Our asset management plan enables us to:

- Maintain affordability by planning when, how, where and why we build new infrastructure.
- Manage demand for water by encouraging Aucklanders to be waterwise.
- Treat wastewater to a high standard every day.
- Ensure resilience against failure of critical assets, extreme weather and climate change.
- Cater for growth as Auckland expands to accommodate 800,000 more people in the next 35 years.
- Reduce overflows into our streams, beaches and harbours.
- Deliver Aa-grade drinking water 24/7 for our customers.
- Maintain affordability by planning when, how, where and why we build new infrastructure.
We are a lifeline utility

**Provide safe and reliable water and wastewater services 24/7**

- 16,119 hectares of catchment
- 27 water sources, including dams, rivers and underground aquifers
- 15 water treatment plants
- 9268 kilometres of water pipes
- 171,691 manholes

**Protect public health**

- Energy generated at dams
- Migrating fish and eels transferred around dams
- Continuous flow of water downstream of the dams to sustain natural habitat
- 85 water reservoirs
- 1.5 million consumers

**Enable social, economic and environmental well-being**

- Energy generated using biogas at two treatment plants
- More than 6000 pupils participate in free education programme
- 514 wastewater treatment plants
- Bird roosts along the Watercare Coastal Walkway attract many species of birds
- Harbour clean-up activity sponsored
- Community tree-planting initiatives supported
- More than 6000 pupils participate in free education programme
- Migrating fish and eels transferred around dams
- Continuous flow of water downstream of the dams to sustain natural habitat
- 85 water reservoirs
- 1.5 million consumers

**Cater for growth**

- 8072 kilometres of wastewater pipes
- 18 wastewater treatment plants

**Contribute to Auckland's quality of life**

- 1.5 million consumers
- Energy generated using biogas at two treatment plants
- Bird roosts along the Watercare Coastal Walkway attract many species of birds
In the last 3 years, we have spent...

$399 million on providing wastewater services

$325 million on building water infrastructure

$242 million on providing water services

$557 million on building wastewater infrastructure
Operational activities associated with providing water and wastewater services to our customers

- Monitoring water quality
- Process control and optimisation
- Assessing asset condition
- Operating treatment plants
- Maintaining assets
- Monitoring receiving environment
- Caring for the environment
- Flushing water pipes
- Clearing blocked wastewater pipes
- Responding to and cleaning up wastewater overflows
- Customer service
- Providing advice
- Billing
Where the money comes from and where it is used

Building new assets to service our existing and future customers makes up 57% of our expenditure over the next 10 years, funded and financed by water and wastewater revenue, IGCs and borrowing.

Operating our business to service our customers makes up 28% of our expenditure over the next 10 years, funded by revenue.

Finance expenses, also funded by revenue, makes up 15%.
Affordable services

- We are a minimum-cost service provider
- We self-fund our operations and capital projects through a combination of revenue and borrowings
- We receive no money from central or local government
- Our capital expenditure for 2018-2028 is fully funded as part of our asset management plan.

Investment breakdown 2019 - 2028:
- $3.6b Investment in wastewater assets
- $1.9b Investment in water assets
- $0.2b Investment in shared services

What we invest in:
- Replacing and replacing existing assets: 48%
- Improving the level of service for our customers: 38%
- Improving capacity to support future growth: 14%

Operational expenditure breakdown 2019 - 2028:
- $1.6b For water
- $1.0b For wastewater

$1.52 is the amount you pay for 1000 litres of water.
Safe, reliable and resilient water services 24/7

- Multiple water sources
- Multiple treatment plants and distribution systems
- Integrated and resilient water supply network
- Ability to meet peak-day and average demands
- Promoting waterwise behaviours to manage demand.

Key future projects:

- Complete Hunua 4 Watermain to Khyber Reservoirs by 2020
- Replace Khyber 2 treated water reservoir by 2021
- Expand Waikato Water Treatment Plant by 2031
- Replace Huia Water Treatment Plant by 2025
- Construct North Harbour 2 Watermain to service customers between Titirangi and Orewa by 2028
- Increase boost pumping capability across the region

We supply ‘Aa’ grade, which is a very high quality of water.
Key future projects:

