

# Komiti Ngā Wai Hangarua Wellington Water Committee

13 July 2021

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Report no: WWC2021/3/176

## Water Services Investment 2021-2024

### Purpose

1. In their 2021-24 long term plans Wellington Water Limited's (WWL) shareholding councils have approved a significant level of investment in three waters infrastructure. Yet some risks to service and key outcomes remain. This paper summarises the key characteristics of the three-year investment plan.

### Recommendations

That the Committee:

- (1) notes the \$300M operational and \$585M capital investments Wellington Water Limited will make over the 2021-24 period, which represents a significant increase compared with the 2018-21 period;
- (2) notes even with the increased investment it will take years to address the backlog of renewals in the ageing pipe network, so bursts and leaks will continue, placing pressure on operational budgets and increased risk to delivery of water services;
- (3) notes the output range for the region's capital programme is forecast to be \$145M-\$189M in year one and will progressively ramp over during years two and three to deliver the full capital programme;
- (4) notes there are additional emerging pressures that compound the budget risks, including meeting the new requirements of Taumata Arowai and increasing water use as a region; and
- (5) notes that Wellington Water Limited will continue to work closely with councils, be clear on the specific risks for their communities and how best to manage the impacts.

### Background

2. Councils' 2021-24 three waters investment represents a step up towards rebuilding strong networks that can deliver the services and environmental

outcomes communities have signalled they want. WWL is very grateful for the trust that councils and communities have placed on the company to carry out this work on behalf of the region. WWL believes it is important we are held to account for our performance in carrying out the agreed work.

3. Councils and WWL have worked together to develop a Strategic Framework for 2021-24 investment planning that has resulted in the uplift to address the strategic priorities for three waters over the coming decades. The five strategic priorities are:
  - 1) looking after existing infrastructure;
  - 2) supporting sustainable growth;
  - 3) having enough water;
  - 4) improving environmental water quality, and
  - 5) responding to climate change.
4. The investment planning process began with several investment scenarios, including an unconstrained view, to support council specific needs and key activities and projects to address strategic priorities. Investment options were filtered through the five strategic priorities that provide line of sight from advice to delivery with clarity for shareholders on the types of work and remaining risk based on the agreed investment. Finally, investment levels were proposed by councils working within their affordable fiscal envelopes to be agreed by councillors.
5. Now that investment is confirmed, a detailed understanding of what can be achieved with the levels of funding agreed, the operational risks that remain resulting from historical funding levels, and the emerging factors arising since budgets were struck that may have cost impacts, is presented.
6. It is important to note that despite an environment of unprecedented economic uncertainty, shareholding councils have remained willing to grapple with the size of the challenge, and how to address it over time without delaying the decisions that needed to be made. In this regard, councils have increased operational and capital budgets and our 2021-2024 total budget is substantially larger than it was in 2018.
7. Equally important is that councils acknowledge that even with the increased investment for this period, the current situation will not change quickly. The aging pipe network and backlog of renewals means bursts and leaks will continue to cause unplanned work and disruption, placing pressure on operational budgets and resources. Unplanned work is often more expensive to carry out, is more disruptive, difficult to budget for, that subsequently results in less funding being available for the proactive maintenance (for example checking valves and testing fire hydrants) necessary to break this reactive situation.
8. Three key activities are in place in this LTP cycle to help:
  - a. increased funding for renewals;
  - b. increased operational funding, supplemented by central government through the stimulus package announced in 2020; and
  - c. a programme focused on investigating the condition of the most critical assets.

