

Strategic Planning and the Asset Management Plan

An overview

February 2019

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Fast facts

We manage

\$9 billion

in assets which include:

9096 kilometres
of water pipes

15 water
treatment plants

93 water
pump stations



91 reservoirs



18 wastewater
treatment plants

515 wastewater
pump stations

7999 kilometres
of wastewater pipes

Facts and figures

Financial responsibility

In the seven years since integration we have invested

\$1.87 billion

in capital work but our debt has increased by just

\$368 million



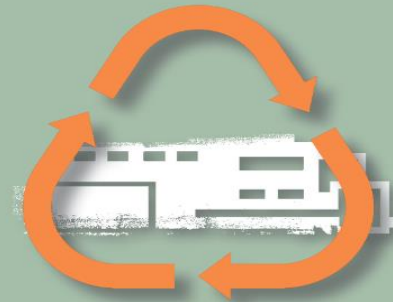
This means that for **every dollar** of our capital expenditure only

\$0.20

has been funded by debt. Before integration, this was about \$0.25.

Sustainability

In 2016/17, we reused the treated wastewater from Mangere and Rosedale for the onsite treatment processes,



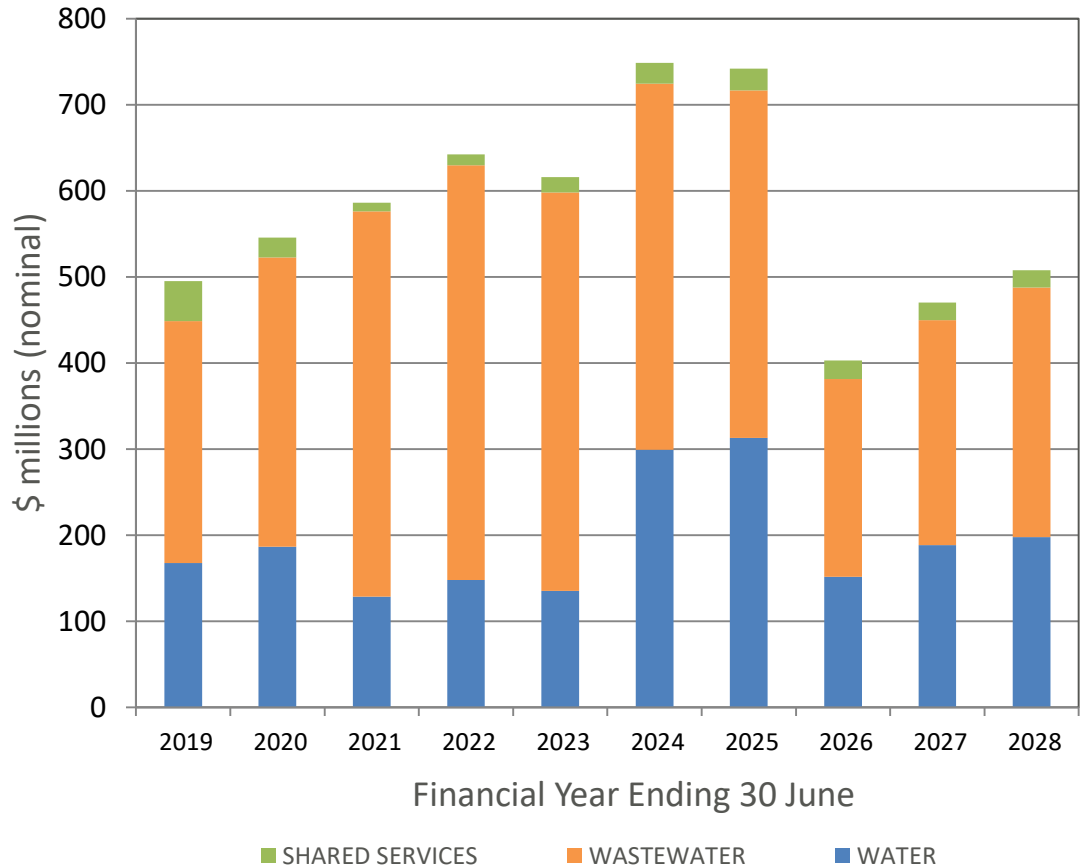
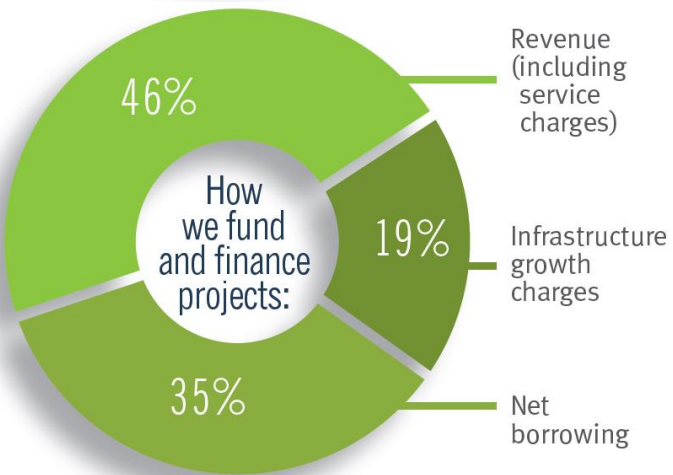
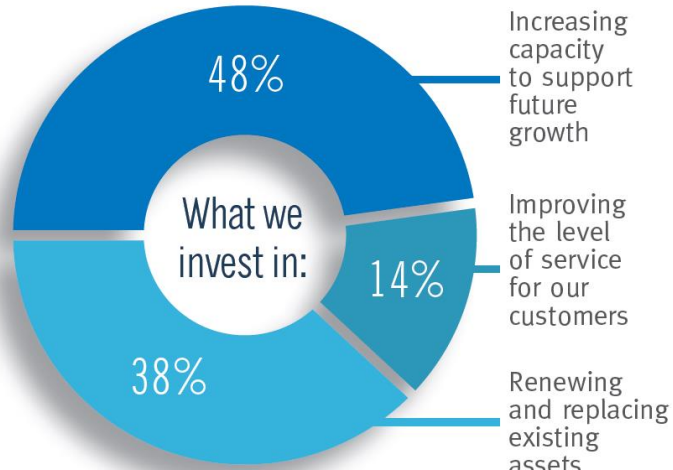
saving as much water as

