

Watercare Services Limited

Funding Plan 2018 to 2028

(Forecasts from 1 July 2018 to 30 June 2028)

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1. Executive summary

Our work is vital for life, keeps people safe, and helps communities to flourish.

Watercare Services Limited (Watercare) has prepared this Funding Plan to demonstrate how we intend to fund and finance our business activities over the next 10 years, consistent with the Auckland Council Long Term Plan 2018 – 2028 (LTP). Funding is the term given to sources of revenue (fees and charges) from which expenditure (including debt repayment) will ultimately be paid. Financing is the term given to the sourcing of debt.

This plan is complemented by the Watercare Asset Management Plan 2018 – 2038 (AMP), which goes into greater detail about how the business will operate, maintain and renew existing water and wastewater assets, and provide new assets to meet demand as Auckland grows. The AMP can be found on our website, under: about us/ reports and publications.

Auckland is growing fast, so the financial challenge is to fund operational expenditure and expensive, long-life infrastructure while also maintaining service affordability.

Preparation of this Funding Plan is guided by legislation, pricing principles and prudent regard to financial ratios and shareholder plans.

- We are legally required to manage our operations efficiently to keep overall costs to our customers (collectively) at the minimum level, consistent with maintaining the long-term integrity of our assets. We do not receive any funding from our shareholder, Auckland Council, or the Government, nor do we pay a dividend to Auckland Council.
- Key pricing principles we follow include:
 - Inter-generational equity
 - Alignment of costs with benefits
 - Affordability for users
 - Horizontal equity
 - Minimising change.
- Establishing the revenue requirement has regard to key prudential financial ratios, including:
 - Funds from operations to interest ratio
 - Debt to debt plus equity ratio
 - Debt to revenue ratio
 - The number of years taken to repay existing debt.
- Every year, we consult with Auckland Council to develop a statement of intent (SOI) to identify the outcomes sought by the Mayor of Auckland and those specified within the Auckland Plan.

Over the 10-year LTP period, we are forecasting:

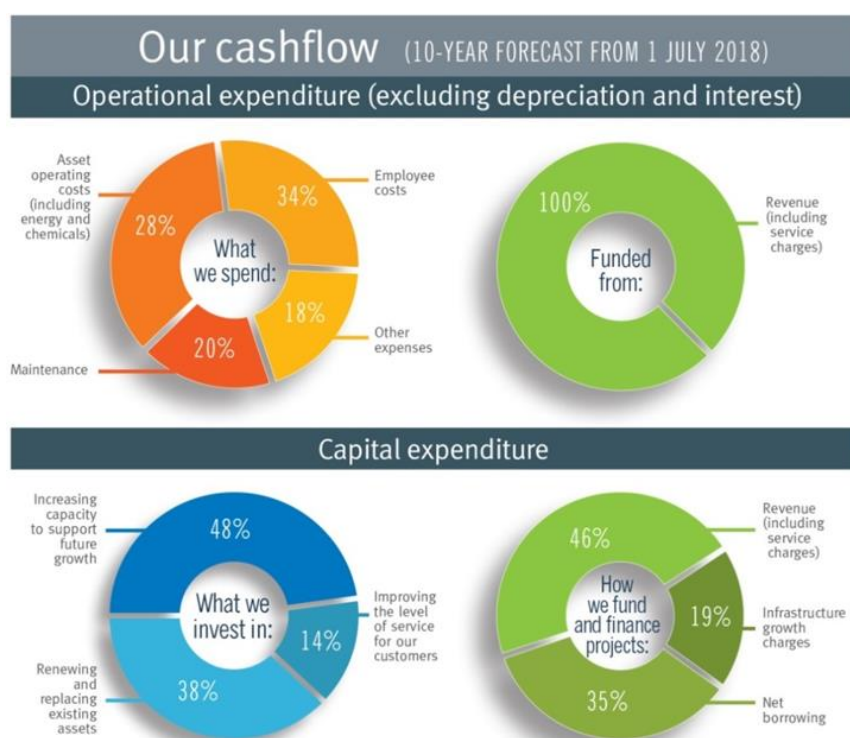
- Expenditure of:
 - \$2.6 billion on operating expenditure
 - \$5.5 billion on capital expenditure
 - \$1.4 billion on interest costs
- Funded and financed by:
 - \$7.7 billion from revenue
 - \$1.8 billion increase in debt.

All the money we receive from customers is allocated to operating, maintaining and expanding our infrastructure. Everything in our sights is budgeted for.

The cost of the Central Interceptor¹ for example, included in Watercare's AMP since at least 2010, is already built into the price path.

In anticipation of increased total water demand from a growing population, we are already searching for additional supply, while also encouraging water efficiency. This would enable us to delay investment in new water infrastructure.

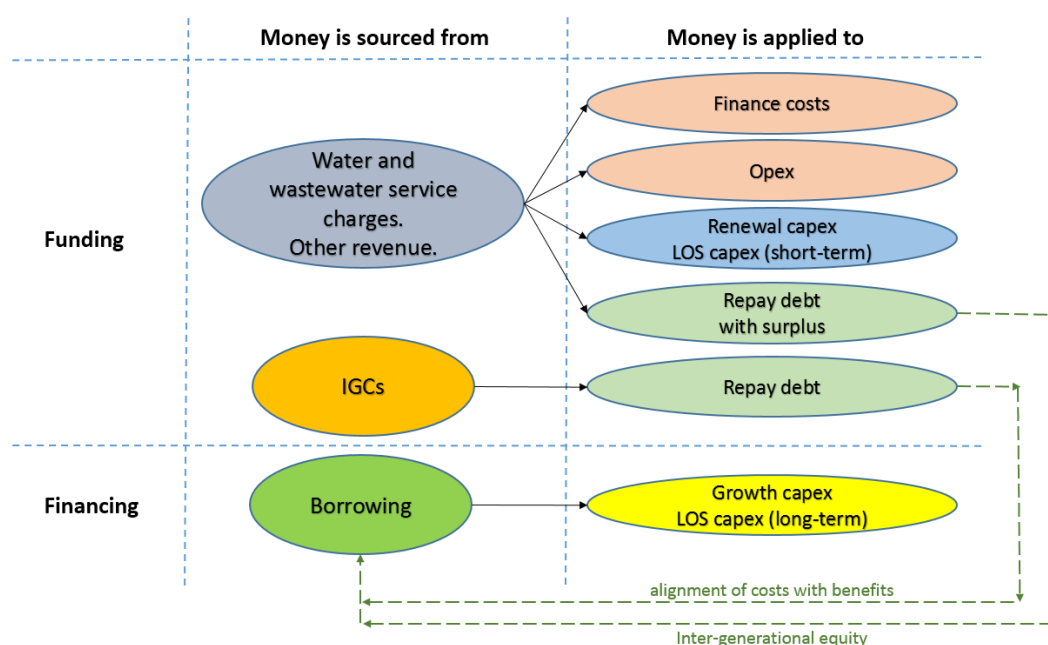
With the likely impact of changing weather patterns, we are proactively planning and budgeting for adjustments to our network as well.



¹ The Central Interceptor is a planned \$1.1 billion wastewater tunnel that will run between Western Springs and the Māngere Wastewater Treatment Plant.

Watercare's funding and financing framework is designed to:

- Finance capital expenditure (capex) for growth and long-term level of service improvement with debt
- Fund annual finance costs and operating expenditure (opex) through operating revenue from water and wastewater service charges and other user charges, except Infrastructure Growth Charges (IGCs)
- Fund the renewal and short-term level of service components of capex by recovering depreciation through water and wastewater service charges
- Fund partial repayment of debt related to bulk growth infrastructure by IGC revenue
- Fund the repayment of remaining debt over time through revenue, after paying all opex and capex for renewal and short-term level of service.



Revenue projections and price paths over the LTP period are set at a level so that, generally:

- Annual price increases are stable over time
- Prices are affordable and appropriately balance the recovery of costs between current and future customers
- The benefit to be derived from Watercare's tax losses is balanced between making them available to the Auckland Council group and retaining them for our own use when it is more economical to do so
- Debt incurred by a generation is repaid by that generation.

Our projected price increases over the period are:

- For water supply, an average of 2.5% per year
(the 2018/19 water price is \$1.517 including GST, per 1000 litres)
- For our wastewater service, an average of 3.3% per year.

This represents an overall average annual price increase for combined water and wastewater of 3% per year for a typical household.

IGC prices are forecast to increase by 3% per year up to and including 2021/22. After that, we do not expect significant increases for the remainder of the LTP period, to avoid over-recovering the cost of growth from new connections.

2. Introduction

Watercare is the Auckland water organisation as defined under the Local Government (Auckland Council) Act 2009 (LGACA). It is a council-controlled organisation (CCO), wholly owned by Auckland Council, providing water supply and wastewater services to around 1.5 million people in the Auckland region. Auckland is growing fast, and over the next 30 years, the population we serve is forecast to grow by another one million people. There will be increased demand on our water and wastewater networks, requiring the construction of new bulk and local infrastructure.

Our work is vital for life, keeps people safe, and helps communities to flourish.

This Funding Plan demonstrates how Watercare intends to fund and finance our business activities over the 10-year period of the LTP. Funding is the term given to sources of revenue (fees and charges) from which expenditure (including debt repayment) will ultimately be paid. Financing is the term given to the sourcing of debt.

All long-term debt is sourced through Auckland Council's centralised treasury function. We do not receive any funding from Auckland Council or the Government, other than for arms-length charges for services we provide, nor do we pay a dividend to Auckland Council. All the money we receive from customers is allocated to operating, maintaining and expanding our infrastructure. Any shortfall is financed through borrowing.

This Funding Plan describes:

- The application of funds – what the money going out is spent on (expenditure and debt repayment)
- The sources of funds – where the money we spend comes from (revenue and borrowing)
- What categories of money going out are funded and financed by which categories of money coming in (revenue and financing framework).

The LGACA sets out how Watercare must manage our operations.

