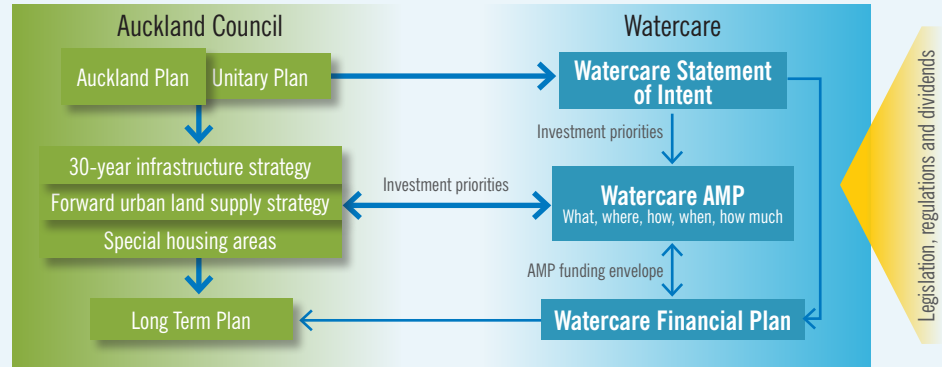


Our Asset Management Plan

Every year we update our Asset Management Plan (AMP) that sets out what infrastructure we will deliver, where, when and how much it will cost.

The AMP aligns with Auckland Council's strategic plans and looks at how we will tactically and cost-effectively manage our infrastructure. While the AMP has a 20-year horizon, in reality, our planning extends more than 50 years due to the long life and strategic nature of our infrastructure assets.



Enabling growth

Every year we invest hundreds of millions of dollars in growth-related projects. Almost half of our \$5.7 billion 10-year capital expenditure forecast for water and wastewater will be invested in providing capacity for growth.

This investment enables us to continually expand our network capacity to keep ahead of Auckland's increasing demand for water and wastewater services.

Our investment is self-funded. We receive no income from property rates or the government.

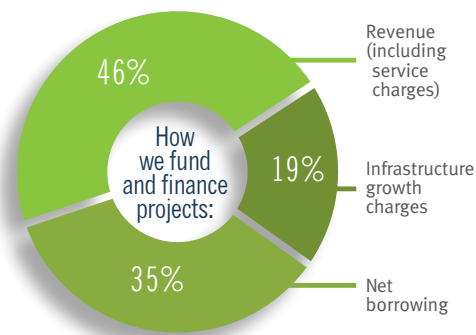
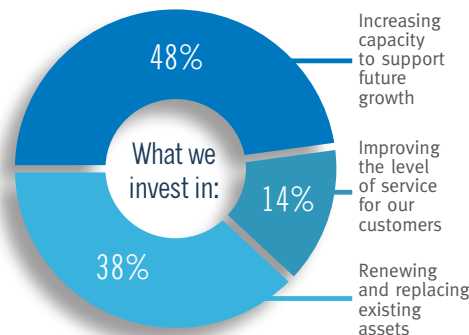
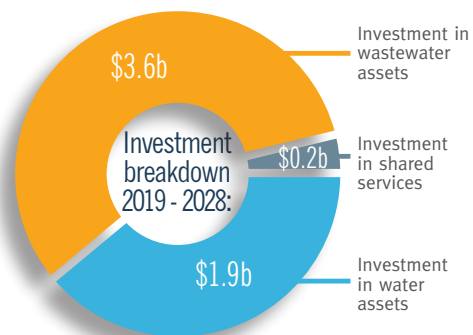
We are required by law to manage our operations efficiently and keep overall costs of water supply and wastewater services to a minimum. Through efficiencies and economies of scale we have achieved this while delivering annual savings of around \$100 million compared with long-term historical forecasts. Today the average water and wastewater bill represents less than 1 per cent of the average household income.

The risks in servicing growth

As with any long term planning, there is always going to be some level of risk.

One risk we face is development uncertainty, where actual developments may differ from the plans in regards to location, timing, type, size and rate of development.

Obtaining regulatory approvals also pose risks for us. If the application is not timed correctly we can face delays in proceeding with the design and construction of water and wastewater treatment facilities as these cannot occur ahead of obtaining the necessary resource consents.