156,000 Aucklanders

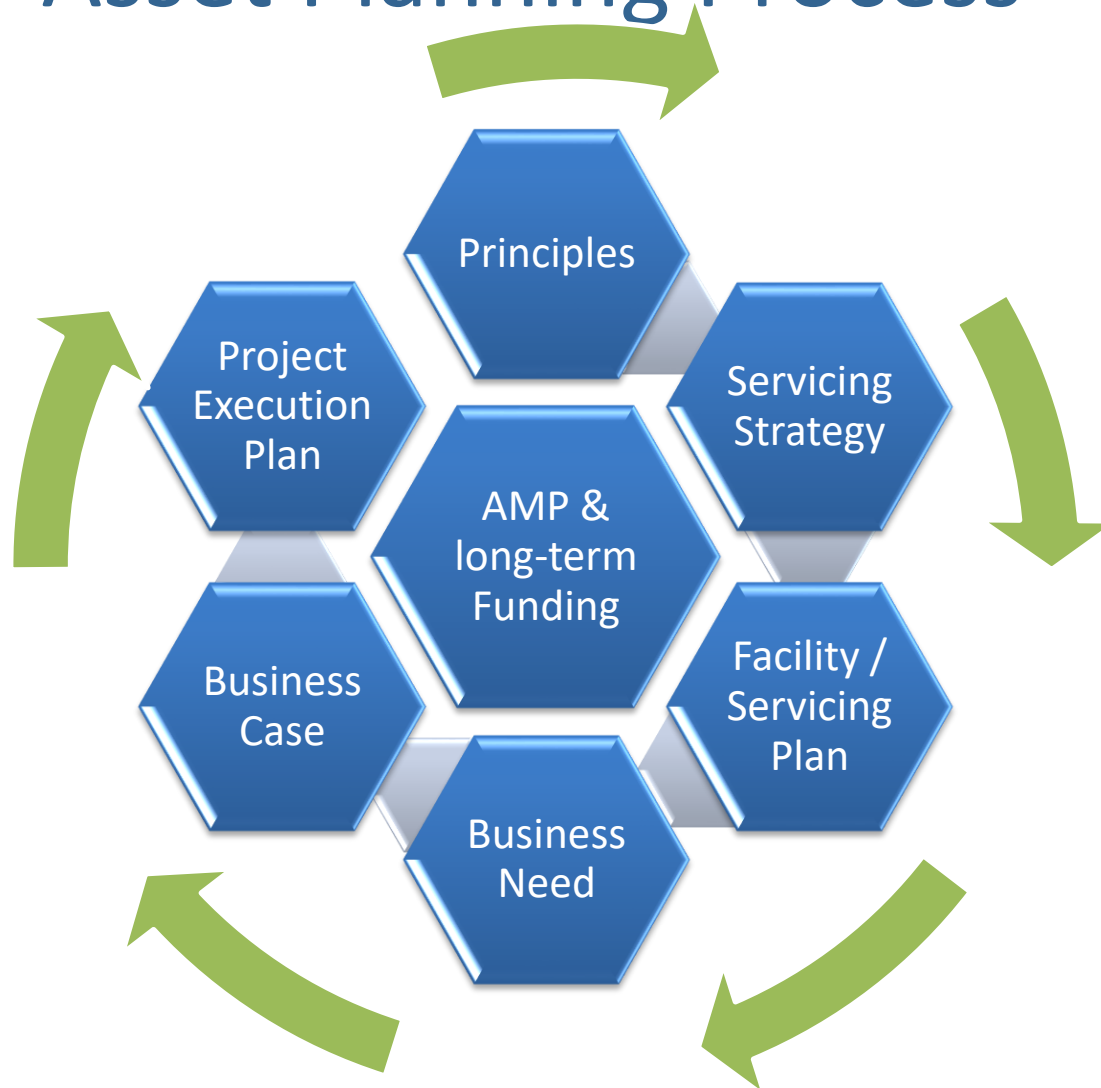


would use in a year.

How we plan our infrastructure



Asset Planning Process



Auckland's Projected Growth in the Next 30 Years

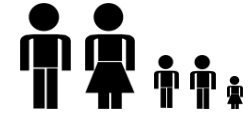
LOCATION	NEW DWELLINGS	PEOPLE (MEDIUM GROWTH)	PEOPLE (HIGH GROWTH)	COMPARATOR
Brownfield	270,000	472,500	651,000	2 x Wellington
Greenfield (FUZ)	98,000	157,500	279,000	Hamilton
SHAs	40,000	70,000	70,000	Palmerston North
TOTAL	*408,000	700,000	1,000,000	