9. Stimulus funding from central Government is effectively helping to subsidise operational expenditure in the short term. It should be noted that this funding is programmed to be fully applied by the end of March 2022 as required under the terms of the funding. Councils have adopted a 'wait-and-see' approach to further stimulus funding support.
10. WWL expects unplanned maintenance costs to continue at current levels or increase. So, from April 2022 when stimulus funding is set to finish, available maintenance funding will reduce, without an additional funding source. The reduced operational budgets put at risk the ability to:
  - a. meet minimum levels of planned maintenance to effectively manage some personnel health and safety risks;
  - b. provide the planned maintenance required to comprehensively mitigate water quality risks;
  - c. carry out adequate investigations to effectively inform future work and respond to all reactive situations; and
  - d. provide effective input into the policies that will enable the region to move forward in the most effective way to the future it seeks for water security, water quality and ability to respond to climate change.
11. The \$585M capital programme for 2021-2024 is an overall \$165M lift in investment over the 2018-2021 period. WWL's job is to deliver this over three years, and our model is to grow capability over time. Building delivery capacity is a focus and forecast an output of \$145M-\$189M in the first year, with ongoing increases in the following two years.
12. The range reflects the risk profile of some projects, including possible delays in gaining resource consents; stakeholder engagement and/or specialist resource requirements. Projects affected in this way can be completed over the second and third years. This approach will also provide a smoother path to build capacity in a market that is widely recognised as under strain.
13. Even when complete, the 2021-2024 asset renewal programme will not yet change the risks and impacts of the aging networks. Therefore, it is reasonable to expect continued unplanned service disruptions and their associated impacts on customer service, customer experience, and operational budgets.

### **Summary of Operational Expenditure**

14. Operational investment levels increase from a regional investment of \$79M in 2020/2021 to an average of \$93M per year in the 2021-2024 investment period (excluding stimulus funding). This is allocated across WWL's core services of planning, advice and delivery (22%), looking after existing infrastructure (72%) and the balance across the remaining priorities (supporting growth, sustainable water supply, improving environmental water quality and responding to climate change):
  - a. 72% looking after existing infrastructure;
  - b. 22% Wellington Water OPEX including planning and advisory, land development services;
  - c. programme and operational delivery support; and
  - d. 6% is the balance across the remaining strategic priorities.

15. When we look at the investment split by core function, it is allocated as follows:
- a. 80% on operations and unplanned maintenance;
  - b. 4% monitoring;
  - c. 3% to planned maintenance (lower than minimal levels required to effectively mitigate risks); and
  - d. 13% investigations<sup>1</sup> (including stimulus funding)

### Summary of Capital Expenditure

16. A total of \$585M of capital investment over the next three years is made up of:
- a. 47% directed to looking after existing assets
  - b. 21% for growth
  - c. 19% for local issues (i.e. those prioritised by communities that do not necessarily fit within the strategic priority framework)
  - d. 13% across the balance of strategic priorities.

### Investment risk insights

#### *Levels of investment in renewal of existing assets still mean aging pipes continue to fail more, increasing operational costs*

17. Councils have responded well to increase the level of investment in renewals across the region. However, the increase will not yet reduce the impacts of the aging network, nor is it sufficient to begin to noticeably reduce the backlog of renewals that are identified. Ongoing and possible increases in frequency of bursts and breaks should be expected.
18. The delivery of the capital programme will be achieved over the three year period. The 2021-2024 capital programme is the largest in WWL's history. It will be necessary to increase delivery capacity and the Wellington Water Board and the Committee have been advised separately on the plans to manage this issue. The approach includes managing this as a three-year plan of sustainable capability and capacity development amongst suppliers, rather than aiming for annual targets that rise and fall significantly.
19. The programme contains several large projects that make up nearly 50% of the programme over the next three years. This proportion does reduce in the out years of the 2021-2031 planning period.
20. Large projects create challenges on several fronts. They add to the need for construction capacity, but not necessarily on a lasting basis. This means WWL competes in the market with others, rather than necessarily being able to rely on our existing procurement model. They also create a delivery risk with respect to budget forecasts, as a delay on one or two large projects can have a big impact on the timing of planned work.
21. For these reasons we have forecasted a delivery range of \$145M-\$189M for 2021-2022, largely due to the risk profile of complex major projects.

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<sup>1</sup> The total investment for investigations looks significant when compared with that for planned maintenance. Investigations activities include asset condition assessments, studies that inform planning for growth, water storage options, inflow and infiltration investigation studies. All these activities enable better investment decisions to be made in the future.

22. The WWL contractor panel has been engaged early in the development of a capital programme and projects have been identified to smooth out delivery shortfalls and mitigate risk that the full capital programme won't be delivered. The plan supports progressive delivery increases over three years and total investment is proposed to be completed by the third year.