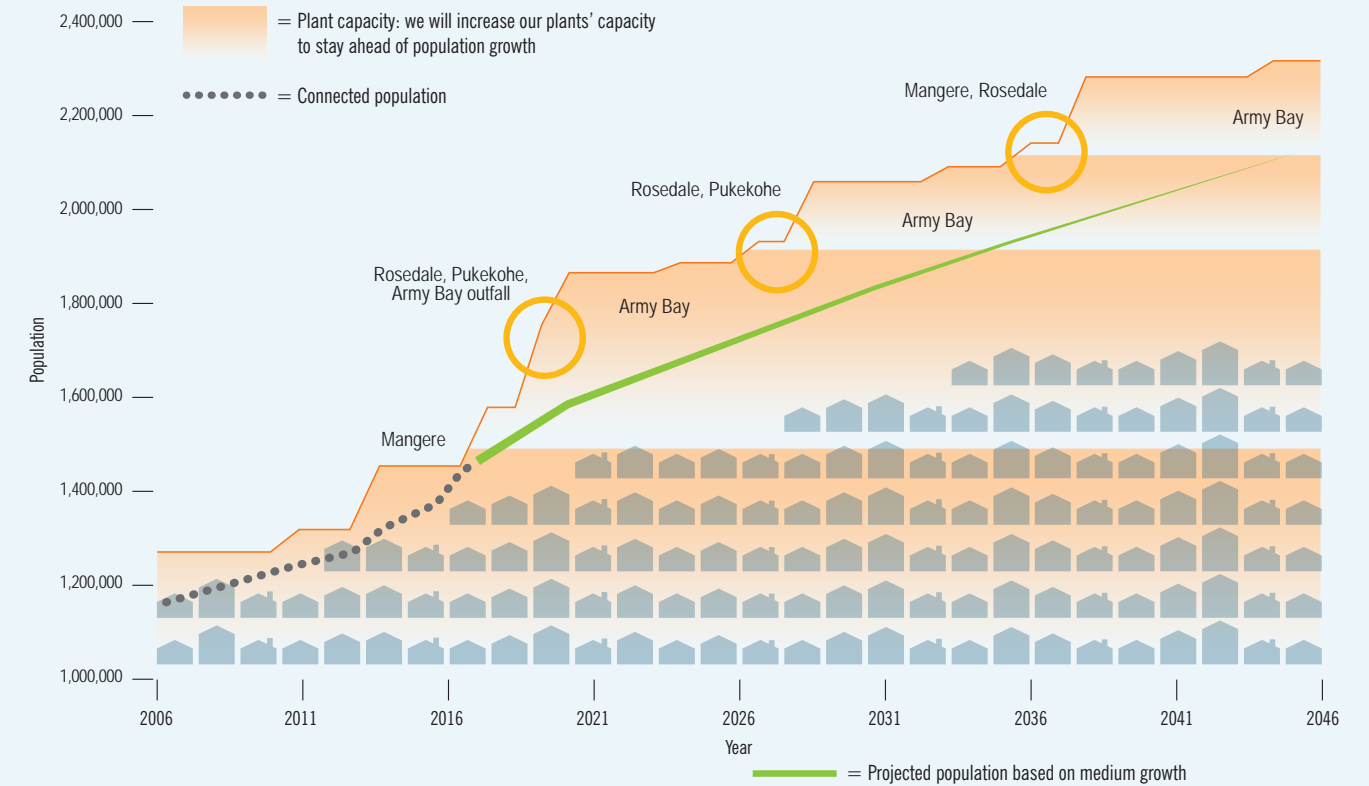
Our treatment plants and networks have capacity to allow **55,000** new homes to connect today. Over the next **10 years** we will expand our infrastructure to provide capacity for a further **155,000** homes



WASTEWATER ASSET STRATEGY

An overview of how we will provide wastewater services to a growing Auckland

Staying ahead of population growth



Currently we service about 1.5 million people living in Auckland. Over the next 30 years this population will grow significantly.

Statistics New Zealand has projected medium population growth of 700,000 and high population growth of one million people for Auckland over the next 30 years. We have adopted the medium population forecast for our planning purposes.

Our challenge is to meet the demands of growth without compromising on our mission to deliver reliable, safe and efficient water and wastewater services.

Between 2019 and 2028, we will invest \$3.6 billion on expanding and upgrading our

wastewater network. A further \$2.4 billion will be invested over the following 10 years.

We have adopted a regional approach to planning our wastewater services. Strategic projects are planned and sequenced to ensure Auckland's wastewater is efficiently distributed across the 18 treatment plant catchments that service the region.