* Excludes 14,000 dwellings in rural zones not serviced by Watercare

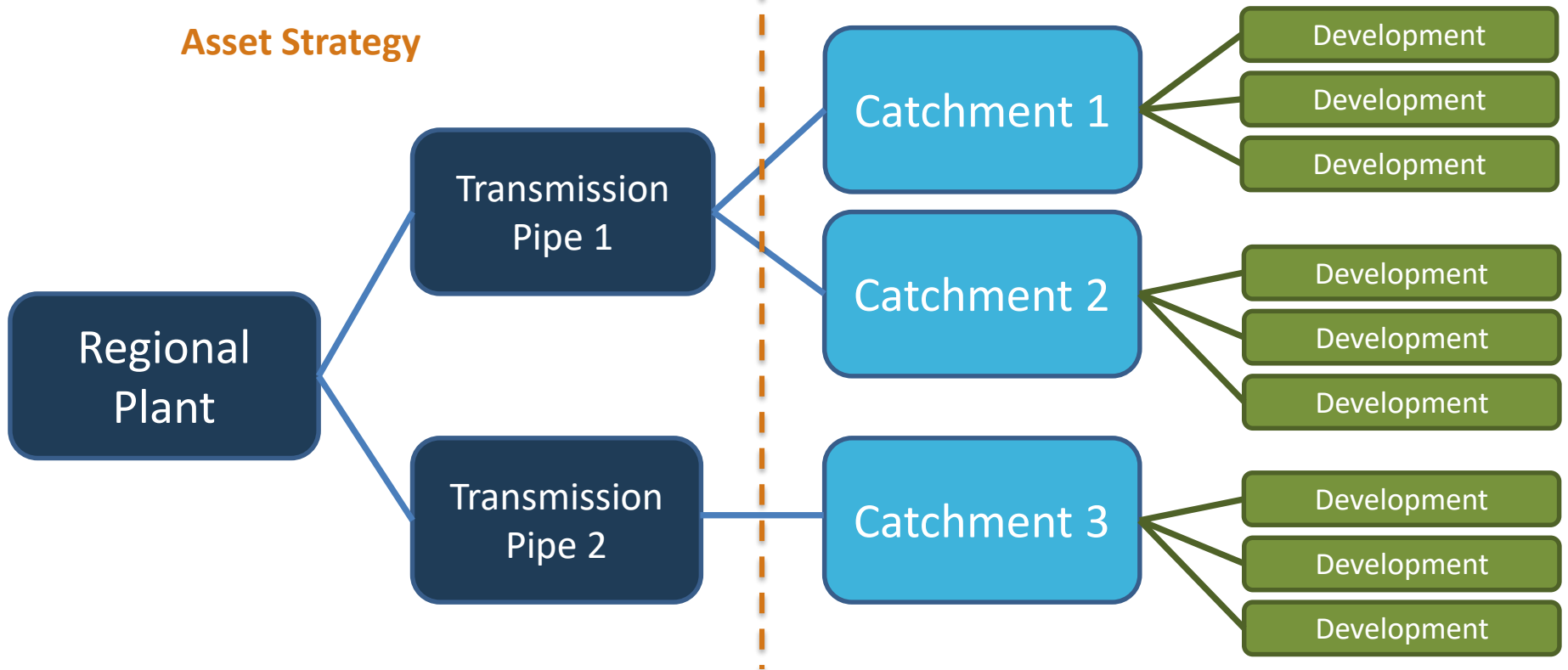
Planned Capacity in the Asset Management Plan

COUNCIL FORECAST GROWTH	DWELLINGS
2017 to 2026	133,000
2026 to 2036	133,000
2037 to 2046	142,000
30 YEAR TOTAL	408,000

WATERCARE CAPACITY	DWELLINGS
Current capacity	55,000
2019 to 2028	155,000
2029 to 2038	90,000
2037 to 2046	110,000
30 YEAR TOTAL	410,000



Asset Strategy



Increasing risk of underutilised assets if development is delayed or does not occur

Strategic Programmes 2019 to 2028

TREATMENT PLANT CAPACITY UPGRADES

Mangere

Rosedale

Army Bay

Pukekohe

NEW SUB-REGIONAL PLANTS & CONVEYANCE

North East (Warkworth and Snells/Algies)

South West (Clarks Beach, Waiuku and Kingseat)

WASTEWATER INTERCEPTORS

Northern Interceptor (Hobsonville to Rosedale)

Northern Interceptor (Westgate to Hobsonville)