In short, we:

- Must balance the need to incur and recover the costs of providing our services with the need to minimise charges for those services and to maintain the long-term integrity of our assets
- Pass on to our customers any surplus or productivity gains in the form of reduced water and wastewater tariffs
- Are prohibited from paying a dividend to council
- Must support and give effect to the relevant aspects of Auckland Council's Plans.

Our focus is, and always will be, to run our operations cost-effectively and deliver value for money through our services. The financial challenge is to fund operational expenditure and expensive, long-life infrastructure while also maintaining service affordability for our customers.

Expenditure incurred by the business includes:

- Capital expenditure (to obtain, replace or improve long-life assets such as plant, equipment, pipes and buildings)
- Operating expenditure (incurred in carrying out normal day-to-day activities such as maintenance, energy, wages and rent)
- Interest on borrowing
- Repayment of debt.

We need to ensure these costs are covered by a combination of revenue (funding) and borrowing (financing). This requires establishing a stable revenue price path which strikes a balance between revenue and borrowing, to ensure that revenue from customers will be sufficient, and also fair between present and future generations.

Revenue received by the business includes:

- Retail and wholesale service charges for water supply and wastewater services
- Infrastructure Growth Charges (IGCs)
- User charges such as new meters and service connections, meter relocations, wastewater audits, trade-waste monitoring, laboratory services and administration fees
- Subvention income from the sale of tax losses to the Auckland Council tax group.

3. Watercare's vision and strategic priorities

Watercare is a lifeline utility that provides essential services to Auckland. Our mission – to deliver reliable, safe and efficient water supply and wastewater services – is critical to the economic, social and environmental health and well-being of our communities.

3.1. Watercare's strategic framework

Our vision:

Trusted by our communities for exceptional performance every day.

Better tomorrow than we are today. Pae aki apōpō atu i tēnei rā

Our mission:

Reliable, safe and efficient water and wastewater services.

Our strategic priorities:

Customer focus: To fulfil our vision of providing exceptional service, we strive to understand our customers and stakeholders and engage with them in meaningful ways.

Business excellence: For Watercare, the drivers underpinning business excellence are the recruitment and retention of the right people, ensuring their health and well-being, and the implementation of smart processes and fit-for-purpose technology.

Financial responsibility: Every dollar Watercare spends has an impact on the price our customers pay for our services. We are obliged to be an efficient, minimum-cost provider with due consideration for long-term asset investment.

Fully sustainable: Watercare's business is intrinsically linked to the natural environment and significantly impacts the communities in which we operate. Integrating sustainability into everything we do is key to our role as a trusted community and iwi partner.

3.2. Key strategies

- **Deliver 100% Aa-grade drinking water, day in, day out:** At a time when, globally, the use of the planet's water resource is in question, we need to make improvements for the sake of the environment, our economy and our community.
- **Enabling growth:** As the city grows, we are upgrading and extending our core water and wastewater infrastructure – all while maintaining the pump stations, plants and thousands of kilometres of pipes.
- **Minimum cost – affordability:** We need to keep the cost of our services down by operating efficiently. One way we are doing this is by implementing water demand-management initiatives to reduce per-capita consumption (PCC), which will defer the timing of new infrastructure and saves cost.
- **Sustainable approach:** We need to be mindful of the resources we use and recover resources where possible. We must protect and enhance the environment affected by our operations, while ensuring a water supply that is safe, reliable and sustainable, and an approach to wastewater that is efficient and effective.
- **Service promise:** When it comes to day-to-day transactions, we know our customers want responsive service. We are modernising our systems and building our people capability so we can deliver on our responsive service promise.

4. Funding Plan preparation

The preparation of this Funding Plan is most closely aligned with the Financial Responsibility strategic area of focus in our mission. Preparation is guided by legislation, pricing principles and prudent regard to financial ratios and shareholder plans.

4.1. Legislation

Watercare has to comply with the LGACA. In particular, Watercare must:

- Under Section 57 (S57),
 - Manage its operations efficiently with a view to keeping the overall costs of water supply and wastewater services to its customers (collectively) at the minimum

- level, consistent with the effective conduct of its undertakings and the maintenance of the long-term integrity of its assets
 - Not pay any dividend or distribute any surplus in any way, directly or indirectly, to any owner or shareholder
- Under Section 58 (S58),
 - Give effect to the relevant aspects of the LTP (but does not authorise non-compliance with S57).

Watercare is unable to levy property rates and is prohibited under the LGACA from charging development contributions. Charges for services are made to our customers under a customer contract. By using our water and/or wastewater services or by remaining connected to our networks, customers are deemed to have accepted the terms and conditions of that contract. We have discretion as to the contractual charges we set for our services, and the methodology used to set the charges, subject to S57 of the LGACA.

Currently, water utilities in New Zealand are not subject to price regulation, unlike some other utilities (for example, electricity lines companies and telecommunications).

4.2. Pricing principles

Inter-generational equity

Both current and future customers benefit from investment in long-lived growth assets. The concept of inter-generational equity is for a fair balance to be struck between current and future customers paying for that investment. This means that costs are not unduly deferred to future generations, nor incurred too early by the current generation.

The principle of inter-generational equity suggests that growth-related assets with a long life span should initially be financed by borrowings. In that way, debt incurred is repaid over a long period. The spread of benefits is reflected in a distribution of cost to users over time. This avoids today's users paying for the entire cost of an asset in the year that it is acquired or built.

The inter-generational equity principle, however, needs to be balanced by consideration of other relevant pricing principles adopted by Watercare.

Other pricing principles include:

Alignment of costs with benefits

Where a service benefits a particular person or group, or where a particular person or group has caused the cost to be incurred, the corresponding person or group should pay the cost of that service as far as practicable.

Affordability for users

We are legally required to manage our business efficiently in order to keep costs to customers collectively at minimum levels. This means we must balance the need to incur and recover the costs of providing our services with the need to minimise charges for those services.

Horizontal equity

Customers across Auckland should pay similar amounts for the same service by our standardisation of the charging frameworks across the region as much as is reasonable.

Minimising change

Customers across Auckland should expect a stable and signalled price path to ensure annual cost increases are manageable.

4.3. Financial ratios and measures

In addition to considering the pricing principles outlined above, the revenue price path needs to ensure key prudential financial ratios and measures are maintained within acceptable bands. This is in order to keep future debt at levels that will not stifle capacity to meet our \$57 obligations.

Key financial ratios and measures include:

- Funds from operations ratio (the net of cash revenue and expenses divided by gross interest cost)
- Gearing
- Debt to revenue ratio
- The number of years taken to repay existing debt.

These ratios and measures are explained in Appendix 1.

4.4. Statement of intent

We are responsible for establishing a statement of intent (SOI), which sets targets and other measures by which our performance can be judged in relation to our objectives.

Every year, we consult with our shareholder, Auckland Council, to develop an SOI covering the next three-year period. The SOI represents Watercare's public and legislative expression of accountability to our shareholder. It identifies the relationship between our activities and the delivery of those outcomes sought by the Governing Body of Auckland Council and those specified within the Auckland Plan. Local boards, the Independent Māori Statutory Board and the general public are invited to comment on the final draft, before it is adopted by the board.

5. Application of funds

- what do we spend your money on?

We are forecasting around \$2.6 billion in operational expenditure and \$5.5 billion of capital expenditure over the 10-year LTP period. We expect to pay \$1.4 billion of interest cost and collect around \$7.7 billion worth of revenue over the same time period. Debt is forecast to increase by \$1.8 billion. Our Funding Plan financials are included in the council's LTP, which was publicly consulted on in early 2018.

5.1. Operating expenditure

Operational expenditure (opex), excluding depreciation and interest, is the sum required to maintain, operate and deliver the services we provide. Opex is split separately into water and wastewater activities. For each activity, opex is further split into employee related costs, maintenance costs, asset operating costs and other expenses.

Both activities include allocations of shared services expenditure. Shared services comprise servicing and consents, planning and design, project delivery, customer experience, supply chain, finance and business support, digital, people and capability, communications, and risk and assurance, among other services.

Forecast opex by year is shown under section 9.1 below.

5.2. Capital expenditure

We prepare our AMP on a three-yearly cycle to inform Auckland Council's preparation of the LTP. The AMP is reviewed internally each year, which also allows us to adjust our works programme to reflect the council's revised growth forecasts and priorities over time and to achieve the following objectives:

- To provide the necessary water and wastewater infrastructure to meet growth in the region in accordance with council's plans
- To maximise the use of existing infrastructure assets
- To ensure that level-of-service requirements are met at the least overall cost to customers collectively.

Watercare plans and builds the capital expenditure (capex) planned in the AMP. The detailed 2018 – 2038 AMP can be found on our website, under: about us/ reports and publications.

For the financial plan projections, we have assumed a target to encourage implementation of cost-effective technologies to deliver better levels of service for same or similar life-cycle costs. This target equates to 5% of the total capex forecasts in the AMP over the 10-year period (refer to section 9.1.3 below).

Forecast capex by year, as identified in the AMP, is shown under section 9.3 below.

The capex programmes identified in our AMP are broadly categorised into three strategic drivers:

- Growth
- Renewal
- Level of service.

It is very unusual for only one of these drivers to be considered when we construct new assets. For example, if we are renewing a pipe because of its condition, we also consider the long-term requirements of the asset with respect to growth and levels of service before deciding

how to proceed with the renewal. Most programmes/projects have multiple drivers. The AMP identifies the percentage split of the cost for each AMP programme or project by strategic driver.

Growth capex

Growth capex is infrastructure investment undertaken to increase capacity to cater for increased population and demand.

Regional growth in population, industry and commerce has a direct impact on the demand for water and wastewater services. Auckland is anticipated to grow significantly, and as it does, the demand for water supply and wastewater services will increase.

To assess the growth component of a programme, there is a need to estimate a scenario of 'what would happen if there was no growth?'. The difference between the total programme cost and the 'no growth' scenario estimate is the growth component.

Renewal capex

Renewal capex is infrastructure investment required to renew and replace critical assets near the end of their useful lives and non-critical assets that have failed.