- Construct first stage of Northern Interceptor, connecting west Auckland to the Rosedale Wastewater Treatment Plant, utilising capacity at Rosedale Wastewater Treatment Plant and freeing up Mangere Wastewater Treatment Plant to service central and south Auckland by 2024.
- Central Interceptor, the 13km wastewater pipe will increase capacity to carry flows from central Auckland to Mangere Wastewater Treatment Plant by 2025.
- Construct thermal hydrolysis at both the Rosedale and Mangere wastewater treatment plants, to produce better-quality by-products and enable increased co-generation of electricity by 2023.
- Conduct inflow and infiltration investigations across Auckland to stop stormwater from entering the wastewater networks and causing wet-weather overflows.
- Upgrade smaller plants with screening improvements, membrane technology and disposal methods to improve the quality of treated wastewater and ultimately the receiving environments.
We strive to protect our environment

Key future projects:

- Compliance with resource consents
- Investment in infrastructure to reduce wastewater overflows
- Conservation activities such as tree planting around our catchments
- Trap and haul programme in our water storage lakes to enable whitebait and eel breeding.

Central Interceptor, the 13km wastewater pipe from central Auckland to Mangere Wastewater Treatment Plant, will enable the reduction of overflows into the environment by 2025

Revegetation of 1900 hectares of pine forests with native plantation in the Hūnua Ranges to protect our catchments

Investment in advanced wastewater treatment technology to improve the quality of wastewater discharge at smaller plants

We have planted more than 120,000 native trees and shrubs in the Hūnua Ranges.

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Watercare

An Auckland Council Organisation
Capital expenditure: water

- Between 2018 and 2028, we will invest more than $1.9 billion on expanding and upgrading our water network.
- 37% of our capital investment in water over the next 10 years will be to cater for growth.
- A further $2.8 billion will be invested over the following 10 years to 2038.

Key future projects:

- Boost pumping Waikato watermain, North Shore watermains and Orewa 1 and 2 watermains to increase transfer capacity.
- New treated water storage in Pukekohe East, additional storage at Redoubt Road and at the new Huia Water Treatment Plant by 2020, 2022, 2025 respectively.
- Upgrades to smaller water treatment plants including, Wellsford, Warkworth, Snells/Algies, Helensville and Waiuku to improve performance while providing for growth.
Our strategic WATER projects

Our strategic projects are planned and staged to ensure our water network continues to have sufficient capacity to meet demand as Auckland’s population increases.

<table>
<thead>
<tr>
<th>Area</th>
<th>Project description</th>
<th>2019 - 2028</th>
<th>2029 - 2038</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rodney</td>
<td>Wellford water supply augmentation</td>
<td>$61m</td>
<td>$170m</td>
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<tr>
<td></td>
<td>Helensville water supply augmentation</td>
<td></td>
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<tr>
<td></td>
<td>Construct pump station to boost supply from Albany to Hibiscus Coast</td>
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<tr>
<td></td>
<td>Construct Orakei 3 Watermain</td>
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<tr>
<td>North</td>
<td>Replace Hula Water Treatment Plant</td>
<td>$11m</td>
<td>$0</td>
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<tr>
<td></td>
<td>Construct North Harbour 2 Watermain</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Construct pump station to boost supply from central to west Auckland</td>
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<td></td>
<td>Replace Waitakere Water Treatment Plant</td>
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<tr>
<td></td>
<td>Replace Waitakere 2 Watermain</td>
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<tr>
<td></td>
<td>Complete Hume 2 Watermain to Khyber reservoirs</td>
<td></td>
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<tr>
<td></td>
<td>Upgrade Parnell Reservoir</td>
<td>$102m</td>
<td>$69m</td>
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<td></td>
<td>Replace Domain Reservoir</td>
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<td></td>
<td>Replace Khyber 3 Reservoir</td>
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<td></td>
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<tr>
<td>Central</td>
<td>Increase Waitakere Water Treatment Plant capacity to 175 MLD</td>
<td>$136m</td>
<td>$357m</td>
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<tr>
<td></td>
<td>Construct pump station to boost supply via Waitakere Watermain to Redoubt Reservoir</td>
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<td></td>
<td>Construct Pakeha East Reservoir at Runciman Road</td>
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<tr>
<td></td>
<td>Construct reservoir at Redoubt Road</td>
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<td></td>
<td>Walaku water supply augmentation</td>
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<td></td>
<td>Increase Waitakere Water Treatment Plant capacity to 250 MLD</td>
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<tr>
<td></td>
<td>Construct additional Pakeha East Reservoir</td>
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<tr>
<td>South</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increasing capacity to support growth</td>
<td>$208m</td>
<td>$354m</td>
</tr>
<tr>
<td></td>
<td>Renewing and replacing existing assets</td>
<td>$634m</td>
<td>$1529m</td>
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<tr>
<td></td>
<td>Improving the level of service for our customers</td>
<td>$35m</td>
<td>$159m</td>
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<tr>
<td>Other programmes</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>TOTAL</td>
<td></td>
<td><strong>$1919m</strong></td>
<td><strong>$2.8 billion</strong></td>
</tr>
</tbody>
</table>