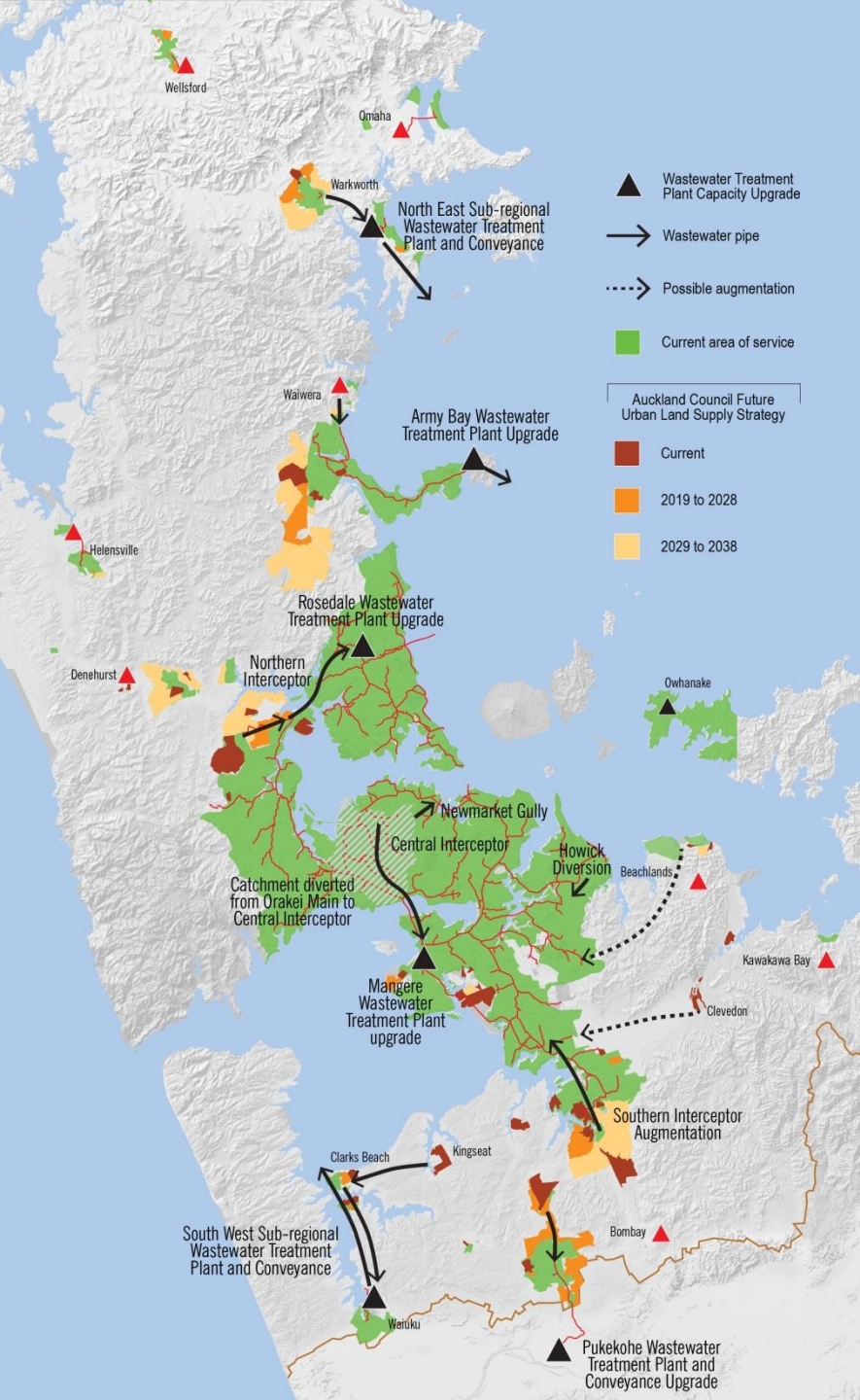
Central Interceptor

Newmarket Gully

Howick Diversion

Southern Augmentation

Pukekohe



Strategic Programmes 2029 to 2038

TREATMENT PLANT CAPACITY UPGRADES

Mangere

Rosedale

Army Bay

Pukekohe

