



# Three Waters Investment Options

Council workshop #2

2 December 2020

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# Today Wellington Water is presenting updated investment options for South Wairarapa District Councils three waters assets to improve performance and reduce risk

Building from our last workshop, Wellington Water have been working with Council officers to update and refine our investment option advice.

Today's presentation provides further information on investment options and seeks direction for South Wairarapa District Councils 21-31 LTP on:

- Which options to take to invest in looking after existing infrastructure
  - Opex expenditure
  - Capital renewals
- There are a number of level of service gaps that need be closed, how do want to approach these?
- Planning for growth and
- Options for reducing water consumption

# Recap from last time – regional framework for prioritising three water investment



Looking after existing infrastructure

Looking after existing assets is foundational to a sound risk management approach. It reduces the risk of surprises that usually cost more, and have greater negative effects, than planned work does and emits more carbon. There are also a number of key upgrade projects that are needed to ensure service is able to be maintained.

Growth

Growth is occurring and must be managed in a way that ensures it doesn't add to existing challenges for the three waters network.

Reducing water consumption

The other priorities are system wide issues that need addressing over the next 30 year:

- The availability of water during warmer months is becoming more of an issue.
- Communities expect better environmental water quality than we have now
- Carbon emissions are a key contributor to climate change

Improving environmental water quality

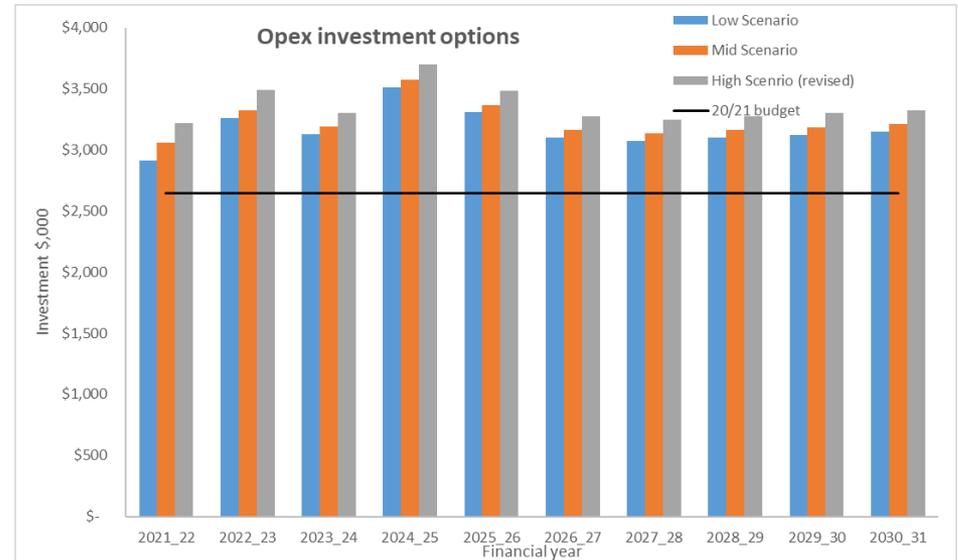
Reducing carbon emissions

NOTE - Individual activities associated with localised risks are still considered such as flood mitigation and resilience.

# Operational expenditure investment priorities



- The funding increase proposed is an uplift of 12% in base operations and maintenance (based on the 2020/21 budget) to help address the risk of increasing unplanned service interruptions and to allow further investment for;
  - An uplift in planned maintenance and condition assessment, to
  - help prioritise renewals to reduce the risk of failure especially for critical assets
- Note there are still risks that exist even at the high funding option such as reactive operational failures that could result in cost overruns.



Looking after existing infrastructure

Increase opex

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# Operational investment options

Focused on looking after existing assets/services, identifying and managing risk to better inform future investment plans and LTPs



Total \$M	Low-Mid Option		High Option	
	Years 1 - 3	Years 4 - 10	Years 1 - 3	Years 4 - 10
Proposed 21-31 LTP	\$9.5M	\$23M	\$10M	\$24M
Description	<ul style="list-style-type: none"> <li>• Uplift in O&amp;M budget of 12% over 3 years (3/3/6)</li> <li>• WWTP sludge monitoring &amp; removal</li> <li>• Continuation of asset condition assessment to inform renewals</li> <li>• Growth planning to inform future investment planning</li> <li>• RWC – leak detection</li> <li>• IEWQ - Featherston I&amp;I strategy &amp; pilot</li> </ul>		<ul style="list-style-type: none"> <li>• As per low-mid option, plus some investment in;               <ul style="list-style-type: none"> <li>• Water supply reservoir seismic assessment</li> <li>• Flooding investigations</li> </ul> </li> </ul>	
Risks / Impacts	<ul style="list-style-type: none"> <li>• Focused on looking after existing assets/services</li> <li>• Linked to the level of asset renewals, an aging network will increase the risk of asset failure and service disruption, placing further pressure on O&amp;M budgets</li> <li>• Limited impact on reducing water consumption as does not allow for proactive leak repairs or</li> <li>• other important three water activities covered in high option</li> </ul>		<p>Helps to better understand three water risks and inform future investment planning</p>	