Asset replacement and rehabilitation programmes are in place to ensure existing levels of service are maintained. These are derived from asset age profiles and maintenance histories, as well as ongoing condition assessments and risk analysis. Capital works are prioritised according to the criticality of the asset and the probability and consequence of system failure.

Level-of-service capex

Level-of-service capex is infrastructure investment required to ensure Watercare complies with legislative and regulatory operating conditions, increase operational efficiency, and improve the quality of service we provide to the region.

Our customers expect safe, reliable service at a reasonable cost over time, and they expect us to respect our natural environment. Legislation governs where and how our water and wastewater services are delivered. From time to time, changing legislative or consenting requirements require us to adjust. Further, legislation also prescribes how the water and wastewater networks are managed, to ensure that public health and the environment are protected.

Some level-of-service capex may be short-term in nature. Examples are information technology and software upgrades that increase operational efficiency. A distinction is made between short-term and long-term level-of-service capex for determining how these are financed and funded.

5.3. Finance costs

Finance costs consist of interest and other costs that are incurred in connection with the borrowing of funds. Finance costs directly attributable to the acquisition, construction or production of a qualifying asset that necessarily takes more than 12 months to become ready

for its intended use are capitalised as part of the cost of that asset. All other finance costs are expensed in the period in which they occur.

5.4. Repayment of debt

The concept of inter-generational equity is that growth-related assets with long life spans should initially be financed by debt. That way, a fair balance can be struck between current and future customers paying for that investment.

In any particular period, Watercare will be raising new debt to finance a level of growth capex. In the same period, we will also be generating fees and charges to repay debt that was raised in earlier periods. In practice, however, these two cash flows will be netted.

We set our revenue price path at a level so that debt incurred by a generation is fully repaid over a period of about one generation. A generation is taken to be the average period between when children are born and when they begin to have children of their own (assumed as 25 years). On average, each generation repays a generation's worth of debt. Because of the spread of ages among the population, there is always more than one generation paying water charges at any one time. However, as long as debt (taken at any point of time) is fully repaid over the period of about one generation, then, on average, each generation has repaid a generation's worth of debt.

6. Sources of funds

- where does the money we spend come from?

Financing is the term given to the sourcing of debt. Funding is the term given to sources of revenue (fees and charges) from which expenditure (including debt repayment) will ultimately be paid. Funding sources must therefore be identified to support opex as well as financing arrangements (debt repayment). If funding is insufficient to meet expenditure, the difference will need to be financed by new borrowing.

Watercare's income is sourced directly from our customers and we therefore need to ensure our overall customer charges are sufficient to fund our expenditure and debt repayment.

6.1. Revenue

Forecast revenue assumptions are shown in section 9.4 below.

Watercare's revenue comes mainly from the following sources:

Water and wastewater charges

- Water revenue is from water supplied, charged volumetrically per kilolitre,² measured by water meter by customer. All customers pay the same volumetric rate (\$1.517 per cubic metre including GST for 2018/19), regardless of the volume used.
- Wastewater revenue is a combination of a fixed charge and a volumetric charge based on a percentage of the water used. The majority of domestic customers who have metered water pay a standard fixed charge and a volumetric charge based on 78.5%³ of their water use. Wastewater services for non-domestic customers are charged on four different price tariffs, which allow customers to choose a combination of fixed and variable rates (refer to Appendix 2 for 2018/19 prices). This is a result of significant consultation undertaken with our customers between 2012 and 2014.

Infrastructure Growth Charges

An Infrastructure Growth Charge (IGC) is applied to all new water and wastewater network connections, additional residential units at an existing connection and where a non-domestic customer increases water usage at their property by 220 kilolitres or more per year (refer to Appendix 2 for 2018/19 IGC rates).

Growth from new property developments, or increased demand from existing connections, creates a requirement for us to provide, or to have provided, new or additional assets or assets of increased capacity. The IGC means that a share of the necessary growth cost is recovered from those who create the extra demand, rather than from all our customers.

IGCs are explained in more detail under section 7.3 below.

User charges

A range of user charges covers items or services such as new meters and service connections, meter relocations, wastewater audits, trade-waste monitoring, and administration fees. These are charged directly to customers who request the service (refer to Appendix 2 for 2018/19 prices).

Watercare Laboratory Services, a division of Watercare, is one of the largest water, wastewater and environmental laboratories in New Zealand, operating out of Auckland, Queenstown and Invercargill. They offer a comprehensive range of sample collection services, laboratory testing and air-quality monitoring services across New Zealand. As well as providing water and wastewater testing for Watercare, their customers also include councils, government agencies and private companies.

Subvention income

Watercare has a loss offset and subvention arrangement with the Auckland Council tax group, a related party. Failure to offset our tax losses to related entities generating taxable profits would require profitable entities to make tax payments to Inland Revenue. This economic

² 1 kilolitre = 1,000 litres = 1 cubic meter = 1 m³

³ Apartments are charged 95% of their water volume as wastewater on the basis they have less outdoor water usage.

inefficiency is addressed by enabling the Auckland Council tax group to access our tax losses by way of tax loss offset and subvention payments to Watercare. The consideration we receive for tax losses represents a reasonable return to enable us to meet our obligations under S57 of the LGACA.

6.2. Borrowing

Forecast debt assumptions are shown in section 9.5 below.

Current and future customers collectively benefit from investment in long-lived growth assets. The concept of inter-generational equity is that growth-related assets with long life spans should initially be financed by debt. That way, a fair balance can be struck between current and future customers paying for that investment. Debt incurred by a generation is repaid by that generation over a long period. This means that costs are not unduly deferred to future generations, nor burdened too heavily on the current generation.

All new long-term debt is sourced from Auckland Council as this is currently the lowest-cost source of debt for our company. Watercare and Auckland Council entered into a service level agreement for the provision of treasury services post 30 June 2018 and an inter-company loan agreement for existing loans at 30 June 2018. All existing loans become one loan with a fixed maturity of 30 June 2021. The key objective of the centralised treasury function is to achieve cost savings and efficiencies across the council group and access to funding at cheaper interest rates for Watercare. We remain responsible for ensuring the company is adequately and sustainably financed on prudent terms. We do not receive any funding from Auckland Council or the Government, other than for arms-length charges for services we provide.

7. Growth infrastructure asset funding

Investment in growth infrastructure is undertaken to increase capacity for increased population and demand. As already noted, most capex programmes/projects can be categorised broadly into three strategic drivers: growth, renewal and level of service. New assets we construct may include elements of all three drivers. For example, if we are replacing a pipe in poor condition, its replacement will meet existing capacity (renewal), it may be larger in size (for growth) or be of a superior design or material (level of service improvement). To assess the growth component of a programme, there is a need to estimate a scenario of 'what would happen if there was no growth?'. The difference between the total cost and the 'no growth' scenario estimate is the growth component.

Watercare distinguishes between local network and bulk infrastructure assets, as follows:

- Local network infrastructure generally refers to the part of water and wastewater systems that customers connect to. It covers all infrastructure that is not bulk infrastructure.
- Bulk infrastructure generally refers to treatment facilities (water and wastewater treatment plants) and larger transmission pipes and associated infrastructure that the local network infrastructure connects to.

The area serviced by bulk infrastructure is extended over time by Watercare, to meet growth in accordance with Auckland Council's Future Urban Land Supply Strategy (FULSS). The FULSS identifies a programme to sequence the urbanisation of future urban land, over 30 years, for the ongoing supply of greenfields land for development. This land is predominantly rural, not previously identified for urbanisation, so may require new bulk infrastructure to be provided.

Funding sources for local network and bulk infrastructure investment for growth are different.

7.1. Funding for local network infrastructure investment

Generally, property developers will fund growth of the local network, sufficient to meet the water and wastewater demand from their development. Watercare funds the capital investment to renew or improve the level of service of existing local infrastructure. We will fund some growth investment in local network infrastructure where it is associated with renewal or level of service improvement of existing assets, mainly in brownfields areas.

A developer of greenfields land will obtain the required consents and will build and pay for earthworks, roading and utilities such as electricity, telecommunications, water and wastewater. We require the developer to construct and fund the internal water and wastewater infrastructure on their land to our specifications. The developer is also to fund any connecting infrastructure, between their internal network and our existing local network infrastructure. They may be required to fund upgrades (if any) to the local network infrastructure as well, where capacity is inadequate for their development.

Where required by consent conditions, the ownership of developer-funded infrastructure is vested to Watercare on completion of construction. After that, we take the responsibility to operate and maintain the assets.

To this point, the developer has not contributed towards investment in bulk growth infrastructure; that is made through payment of IGCs at the time of connection to our networks.

7.2. Funding for bulk infrastructure investment

Watercare usually pays all the cost of capital investment for bulk infrastructure, including for growth. We recover the cost of bulk growth infrastructure through IGCs. However, in some circumstances, it is appropriate for us to reach agreement with a developer (or developers) to share the cost of bulk growth infrastructure with us.

7.3. Infrastructure Growth Charges

An Infrastructure Growth Charge (IGC) is applied to all new water and wastewater network connections, for additional residential units at an existing connection, and where a non-domestic customer increases water usage at their property by 220 kilolitres or more per year. For domestic customer connections, one IGC is applicable per residential unit. However, where the floor area of the residential unit (includes apartments) is less than 65m², two-thirds of the standard IGC rate will apply.

The IGC is charged at the time an approval for a connection is made. The IGC is not to be confused with a connection fee, which covers the direct cost of connecting privately-owned pipes to the local water network through a water meter.

A new property development or an increase in non-domestic demand creates a requirement for us to provide, or to have provided, new or additional assets or assets of increased capacity. The IGC means that a share of the necessary upgrade cost is recovered from those who create the extra demand, rather than from all our existing customers.

The IGC rate a customer is billed varies depending on whether the capital investment is on the Auckland metropolitan water and wastewater networks or on the smaller, stand-alone non-metropolitan (generally rural) networks. In some areas, there may only be a water or a wastewater service, or a combination of metropolitan and non-metropolitan elements. In those cases, a hybrid IGC rate applies. However, most of our IGC revenue comes from connections to the metropolitan networks.