### **High level of unplanned maintenance increases the operational risks from year two onwards**

23. Even with increased funding, the highly reactive environment resulting from historical funding levels in infrastructure will continue to consume much of the available operational expenditure. The priority for operational investment in this environment will be managing and operating critical services: treatment and delivery of safe drinking water; collection and treatment of wastewater and compliance monitoring. The next priority is the unplanned maintenance necessary to ensure the continuity of these and other core services.
24. Councils have utilised the Government's stimulus funding to address the unplanned maintenance shortfall to varying degrees. Without further stimulus funding offsets, continued higher unplanned maintenance from April 2022 to June 2024 means WWL will have limited ability to do much outside of core operational service provision and unplanned maintenance.
25. The drop-off in planned maintenance investment levels from year two will increase the likelihood and impact of unplanned service disruptions. The cost of attending to these will further compound the operational investment shortfall. Additionally, the reduced levels of planned maintenance such as hydrant flushing, proactive leak detection and repair, reservoir cleaning and facilities maintenance increases human health and safety risks and the possibility that water quality is compromised.

### **Other emerging challenges**

26. Recent population projections are indicating we are tracking at higher growth levels. This combined with few councils investing in the sustainable water strategic priority means water demand growing and little ability to proactively detect and address leaks, especially from year two. Without appropriate intervention in the next three years, leakage and more people using water will contribute to the risk of more frequent and severe restrictions in summer. In doing so increasing the pressure to develop new source capacity (such as an extra storage lake).
27. During the 2021-2024 period, there are changes in the operating environment that will affect risk and costs. Some general examples are the increased regulatory requirements likely under Taumata Arowai, the effect of disruptions to international supply chains caused by the global pandemic, and a heated construction market as local and centrally funded infrastructure work is stepped up to help stimulate the economy and meet historic levels of demand for housing.
28. Additionally, councils have recognised the need to urgently carry out an assessment of the state of the most critical assets. It is likely these assessments will identify urgent unplanned work that will have to be done quickly and accommodated within the existing budgets. There is also the risk that this work would be complex and costly.

### **19% of capital investment being spent on acute local issues**

29. Of the \$585M total capital investment in the next three years, 19% is being spent to address acute and local issues such as flooding and seismic resilience. This reflects the importance of these issues to communities. Investing in these activities means that less progress can be made at a regional level on the strategic priorities of having enough water, improving environmental water quality, and responding to climate change.

### **Next steps**

30. Over the next few months, WWL will be working closely with councils to provide a fuller briefing on the issues outlined in this paper. The aim will be to develop a plan to manage the specific risks associated with respective investment levels.

### **Appendices**

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**Author:** Wellington Water Ltd

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### Summary of Operational Investment

Strategic Priority	2021/22	2022/23	2023/24	3 Year Total
Wellington Water Opex	\$18.5M	\$20.4M	\$21.9M	\$60.7M
Looking after existing infrastructure	\$65.6M	\$66.8M	\$68.2M	\$200.6M
Supporting growth	\$1.3M	\$1.9M	\$0.8M	\$4.1M
Enough water, from catchment to tap	\$0.9M	\$1.6M	\$1.4M	\$3.9M
Return to source - Improving environmental water quality	\$1.6M	\$2.0M	\$2.0M	\$5.5M
Climate resilience	\$0.4M	\$0.1M	\$1.6M	\$2.1M
Localised issues	\$0.9M	\$0.9M	\$0.5M	\$2.3M
<b>LTP funding</b>	<b>\$89.2M</b>	<b>\$93.6M</b>	<b>\$96.5M</b>	<b>\$279.3M</b>
Wellington Water Opex	\$3.5M			\$3.5M
Maintenance	\$7.5M			\$7.5M
Investigations (condition assessment)	\$7.6M			\$7.6M
Investigations (leak detection)	\$2.4M			\$2.4M
<b>Stimulus Funding</b>	<b>\$20.9M</b>	<b>\$0.0M</b>	<b>\$0.0M</b>	<b>\$20.9M</b>
<b>Total funding</b>	<b>\$110.1M</b>	<b>\$93.6M</b>	<b>\$96.5M</b>	<b>\$300.2M</b>

### Operational investment by investment categories

1. The investment by core functions management, operations and unplanned maintenance make up over 80% of the operational expenditure for Wellington Water with the balance allocated 13% to investigations, 4% monitoring, 3% to planned maintenance.
2. The proportion of reactive to planned maintenance over the first three years of this plan is 91% reactive to 7% planned. In the first year of the plan this is masked by an additional \$7.5 million of stimulus funding bringing the balance to 86% to 14%. In years two and three, once the stimulus funding is finished, this moves to 96% reactive to 4% planned based on forecasted operational reactive costs. This balance of maintenance introduces severe risks.

