

Draft Price and Service Plan 3

1 July 2018 to 30 June 2021



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List of acronyms and abbreviations

Acronym	Meaning
ABS	Australia Bureau of Statistics
ADWG	Australian Drinking Water Guidelines 2011
AER	Australian Energy Regulator
AMIS	Asset Management Information System
ANCOLD	Australian National Committee on Large Dams
BA	Building Application
BWA	Boil Water Alert
Capex	Capital Expenditure
CCW	Certificate for Certifiable Works
COTA	Council on the Ageing
CPI	Consumer Price Index
CWC	Capital Works Committee
DALY	Disability Adjusted Life Years
DHHS	Department of Health and Human Services
DPIPWE	Department of Primary Industries, Parks, Water and Environment
DRP	Debt Risk Premium
DWQ	Drinking Water Quality
DWQMP	Drinking Water Quality Management Plan
EPA	Environment Protection Authority
ERAWA	Economic Regulation Authority of Western Australia
ESC	Essential Services Commission of Victoria
ESCOSA	Essential Services Commission of South Australia
ET	Equivalent Tenement
FTE	Full Time Equivalent
GBFA	Gross Building Floor Area
HBT	Health Based Target
IAP2	International Association for Public Participation
IPART	Independent Pricing and Regulatory Tribunal of New South Wales
LGA	Local Government Area
LGAT	Local Government Association of Tasmania
LGF	Loan Guarantee Fees
LTSP	Long Term Strategic Plan
MOS	Management Operating System
MOU	Memorandum of Understanding
NPV	Net Present Value
OTCC	OTTER Customer Consultative Committee

Acronym	Meaning
Opex	Operating Expenditure
OTTER	Office of the Tasmanian Economic Regulator
PA	Plumbing Application
PHA	Public Health Alert
POA	Price on application
PPI	Producer Price Index
PSP2	Price and Service Plan 2 (1 July 2015 to 30 June 2018)
PSP3	Price and Service Plan 3 (1 July 2018 to 30 June 2021)
PSP4	Price and Service Plan 4 (1 July 2021 to 30 June 2024)
PSP5	Price and Service Plan 5 (1 July 2024 to 30 June 2027)
QCA	Queensland Competition Authority
RAB	Regulated Asset Base
RBA	Reserve Bank of Australia
RFR	Risk Free Rate
SCADA	Supervisory Control and Data Acquisition
STP	Sewage Treatment Plant
TasCorp	Tasmanian Public Finance Corporation
TasCOSS	Tasmanian Council of Social Service
TDWQG	Tasmanian Drinking Water Quality Guidelines 2015
TER	Tasmanian Economic Regulator
THA	Tasmanian Hospitality Association
TSIC	Tasmanian Seafood Industry Council
WACC	Weighted Average Cost of Capital
WSAA	Water Services Association of Australia
WTP	Water Treatment Plant
WWMP	Wastewater Management Plan

A note on price and expenditure data in this document

Unless otherwise stated, all expenditure forecasts, revenue forecasts and prices throughout our Price and Service Plan 3 (PSP3) submission are presented in nominal (not real) terms. This means that our estimates are adjusted to include past and forecast inflation. This is easier for customers and stakeholders to relate to because most costs experienced in day-to-day life are also presented in nominal terms.

1 Introduction

Key points

- TasWater was formed on 1 July 2013. We are only part way through the reform journey that many of our Australian counterparts began over 20 years ago
- We have made significant progress since our formation to improve water and sewerage services in Tasmania. However, we operate in a unique environment among comparable water utilities with the following challenges:
 - We have significantly more assets per customer due largely to Tasmania's dispersed population and geography. This creates diseconomies of scale that result in higher costs for us relative to similar water utilities
 - We start from a low compliance base, having inherited major challenges to meet legislative obligations for water quality, environment and dam safety
 - Affordability is a key issue for many of our customers and minimising price impacts is a high priority for them
- To address these challenges and reflect customer views, we developed a 20 Year Long Term Strategic Plan (LTSP) to balance prices, service standards and the time to reach full compliance. Our LTSP is described in Section 1.5 and a summary is available at Appendix 1
- Over the duration of our LTSP, we will deliver the following outcomes to customers:
 - Effluent compliance of 93 per cent by volume measured against EPA standards¹
 - Microbiological compliance of 100 per cent for drinking water systems
 - All dams are deemed safe in accordance with Australian standards
 - Unplanned water supply interruptions and sewer main breaks and chokes reduced to the average level for large Australian water utilities
 - Price increases trending to CPI or less from FY2027/28 and beyond
- In the first three years of the LTSP, which forms the PSP3 period and is the focus of this document, we will make substantial improvements in drinking water, environmental and dam safety compliance. We will also manage price rises and maintain prudent debt levels as we transition to cost-reflective pricing by PSP5 in line with our legislative obligations and best practice economic regulation
- The key outcomes we will deliver in the LTSP and PSP3 are discussed further in Section 1.6

This document presents information about TasWater's PSP3 to our customers, stakeholders and the Tasmanian Economic Regulator (TER). It commits to a set of outcomes and prices to be delivered over the regulatory period from 1 July 2018 to 30 June 2021.

PSP3 is required by the Economic Regulator, who determines regulated revenues and prices for water and sewerage services in Tasmania after evaluating our submission.

1.1 About TasWater

TasWater is registered as a proprietary limited company under the *Corporations Act 2001* (Cth) owned by the 29 local government councils of Tasmania and with an independent Board of Directors.