The metropolitan rate applies for connections made to:

- Our large, contiguous water supply network
- Any of our four major wastewater treatment plants for Auckland, being Māngere, Rosedale, Army Bay and Pukekohe.

7.3.1. The method for calculating the metropolitan IGC rate

We use the term ‘development unit equivalent’ (DUE)⁴ to mean a new connection, or unit of increased non-domestic use, that attracts an IGC at the full rate.

We have chosen to standardise water and wastewater tariffs across the region and we’ve taken the same approach for IGCs in the metropolitan area. This makes the method of calculation simpler, with a single IGC rate more predictable for developers and customers.

The cost of bulk growth infrastructure to be recovered from each DUE equates to the cost of bulk growth infrastructure over a period divided by the number of DUEs over the same period. We use a period of 15 years (4 past + current + 10 forecast). This is deliberately an averaging approach, considering that Watercare has an ongoing growth investment need.

Cost of growth per DUE = cost of bulk growth infrastructure ÷ number of DUES (over 15 years)

However, we endeavour to recover the cost of growth per DUE, from those who connect, in two ways:

- By an IGC at the time of connection
- Through future water and wastewater service charges over time, for the portion representing depreciation and interest recovered.

⁴ A development unit equivalent (DUE) is the equivalency factor between the full IGC rate and the IGC rate applying to the development unit. For example, a development unit which is a residential unit less than 65m² and charged two-thirds the IGC rate is taken to be two-thirds of a DUE. Every 220 kilolitres of water used by a non-domestic connection is a DUE.

The depreciation and interest recovered from each DUE over time (in today's dollars) ensures that the new customer is not charged twice for the same asset over its life. This places new customers on an equal footing with existing customers, with both groups contributing equally to the recovery of operating costs, depreciation, interest and debt repayment through a common standard tariff.

Currently, the metropolitan IGC rate is recovering close to 80% of what it should be. The reason for this is that the initial level of IGC was set around the average amount of development contributions collected by former councils prior to amalgamation of Auckland's local government on 1 November 2010. This level was considerably less than our calculation of what the IGC amount should be to recover the full costs of growth. We are seeking to gradually increase the level of the IGC to an amount close to the full rate by about 2023. This follows the pricing principle that customers across Auckland should expect a stable and signalled price path to provide manageable annual cost increases.

7.4. Housing Infrastructure Fund

In July 2016 the Government announced the creation of a Housing Infrastructure Fund (HIF). The aim of this fund was to provide financing capacity for growth councils to deliver the infrastructure needed to support their area's growth.

Auckland Council submitted an application to this fund in March 2017 and was notified in July 2017 that \$300 million of investment was supported in principle. The understanding of how this will work was advanced by subsequent negotiations between council, Watercare, the Government and developers. It is estimated that the HIF investment will unlock around 6200 dwellings in the North-West area.

The \$300 million investment will include an interest-free loan from the Crown to Auckland Council of \$120 million. Watercare wastewater projects in Redhills and Whenuapai have been identified to participate. With the support of a back-to back-interest-free loan from Auckland Council to Watercare of \$114 million, we have planned to bring construction of these projects forward in anticipation of the new dwellings being built. The loan will be received progressively over 2019 to 2023, in line with construction. Repayment is forecast to be made over 2025 to 2033, to correspond with the anticipated build rate of the new dwellings.

8. Revenue and financing framework

Revenue projections and price paths over the LTP period are set at a level so that, generally:

- Annual price increases are stable over time
- Prices are affordable⁵ and appropriately balance the recovery of costs between current and future customers

⁵ Watercare measures affordability by expressing the cost of water and wastewater services per household as a percentage of average household income. For the 2017/18 financial year, the percentage was 0.85%.

- The benefit to be derived from Watercare's tax losses is balanced between making them available to the Auckland Council group and retaining them for our own use when it is more economical to do so
- Debt incurred by a generation is repaid by that generation.

However, the concept is complicated to apply:

- Capital spends are uneven, and assets in place at any time may have excess capacity.
- Capex is paid for as incurred but under the inter-generational concept we will only be reimbursed for those assets (from revenue) as they are used.
- Many generations are present at any one time.

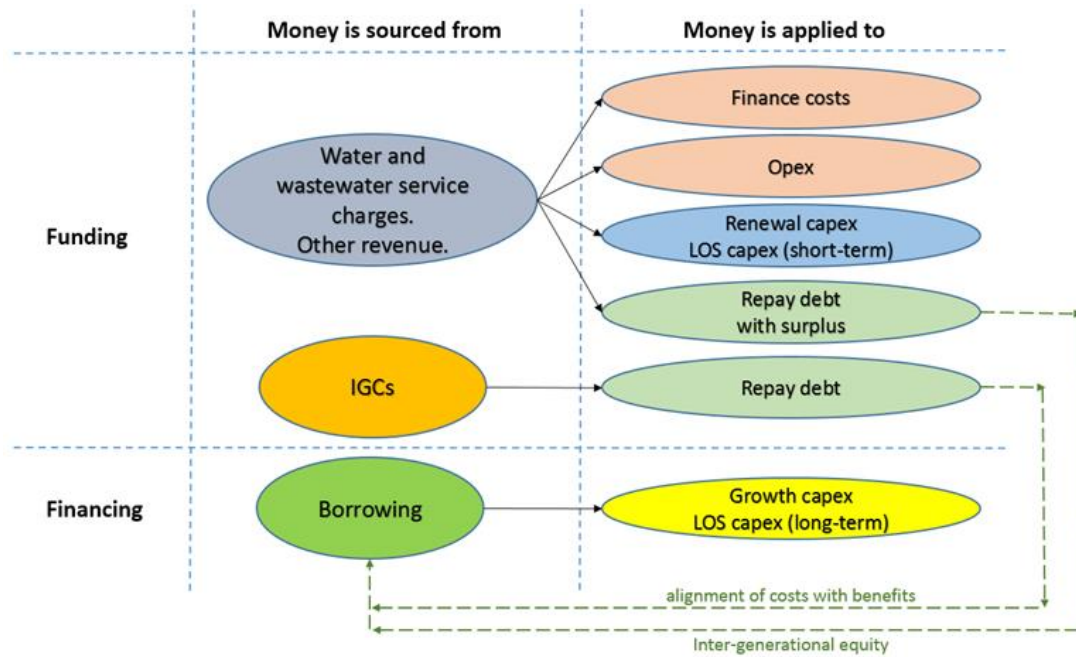
We attempt to set the price path at a level that is fair by optimising funding sources through a combination of:

- Service charges paid by current users
- IGCs paid by those who create demand
- Borrowing.

Watercare's revenue and financing framework identifies how those sources of funding are applied to opex, capex and repayment of debt. This answers the question in the scenario of 'what categories of money going out are funded and financed by which categories of money coming in'.

Watercare's funding and financing framework is designed to:

- Finance capex for growth and long-term level of service improvement with debt
- Fund annual finance costs and opex through operating revenue from water and wastewater service charges and other user charges (except IGCs)
- Fund the renewal and short-term level of service components of capex by recovering depreciation through water and wastewater service charges
- Fund partial repayment of debt related to bulk growth infrastructure by IGC revenue
- Fund the repayment of remaining debt over time through revenue after paying all opex and capex for renewal and short-term level of service.



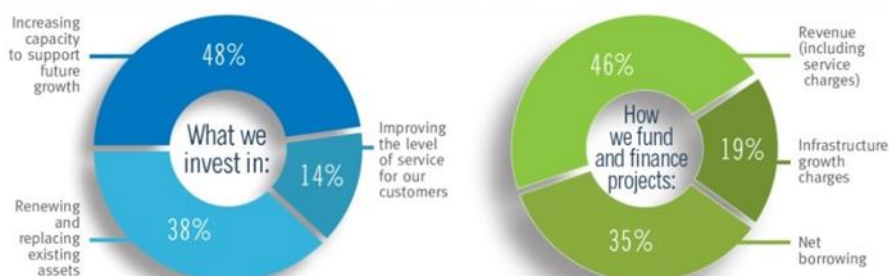
9. Financial projections

Our cashflow (10-YEAR FORECAST FROM 1 JULY 2018)

Operational expenditure (excluding depreciation and interest)



Capital expenditure



9.1. Significant assumptions

All forecasts are exclusive of goods and services tax (GST).

9.1.1. Growth forecasts

Regional growth in population, industry and commerce has a direct impact on the demand for water and wastewater services, and new connections.

- Increased water demand translates into more water sold and higher volumes of wastewater discharged. This means greater revenue, but also increased operating costs. The increase in demand comes not only from people in their homes but also from the places they work. Water and wastewater revenue and opex are assumed to increase in line with water demand growth.
- All new homes and commercial premises need connections to our networks. This translates into investment in expanded infrastructure, but also revenue from IGCs.

Growth estimates are based on Auckland Council's ART i11 growth forecast dated July 2017. Our starting point is that water demand will increase in line with the rate of growth of the population connected to our networks. However, offsetting this increase in demand is our Auckland water efficiency strategy, which aims to reduce the gross PCC of water from 273 litres per person per day in 2017 to 253 litres per person per day by 2025. Specific initiatives include reducing leakage in our network, smart metering, consumer education to encourage the efficient use of water, and developing tools to understand localised demand and its causes.

Forecast growth in annual per-day demand is shown in the following table:

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Growth in connected population	1.89%	1.84%	1.99%	1.95%	2.00%	1.97%	1.91%	1.30%	1.27%	1.30%
less reduction PCC effect	0.43%	0.43%	0.43%	0.43%	0.44%	0.44%	0.44%	0.00%	0.00%	0.00%
Net annual per-day volume increase	1.46%	1.41%	1.55%	1.51%	1.57%	1.53%	1.47%	1.30%	1.26%	1.29%

9.1.2. Cost adjustors

Estimates for inflation, or cost adjustors, are applied for each year of the 10-year LTP period. They are applied to estimates of future expenditure made in today's dollars (real dollars) to derive future-year expenditure with estimated inflation taken into account (nominal dollars). For the LTP, Watercare used cost adjustors provided by Auckland Council, which it reviewed against several financial institutions' projections. Our own investigation supported these rates.