Investment Category	2021/22	2022/23	2023/24	Total
<b>Wellington Water operational expenditure</b>	\$18.5M	\$20.4M	\$21.9M	\$60.7M
<b>Operations</b>	\$30.3M	\$30.2M	\$31.4M	\$91.9M
<b>Reactive Maintenance</b>	\$22.8M	\$27.5M	\$28.2M	\$78.5M
<b>Monitoring</b>	\$3.7M	\$3.8M	\$3.9M	\$11.5M
<b>Planned Maintenance</b>	\$5.2M	\$1.2M	\$1.7M	\$8.1M
<b>Investigations</b>	\$8.7M	\$10.5M	\$9.3M	\$28.5M
<b>LTP funding</b>	<b>\$89.2M</b>	<b>\$93.6M</b>	<b>\$96.5M</b>	<b>\$279.3M</b>
<b>Wellington Water operational expenditure</b>	\$3.5M			\$3.5M
<b>Maintenance</b>	\$7.5M			\$7.5M
<b>Investigations (condition assessment)</b>	\$7.6M			\$7.6M
<b>Investigations (leak detection)</b>	\$2.4M			\$2.4M
<b>Stimulus funding</b>	<b>\$20.9M</b>	<b>\$0.0M</b>	<b>\$0.0M</b>	<b>\$20.9M</b>
<b>Total funding</b>	<b>\$110.1M</b>	<b>\$93.6M</b>	<b>\$96.5M</b>	<b>\$300.2M</b>

## Operational investment outcomes

Strategic Priority	Investment category	What you get from this investment	3y investment \$ (,000) Opex including stimulus
<b>Looking After Existing Infrastructure</b>	Wellington Water operational expenditure	Continue to run Wellington Water's planning and advisory, land development services; programme and operational delivery and operational and company management support functions. Support asset management system and data and technology improvements.	64,273
	Operations	Continue to safely operate network and treatment plants to meet existing levels of service.	90,941
	Reactive Maintenance	Respond to unplanned service disruptions to restore current levels of service.	85,740
	Monitoring	Provide information on network performance to report on compliance and inform future solutions in response to incidents.	10,736
	Planned Maintenance	Maintain ongoing levels of service from assets for high criticality assets.	6,586
	Investigations	Increased understanding of the health of assets through condition assessments and inspections. Respond to environmental and drinking water quality incidents to identify the root cause and options to inform future solutions.	20,244
	Strategy, policy, systems, procedures and standards	Provide policy advice into local, regional and national processes for PNRP and district plan. Capability building for operational activities	1,444
<b>Growth without adverse environmental impact</b>	Investigations	Support councils with three waters growth advice for their priority areas	4,080
<b>Reducing Water Consumption</b>	Investigations	Proactively detect leaks to reduce drinking water loss.	6,237
<b>Improving Environmental Water Quality</b>	Investigations	Proactively identify water quality issues on private property to support a catchment human health mitigation plan. Pilot studies to understand wastewater issues.	5,534
<b>Resilient to climate change</b>	Operations	Fund net increase for sludge minimisation opex costs (from year 3)	1,000
	Investigations	Carbon efficiency assessments	1,075
<b>Localised issues</b>	Investigations	Stormwater catchment investigations and seismic resilience assessments in Hutt City	2,314