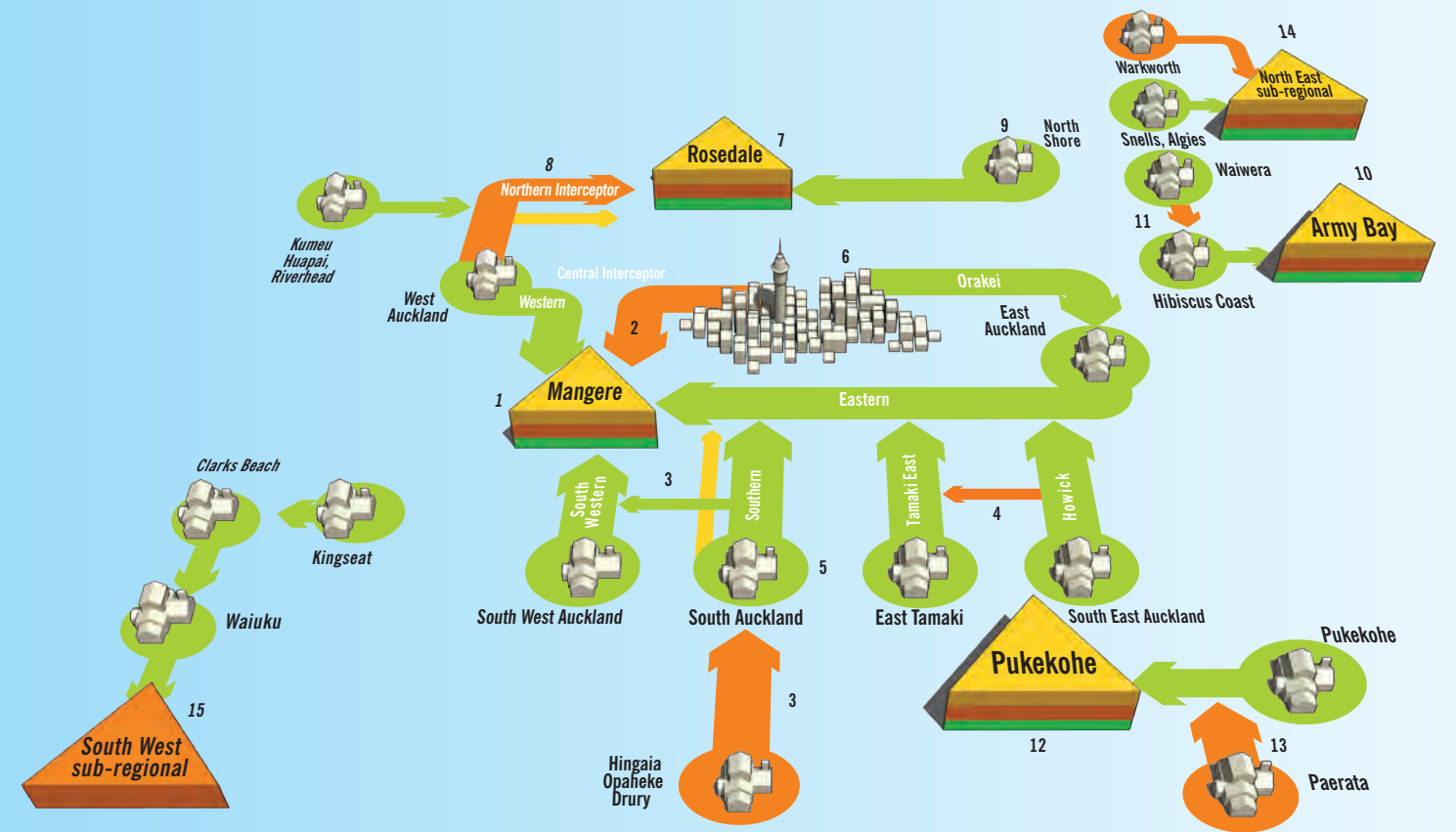
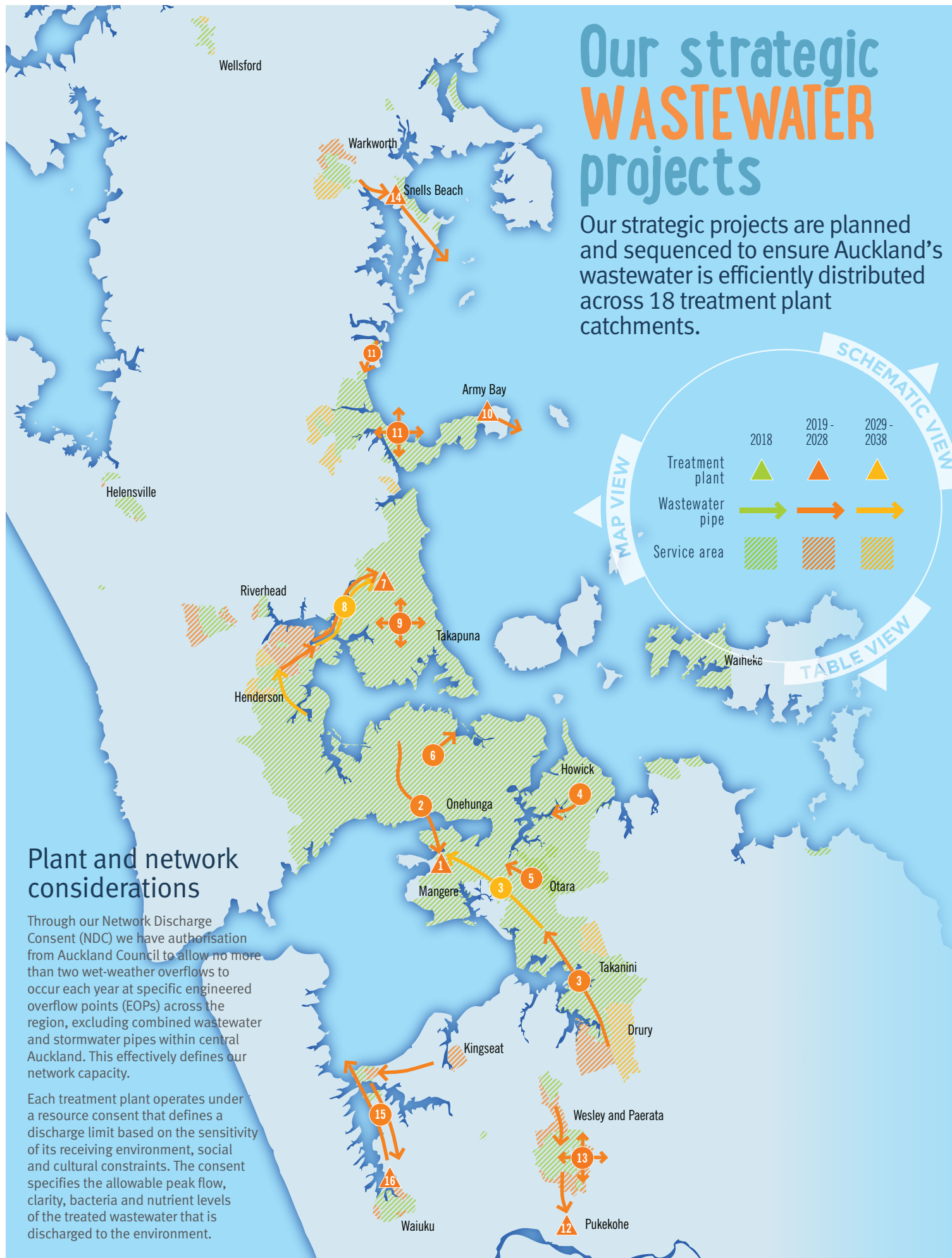
Projects will improve resilience within the network by maximising the use of existing assets and increasing connectivity across the region. For example, before integration the Rosedale treatment plant was only going to service wastewater from customers on the North Shore. Now, we are planning our