The following cost price and capital goods price adjustors have been applied to the long-term financial projections:

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Cost price adjustor	per annum	1.7%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	cumulative	1.7%	3.7%	5.8%	7.9%	10.1%	12.3%	14.5%	16.8%	19.2%	21.5%
Capital goods price adjustor	per annum	3.5%	3.7%	3.5%	3.6%	2.9%	3.0%	3.1%	2.6%	2.7%	2.8%
	cumulative	3.5%	7.3%	11.1%	15.1%	18.4%	22.0%	25.8%	29.0%	32.5%	36.2%

The cost price adjustor is applied to opex. The capital goods price adjustor is applied to capex. The rates are different because the component parts of opex and capex are inherently different. Opex includes costs such as labour, energy, chemicals, repairs and maintenance. Capex, on the other hand, can include costs such as pipes, machinery, control equipment, bespoke manufactured components, and construction costs.

The rate of inflation for these types of expenditure is different to the Consumer Price Index (CPI), commonly referred to as the rate of inflation affecting the goods that people buy day to day. CPI includes cost increases for such things as food and fridges. Inflation affecting Watercare's costs is more to do with items such as construction, concrete, pipes, equipment and bitumen; these are more accurately measured by other cost indices such as Producer Price Index (PPI) and Capital Goods Price Index (CGPI), which have generally been higher than CPI.

9.1.3. Efficiency/value for money savings

In general, the capital investment planning process produces estimates for project costs and timing with varying degrees of precision. Uncertainty of estimates is implicit in forecasting capex programmes. Actual project costs can be more or less than initially estimated due to new technologies, materials, method of construction, processes and supply constraints.

For the financial plan projections, Watercare has assumed a target to encourage implementation of cost-effective technologies to deliver better levels of service for the same or similar life-cycle costs. The target equates to 5% of the total capex forecasts in the AMP over the 10-year period and represents the opportunity of design and delivery synergies across a large programme of work.

It is not practical to allocate this saving to specific projects. Instead, for the purpose of the financial plan projections, the percentage savings have been calculated against the total AMP capex for water and wastewater, and across the growth, renewal and level of service categories.

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2019-2028
Real \$ (2017/18, millions)											
AMP Forecast	482.2	522.5	564.0	573.9	516.8	589.2	586.8	307.5	347.2	361.4	4,851.4
Efficiency Saving Target @ 5%	24.1	26.1	28.2	28.7	25.8	29.5	29.3	15.4	17.4	18.1	242.6
Financial Plan Capex Forecast	458.1	496.3	535.8	545.2	490.9	559.7	557.5	292.2	329.9	343.3	4,608.8
Nominal \$ (millions)											
AMP Forecast	499.0	560.8	626.5	660.5	612.0	718.6	737.9	396.8	460.1	492.2	5,764.6
Efficiency Saving Target @ 5%	25.0	28.0	31.3	33.0	30.6	35.9	36.9	19.8	23.0	24.6	288.2
Financial Plan Capex Forecast	474.1	532.7	595.2	627.5	581.4	682.7	701.0	377.0	437.1	467.6	5,476.3

9.1.4. Asset revaluation

Asset revaluations for property, plant and equipment are carried out on a 'class of asset' basis at least every three years. The most recent valuation for all infrastructure assets was completed at 30 June 2018 by Beca Valuations Limited. Given Watercare's business, the infrastructure assets are of a specialised nature, rarely traded in the marketplace. Therefore, fair value is assessed by the optimised depreciated replacement cost (ODRC) approach. The

ODRC uses the assessment of replacement cost of an asset with a new or modern equivalent asset. It applies optimisation and depreciation to adjust for age, condition, performance and remaining useful life.

Revaluation of plant and equipment is forecast to occur every three years. Asset values are increased by the cumulative capital goods price adjustor over the relevant three-year period. Forecast depreciation is calculated on a straight-line basis on the ODRC over the assets' remaining useful lives.

9.1.5. Interest rate

All long-term debt is sourced from Auckland Council as this is currently the lowest-cost source of debt for Watercare. The following interest rate assumptions have been applied to the long-term financial projections:

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Average interest rate	5.36%	5.44%	5.54%	5.51%	5.44%	5.33%	5.26%	5.24%	5.24%	5.23%

As noted in section 7.4 above, \$114 million of interest-free debt is projected to be received from Auckland Council during the LTP period under the Government's Housing Infrastructure Fund.

9.2. Operational expenditure forecasts

Watercare's opex forecast for the period 1 July 2018 to 30 June 2028 is presented in real dollars (excluding inflation) and nominal dollars (including inflation) in the following two tables.

Inflation is applied at the cost price adjustor rate per year (refer to section 9.1.2 above). Base-line opex is assumed to increase in line with water demand growth. Approximately \$3 million (real) is added progressively to baseline opex from 2018/19 through to 2024/25, to allow for increased operating costs on planned or new major infrastructure. These include the biological nutrient removal addition at the Māngere Wastewater Treatment Plant, the Central Interceptor and the replacement Huia Water Treatment Plant.

The total forecast opex for the 2019-2028 period (excluding depreciation and interest) is estimated at \$2.3 billion in real terms, or \$2.6 billion in nominal dollars.

Opex is split into water and wastewater activities. Both activities include allocations of shared services expenditure in proportion to water and wastewater revenue.

Over the 2019-2028 period, opex for the water activity is forecast to be \$952 million (37%), and for the wastewater activity, \$1,631 million (63%) – in nominal dollars.

For each activity, opex is split into maintenance costs, asset operating costs (including energy and chemicals), employee related costs (including labour), and other expenses.

Over the 2019-2028 period, the percentage of total forecast expenditure in each category is as follows:

- Maintenance costs –20%
- Asset operating costs –28%
- Employee related costs – 34%
- Other expenses – 18%.

Operational expenditure 1 July 2018 to 30 June 2028 - \$ millions (real - 2017/18 base)

Activity		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2019-2028	2029-2038	20-year total
Water	Asset Operating Costs	22.1	22.4	22.7	23.3	23.6	24.3	24.6	24.9	25.2	25.6	239	274	513
	Maintenance Costs	17.4	17.7	18.0	18.4	18.7	19.2	19.4	19.7	20.0	20.3	189	213	402
	Employee Related Costs	27.2	27.6	27.9	28.2	28.6	29.1	29.3	29.6	29.9	30.3	288	335	622
	Other Expenses	13.1	13.3	13.4	13.5	13.7	13.9	14.0	14.1	14.2	14.4	138	163	301
Total Water		79.8	81.0	82.0	83.4	84.6	86.4	87.3	88.3	89.3	90.6	853	985	1,838
Wastewater	Asset Operating Costs	38.2	38.9	39.4	40.0	41.0	41.7	42.6	43.2	43.7	44.4	413	473	886
	Maintenance Costs	25.3	25.7	26.0	26.3	27.0	27.4	28.0	28.3	28.6	29.1	272	314	586
	Employee Related Costs	46.7	47.5	48.2	49.0	49.8	50.8	51.5	52.2	53.0	53.9	503	564	1,067
	Other Expenses	25.3	25.7	26.1	26.6	27.1	27.6	28.0	28.5	28.9	29.4	273	304	577
Total Wastewater		135.4	137.8	139.7	141.9	144.9	147.6	150.1	152.2	154.2	156.8	1,461	1,654	3,115
Watercare	Asset Operating Costs	60.3	61.3	62.1	63.2	64.6	66.0	67.2	68.0	68.9	70.0	652	747	1,398
	Maintenance Costs	42.7	43.4	43.9	44.7	45.7	46.6	47.4	48.0	48.6	49.4	460	527	987
	Employee Related Costs	73.9	75.1	76.1	77.2	78.5	79.9	80.8	81.9	82.9	84.2	791	899	1,689
	Other Expenses	38.4	39.0	39.5	40.1	40.8	41.5	42.0	42.6	43.1	43.8	411	467	878
Total Watercare		215.2	218.9	221.7	225.4	229.5	234.0	237.4	240.5	243.5	247.3	2,313	2,639	4,952

Operational expenditure 1 July 2018 to 30 June 2028 - \$ millions (nominal)

Activity		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2019-2028	2029-2038	20-year total
Water	Asset Operating Costs	22.4	23.3	24.0	25.1	26.0	27.3	28.1	29.1	30.0	31.1	267	394	661
	Maintenance Costs	17.7	18.4	19.0	19.8	20.6	21.5	22.2	23.0	23.8	24.7	211	307	517
	Employee Related Costs	27.7	28.6	29.5	30.5	31.5	32.6	33.6	34.6	35.7	36.9	321	482	803
	Other Expenses	13.4	13.8	14.2	14.6	15.1	15.6	16.0	16.5	16.9	17.5	153	235	389
Total Water		81.2	84.1	86.7	90.0	93.2	97.0	100.0	103.2	106.4	110.1	952	1,417	2,369
Wastewater	Asset Operating Costs	38.9	40.3	41.7	43.1	45.1	46.8	48.8	50.4	52.1	54.0	461	680	1,141
	Maintenance Costs	25.7	26.6	27.5	28.4	29.7	30.8	32.0	33.1	34.1	35.3	303	452	755
	Employee Related Costs	47.5	49.3	51.0	52.9	54.9	57.1	59.0	61.0	63.1	65.5	561	812	1,373
	Other Expenses	25.7	26.7	27.7	28.7	29.8	31.0	32.1	33.2	34.4	35.7	305	437	742
Total Wastewater		137.7	143.0	147.8	153.2	159.5	165.7	171.9	177.8	183.7	190.5	1,631	2,381	4,011
Watercare	Asset Operating Costs	61.3	63.6	65.7	68.3	71.1	74.1	76.9	79.5	82.1	85.1	728	1,075	1,802
	Maintenance Costs	43.4	45.0	46.5	48.3	50.3	52.3	54.3	56.1	57.9	60.0	514	758	1,272
	Employee Related Costs	75.1	77.9	80.5	83.4	86.4	89.7	92.6	95.7	98.8	102.4	882	1,293	2,176
	Other Expenses	39.1	40.5	41.8	43.3	44.9	46.6	48.1	49.7	51.3	53.2	459	672	1,131
Total Watercare		218.9	227.0	234.5	243.2	252.6	262.8	271.9	280.9	290.2	300.6	2,583	3,798	6,381

9.3. Capital expenditure forecasts

Watercare's capex forecast in the AMP for the period 1 July 2018 to 30 June 2028 is presented in real dollars (excluding inflation) and nominal dollars (including inflation) in the following two tables.