We provide water and wastewater services to residential and business customers across Tasmania. Our core business is to provide two essential services to Tasmanians:

¹ The measurement of effluent compliance currently differs between TasWater and the Environmental Protection Authority (EPA) Tasmania. The two measures both use seven parameters for an effluent sample. However, the EPA measure, used in the Office of the Tasmanian Economic Regulator's (OTTER) State of the Industry Report, allows for a partial pass where some of the parameters are compliant. TasWater's measure requires all parameters to be compliant to 'pass'. As of 1 July 2017, EPA Tasmania and the State of the Industry Report will use TasWater's more stringent measure. The effluent compliance figures used throughout this document refer to TasWater's more stringent measure.

- The sourcing, treatment and reliable delivery of quality drinking water to our customers and
- The collection, transportation, treatment and safe return of wastewater to the environment.

We have 70 drinking water systems and supply water to more than 202,000 connections using a network of water mains over 6,200km in length. We have 112 sewage treatment plants and collect sewage from more than 177,000 connections using a network of sewer mains over 4,700km in length.

1.1 Our historical context and challenges

We commenced operations on 1 July 2013 following the merger of the three former regional Tasmanian water and sewerage corporations (Ben Lomond Water, Cradle Mountain Water and Southern Water) and the common services provider company, Onstream.

We operate in a unique environment compared to other large water utilities in Australia. We have significantly more assets per customer than our mainland counterparts (eg treatment plants, dams). In 2015, a survey of water utilities in Australia found that although our population was between two to three per cent of the total population surveyed, we had 38% of water treatment plants and 37% of sewage treatment plants, but only two per cent of the total revenue.

All else being equal, this large number of small scale assets creates higher costs for us than similar water utilities. A large proportion of our inherited infrastructure is also ageing and in poor condition. This results in customer service and compliance levels that are well behind the levels delivered by other major Australian water utilities.

Since our formation, we have commenced the task of addressing these challenges. In our first year we successfully merged the four former corporations into a single statewide entity while maintaining a focus on our customers. In our second year we delivered on our savings targets while making major improvements in safety, fault response times, sewage spill reductions and Ombudsman complaints. In our third year of operations we used the learnings and knowledge gained in the first two years of operation to build a 10 year plan to address Tasmania's water and sewerage infrastructure challenges.

However, we still have much to do to address the challenges that face us and to deliver the outcomes that our customers and stakeholders expect. This document articulates our updated long term plan, our LTSP, and puts the PSP3 into context within the LTSP.

1.2 Our regulatory framework

We are governed by a range of legislative and regulatory instruments, including the *Water and Sewerage Industry Act 2008* (Industry Act). The Industry Act provides a regulatory framework covering the provision of water and sewerage services. It is similar to utility regulatory frameworks in other jurisdictions and includes an economic regulator and a number of technical regulators. Our key regulators are:

- The TER who regulates the prices we can charge our customers and the standards of service we provide to our customers
- The EPA who regulates environmental matters such as sewage treatment plant licensing and compliance
- The Department of Health and Human Services (DHHS) who regulates drinking water quality and
- The Department of Primary Industries, Parks, Water and Environment (DPIPWE) who regulates water allocation licensing and dam safety.

Our compliance obligations and our engagement with the industry regulators (EPA, DHHS, DPIPWE) for PSP3 is discussed further in Chapter 3 (Regulatory Compliance).

We also comply with a number of other regulatory bodies such as Council Environmental Health Officers and the Tasmania Fire Service. In addition, any customer that is not satisfied with the outcome of his or her complaint to TasWater can refer the matter to the Ombudsman.

1.3 Our strategic framework

Our vision is to be a trusted and respected provider of essential services that is making a positive difference to Tasmania. This vision reflects the strong desire of the Board and employees of TasWater to focus on what really matters for our owners, customers and the general community who are dependent on us for essential services.

To achieve our vision, we have a strategic framework to align our activities and investment with outcomes that matter to our customers (refer Table 1).

Table 1: TasWater strategic framework

Customer Promises	Customer Outcomes
Deliver a positive customer experience to you	You are satisfied with our service
	You find it easy to do business with us
	You are kept informed
Give you value for money	Your price increases are minimised
	The local economy benefits from our investment and capacity building
Provide you with safe drinking water and responsibly manage your sewage	Your drinking water is clean and safe to drink
	You have a reliable supply of water
	Your sewage is efficiently collected and transported
	Your sewage is treated and disposed of with minimal impact to the environment and its users
Build culture and skills for the long term benefit of Tasmania	Our work is conducted safely to protect our people, contractors and the communities we serve
	Our culture and capabilities support us to make a positive difference to Tasmania

We have assigned measures of success and targets to each outcome to demonstrate when the outcome will be achieved and to enable customers and stakeholders to assess our progress over time.

1.4 Our long term strategic plan

Our PSP3 submission is supported by the development of our LTSP which identifies customer outcomes to be delivered over a 20 year period and the resulting balance between prices, service standards and the time to reach full compliance.

We are very aware that our services must be affordable for our customers. However, we face some major challenges to ensure drinking water for all customers is clean and safe to drink, to reduce the impact of sewage treatment and disposal on the environment, to maintain a secure supply of water by managing the safety of our dams and to replace our ageing networks to provide reliable service to our customers.

