

# Asset management plan 2018–2038

## Summary



# Our asset management plan enables us to:



**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



**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.



**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

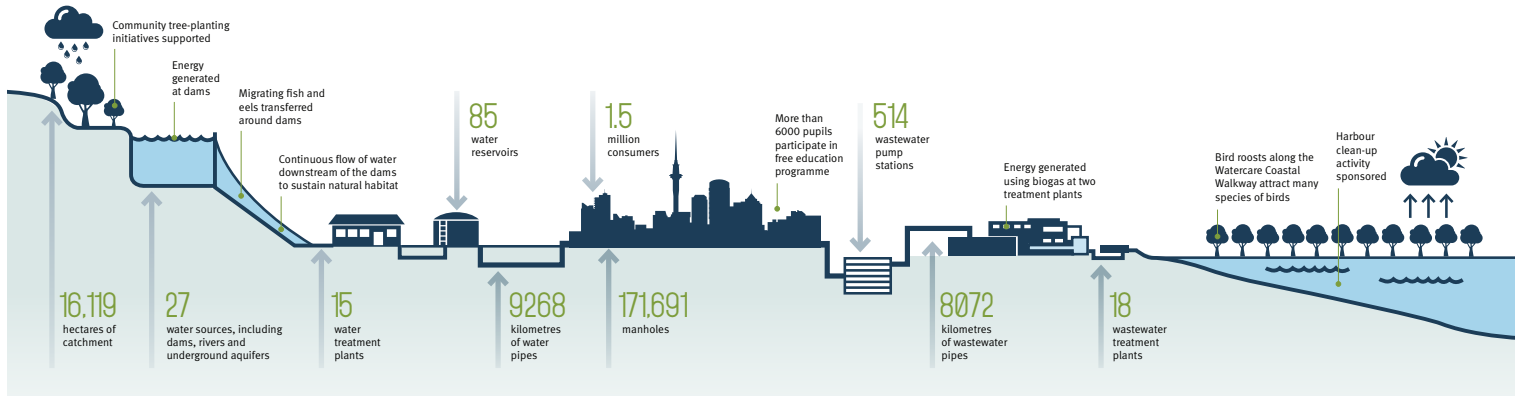
**Provide safe and reliable water and wastewater services 24/7**

**Protect public health**

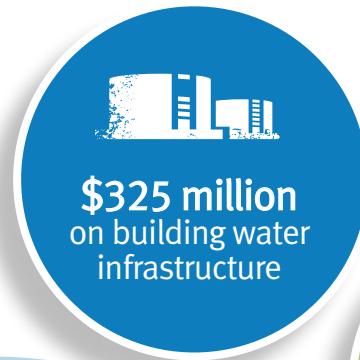
**Enable social, economic and environmental well-being**