Inflation is applied at the Capital Goods Price Index per year (refer to section 9.1.2 above).

The capex forecast for the 2019-2028 period is \$4.8 billion (real) or \$5.8 billion (nominal). This excludes capitalised interest and is without deduction of the 5% capex efficiency/value for money savings target (refer section 9.1.3 above). The capex efficiency/value for money savings targets are deducted for the purpose of the financial forecasts. The first 10-year period forecasts, after deduction of the 5% capex efficiency/value for money savings targets, reduce to \$4.6 billion (real) or \$5.5 billion (nominal).

The tables show capex for growth, renewal and level of service, split into water, wastewater and shared activities. The shared services capex is allocated between the water and wastewater activities in proportion to depreciation on water and wastewater assets.

Over the 2019-2028 period, capex in nominal dollars – after deducting the 5% capex efficiency/value for money savings target – for the water activity is estimated at \$1,894 million (35%), and for the wastewater activity, \$3.583 million (65%).

The detailed 2018 – 2038 AMP can be found on our website, under: about us/ reports and publications. This provides a more in-depth explanation of why and where our capex programmes are being undertaken in the Auckland region.

Capital expenditure forecast summary – \$ millions (real – 2017/18 base)

Activity	Contributing Driver	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2019-2028	2029-2038	20-year total
Water	Growth	95.8	97.7	54.5	52.3	34.5	55.3	66.0	45.3	48.2	58.0	608	612	1,220
	Renewal	49.7	63.7	59.8	73.6	73.6	167.7	159.8	70.2	91.8	85.3	895	1,055	1,951
	Level of Service	16.7	12.6	1.5	2.8	6.4	22.7	23.1	2.2	2.4	2.0	92	76	169
Water Total		162.2	174.0	115.8	128.7	114.5	245.6	248.9	117.7	142.4	145.3	1,595	1,744	3,339
Wastewater	Growth	195.2	229.7	280.0	276.3	220.0	141.2	134.4	63.3	72.8	102.3	1,715	763	2,478
	Renewal	64.9	60.8	79.8	71.1	88.6	105.6	87.3	75.4	84.0	65.2	783	635	1,417
	Level of Service	15.0	36.4	79.1	87.1	78.7	77.0	96.1	34.5	32.7	33.8	570	10	580
Wastewater Total		275.1	326.9	439.0	434.4	387.2	323.8	317.8	173.2	189.4	201.2	3,068	1,408	4,476
Shared services	Growth	2.6	2.5	1.4	2.2	3.0	4.0	4.0	3.3	3.1	3.0	29	25	54
	Renewal	10.5	9.9	5.7	8.7	12.1	15.9	16.0	13.3	12.3	11.8	116	100	216
	Level of Service	31.7	9.2	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43	0	43
Shared services Total		44.8	21.5	9.2	10.8	15.1	19.8	20.0	16.6	15.4	14.8	188	125	313
Watercare	Growth	293.6	329.9	335.9	330.8	257.5	200.4	204.4	111.9	124.0	163.3	2,352	1,400	3,752
	Renewal	125.1	134.3	145.4	153.3	174.2	289.1	263.2	158.9	188.1	162.3	1,794	1,790	3,584
	Level of Service	63.5	58.2	82.7	89.9	85.1	99.6	119.2	36.7	35.0	35.7	706	86	792
Total before assumed efficiency savings		482.2	522.5	564.0	573.9	516.8	589.2	586.8	307.5	347.2	361.4	4,851	3,277	8,128
Efficiency/value for money savings target		24.1	26.1	28.2	28.7	25.8	29.5	29.3	15.4	17.4	18.1	243	164	406
Watercare Total - financial projections		458.1	496.3	535.8	545.2	490.9	559.7	557.5	292.2	329.9	343.3	4,609	3,113	7,722

With efficiency/value for money savings target and Shared Services capex allocated to Water and Wastewater activities

Activity	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2019-2028	2029-2038	20-year total
Water	168.6	172.3	113.0	125.7	113.6	239.7	242.9	117.2	140.3	142.8	1,576	1,697	3,273
Wastewater	289.5	324.1	422.9	419.5	377.3	320.0	314.5	174.9	189.6	200.4	3,033	1,416	4,449
Watercare Total - financial projections	458.1	496.3	535.8	545.2	490.9	559.7	557.5	292.2	329.9	343.3	4,609	3,113	7,722

Values exclude capitalised interest.

Capital expenditure forecast summary – \$ millions (nominal)

Activity	Contributing Driver	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2019-2028	2029-2038	20-year total
Water	Growth	99.1	104.9	60.5	60.2	40.8	67.4	83.0	58.5	63.9	79.0	717	976	1,694
	Renewal	51.5	68.3	66.5	84.7	87.1	204.5	201.0	90.6	121.7	116.2	1,092	1,733	2,825
	Level of Service	17.3	13.6	1.6	3.2	7.6	27.6	29.1	2.9	3.1	2.7	109	129	238
Water Total		167.9	186.8	128.6	148.1	135.5	299.5	313.0	151.9	188.7	198.0	1,918	2,838	4,757
Wastewater	Growth	202.1	246.5	311.1	318.0	260.5	172.3	169.1	81.6	96.4	139.4	1,997	1,263	3,260
	Renewal	67.2	65.2	88.7	81.8	104.9	128.8	109.8	97.3	111.3	88.7	944	1,057	2,001
	Level of Service	15.6	39.1	87.9	100.2	93.1	93.9	120.9	44.5	43.3	46.0	684	17	701
Wastewater Total		284.8	350.8	487.7	500.0	458.6	394.9	399.7	223.4	251.0	274.1	3,625	2,337	5,962
Shared services	Growth	2.7	2.7	1.6	2.5	3.6	4.8	5.0	4.3	4.1	4.0	35	41	76
	Renewal	10.9	10.6	6.3	10.0	14.3	19.4	20.1	17.2	16.3	16.1	141	164	306
	Level of Service	32.8	9.9	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45	0	45
Shared services Total		46.4	23.1	10.3	12.5	17.8	24.2	25.2	21.5	20.4	20.2	222	206	427
Watercare	Growth	303.9	354.1	373.2	380.7	304.9	244.5	257.1	144.4	164.4	222.4	2,750	2,280	5,030
	Renewal	129.5	144.2	161.5	176.4	206.3	352.6	330.9	205.1	249.3	221.1	2,177	2,954	5,131
	Level of Service	65.7	62.5	91.9	103.4	100.7	121.5	149.9	47.3	46.4	48.7	838	146	984
Total before assumed efficiency savings		499.0	560.8	626.5	660.5	612.0	718.6	737.9	396.8	460.1	492.2	5,765	5,381	11,146
Efficiency/value for money savings target		25.0	28.0	31.3	33.0	30.6	35.9	36.9	19.8	23.0	24.6	288	269	557
Watercare Total - financial projections		474.1	532.7	595.2	627.5	581.4	682.7	701.0	377.0	437.1	467.6	5,476	5,112	10,588

With efficiency/value for money savings target and Shared Services capex allocated to Water and Wastewater activities

Activity	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2019-2028	2029-2038	20-year total
Water	174.5	184.9	125.5	144.7	134.5	292.4	305.5	151.2	185.9	194.6	1,894	2,763	4,656
Wastewater	299.6	347.8	469.7	482.8	446.8	390.3	395.5	225.7	251.2	273.0	3,583	2,349	5,932
Watercare Total - financial projections		474.1	532.7	595.2	627.5	581.4	682.7	701.0	377.0	467.6	5,476	5,112	10,588

Values exclude capitalised interest.

9.4. Revenue forecasts

Watercare's forecast revenue for the period 1 July 2018 to 30 June 2028 is shown in the following table:

Revenue, \$ million	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2019-2028
Water supply revenue	160	166	173	180	187	195	202	210	218	227	1,917
Wastewater service revenue	348	365	382	400	420	441	461	483	505	530	4,335
Infrastructure Growth Charges	96	101	103	108	105	106	105	105	104	112	1,044
Subvention receipts	6	7	7	10	11	12	13	16	17	23	124
Other	22	23	24	24	25	26	27	28	29	30	259
Total Revenue (excluding vested assets)	631	662	688	722	748	780	809	842	873	923	7,679
Vested Assets (non-cash)	20	21	21	22	23	24	25	25	26	27	235
Total Revenue	651	683	710	744	771	804	833	868	900	950	7,914

9.4.1. Water and wastewater service charges

Revenue from water and wastewater service charges are forecast to increase because of:

- Projected price increases
- Population growth, offset by per-capita consumption reductions (refer section 9.1.1 above).

As outlined in the Council's 10-year LTP, our projected price increases over the period are:

- For water, an average of 2.5% per year
- For wastewater, an average of 3.3% per year.

This represents an overall average annual price increase for combined water and wastewater of 3% per year for a typical household.

Refer to Appendix 2 for 2018/19 water and wastewater prices.

9.4.2. Infrastructure Growth Charges

IGC prices are forecast to increase by 3% per year up to and including 2021/22 (refer to Appendix 2 for 2018/19 IGC rates). After that, we do not expect significant increases for the remainder of the LTP period, to avoid over-recovering the cost of growth from new connections.