While we are addressing many of these challenges through PSP2, at the start of PSP3 we will still have several substantial challenges to address including:

- In the 18 months leading up to PSP3, we will have removed all but six townships across the state from boil water or do not consume alerts. This leaves the remaining six townships to address early in the PSP3 period (by August 2018)
- Nine of our dams will still be above the level of tolerability prescribed by Australian National Committee on Large Dams Incorporated (ANCOLD) guidelines at the start of PSP3
- At the start of PSP3, we expect 62% of total effluent volume will be compliant with the EPA's licence discharge limits
- The rate of unplanned water supply interruptions and sewer mains breaks and chokes are above the median for similar sized water utilities in Australia and
- Many of our critical sewer pump stations adjacent to sensitive receiving waters are undersized and prone to overflow and are known to discharge onto beaches, recreational sites, schools and to shellfish leases.

It is not feasible for us to address all of these challenges in the short time period of PSP3 given the scale of expenditure required and the need to strike a balance with customer affordability. Our LTSP provides the framework for engaging with customers, stakeholders and regulators to prioritise these outcomes over the long term.

Our consultation for PSP3 (see Chapter 2) sought feedback from our customers and stakeholders on a range of topics relating to the outcomes. This included investment priorities associated with each outcome, acceptable price increases to achieve the outcomes and customer service standards related to the outcomes.

This feedback was an integral part of the development of our LTSP. We assigned quantitative measures to link each project in our capital program to the customer outcomes in our strategic framework. We then prioritised the capital projects by comparing their relative costs and benefits (that is, their contribution to achieving measures of success for each customer outcome).

The preferred scenario in our LTSP model contains a weighting to emphasise various compliance outcomes in accordance with the preferences expressed by our customers during consultation. The LTSP includes the following characteristics:

- Improving drinking water quality as highest priority (ie projects that contribute to achieving this priority receive a greater weighting)
- Improving environmental compliance and dam safety as an equal second priority (ie projects that contribute to achieving these priorities receive the same weighting – and slightly less than water quality projects)
- Maintaining service reliability with a focus on critical assets and high impact/sensitive environments in PSP3
- The individual projects in the LTSP also reflect priorities discussed with our regulators and
- Price increases limited to 4.6% per annum in PSP3 to balance affordability with risk mitigation and compliance improvement.

1.5 Key customer outcomes in the LTSP and PSP3

Our PSP3 submission sets out the prices, services, projects and outcomes to be delivered by 2021 in support of the long term outcomes articulated in our LTSP. Based on the preferences expressed by our customers, we will deliver the following outcomes over the 20-year duration of our LTSP:

- Effluent compliance of 93 per cent by volume measured against EPA standards

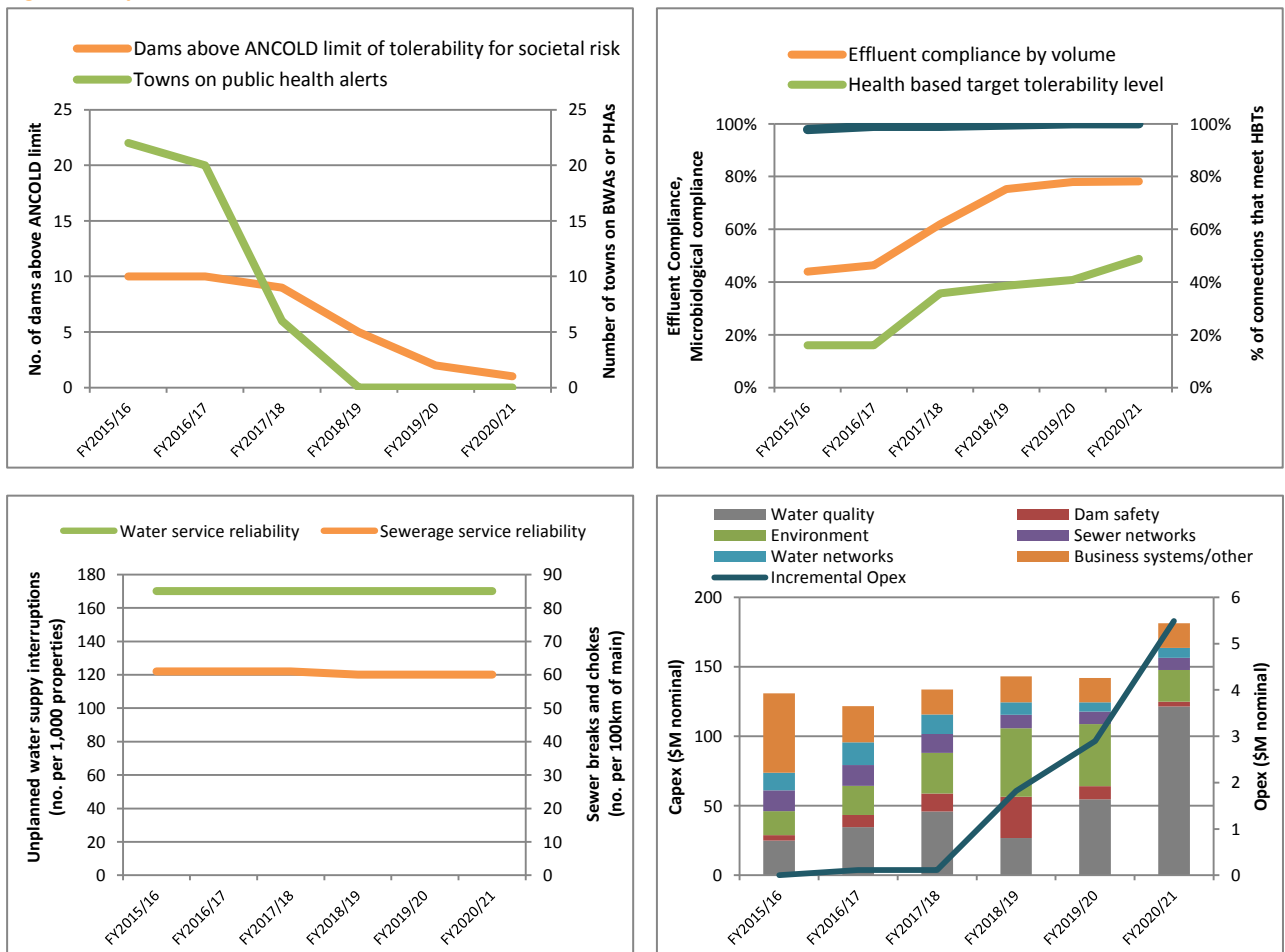
- Microbiological compliance of 100 per cent for drinking water systems
- All dams are deemed safe in accordance with Australian standards by FY2022/23
- Unplanned water supply interruptions and sewer main breaks and chokes reduced to the average level for large Australian water utilities and
- A managed transition to cost-reflective pricing, with price increases trending to the Consumer Price Index (CPI) rate of increase or less from FY2027/28 and beyond.