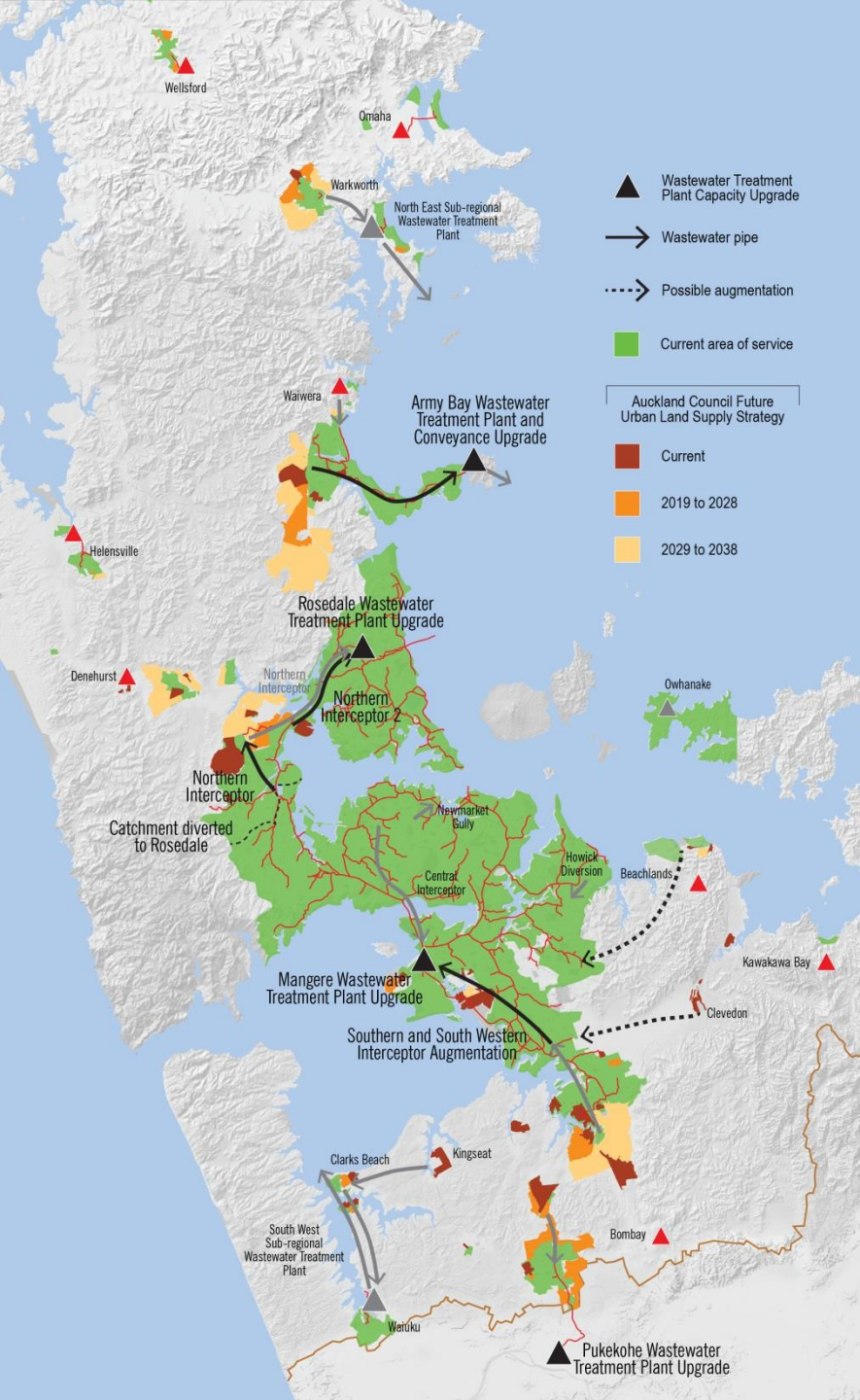
WASTEWATER INTERCEPTORS

Whangaparaoa Augmentation

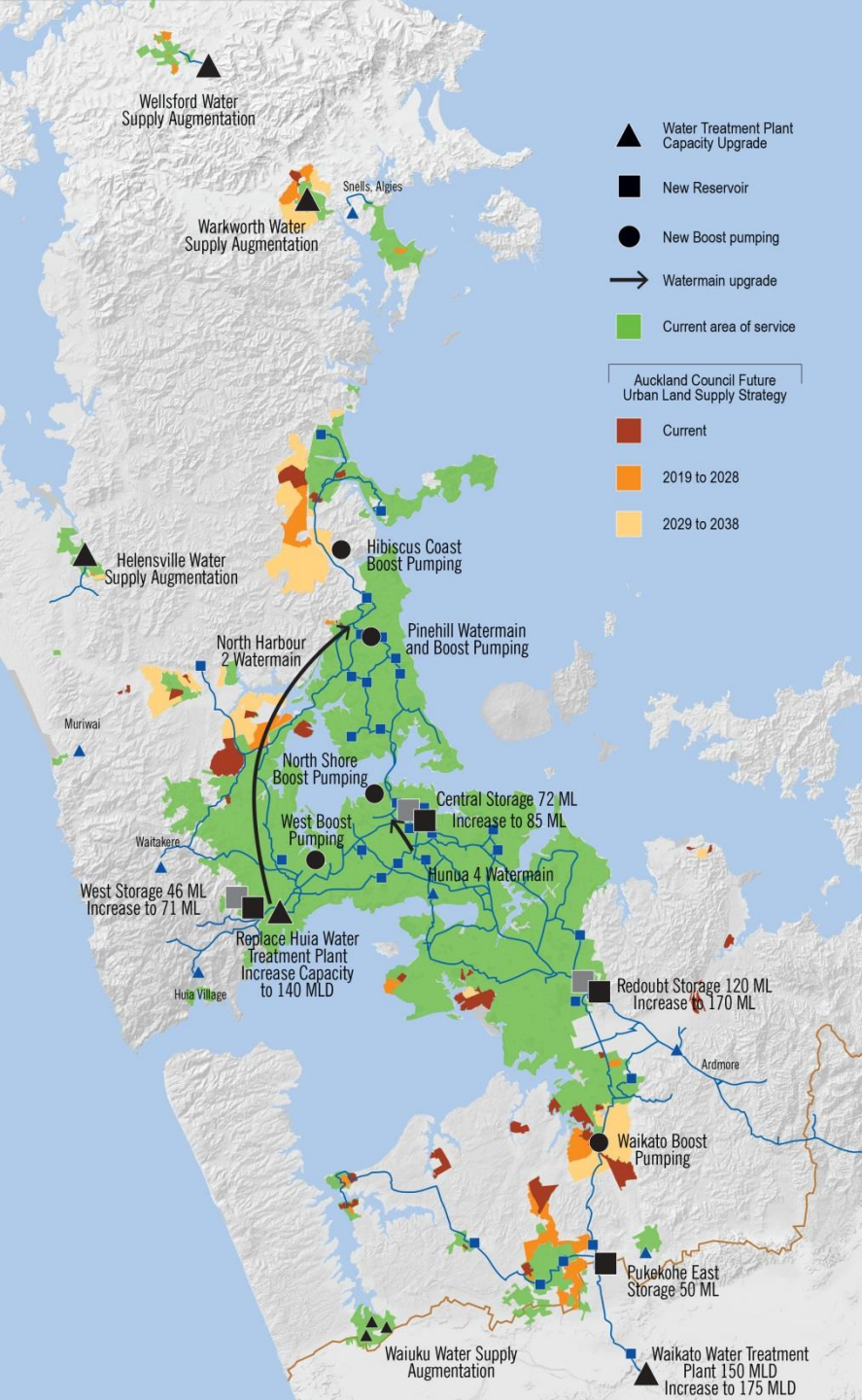
Northern Interceptor (Concourse to Westgate)

Northern Interceptor 2 (Hobsonville to Rosedale duplication)