The rate of growth in the number of full IGC equivalents is assumed to lag behind the rate of population growth. This partially reflects the trend over recent years of new house builds not keeping up with population growth but also that more apartments and units are being built

that may be entitled to a reduced IGC rate (residential units less than 65m² will be charged two-thirds of a full IGC).⁶

9.4.3. Subvention receipts

Watercare allows the Auckland Council tax group to access our tax losses by way of tax loss offset and subvention payments to us. Actual amounts of tax loss offset and subvention payments are determined post balance date when the respective income tax calculations are completed by the parties. Under the agreement with council, subvention income of 45 cents per dollar of the tax impact of the losses sold is paid to us by the Auckland Council tax group.

The consideration we receive for tax losses represents a reasonable return to enable us to meet our obligations under S57 of the LGACA.

Forecasts for subvention receipts are based on Auckland Council's estimates of taxable profit available for offset within the Auckland Council tax group.

9.4.4. Other revenue

Other revenue includes laboratory income and user charges such as new meters and service connections, meter relocations, wastewater audits, trade-waste monitoring, and administration fees. Other revenue growth is forecast to be in line with water demand growth and prices are estimated to increase at the same rate as the Cost Price Index (refer to section 9.1.2 above).

Refer to Appendix 2 for 2018/19 prices for 'Other Charges'.

9.5. Debt

Watercare inherited the water and wastewater assets of the previous Local Network Operators (LNOs) and councils as a result of the amalgamation of Auckland's local government on 1 November 2010. It also took over the debts of the LNOs and a portion of the debt of the councils. Watercare's initial debt, as an integrated provider on 1 November 2010, was \$1.236 billion.

Net debt was \$1.613 billion at 30 June 2018 (refer to Watercare 2018 Annual Report). It is forecast to increase to \$3.406 billion by 30 June 2028.

\$ million	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Debt	1,767	1,962	2,213	2,487	2,719	3,020	3,344	3,372	3,389	3,406

Refer to Appendix 1 for commentary on applicable debt ratios and measures.

⁶ In the 12 months to April 2018, apartments, townhouse units and retirement village units accounted for 52% of new residential dwellings, compared with 18% in the 12 months to April 2011. *NZ Herald* 7 June 2018.

9.6. Asset values

The value of property, plant and equipment (PP&E) at 30 June 2018 was \$9.9 billion (refer to Watercare 2018 Annual Report), including capital work in progress of \$452 million. The value will increase each year through capex spend, capitalised interest and vested assets, and every three years by revaluation to the ODRC (refer to section 9.1.4 above), offset by depreciation and a small provision for asset write-off. The value of PP&E is forecast to be \$15.5 billion by 30 June 2028.

Total assets at 30 June 2018 were \$10.1 billion and are forecast to increase to \$15.7 billion by 30 June 2028.

APPENDIX 1. Financial ratios and performance measures

The final revenue price path needs to result in key prudential financial ratios and measures being kept within acceptable bands. This is in order to keep future debt at levels that will not stifle capacity to continue meeting our obligations under the LGACA S57. Watercare maintains appropriate financial thresholds in the following key areas which impact the level of future expenditures, fees and charges, and borrowings.

Funds from operations ratio

Funds from operations (FFO) broadly means the net amount of cash revenue and cash expenses. The FFO ratio is the FFO divided by gross interest cost. This measures our ability to generate sufficient cash to service debt. Our established price path modelling has been based on maintaining the FFO ratio at ≥ 3.0 . Our planned average FFO over the 10-year LTP period is 3.7.

Gearing

A company's gearing is the relationship between its levels of debt and equity. High gearing will normally signify reduced financial flexibility and the need to alter levels of future expenditures, fees and charges, and borrowings to reduce gearing. Gearing is usually expressed as the ratio of debt to debt plus equity. We target a debt to debt plus equity ratio of no more than 28%.

Our forward debt projections reflect a prudent debt-to-debt-plus-equity percentage, trending to 26% at the end of 2028 from 19% at 30 June 2018. The average over the 10-year period is forecast to be 25%.

Debt to revenue ratio

Our shareholder, Auckland Council, reports its financial performance in relation to various prudential benchmarks. A key measure for council is its net debt as a percentage of total revenue. The sustainable management of debt presents a major challenge for council to make progress on new investment to meet the most pressing needs of Auckland. Its approach to managing this challenge is to maintain an AA credit rating from Standard & Poor's (or similar rating from an independent rating agency). To ensure that debt levels continue to remain prudent and sustainable, the council has set a prudential limit of group debt being less than 2.7 times group revenue. Breaching this ratio is likely to increase interest costs.

Watercare is consolidated with the Auckland Council group for this measure, for credit rating purposes. All of our new long-term debt is sourced from Auckland Council. Accordingly, we have high regard to alleviating council's debt to revenue challenges. The Auckland Council group's forecast debt to revenue target is not breached throughout the LTP period, even though Watercare's debt to revenue ratio is predicted to increase from 2.6 to 3.7 by 30 June 2028. Our increasing ratio is mainly due to high capital expenditure on the planned Central Interceptor during 2019 to 2025.

Number of years taken to repay existing debt

We set our revenue price path at a level so that debt, taken at any point of time, is fully repaid from service charges over a period of about one generation (assumed as 25 years). On average then, each generation repays a generation's worth of debt.

The number of years it will take us to repay existing debt is currently 18 years, at the lower end of the generation range. However, the price path pre-empts high capital expenditure over 2019 to 2025 associated with the Central Interceptor, during which the years taken to repay debt (existing at the time) will tend towards 25 years. This is a logical consequence of aligning an even revenue path with an uneven capex profile.

Comparison of financial ratios and other measures - between current 2018 to 2028 LTP and previous 2015 to 2025 LTP

The following tables compare financial measures in the 2018 - 2028 LTP with the previous 2015 - 2025 LTP. The comparison shows only two forecast years, 2024/25 and 2027/28, being the final year for each 10-year period. The measures between the two LTPs are reasonably consistent for each year.

Measure	Year 2024/25		Year 2027/28	
	2018-2028 LTP	2015-2025 LTP	2018-2028 LTP	2015-2025 LTP
FFO ratio	3.3	3.1	3.6	3.3
Debt to debt + equity	28%	26%	26%	26%
Debt to revenue ratio	4.1	3.8	3.7	3.5
Non-current assets \$m	\$14.2	\$14.4	\$15.5	\$15.7
Debt \$m	\$3.3	\$3.1	\$3.4	\$3.3
Equity \$m	\$8.6	\$8.8	\$9.5	\$9.4

Number of years to repay existing debt, as from the start of the LTP period	years
2018-2028 LTP	18
2015-2025 LTP	23

APPENDIX 2. Watercare charges as of 1 July 2018

Watercare charges can be found on our website, under: manage account/ our charges.

2018-2019

Domestic

water and wastewater charges and IGC

Prices are effective from 1 July 2018. For more information see clause 3.1 of the Customer Contract.

Water and wastewater charges

Water

Volumetric charges, per 1000 litres \$1.517, including GST

Wastewater

Customers who have water meters:

Fixed charge per meter: \$218 per year, including GST

Volumetric charge: \$2.618 per 1000 litres, including GST

Domestic wastewater volume is calculated at 78.5 per cent* of the incoming water volume, as measured by the water meter. This assumes that, on average, 78.5 per cent of the water that enters the home goes down the drain via showers, baths, washing machines, dishwashers, toilets, sinks, etc.

* Apartments, charged at 95 per cent, are among the exceptions.

Customers who do not have a metered water supply but are connected to the wastewater network:

Fixed charge: \$668 per year, including GST

Infrastructure growth charges (IGC)

Area	Infrastructure growth charges (per residential unit)**	
	Excluding GST	Including GST
Metropolitan ¹	\$11,680	\$13,432
Beachlands and Maraetai (wastewater only)	\$7,880	\$9,062
Clarks Beach (to 30 September 2018) ²	\$12,620	\$14,513
Franklin (excluding Clarks Beach, Paerata, Pukekohe and Bucklands) (to 30 September 2018) ²	\$13,540	\$15,571
Helensville and Parakai	\$22,080	\$25,392
Kawakawa Bay (wastewater only)	\$27,620	\$31,763
Northeast sub-regional ³	\$17,320	\$19,918
Omaha/Matakana/Point Wells (wastewater only)	\$7,660	\$8,809
Owhanake ⁴ (wastewater only)	\$25,340	\$29,141
Southwest sub-regional ³	\$18,740	\$21,551
Warkworth (to 30 September 2018) ³	\$14,000	\$16,100
Wellsford	\$18,556	\$21,344

Infrastructure growth charges (IGC) *continued*

Where a customer already has a wastewater connection and will not increase demand on the wastewater network, or where a wastewater connection is unavailable, an application for a water connection will be charged a water-only infrastructure growth charge.

No further connections are available in **Bombay, Kingseat, Muriwai, Waiheke⁴ and Waiwera.**

¹The Metropolitan network area covers customers supplied by Watercare's contiguous water supply system and/or serviced by any of Watercare's wastewater treatment plants at Mangere, Rosedale, Army Bay or Pukekohe. It includes the Hibiscus Coast, Kumeu, Huapai, Riverhead, Paerata, Pukekohe and Bucklands.

²The Southwest sub-regional IGC replaces the Clarks Beach and Franklin IGCs from 1 October 2018. The Clarks Beach and Franklin IGCs apply for new applications for connections to our networks in these areas (where a Metropolitan IGC doesn't apply) where the IGC is paid before 1 October 2018 and where, at the time of application, there is an approved building consent for the property or an existing private onsite water or wastewater system.

³The Northeast sub-regional IGC replaces the Snells Beach IGC from 1 July 2018 and the Warkworth IGC from 1 October 2018. The Warkworth IGC applies to new applications for connections to our Warkworth networks where the IGC is paid before 1 October 2018 and where, at the time of application, there is an approved building consent for the property or an existing private onsite water or wastewater system.

⁴The Owhanake (Waiheke) IGC is payable in the case of existing non-domestic connections, where that connection first becomes liable for the IGC (for example, where demand increases) under Watercare's Infrastructure Growth Charge terms and conditions included in our Customer Contract. New connections will become available after construction of staged upgrades to the wastewater treatment plant are completed.