In the first three years of the LTSP, which forms the PSP3 period and is the focus of this document, we will deliver the following outcomes to customers:

- Effluent compliance of 78 per cent by volume measured against EPA standards and mitigation of environmental risks for 90 per cent of the EPA's top 20 sites
- Microbiological compliance of 100 per cent, removal of all boil water and public health alerts and a progressive reduction of public health risk in our water systems
- Risk reduction of all but one dam to within tolerable levels, with the remaining dam managed through interim measures to reduce its risk appropriately
- Maintain current service reliability standards by focusing investment on assets that, if they failed, would cause substantial service interruption or environmental impact and
- Limiting price increases to 4.6% per annum in PSP3 to achieve the above outcomes while managing impacts to customer bills and maintaining prudent debt levels as we transition to cost-reflective pricing by PSP5.

The customer outcomes and related expenditure in PSP2 and PSP3 are shown below. Please refer to Section 3 for more information on regulatory compliance outcomes, Section 4 for service standards, Section 6 for capital expenditure, Section 7 for operating expenditure and Section 9 for prices.

Figure 1: Key customer outcomes in PSP2 and PSP3



2 Customer and stakeholder consultation

Key points

- We consulted with a range of customers and stakeholders to understand their views on key issues such as service standards, investment decisions, tariffs and price and service trade-offs
- We used a Consultation Issues Paper, focus groups, individual discussions and a telephone survey statistically representative of our customer base to gather feedback
- This process helps customers appreciate the trade-offs that are necessary if we are to achieve the results they expect, and it allows us to see the impact our decisions have on our customers
- During consultation, customers and stakeholders told us in general that:
 - Our focus in PSP3 should be on maintaining and improving compliance outcomes (water quality, environment and dam safety)
 - Our targets for customer service standards should remain about the same as now
 - To achieve these outcomes, modest price increases are supported - but affordability remains a key issue for many customers who recognise that a careful balance is required between price increases, service standards and the time to reach full compliance
- We are committed to keeping bills as affordable as possible, but understand that even a modest price rise may be difficult for some customers to pay. Over the PSP3 period, we will review our Financial Hardship Policy in consultation with customers, stakeholders and the TER to ensure it reflects best practice
- We have addressed feedback from our customers and stakeholders in our PSP3 submission and this is summarised in Section 2.4

First and foremost, we are a provider of essential services to Tasmania. Customers are at the heart of our business and, correspondingly, customers are at the heart of the price and service plan process.

In developing our LTSP and PSP3, we consulted with a wide range of customers and stakeholders which helped us to understand their views on key issues. Our approach to engaging with customers and a summary of our consultation activities and the feedback we received is described in more detail below.

2.1 Our customer engagement framework

Our customer engagement framework for the LTSP and PSP3 used four primary components:

- Developing a Consultation Issues Paper to help customers and stakeholders think about key challenges (eg service outcomes, priority, prices) in their submissions
- Conducting focus groups and telephone surveys with representative cross-sections of customers in different locations
- Conducting one-on-one sessions with key stakeholders, peak bodies and regulators to have in-depth discussions and receive feedback on targeted issues in greater detail and
- Closing the loop by providing a summary of feedback received during engagement, an explanation of what feedback was taken up (or not), and why.

In line with accepted industry practice, our framework is based on the Community Engagement Spectrum developed by the International Association for Public Participation (IAP2). The Spectrum provides a framework to consider the purpose and desired outcome of the following engagement types:

- Inform – tell our story and provide information

- Consult – seek input to set and revise strategies, plans and priorities
- Involve – foster meaningful discussion with customers and stakeholders
- Collaborate – facilitate consensus with customers and stakeholders and
- Empower – place final decision making with the customers and stakeholders.

Our approach relied on the ‘Inform’ and ‘Consult’ parts of the Spectrum through the Consultation Issues Paper, focus groups and telephone survey. We also used the ‘Involve’ method through one-on-one interviews, workshops and forums with major customers, peak bodies and our regulators.

Our customer engagement approach also touched on the ‘Collaborate’ method specifically through the Tasmanian Water and Sewerage Industry Regulators Forums. Our aim for these forums was to achieve consensus (to the extent possible) between our regulators for our compliance priorities and proposed trade-offs in PSP3. This is discussed in more detail in Chapter 3 (Regulatory Compliance).

2.2 Summary of consultation activities undertaken

Our customer and stakeholder consultation activities for the LTSP and PSP3 were designed to maximise the level of engagement with the maximum number of customers and stakeholders in the available timeframes. A summary of our engagement activities is shown in the table below.