**Cater for growth**

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



# In the last 3 years, we have spent...

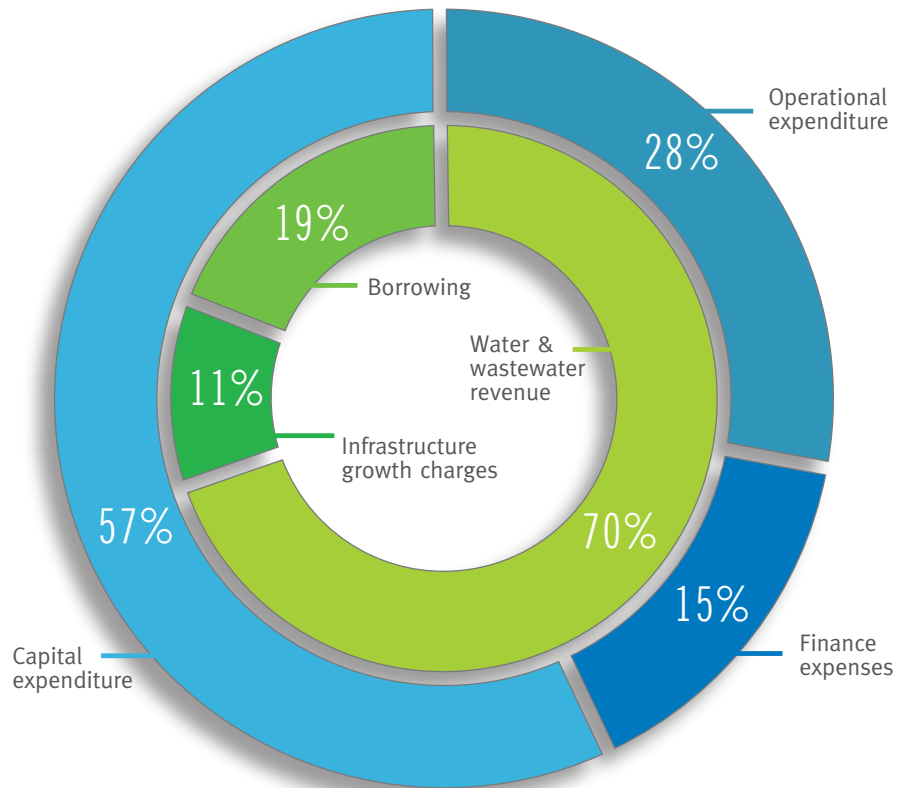


# Operational activities associated with providing water and wastewater services to our customers



# Where the money comes from and where it is used

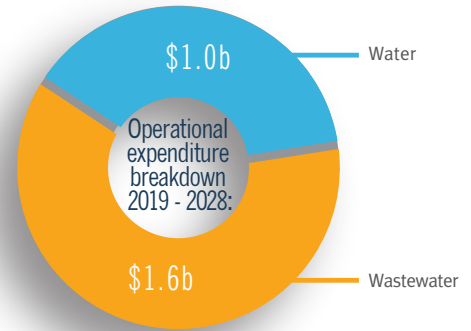
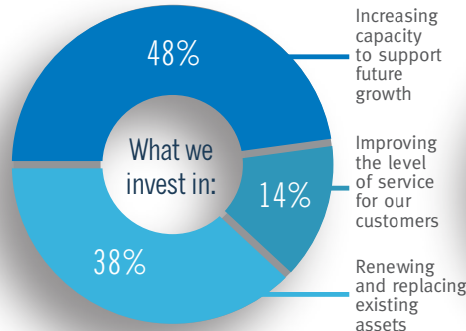
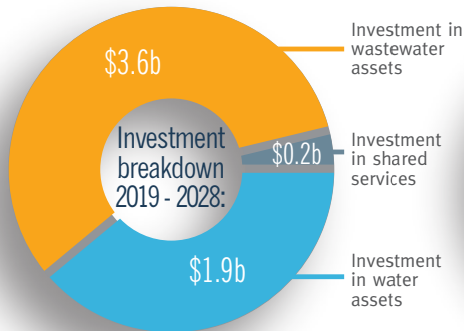
- ✓ Building new assets to service our existing and future customers makes up 57% of our expenditure over the next 10 years, funded and financed by water and wastewater revenue, IGCs and borrowing
- ✓ Operating our business to service our customers makes up 28% of our expenditure over the next 10 years, 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.



# 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





# Safe, reliable and resilient wastewater services 24/7



- ✓ Electricity co-generation
- ✓ process duplication
- ✓ alternate process streams and additional capacity to deal with wet-weather flows.

Every day,  
we treat about  
**460 million litres**



of wastewater to a high  
quality across our  
**18 treatment plants.**



## 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



- ✓ 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.



## Key future projects:

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



# 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

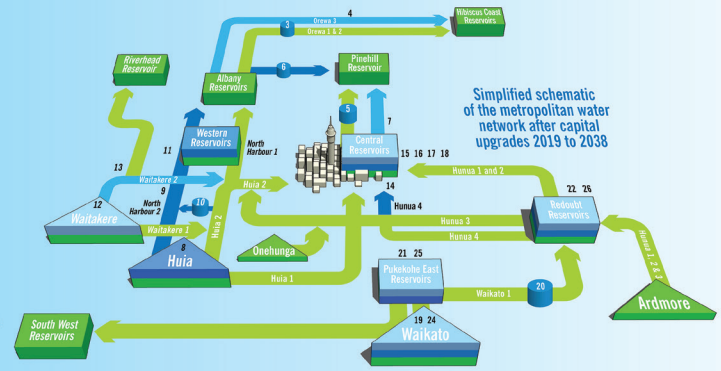
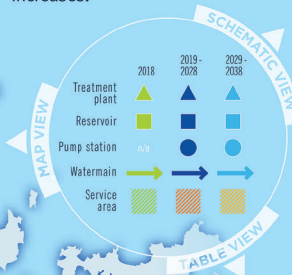


Upgrades to smaller water treatment plants including, Wellsford, Warkworth, Snells/Algies, Helensville and Waiuku to improve performance while providing for growth



# 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.



Area	Project description	2019 - 2028	2029 - 2038
Rodney	1 Wellsford water supply augmentation		
	2 Helensville water supply augmentation		
	3 Construct pump station to boost supply from Albany to Hibiscus Coast	\$61m	\$170m
	4 Construct Orewa 3 Watermain		
North	5 Construct pump station to boost supply from Auckland City to North Shore		
	6 Construct watermain and pump station to supply Pinehill from Albany	\$11m	\$0
	7 Construction of new watermain as part of planned NZTA Waitemata Harbour crossing*		
West	8 Replace Huiua Water Treatment Plant		
	9 Construct North Harbour 2 Watermain		
	10 Construct pump station to boost supply from central to west Auckland		
	11 Construct additional reservoirs in the west	\$731m	\$201m
	12 Replace Waitakere Water Treatment Plant		
Central	13 Replace Waitakere 2 Watermain		
	14 Complete Hunua 4 Watermain to Khyber reservoirs		
	15 Construct reservoir at Khyber Reservoir Complex		
	16 Upgrade Ponsonby Reservoir	\$102m	\$69m
	17 Replace Domain Reservoir		
	18 Replace Khyber 3 Reservoir		
South	19 Increase Waikato Water Treatment Plant capacity to 175 MLD		
	20 Construct pump station to boost supply via Waikato Watermain to Redoubt Reservoirs		
	21 Construct Pukekohe East Reservoir at Runciman Road		
	22 Construct reservoir at Redoubt Road	\$136m	\$357m
	23 Waiuku water supply augmentation		
	24 Increase Waikato Water Treatment Plant capacity to 250 MLD		
Other programmes	25 Construct additional Pukekohe East Reservoir		
	26 Construct additional Redoubt Road Reservoir		
	Increasing capacity to support growth	\$208m	\$354m
	Renewing and replacing existing assets	\$634m	\$1529m
	Improving the level of service for our customers	\$35m	\$159m
<b>TOTAL</b>		<b>\$1918m</b> (\$1.9 billion)	<b>\$2838m</b> (\$2.8 billion)