Southern Augmentation



Strategic Programmes 2019 to 2028



TREATMENT PLANTS

Waikato to 175 MLD

Huia to 140 MLD

ADDITIONAL RESERVOIR STORAGE

Pukekohe East

Western

Redoubt

Khyber

NEW WATERMAINS

Hunua 4

North Harbour 2

Huia 1 and Nihotupu 1 replacements

BOOST PUMPING

Waikato

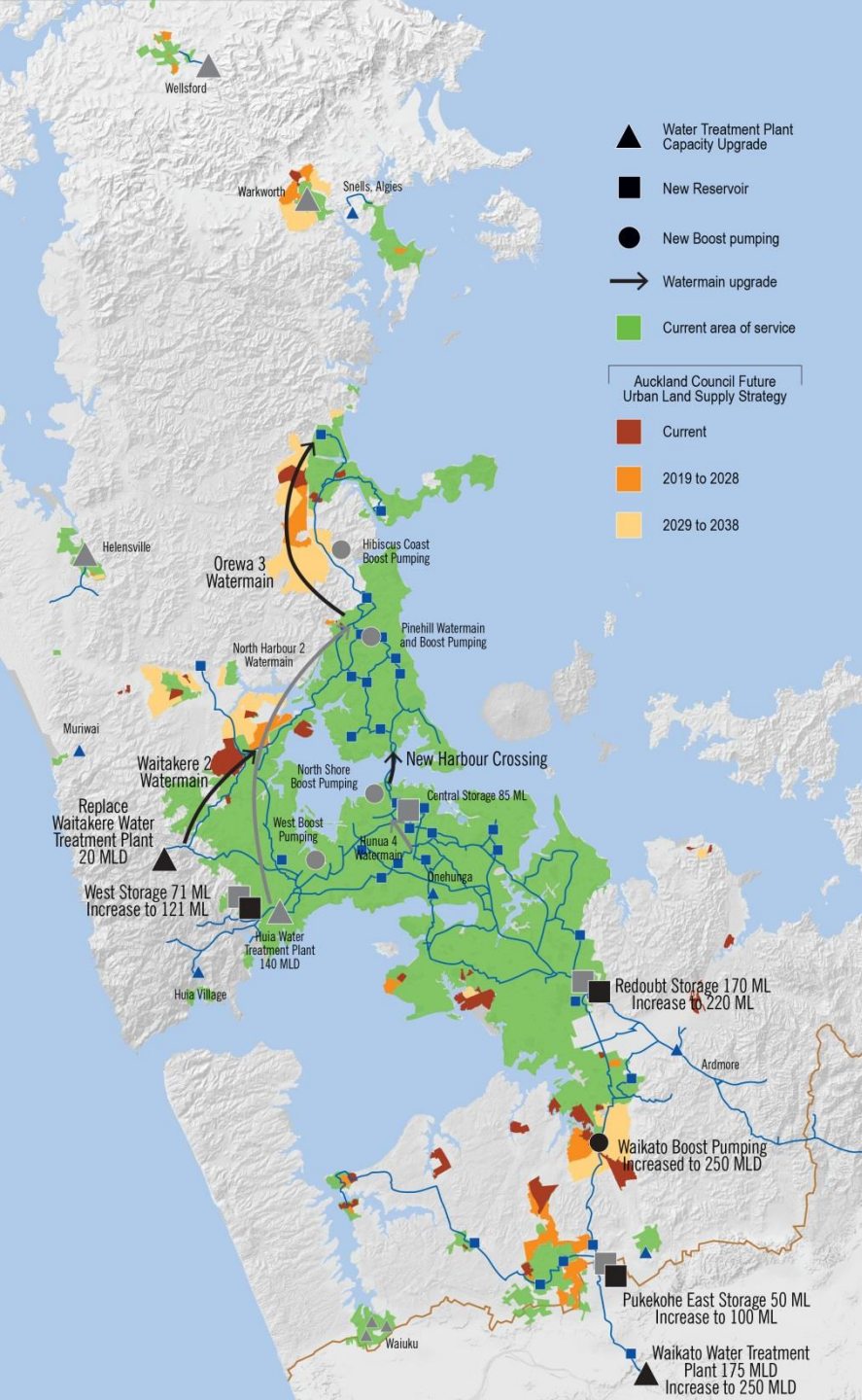
West

North Shore

Pinehill

East Coast Bay

Strategic Programmes 2029 to 2038



TREATMENT PLANTS

Waikato to 250 MLD

Waitakere 20 MLD

ADDITIONAL RESERVOIR STORAGE

Pukekohe East

Western

Redoubt

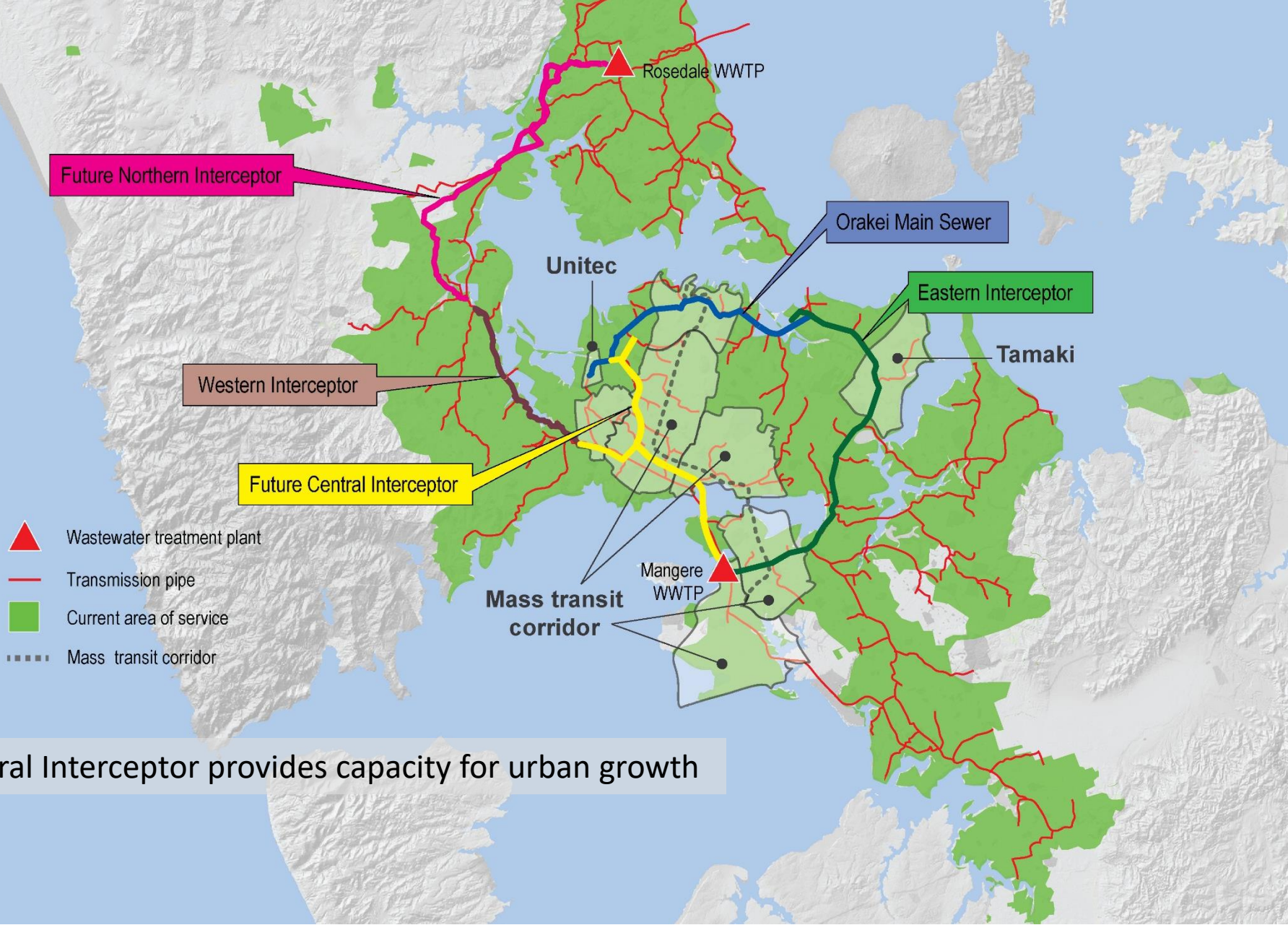
NEW WATERMAINS

Waitakere 2 replacement

Orewa 3

BOOST PUMPING

Waikato



Future Northern Interceptor

Orakei Main Sewer

Eastern Interceptor

Western Interceptor

Future Central Interceptor

Tamaki

-  Wastewater treatment plant
-  Transmission pipe
-  Current area of service
-  Mass transit corridor