Table 2: Engagement activities undertaken

Activity	Number of customers and stakeholders involved
1. Providing general information on the basis and objectives of PSP3 to customers and stakeholders through newsletter inserts in bills, raising awareness of PSP3 and encouraging participation	Approximately 210,000 business and residential customers – overview information; 600 major customers and stakeholders – detailed information
2. Holding Focus Groups to explore customers’ perceptions, views and priorities concerning TasWater	40 customers over six focus groups
3. Preparing a Consultation Issues Paper to provide more detailed information and stimulate discussion	Available to all via TasWater’s website Advertised in three major newspapers, and letters and emails sent to major customers, peak bodies and government agencies to raise awareness of the Issues Paper
4. Providing the opportunity for anyone with access to the internet to comment through TasWater’s Yoursay website portal	Three comments received and responded to
5. Enabling anyone to comment via written submissions	Six submissions received, including five from Tasmanian local government bodies
6. Holding individual discussions with major customers and peak bodies representing the interests of specific groups, including low income, vulnerable and disadvantaged people, and various business sectors	11 major customers (12 approached) 10 peak body stakeholder discussions (12 approached)
7. Participating in the OTTER Customer Consultative Committee (OCCC) to provide information on the development of our LTSP and PSP3 submission and receive feedback from representative customers	Presentations to four OCCC meetings between September 2016 and May 2017 with up to eight OCCC members and two observers at each meeting
8. Undertaking telephone surveys of a statistically representative sample of business and residential customers	135 randomly selected business customers 406 randomly selected residential customers
9. Holding discussion workshops with representatives of peak bodies and state government departments	Workshops with three peak body representatives and four state government representatives
10. Holding an ongoing series of meetings and forums with organisations which regulate TasWater’s operations.	Regulator forums with the TER and each of the technical regulators (DHHS, DPIPWE and EPA)

Our approach for the four primary engagement methods (focus groups, issues paper, telephone survey and individual discussions) is described in more detail below.

2.2.1 Focus groups

Six exploratory focus groups were carried out with customers in early December 2016 to seek feedback on:

- Customers' understanding of relevant concepts including trade-offs between various areas of activity and to meet budgetary limits
- Customers' ability to think through the fact that TasWater needs to prioritise – what are the best words and context to use when describing this to them.

We held three focus groups with residential customers (one each in Hobart, Launceston and Devonport) and three focus groups with small and medium business customers (again in Hobart, Launceston and Devonport).

The focus groups were qualitative in nature and explored customer perceptions relating to TasWater's priorities, spending and trade-offs, bills and pricing, service levels, growth and development and trade waste.

2.2.2 Consultation issues paper

We published a Consultation Issues Paper for PSP3 on TasWater's Yoursay website² on 16 December 2016 and submissions closed on 17 February 2017. This document provided information on the major issues raised by customers and stakeholders in the focus groups and recent discussions and interactions. It was designed to provide PSP3 related information that may be of concern or interest to customers and stakeholders. The content of the paper included:

- TasWater's priorities – the relative importance of priorities such as protecting public health by providing safe and clean drinking water, and reducing environmental impact from discharges from waste water treatment plants
- Investment to address key challenges – spending priorities across key challenge areas
- Costs to customers – acceptable and reasonable increases in charges
- Service standards – possible trade-offs between service standards and levels of charges
- Serviced land – definitions and charges for undeveloped land
- Policies for new development – from whom and on what basis should costs for infrastructure to support new development be recovered?
- Trade waste - policies and practices

Customers and stakeholders were encouraged to provide their views in a number of ways, including the Yoursay website, by email, telephone or via written submissions. While the Issues Paper was structured with the seven issues areas listed above, opinions were welcomed on any matter in relation to TasWater's operations that customers and stakeholders wished to raise.

2.2.3 Individual interviews and discussions

Individual interviews and discussions were held with two main types of organisations: major business customers, and peak bodies representing various business sectors and community service groups. The topics covered were based on the PSP3 Issues paper.

We have around 60 major customers who are relationship-managed, based largely on revenue. These include breweries, major processing plants, public housing managers, operators of aged and

² <http://www.yoursay.taswater.com.au/price-and-service-plan-2018/documents/48824/download>

community care facilities and agricultural operations. Interviews lasted 20 – 60 minutes depending on the interest of the participants and complexity of the issues involved.

Discussions were also held with representatives of two main classes of peak bodies: those advocating for community services, low income, vulnerable and disadvantaged people, and those representing the interests of businesses. Nine bodies were interviewed face-to-face, one by phone and three others participated in a workshop.

Table 3: Peak bodies with whom discussions were held

Peak bodies	Segment	Interview type
Tasmanian Council of Social Service Inc (TasCOSS)	Community services	Face to face
COTA Tasmania (Council on the Ageing)	Community services	Face to face
Anglicare Tasmania	Community services	Phone
Local Government Association of Tasmania (LGAT)	Local government	Face to face
Tasmanian Hospitality Association (THA)	Hospitality	Face to face
Tasmanian Small Business Council	Small business	Face to face
Tasmanian Seafood Industry Council (TSIC)	Fishing	Face to face
Tasmania – Property Council of Australia	Building industry	Phone
Caravanning Tasmania	Leisure/Hospitality	Phone
Tourism Industry Council Tasmania	Tourism	Short phone discussion

2.2.4 Telephone surveys

TasWater engaged market research company ORC International to undertake a computer aided telephone interview in early 2017. The sample included 511 customers in total (105 business, 406 residential) to ensure we received a statistically valid set of responses from our customer base.

