021	Board 5 July 2021	Board 29 July 2021	Board 30 August 2021	Board 30 September 2021	Board 28 October 2021	Board 30 November 2021	A&R 3 February 2021	A&R 26 May 2021	A&R 9 August 2021	A&R 24 August 2021	A&R 28 October 2021	AMCC 18 February 2021	AMCC 16 April 2021	AMCC 20 May 2021	AMCC 11 August 2021	AMCC 18 November 2021	TTK 27 January 2021	TTK 28 April 2021	TTK 26 July 2021	TTK 19 August 2021	TTK 24 November 2021	CCA 19 February 2021	CCA 24 May 2021	CCA 16 August 2021	CCA 3 November 2021
Margaret Devlin	✓	✓	✓	✓								✓					✓	✗	✓			✓	✓				■			
Nicki Crauford	✓	✓	✓	✓								■					✓	✓	✓			■	■				✓			
Brendon Green	✗	✓	✓	✓								✓					■	■	■			■	■				✓			
David Thomas	✓	✓	⁄	⁄	⁄	⁄	⁄	⁄	⁄	⁄	⁄	✓	⁄	⁄	⁄	⁄	■	⁄	⁄	⁄	⁄	✓	⁄	⁄	⁄	⁄	■	⁄	⁄	⁄
Hinerangi Raumati-Tu'ua	✗	✗	✓	✓								✓					■	✓	■			■	■				■			
Dave Chambers	✓	✓	✓	✓								■					■	■	✓			✓	✓				✓			
Frances Valintine	✓	✓	✓	✓								■					✗	■	■			■	✓				✓			
Graham Darlow	⁄	✓	✓	✓								■					■	✓	✓			⁄	■				■			

Report to the Board of Watercare Services Limited
Prepared for the 1 June 2021 Board meeting

Disclosure of Directors' and Senior Executives' interests

Purpose:

Information

Team

Prepared and recommended	Signature	Submitted	Signature
Rob Fisher Company Secretary		**Jon Lamonte** Chief Executive	

Natural Environment	People and Culture	Customer and Stakeholder relationships	Assets and Infrastructure	Intellectual Capital	Financial Capital and Resources
					

1. Purpose and context

Section 140 of the Companies Act 1993 requires all directors to keep an Interests Register, which must be disclosed to the Board of the company.

One of key principles of good governance is transparency and having an open and honest approach to working with the wider community. Watercare not only maintains an Interests Register for its directors, but also voluntarily maintains an Interests Register for our senior executives.

2. The details

Watercare Services Limited's Directors' Interests Register is set out below.

DIRECTOR	INTEREST
Margaret Devlin	• Director and Chair, Lyttleton Port Company Limited • Director, Waikato Regional Airport • Director, Titanium Park (wholly owned subsidiary of Waikato Regional Airport) • Director, Waimea Water Limited • Director, Aurora Energy

DIRECTOR	INTEREST
	• Director, IT Partners Group • Councillor, Waikato University • Deputy Chair, WINTEC • Independent Chair of Audit and Risk Committee, Waikato District Council • Director, Infrastructure New Zealand • Chair, Advisory Board Women in Infrastructure Network • Chair, Hospice Waikato • Chartered Fellow, Institute of Directors • Member, Institute of Directors, Waikato Branch Committee
Nicola Crauford	• Chair, GNS Science Limited • Chair, Electricity Authority • Director and Shareholder - Riposte Consulting Limited • Director – CentrePort Limited Group • Trustee – Wellington Regional Stadium Trust
Brendon Green	• Director, Kaitiaki Advisory Limited • Director, Tainui Kawhia Incorporation • Director, Hiringa Energy Limited • Director, Hiringa Refueling Investments Limited • Executive Director, Advanced Biotech NZ Limited • Management contract, Tainui Kawhia Minerals • Australia-NZ representative, Wattstock LLC (USA) • Representative of Waipapa Marae, Kawhia, Te Whakakitenga o Waikato Tainui • Runanga Manukau Institute of Technology - Te Whakakitenga o Waikato representative • Member – Waikato District Council – Infrastructure Committee • Advisor – Te Taumata Aronui – Ministry of Education • Adjunct Senior Fellow – University of Canterbury – Department of Chemical Engineering
Hinerangi Raumati-Tu'ua	• Chair, Parininihi Ki Waitotara Incorporated • Chair – Te Rere O Kapuni Limited • Chair, Ngā Miro Trust • Chair, Nga Kai Tautoko Limited

DIRECTOR	INTEREST
	• Chair, Te Kiwai Maui o Ngaruahine Limited • Director, Taranaki Iwi Holdings Management Limited • Chair, Aotearoa Fisheries Limited • Director, Sealord Group Limited • Director, Port Nicholson Fisheries GP Limited • Director, Te Puia Tapapa GP Limited • Chair, Tainui Group Holdings Limited • Executive Member, Te Whakakitenga O Waikato
Dave Chambers	• Director, Paper Plus New Zealand Limited • Director, Living Clean NZ Limited • Director, Turners and Growers Fresh Limited
Frances Valintine	• Director and CEO, The Mind Lab Limited • Director and CEO, Tech Futures Lab Limited • Director, Harcourt Jasper Limited • Director, Pointed Tangram Limited • Director, Harper Lilley Limited • Director, On Being Bold Limited • Director, Sandell Trustees Limited • Selection Advisor, Edmund Hillary Fellowship • Trustee, Dilworth Trust Board • Futures Advisor, BNZ Bank
Graham Darlow	• Business Executive, Acciona Infrastructure NZ Limited • Director and Shareholder, Brockway Consulting Limited • Chair, Frequency NZ Limited • Director, Hick Bros. Civil Construction Limited • Director, Hick Bros. Infrastructure Limited • Chair, Holmes GP Structure Limited • Director, Tainui Auckland Airport Hotel GP (No.2) Limited • Director, City Care Limited • Director, Hick Bros. Heavy Haulage Limited • Director, Hick Bros. Holdings Limited

Watercare Services Limited's Senior Executives' Interests Register is set out below.

Senior Executive	Interest
Jon Lamonte	• Director - Water Services Association of Australia
Marlon Bridge	• Trustee – Te Motu a Hiaroa (Puketutu Island) Governance Trust • Director – WCS Limited
Rebecca Chenery	• Director – Lutra Limited
Shayne Cunis	• Director – The Water Research Foundation (USA)
Rob Fisher	• Deputy Chair – Middlemore Foundation • Trustee – Watercare Harbour Clean Up Trust • Trustee – Te Motu a Hiaroa (Puketutu Island) Governance Trust
Jason Glennon	• Director – Michaels Ave Investments Limited
David Hawkins	• Nil
Shane Morgan	• Committee Member – International Water Association, New Zealand • Director – Lutra Limited
Amanda Singleton	• Director – Die Weskusplek Pty Ltd (South Africa) • Trustee – Te Motu a Hiaroa (Puketutu Island) Governance Trust
Nigel Toms	• Director – TRN Risk & Resilience Consulting
Steve Webster	• Director – Howick Swimgym Limited