infrastructure to utilise the available capacity at Rosedale by directing flows across the region, off the Mangere Treatment Plant. This creates extra capacity and better utilises our assets to service a growing population.

A regional approach is also being undertaken to reduce the amount of stormwater and ground water entering the wastewater network. Flows in addition to wastewater erode the network's hydraulic capacity, which could be used to service growth and provide better levels of service to our customers. In the first decade \$1.7 billion will be spent on the Central Interceptor and catchment improvements to reduce discharges to the environment.

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 authorisation 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 Treatment plant: Thermal Hydrolysis Sludge digestion capacity, solids stream processing upgrades, wet-weather treatment upgrades, consent renewals	\$181m	\$145m
	2 Catchment: Construct Central Interceptor and catchment improvements		
	3 Catchment: Southern Interceptor augmentation		
	4 Catchment: Construct Howick diversion		
	5 Catchment: Upgrade Otara wastewater network	\$1855m	\$130m
	6 Catchment: Upgrade Newmarket gully wastewater pipes		
Rosedale	7 Treatment plant: Treatment process upgrades, hydraulic capacity upgrades, consent renewals	\$123m	\$187m
	8 Catchment: Construct Northern Interceptor	\$276m	\$341m
	9 Catchment: Upgrade North Shore wastewater network		
Army Bay	10 Treatment plant: Outfall upgrade, treatment process upgrades	\$52m	\$77m
	11 Catchment: Upgrade Army Bay wastewater network	\$29m	\$95m
Pukekohe	12 Treatment plant: Treatment process upgrades	\$62m	
	13 Catchment: Upgrade Pukekohe wastewater network	\$63m	\$19m
Warkworth, Snells/Algies	14 Treatment plants: Resource consent and construction of a sub-regional wastewater treatment plant and conveyance system	\$197m	\$115m
Clarks Beach, Waiuku	15 Treatment plants: Construction of a sub-regional wastewater treatment plant and conveyance system	\$132m	\$27m
Other programmes	Increasing capacity to support growth	\$25m	\$266m
	Renewing and replacing existing assets	\$575m	\$936m
	Improving the level of service to our customers	\$30m	\$66m
TOTAL		\$3600m (\$3.6 billion)	\$2404m (\$2.4 billion)

All monetary figures are nominal.