Residential respondents were recruited using random digit dialing to target different locations across TasWater’s geographical service area. Business respondents were identified from TasWater’s customer database, and a random selection were contacted for interview. Households or businesses that did not receive a bill from TasWater were excluded.

In line with other utilities, and consistent with industry standards, a demographic weighting was applied to the results to correct the raw data for differences between the TasWater customer base and the general population of Tasmania (for example, residential renters do not receive bills and some areas of the state are not serviced by TasWater).

The survey sought feedback from customers on priorities for expenditure and outcomes, pricing and tariff structures, price and service trade-offs, and policies.

2.3 The results of our customer and stakeholder engagement

This section summarises the findings and conclusions from the various customer and stakeholder engagement activities undertaken.

2.3.1 Customer priorities for TasWater

The overall recommended priorities revealed in focus groups, customer and peak body discussions and workshops were consistently:

- Safe drinking water
- Meeting environmental standards for treated wastewater discharges
- Ensuring water security and

- Maintaining dam safety.

There were some differing views, such as TSIC which prioritised wastewater discharges into aquaculture areas, and some local governments that rated all as equally important, but overall, the priority set out above were clearly preferred across the board.

The phone surveys revealed very high awareness of TasWater's challenges in providing safe drinking water and meeting environmental guidelines for wastewater discharges, but very few were aware of structural dam safety issues. The order of priorities from survey respondents is shown in the table below.

Table 4: Order of priorities from telephone survey

Outcome	Priority		
	Residential	Business	Overall
Provide safe drinking water	1 st	1 st	1 st
Treating sewage	2 nd	3 rd	2 nd
Adequate water to meet community needs	3 rd	2 nd	3 rd
Making sure that dams are structurally safe	4 th	4 th	4 th

2.3.2 Investment to address key challenges

This topic examined customer and stakeholder views on the spending priorities that should be adopted to address priority areas, and whether the balance of capital and operational expenditure seemed appropriate.

Both business and residential customers generally saw existing investment priorities as appropriate, agreeing with overall priorities of drinking water, then wastewater treatment second. When showed expenditures, some participants recognised that wastewater projects would be more expensive to achieve similar benefits, but most felt they did not have adequate experience to comment on expenditures in these areas.

The concept of trade-offs was quickly recognised (if you're doing a lot about X then you won't have enough money for Y or Z). There was clear recognition that not everything could be done at once. This was an important consideration in assessing acceptable price increases, examined in the next section.

The relative levels of capital and operating expenditure were examined, with most participants feeling that the balance was about right, or that capital expenditure should be a bit higher. Several participants accepted the high level of investment required to address challenges, but expressed a desire for TasWater to identify internal cost saving opportunities as a first priority before raising customer prices.

2.3.3 Price increases and tariff structures

This topic examined both tariff structures and what level of price increases TasWater customers and stakeholders felt was reasonable and acceptable, considering impacts on customers, and whether larger increases could be justified to rectify non-compliances more rapidly.

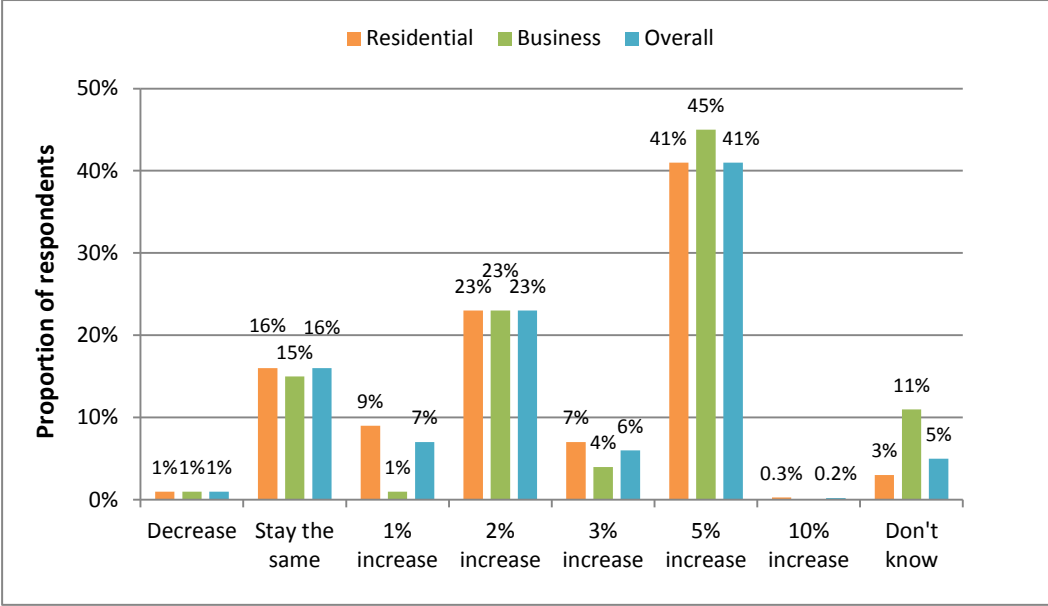
2.3.3.1 Price increases

Given the scale of improvements that are required, operating costs will rise as we upgrade infrastructure to address compliance obligations. As a result, customer and stakeholder engagement focused primarily on the level and pace of price increases over time to cover these rising costs, and the resulting trade-offs in terms of the time to reach full compliance.