**Note:** Current base operational expenditure for 2020/21 is \$2.6M (\$7.9M for years 1-3)

*For project budget estimates, Wellington Water have used a 95th percentile figure. Costs are based on 2020 NZD and may vary as more detailed planning is completed.*

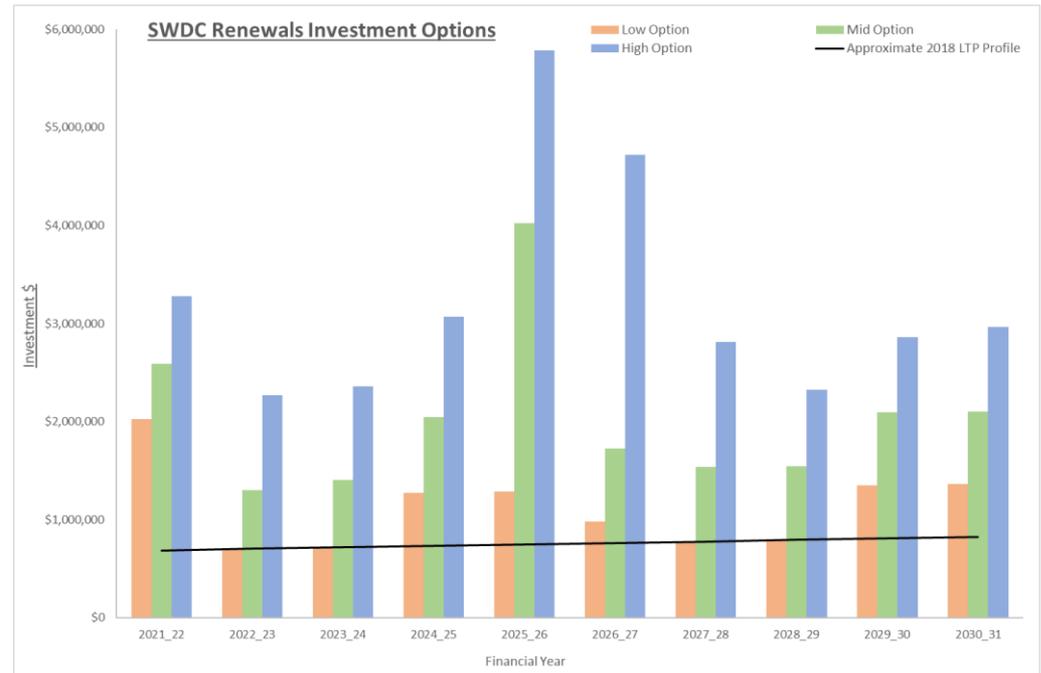
Looking after existing infrastructure

Renewals

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## Capital renewal investment

- We recommend that the renewals be funded at a rate that prevents the backlog increasing over time.
- Renewals will be prioritised based on the criticality of the asset and known condition. (condition assessment will inform this)
- There are areas where the network is performing worse than the age would indicate, it is recommended that specific areas are renewed earlier.
- Completing renewals will provide benefit that improve performance against other priority areas e.g. reducing water consumption and environmental water quality.



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Looking after existing  
infrastructure

Renewing our assets

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# Capital renewal options



In South Wairarapa, between 40-50% of your water supply and wastewater assets are due to be replaced in the next 30 years (based on age), and are getting older.

Total \$M	Low		Mid		High	
	Years 1 - 3	Years 4 - 10	Years 1 - 3	Years 4 - 10	Years 1 - 3	Years 4 - 10
* Proposed 21-31 LTP	\$3.5M	\$8M	\$5M	\$15M	\$7M	\$23
Description	Includes for; Renewal of some SWDC older water pipes (FT & GT) and poor performing WW pipes and pump station (FT) Renewal of resource consents Excludes planned WTP/WWTP renewals		As per low option, plus; Renewal of high criticality (AC) water pipe from reservoir (MB) and a % of the town's AC pipes, and includes WTP/WWTP planned renewals		As per the mid option, plus; allows for the renewal of assets at a rate that prevents the backlog increasing over time	
Risks / Impacts	<ul style="list-style-type: none"> <li>At this level of investment, SWDC's asset renewal backlog will grow, increasing the risk of:</li> <li>Potential failure of high criticality assets</li> <li>Unplanned service disruptions, and</li> <li>Higher reactive costs</li> <li>More water supply leakage and I&amp;I in the wastewater network</li> </ul>			<ul style="list-style-type: none"> <li>Network reliability improves over time</li> <li>Number of service interruptions decreased in frequency</li> <li>Potential for high criticality asset failure still exists but becomes less likely</li> <li>Improved performance of the water supply and wastewater networks</li> </ul>		

**Note:** the current LTP (10 year) investment in renewals \$8.5m  
Asset condition assessment will inform priorities for renewal