****** For more information please visit www.watercare.co.nz and search for 'Infrastructure Growth Charges'. The IGC terms and conditions are on page 11 of our Customer Contract, which can be found by visiting www.watercare.co.nz and searching for 'Customer Contract'.

Non-domestic water and wastewater charges and IGC

Prices are effective from 1 July 2018. For more information see clause 3.1 of the Customer Contract.

Water and wastewater charges

Water

	<i>Excluding GST</i>	<i>Including GST</i>
Volumetric charge, per 1,000 litres:	\$1.319	\$1.517

Wastewater

Pricing plan	Annual fixed charge (per meter)		Volumetric wastewater charge (per kL)		Suited to approximate annual wastewater volume
	<i>Excluding GST</i>	<i>Including GST</i>	<i>Excluding GST</i>	<i>Including GST</i>	
Low user plan	\$190.00	\$218.00	\$4.26	\$4.899	less than 1,362kL
Moderate user plan	\$475.00	\$546.25	\$4.05	\$4.658	1,362kL up to 10,080kL
High user plan	\$6,725.00	\$7,733.25	\$3.43	\$3.945	10,080kL up to 88,399kL
Industry plan	\$72,140.00	\$82,961.00	\$2.69	\$3.094	88,399kL or more
Notional*	\$781.00	\$897.60	n/a	n/a	unmetered water source

* Non-domestic customers who do not have a metered water supply but are connected to the wastewater network will typically pay the notional fixed charge. This charge may be adjusted to better reflect actual discharge volumes.

Trade waste

Trade waste is now charged as wastewater under the non-domestic wastewater tariff (outlined above); this means there are no separate charges for trade waste carriage and treatment. Charges for trade-waste administration and monitoring apply.

Infrastructure growth charges (IGC)

Area	Infrastructure growth charges (per development unit equivalent)**	
	<i>Excluding GST</i>	<i>Including GST</i>
Metropolitan ¹	\$11,680	\$13,432
Beachlands and Maraetai (wastewater only)	\$7,880	\$9,062
Clarks Beach (to 30 September 2018) ²	\$12,620	\$14,513
Franklin (excluding Clarks Beach, Paerata, Pukekohe and Bucklands) (to 30 September 2018) ²	\$13,540	\$15,571
Helensville and Parakai	\$22,080	\$25,392
Kawakawa Bay (wastewater only)	\$27,620	\$31,763
Northeast sub-regional ³	\$17,320	\$19,918
Omaha/Matakana/Point Wells (wastewater only)	\$7,660	\$8,809
Owhanake ⁴ (wastewater only)	\$25,340	\$29,141
Southwest sub-regional ³	\$18,740	\$21,551
Warkworth (to 30 September 2018) ³	\$14,000	\$16,100
Wellsford	\$18,556	\$21,344

Infrastructure growth charges (IGC) *continued*

Where a customer already has a wastewater connection and will not increase demand on the wastewater network, or where a wastewater connection is unavailable, an application for a water connection will be charged a water-only infrastructure growth charge.

No further connections are available in **Bombay, Kingseat, Muriwai, Waiheke⁴ and Waiwera.**

¹The Metropolitan network area covers customers supplied by Watercare's contiguous water supply system and/or serviced by any of Watercare's wastewater treatment plants at Mangere, Rosedale, Army Bay or Pukekohe. It includes the Hibiscus Coast, Kumeu, Huapai, Riverhead, Paerata, Pukekohe and Bucklands.

²The Southwest sub-regional IGC replaces the Clarks Beach and Franklin IGCs from 1 October 2018. The Clarks Beach and Franklin IGCs apply for new applications for connections to our networks in these areas (where a Metropolitan IGC doesn't apply) where the IGC is paid before 1 October 2018 and where, at the time of application, there is an approved building consent for the property or an existing private onsite water or wastewater system.

³The Northeast sub-regional IGC replaces the Snells Beach IGC from 1 July 2018 and the Warkworth IGC from 1 October 2018. The Warkworth IGC applies to new applications for connections to our Warkworth networks where the IGC is paid before 1 October 2018 and where, at the time of application, there is an approved building consent for the property or an existing private onsite water or wastewater system.

⁴The Owhanake (Waiheke) IGC is payable in the case of existing non-domestic connections, where that connection first becomes liable for the IGC (for example, where demand increases) under Watercare's Infrastructure Growth Charge terms and conditions included in our Customer Contract. New connections will become available after construction of staged upgrades to the wastewater treatment plant are completed.

****** For more information please visit www.watercare.co.nz and search for 'Infrastructure Growth Charges'. The IGC terms and conditions are on page 11 of our Customer Contract, which can be found by visiting www.watercare.co.nz and searching for 'Customer Contract'.

Other charges

New connections, development, administration and other charges

Prices are effective from 1 July 2018. For more information see clause 3.1 of the Customer Contract.

All charges apply to domestic and non-domestic customers unless otherwise stated.

New connections and development charges

All property owners or developers applying for new connections to Watercare's networks are liable for our infrastructure growth charge (IGC). The IGC is applicable to all new developments connecting to our networks, or to existing non-domestic customers that increase demand for water and wastewater.

Application processing fees and site inspections (per hour, one hour minimum)

	Excluding GST	Including GST
Engineer	\$139.00	\$159.85
Technician	\$124.00	\$142.60

This fee applies in addition to the charges listed below.

New water meters (without backflow prevention, domestic only) including installation*

	Excluding GST	Including GST
20mm water meter onto existing service lead	\$402.00	\$462.30
20mm water meter and install new service lead	\$900.00	\$1,035.00

New water meters with a backflow prevention device (includes irrigation meters) including installation*

	Excluding GST	Including GST
20mm water meter and backflow device and install new service lead	\$1,292.00	\$1,485.80

Water meter relocation*

	Excluding GST	Including GST
15 to 25mm meter relocated within two metres of an existing service lead	\$348.00	\$400.20
15 to 25mm meter relocated more than two metres of an existing service lead	Price on application	

Water meter disconnection*

	Excluding GST	Including GST
15 to 25mm water meter disconnection	\$348.00	\$400.20

Subdivision and network extension connections

Connection of a water or wastewater network extension to the public network	Price on application	
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All other water connections (including non-standard connections)

All other water meter sizes, service lead installations, relocations and disconnections Price on application

*These are standard fees and additional charges may apply depending on the nature of the site. An example of a non-standard installation involves (but is not limited to) one or more of the following: a road crossing, traffic management, arborist services, other utility service providers or hindrance by above ground structures.

Wastewater

	Excluding GST	Including GST
Pressure wastewater collection boundary kit	Price on application	
CCTV inspection of wastewater line (per inspection)	\$341.00	\$392.15

Administration

	Excluding GST	Including GST
Additional copy of account	\$4.35	\$5.00
Account processing fee	\$17.39	\$20.00
Processing of refunds (first refund no charge)	\$21.74	\$25.00
Special meter reading fee	\$21.74	\$25.00
Rain tank meter application processing, per application	\$43.48	\$50.00
Debt collection fee (plus agency cost)	\$58.26	\$67.00
Legal collection fee (plus agency cost)	\$111.30	\$128.00
New product approval fee (non-domestic only)	Price on application	
Administration fee on any balance unpaid after the due date, per month or part of the month, minimum charge (otherwise 1% of overdue amount)	\$6.96	\$8.00

Other charges

Meter testing

	Excluding GST	Including GST
15 to 25mm (site test)	\$140.00	\$161.00
15 to 25mm (lab test)	\$324.00	\$372.60
Larger than 25mm	Price on application	
Aborted test	\$79.00	\$90.85

Wastewater audit

	Excluding GST	Including GST
Two-hour minimum initial charge	\$278.00	\$319.70
Hourly charge thereafter	\$139.00	\$159.85

Backflow prevention

	Excluding GST	Including GST
Annual backflow prevention device testing (per device, per visit):		
Business hours	\$118.00	\$135.70
After hours	\$214.00	\$246.10
Site inspections and surveying:		
Engineer – per hour	\$139.00	\$159.85
Technician – per hour	\$124.00	\$142.60
Repair of backflow prevention device due to normal wear and deterioration	Price on application	
New backflow prevention device for existing water meters, all sizes and hazard levels	Price on application	

Tanker filling stations (additional volumetric charges at the standard water rate apply)

	Excluding GST	Including GST
Annual permit – fixed charge (per year)	\$1,546.00	\$1,777.90
Tanker filling station bond (reimbursable on termination of the agreement)	\$1,000.00	n/a

Fire hydrant use (additional volumetric charges at the standard water rate apply)

	Excluding GST	Including GST
Standpipe hire – 65mm with meter and backflow (per year)	\$1,261.00	\$1,450.15
Standpipe hire – 25mm with meter and backflow (per year)	\$1,087.00	\$1,250.05

Trade-waste agreements

	Excluding GST	Including GST
Processing, monitoring and attendance (per hour)	\$139.00	\$159.85
Sampling (per sampling visit)	Price on application	
Analysis	Price on application	

Septage

	Excluding GST	Including GST
Septage charges (Rosedale and Pukekohe wastewater treatment plants) (per m ³)	\$30.00	\$34.50

General site inspections, surveying and other activities (per hour, one hour minimum)

	Excluding GST	Including GST
Engineer	\$139.00	\$159.85
Technician	\$124.00	\$142.60

Invoicing and payment

We will send you a bill for your water, wastewater and other associated charges every month via email or post. Your bill will include a breakdown of how these charges are calculated. Charges associated with connections will be billed separately.

If you have trouble paying your bill please contact us. We will ensure that any customer unable to pay their bill can discuss options with us before we try to recover any outstanding payment.

Payment due date

Payment of your monthly bill is due within 21 days of the bill date. Payment of charges associated with connections is due within 14 days of the bill date. Please allow a minimum of two working days for the payment to appear on your account.

Administration fees

Any balance unpaid after the due date may incur an administration fee of \$8.00 or 1% of the overdue amount, whichever is greater, per month or part of a month.

Terms

This leaflet is subject to any changes that we are entitled to make in accordance with our customer contract which is available upon request or can be viewed online at www.watercare.co.nz.