All monetary figures are nominal. MLD = millions of litres per day  
 \*Currently in third decade. Subject to NZTA 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.

*The recent BNR upgrades to our Mangere Wastewater Treatment Plant allow it to treat the wastewater of another 250,000 Aucklanders.*



## 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

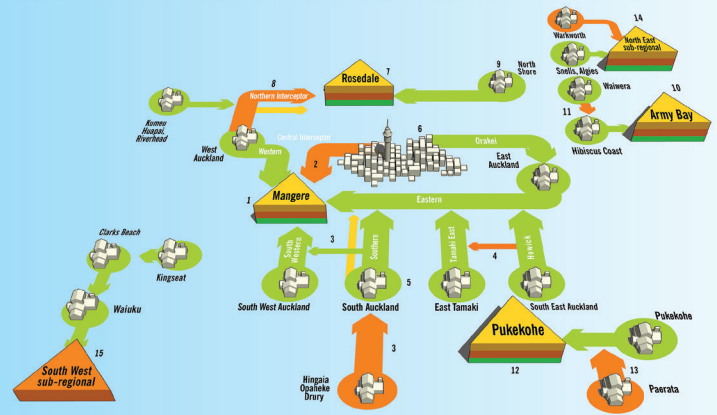
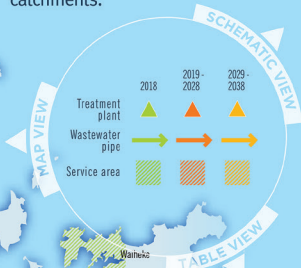


Construct South West Sub-Regional Wastewater Treatment Plant to provide for growth and improve environmental outcomes for the Manukau Harbour by 2022



# 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) from Auckland Council to allow no more than two wet-weather overflows to occur each year at specific engineered overflow points (EOPs) 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.

Catchment area	Project description	2019 - 2028	2029 - 2038
Mangere	1 <b>Treatment plant:</b> Thermal Hydrolysis Sludge digestion capacity, solids stream processing upgrades, wet-weather treatment upgrades, consent renewals <b>Catchment:</b>	\$182m	\$142m
	2 Construct Central Interceptor and catchment improvements		
	3 Southern Interceptor augmentation		
	4 Construct Howick diversion		
	5 Upgrade Otara wastewater network	\$1867m	\$127m
	6 Upgrade Newmarket gully wastewater pipes		
Rosedale	7 <b>Treatment plant:</b> Treatment process upgrades, hydraulic capacity upgrades, consent renewals <b>Catchment:</b>	\$122m	\$184m
	8 Construct Northern Interceptor		
Army Bay	9 Upgrade North Shore wastewater network	\$274m	\$334m
	10 <b>Treatment plant:</b> Outfall upgrade, treatment process upgrades <b>Catchment:</b>	\$53m	\$75m
Pukekohe	11 Upgrade Army Bay wastewater network	\$30m	\$93m
	12 <b>Treatment plant:</b> Treatment process upgrades <b>Catchment:</b>	\$63m	\$63m
Warkworth, Snells/Algies	13 Upgrade Pukekohe wastewater network	\$63m	\$19m
	14 <b>Treatment plants:</b> Resource consent and construction of a sub-regional wastewater treatment plant and conveyance system	\$199m	\$113m
Clarks Beach, Waikuku	15 <b>Treatment plants:</b> Construction of a sub-regional wastewater treatment plant and conveyance system	\$134m	\$26m
	Other programmes	\$99m	\$241m
	Renewing and replacing existing assets	\$509m	\$918m
	Improving the level of service to our customers	\$29m	\$65m
<b>TOTAL</b>		<b>\$3624m</b> (\$3.6 billion)	<b>\$2337m</b> (\$2.3 billion)

All monetary figures are nominal.

# 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.

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



## 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



# 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



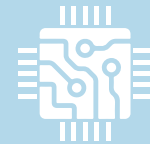
Boost pumping of water supply to increase flows instead of building additional pipes



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.