In the telephone survey, customers were told that annual increases had been around 5% in the past and were asked whether continuing this rate of increase was acceptable to address the need for compliance improvements. The outcome from telephone surveys is shown in the figure below, but overall:

- 41% of all respondents supported maintaining 5% per annum price increases (standout response)
- 23% preferred a 2% per annum increase
- 16% preferred that prices stay the same (0% increase)
- Almost all of the remainder preferred a price increase somewhere between 0% and 5%.

Figure 2: Customer preferences for acceptable price increases per annum in PSP3



From our other forms of engagement (apart from the telephone survey), most peak bodies, both business and community service focussed, sought the minimum cost increases, to ensure business viability and protect those on low incomes, vulnerable and disadvantaged people.

We are committed to keeping bills as affordable as possible, but understand that even a modest price rise may be difficult for some customers to pay. Over the PSP3 period, we will review our Financial Hardship Policy in consultation with customers, stakeholders and the TER to ensure it reflects best practice.

2.3.3.2 Fixed and variable costs

Residential respondents were given an example of a typical household bill, of which about 80% currently relates to providing and maintaining infrastructure (fixed costs) and about 20% is for the water used (variable costs).

Business respondents were not given any information about a typical bill, as there is more variation in business bills according to the size and industry of the business.

While 42% of residential respondents thought that a fixed cost proportion of 80% was appropriate, only 20% of business respondents gave the same response.

2.3.3.3 Sewerage charges – equivalent tenements

TasWater charges customers other than standard residential units on the basis of estimated sewage generated, expressed as a number of equivalent tenements (ETs).³

Nearly 60% of businesses supported changing to an individually calculated methodology such as a volumetric discharge factor and one third preferred retaining the existing system. Many customers held the view that the term ‘equivalent tenement’ was unclear and uncertainty about its meaning was raised regularly.

A number of major customers stated that the basis for ET calculations was not valid and those offering accommodation felt the applicable ET rate for accommodation rooms did not reflect the seasonal nature of accommodation.

However, the majority of sewerage costs are fixed and our systems are designed to cater for peak season demand. The ET rate for accommodation reflects this and is also consistent with the rate used in other jurisdictions such as New South Wales. As a result, we do not propose any changes to the accommodation ET rate in PSP3.

Our PSP3 submission does make targeted changes to the ET methodology in response to concerns raised during customer engagement from specific business types (refer to Chapter 9 for more information), but generally retains the ET methodology for PSP3 given the complexity of making a change in our billing system and for customers transitioning to target tariffs. We are committed to reviewing the sewerage charging methodology ahead of PSP4.

Caravanning Tasmania praised changes to sewerage charges for caravan parks introduced after PSP2, which reflected a move toward a discharge factor for these businesses.

2.3.3.4 Fire services

Fire services are provided to supply additional water supply capacity to operate fire sprinklers and or fire hydrants in the event of fire. An additional charge is levied on customers who receive these services.

Most participants felt that current fire services arrangements were appropriate, including representatives of organisations which had these installations and paid additional fire services charges.

2.3.4 Customer service standards

This topic explored whether customers and stakeholders would prefer higher or lower customer service standards from TasWater for responses to faults, leaks and answering call centre telephone calls, with potential for greater or lower rates of increases in bills as a result.

Most customers felt existing response times to attend to water main breaks and sewage spills were appropriate and did not see a need for change. On the other hand, most customers stated they would find an increase in the average time taken to answer telephone calls acceptable, with nearly half quoting a response within three minutes would be acceptable, up from the current target of 30 seconds.

³ An ET is a measure used to approximate the load a property places on the sewerage system. One ET is considered to be the sewage discharge from an average residential house under dry weather flows. For business customers the number of ETs is determined by their type of business.