All monetary figures are nominal. MLD = millions of litres per day

*Current in third decade. Subject to NZEA timing for the second harbour crossing.
Capital expenditure: wastewater

- Between 2018 and 2028, we will invest more than $3.6 billion on expanding and upgrading our wastewater network.
- 55% of our capital investment in wastewater over the next 10 years will be to cater for growth.
- A further $2.3 billion will be invested over the following 10 years to 2038.

Key future projects:

- Construct North East Sub-Regional Wastewater Treatment Plant and associated conveyance between Warkworth and Snells Beach by 2023.
- Construct Northern Interceptor by 2024.
- Construct Howick Diversion, to reduce existing overflows while providing for growth by 2025.
- Augment Southern Interceptor between Hingaia and Manurewa, to meet southern growth expectations by 2030.
- Expand Pukekohe Wastewater Treatment Plant by 2021.
- Construct South West Sub-Regional Wastewater Treatment Plant to provide for growth and improve environmental outcomes for the Manukau Harbour by 2022.
Our strategic WASTEWATER projects

Our strategic projects are planned and sequenced to ensure Auckland’s wastewater is efficiently distributed across 18 treatment plant catchments.

Plant and network considerations

Through our Network Discharge Consent (NDC) we have authorization from Auckland Council to design and build more than two wet-weather overflow points (WWOPs) across the region, excluding combined wastewater and stormwater pipes within central Auckland. This effectively defines our network capacity.

Each treatment plant operates under a resource consent that defines a discharge limit based on the sensitivity of its receiving environment, social and cultural constraints. The consent specifies the allowable peak flow, clarity, bacteria and nutrient levels of the treated wastewater that is discharged to the environment.

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ASSET MANAGEMENT PLAN 2018 – 2038

Watercare
An Auckland Council Organisation
Planning for climate change

- Auckland-specific climate change projections commissioned through NIWA in 2017
- Enterprise-wide climate change strategy and action plan for adaptation and mitigation
- Signatory of the UN Sustainable Development Goals and Sustainable Business Council Climate Change Statement.

Key future projects:

- Improving resilience at Ardmore, Waikato and Huia water treatment plants to deal with extreme-weather events
- Future-proofing design of new assets for factors such as sea-level rise
- Energy neutrality for Mangere and Rosedale wastewater treatment plants by 2025
- Adaptive planning pathways for dealing with climate change uncertainties while planning assets
- Mitigation programme including carbon budgets and emission reduction initiatives

We generate about 30% of our own energy needs from waste at our two wastewater treatment plants.
Funding sources

- No revenue funding from Auckland Council or Government
- All revenue generated directly from customers through user charges (not council rates)
- Revenue is used to operate, maintain and expand infrastructure
- Any shortfall is financed through borrowing
- Stable price path to ensure balance between revenue and borrowing and equity between present and future generations
- The funding plan demonstrates how we intend to fund and finance activities over the next 10 years.
Minimum cost and efficiency

- Efficient use of assets
- Demand management
- Efficient procurement
- No dividends to Council.

Efficient operations:

- We actively manage demand for water to reduce per capita water consumption and defer the need for new infrastructure.
- Boost pumping of water supply to increase flows instead of building additional pipes.
- Adopting new treatment processes like thermal hydrolysis to generate more electricity from wastewater by-products.
- Using digital technology to streamline processes, transactions and increase efficiencies.
Demonstrating value to our customers

The asset management plan:

- Is an evolving plan that accommodates changing business priorities and risks
- Shows the magnitude of what we want to do and how we will do it
- Helps to define and shape our funding plan
- Identifies projects that are a priority
- Is a way to measure our performance against our objectives
- Informs our future capital works programme
- Provides input to Auckland Council’s Long Term Plan, annual plan updates and 30-year Infrastructure Strategy
- Provides input to government infrastructure studies and plans.