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Looking after existing infrastructure

Renewals

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## Closing the level of service gap

- There are number of key level of service upgrade projects that are required in the next three years to;
  - There is the necessary consents to operate the Featherston Wastewater Treatment Plant and the associated upgrades to enable this
  - Prevent wastewater treatment plant discharges that could create an environmental impact or public health issue
  - Address health and safety issues

*Key projects	Project driver	Years 1-3	Years 4-10
Martinborough Water Source Relocation	Security of water supply	\$3.5M	\$3M
Featherston WWTP upgrade	Public health and consent compliance	\$TBA*	\$TBA
Martinborough WWTP upgrade	Consent requirements and growth	\$0.5M	\$4M
Greytown WWTP upgrade	Consent requirements and growth	\$0.7M	\$0.7M TBC
WWTP Health and Safety	Health and safety	\$0.5M	\$0.5M

Note: there are also some smaller projects that are not included in the above table

\* Budget costs TBA following further option development and shortlisting of long list currently underway

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Looking after existing  
infrastructure

Ensuring we operate within  
the legislative framework

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# Understanding the implications of growth



**Growth is predicted to occur but it is important that the significant level of service gaps are closed first.**

- Growth in the district is being shaped by the Spatial Plan, population increases are expected to be between 33 and 42% by 2051.
- Wellington Water has an understanding of the constraints at a high level but recommend further growth planning work is undertaken to improve knowledge and to narrow down investment needs to inform future annual plan and LTP processes.
- Treatment plant capacities will need to be reviewed against new growth scenarios and consent limitations although Featherston WWTP has sufficient capacity based on current forecasts and planned works.
- Wastewater network upgrades will be needed in Martinborough and Greytown.
- There are some areas of the water network that will require upgrade due to pressure constraints.
- These upgrades are not yet quantified and funding has not yet been incorporated into the LTP.

Growth	Years 1-3	Years 4-10
Capex	\$2.8M +	\$2.4M +
Opex	\$200K TBC	

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Growth

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# Emerging challenges

There are a number of emerging issues that need to be monitored and action taken over time.

## Reducing water consumption

Changing weather patterns are resulting in more drier periods which affects the availability and security of supply.

The approach to reducing water consumption is multi faceted including; **replacing mechanical meters with smart meters to target consumption and leakage investigations, leak detection, water main replacement and education**

## Improving environmental water quality 2040

Planning which activities to progress to meet swimmable water quality targets starting with improving understanding.

(Trade waste, environmental monitoring and inflow and infiltration reduction approx. \$100K per annum)

## Reducing carbon emissions 2050

Prioritising which activities to progress to meet the Zero Carbon Act 2019 targets starts with understanding first.

(Delivery through how projects are designed and delivered and we operate our network)

Reducing water consumption	Years 1-3	Years 4-10
Capex	\$3M	TBA
Opex	\$0.1M	TBA

You could make progress on these but we recommend you consider timing and do not compromise the work needed to look after existing infrastructure and key level of service upgrades.

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## Other Emerging Challenges – climate change and its impacts

Climate change requires both adaptation and mitigation responses. In particular, increasing dry periods, rainfall intensifications and sea level rise will impact water supply, urban flooding, and South Wairarapa District Council's wider three water networks.

In addition to considering reducing carbon emissions through the operation, renewal and upgrading of Council's three water assets, how to address the impact of climate change will also need to be considered.

# Key considerations

Wellington Water recommends SWDC considers investment in the following key priorities;

	<b>Fund additional OPEX for the first 3 years</b> supporting a step change in base operational and maintenance expenditure and continue asset condition assessment programme to look after existing infrastructure
	<b>Fund increased level of investment in renewals (range of \$12M - \$30M CAPEX) over 10 years</b> to look after existing infrastructure (an increase of up to \$24M above the current base)
	<b>Fund the level of service upgrades covered in slide 8</b>
	<b>Fund a minimum of \$5M+ CAPEX and \$0.2M OPEX over 10 years</b> to complete known upgrades for growth and improve understanding of growth implications
	<b>Fund \$3M+ CAPEX and \$0.1M OPEX over 3 years</b> to reduce water consumption

# Indicative Outcomes for Investment



		Legislative compliance	Reduce service interruptions	Lower risk of critical asset failure	Increase customer satisfaction	Reduce water consumption & security of supply	Improve env. water quality	Reduce CO <sub>2</sub> emissions
	Fund an additional OPEX averaging for the first 3 years	Y	Y	Y	Y	part	part	part
	Fund additional CAPEX over 10 years for renewals		Y	Y	Y	Y	Y	part
	Fund the level of service upgrades covered in slide 8	Y	Y	Y	Y	Y	Y	part
	Fund additional CAPEX and OPEX to complete known upgrades and better understand growth		Y	Y	Y	Y	Y	part
	Fund further CAPEX and OPEX over 3 years to reduce water consumption					Y		

**Any further Questions ....**

**Next steps....**