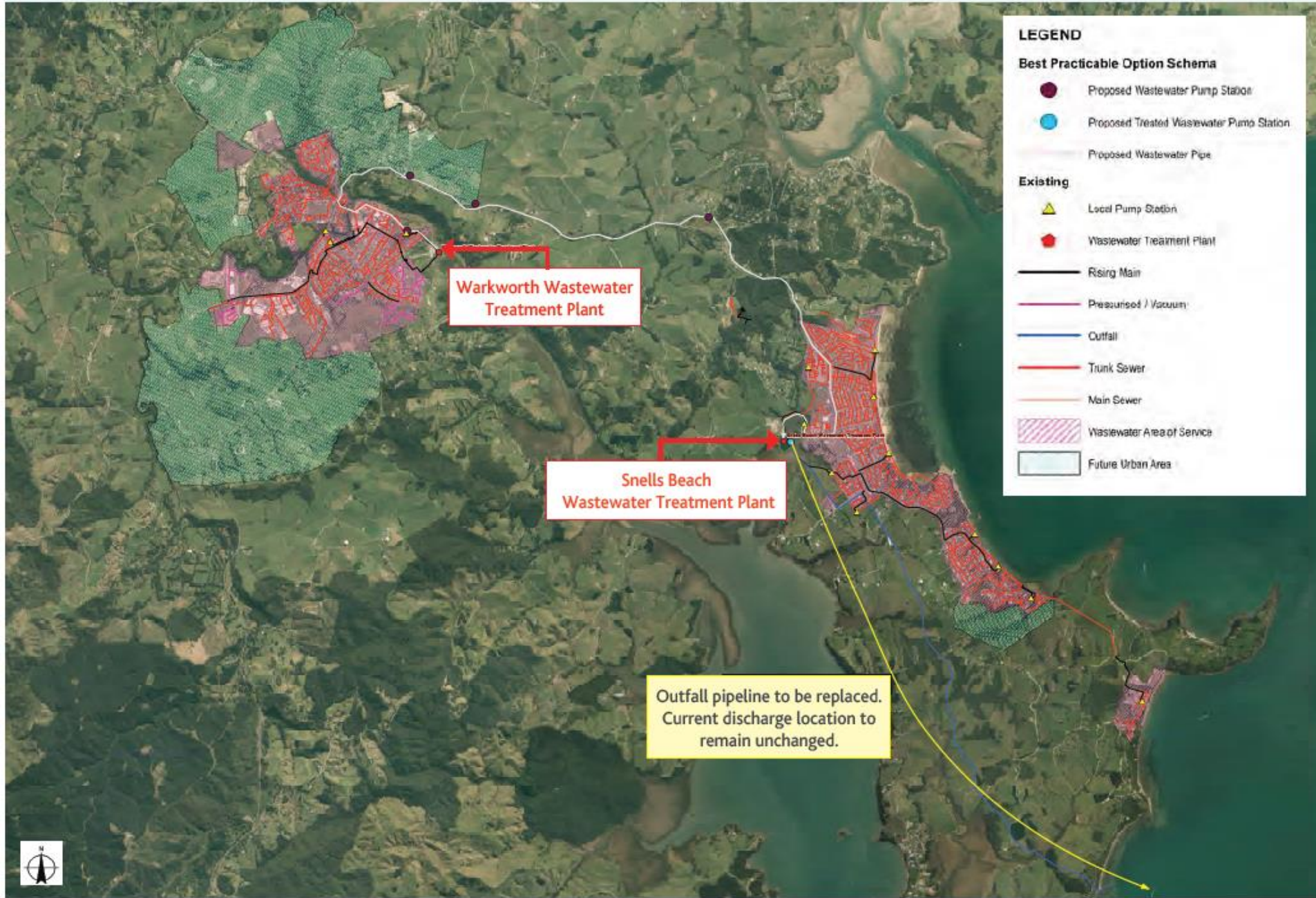
Unitec

Mass transit corridor

Mangere WWTP

Central Interceptor provides capacity for urban growth

Servicing Growth Warkworth, Snells Algies



Forward Works Programme

FORWARD WORKS - SIGNIFICANT PROJECTS / PROGRAMMES > \$ 2,000,000																										
Project / Programme	Activity Description	Category	Cost Range	2018		2019				2020				2021				2022		2023						
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2			
Hula WTP Upgrade	Construction of a new water treatment plant at the Manuka Road, Tihirangi site.	A	♦♦♦♦♦																							
Andromore WTP Treated Water Resilience	Plant modification to allow separation into two separate process streams.	A	♦♦♦																							
Waikato WTP OFSMLD	Installation/ upgrade of plant processes (including sand separation, clarification and membrane unit process additions).	A	♦♦♦																							
Waikato WTP Upgrade	Capacity and process upgrade of the existing Waikato Water Treatment Plant.	A	♦♦																							
Waikato WTP Upgrade	Upgrade Waikato Water Treatment Plant to increase capacity.	A	♦♦																							
Hays Creek Source Utilisation - Treatment Plant	New TMD package water treatment plant utilising Hays Creek Dam source in Papakura.	A	♦																							
Andromore WTP UV	Addition of ultra violet treatment to Andromore Water Treatment Plant to increase resilience.	A	♦																							
Andromore WTP Sludge Handling Systems Upgrade	Installation of a second sludge press and centrifuge.	A	♦																							
Owhango WTP UV	Installation of three UV treatment trains, with capacity of up to 30 MLD, at the Owhango Water Treatment Plant.	A	♦																							
WTP Plant / Equipment Replacement	Programme of equipment replacements.	A	♦																							
Rosedale WWTP RC/UV Expansion	Upgrade to the reactor/clarifier and the ultra violet plant at Rosedale.	B	♦♦♦																							
Mangere WWTP Sludge Conditioning	New sludge conditioning prior to digester, such as thermal hydrolysis.	B	♦♦♦♦																							
Snells WWTP Upgrade	Upgrade Waste Water Treatment Plant to service Waitworth, Snells Beach and Algies Bay.	B	♦♦♦♦																							
Pukekohe WWTP Upgrade	Upgrade the Waste Water Treatment Plant capacity from 200 to 230 MLD.	B	♦♦♦																							
Rosedale WWTP Expansion Project	Expansion of treatment plant including a new primary settlement tank, secondary biological treatment reactor and new thermal hydrolysis plant.	B	♦♦♦																							
Snells Algies WWTP Ocean Outfall	Replacement of existing outfall with approximately 7.5km of 1.0m diameter pipe.	B	♦♦♦																							
Army Bay WWTP Upgrade	Army Bay WWTP capacity increase to meet growth.	B	♦♦																							
Mangere WWTP Biogas and Cogeneration Expansion	Upgrade to the biogas and cogeneration facilities at Mangere WWTP.	B	♦♦																							
Mangere WWTP Peak Flow Treatment	Process modifications to allow for enhanced peak flow treatment.	B	♦♦																							
Mangere WWTP Plant Maintenance Programme	Programmed maintenance of 10 primary settlement tanks, 7 digester tanks and 9 reactor clarifiers, including cleaning, re-casting, mechanical and out repair.	B	♦																							