\* \$\$\$ predominantly stimulus funding in year 1 only

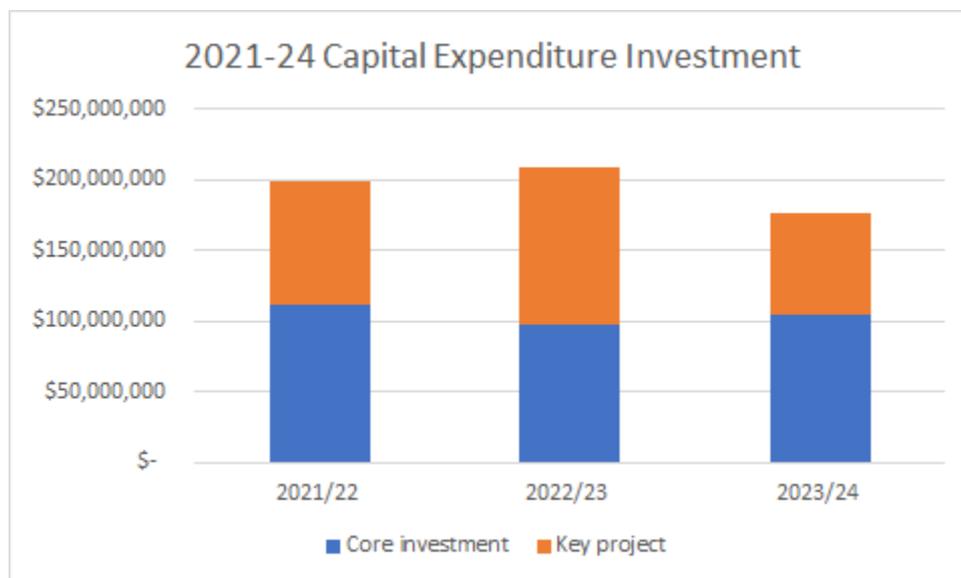
3. The proportion of these strategic priority investment is shown in the following chart.



### Summary of Capital Investment

Strategic priority	2021/22	2022/23	2023/24	3 Year Total
Looking After Existing Infrastructure	\$87,953,968	\$96,109,088	\$89,292,483	\$273,355,540
Growth	\$28,751,430	\$47,585,251	\$45,634,752	\$121,971,432
Reducing Water Consumption	\$9,992,791	\$17,872,800	\$23,146,400	\$51,011,991
Improving Environmental Water Quality	\$14,990,079	\$11,264,140	\$853,740	\$27,107,959
Reducing Carbon Emissions	0	0	0	0
Localised issues	\$57,998,867	\$36,861,322	\$17,177,336	\$112,037,525
Total Capital	\$199,687,135	\$209,692,601	\$176,104,711	\$585,484,447

4. The capital investment ramps up to around \$190-210 million per year in the first two years, dropping to \$176 million in year three. Around \$100 million of the annual expenditure is made up of a “baseload” of core investment while the overlay of large named projects provides the lift of investment closer to \$200 million. From year four the pipeline of capital investment settles to core uplifted investment levels that are around \$160-170 Million as the near-term large projects are delivered in years 1-3 as shown in the graph below.



## Capital investment outcomes

Strategic Priority	Investment category	Investment Outcomes	3y investment \$ (,000) capex
<b>Looking After Existing Infrastructure</b>	Renewals	Renew specified very high criticality assets to support growth and improve environmental water quality Maintain wastewater treatment plant operations. Renew some known failing infrastructure, but not to levels that will begin to address the backlog.	227,000
	Levels of Service	Enable the global storm water consent to be renewed. Mitigate health and safety risks	46,000
<b>Growth without adverse environmental impact</b>	Growth & Levels of service	Support councils specified areas of growth through modelling, growth studies	121,000
<b>Reducing Water Consumption</b>	Level of Service	Maintain existing knowledge of commercial and network water usage through meter renewals. Reduce possible water loss by managing network pressure. Increase the water treatment plant capacity to increase the volume of available drinking water from Te Marua Secure future water source by commencing new water treatment plant development for SWDC.	51,000
<b>Improving Environmental Water Quality</b>	Renewal & Level of Service	Improve water quality in three catchments across the region through wastewater pipe upgrades.	27,000
<b>Resilient to climate change</b>			0*
<b>Localised issues</b>	Renewal, Level of Service & Growth	Securing continuity of water supply and supporting growth through new or reservoir resilience upgrades as well as network upgrades. Flood modelling and mitigation through stormwater upgrades.	112,000

\* Note Sludge Improvements are funded elsewhere and not yet included in this investment.