Waikato WTP Upgrade	Waikato WTP upgrade to cater for growth.	B	♦																							
WWTP Plant / Equipment Replacement	Programme of equipment replacement.	B	♦																							
Army Bay WWTP Outfall Upgrade	Construction of approximately 3km of 1.2m diameter sea discharge outfall, pump station and UV upgrades.	B	♦																							
Mangere WWTP Solids Stream Upgrade	Upgrade of solids stream process as part of Mangere Wastewater Treatment Plant upgrade.	B	♦																							
Rosedale Biogas and Cogeneration Expansion	Upgrade to the biogas system at the Rosedale WWTP to cater for additional capacity.	B	♦																							
Waitworth WWTP Upgrade	Provide a side stream 250m ³ /d membrane bioreactor package plant and all ancillary systems.	B	♦																							
Mangere WWTP Sludge Tanks Upgrade	Replacement of 5 sludge tanks at the Mangere WWTP.	B	♦																							
Army Bay WWTP Inlet Screens	Upgrade to the inlet screens to provide better capture and higher throughput.	B	♦																							
Hula 1 and Nihitupu 1 Replacement	Treated water transmission pipeline replacement.	C	♦♦♦♦																							
North Harbour Watermain Duplication - Northern	Approximately 22km of 300mm concrete lined steel pipeline for new North Harbour no. 2 watermain connecting Greenhithe Bridge and Albany Reservoir.	C	♦♦♦																							
North Harbour Watermain Duplication - Southern	Approximately 22km of 300mm OD concrete lined steel pipeline for new North Harbour no. 2 watermain connecting proposed Woodlands Park reservoir to Greenhithe Bridge.	C	♦♦♦																							
Hunua 1 Watermain Replacement	Replacement of the Hunua no. 1 watermain.	C	♦♦																							
Hunua 4 Section 11	Installation of 4km x 1.5m pipeline from Market Road to the Khyber Reservoir complex.	C	♦♦																							
North Harbour Watermain Duplication - Greenhithe Bridge Section	Approx. 2.5km of 300mm OD concrete lined steel pipeline for the new North Harbour 2 watermain connecting Greenhithe Bridge section.	C	♦♦																							
Woodlands Watermain to Tihirangi Reservoir	Pipe tunnelled between Hula WWTP and Tihirangi Reservoir.	C	♦♦																							
Crewe Number 1 Replacement Stage 3	4.6 km of 500mm OD concrete lined steel pipeline from the Crewe 1 watermain from Hibiscus Coast Highway through to connection with Main Road Reservoir.	C	♦♦																							
North Harbour No. 2 Watermain - Northern Corridor	Design and early works (NATF and rail crossings).	C	♦																							
Hays Creek Source Utilisation - Transmission	Integrating new WTP utilising Hays Creek Dam source into the Papakura transmission and network, also including 3km of 500mm OD transmission watermain renewal.	C	♦																							
Waikare No. 1	Upgrade the Waikare No. 1 watermain for growth.	C	♦																							
Reservoir - Birkenhead No. 1	Renewal of the Birkenhead No. 1 reservoir.	C	♦																							
Northcote Reservoir to Glenfield	Transmission water pipe between Northcote reservoir and Glenfield.	C	♦																							
East Coast Bays 2 Watermain Renewal	Replacement of 1.2km of 300mm OD CLC transmission watermain.	C	♦																							

Questions and discussion