Figure 3: Customer preferences for water and sewerage fault response times

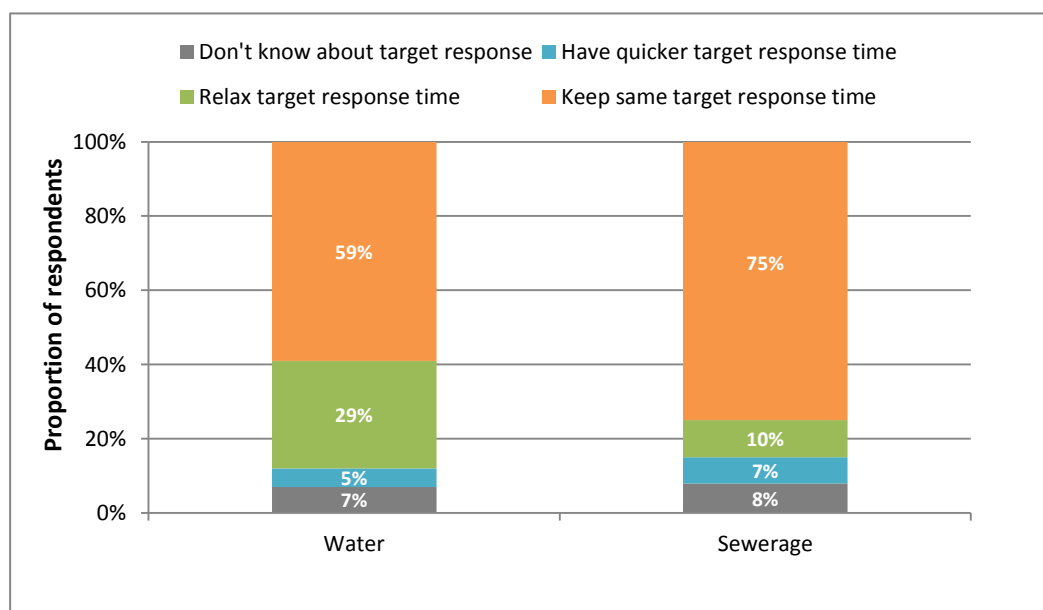
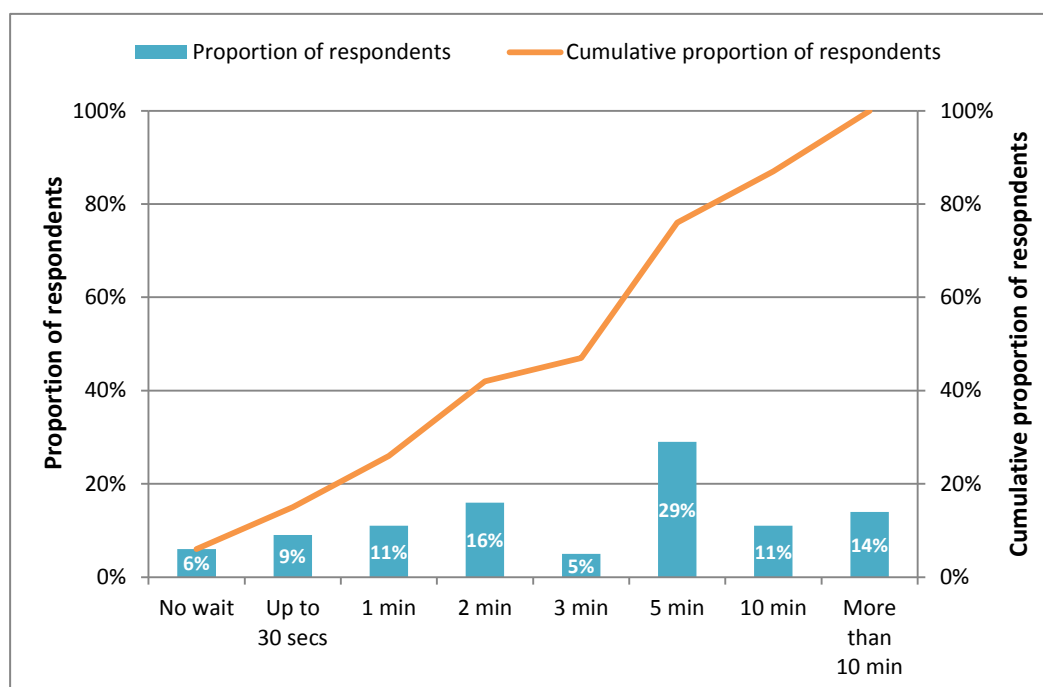


Figure 4: Customer preferences for contact centre response time

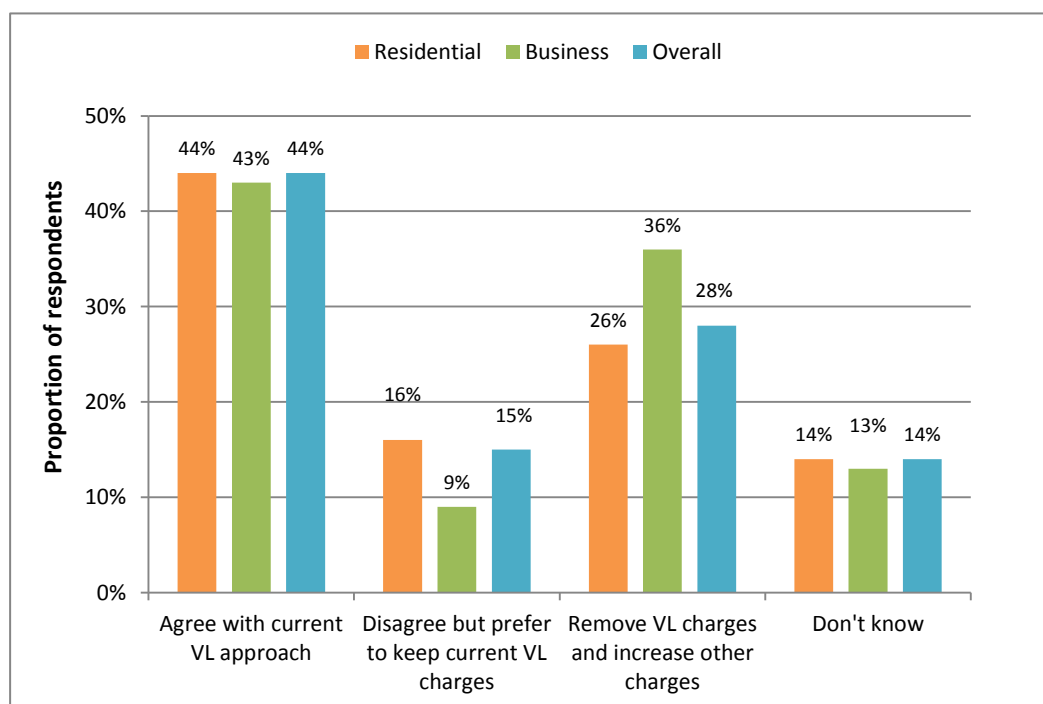


2.3.5 Serviced land (charges for undeveloped land)

Under Tasmanian legislation, owners of all land within defined and published serviced land areas are liable for TasWater charges, regardless of whether physical connections are present. This is due to our requirement to provide infrastructure for these properties should they wish to connect.

However, discounts to standard fixed charges apply where land is not connected. Most customers in the phone survey (59%) supported retention of current vacant land charging arrangements, although some disagreed with the approach even though they thought the charge should be retained.

Figure 5: Customer preferences for vacant land (VL) charges



2.3.6 Policies for new development

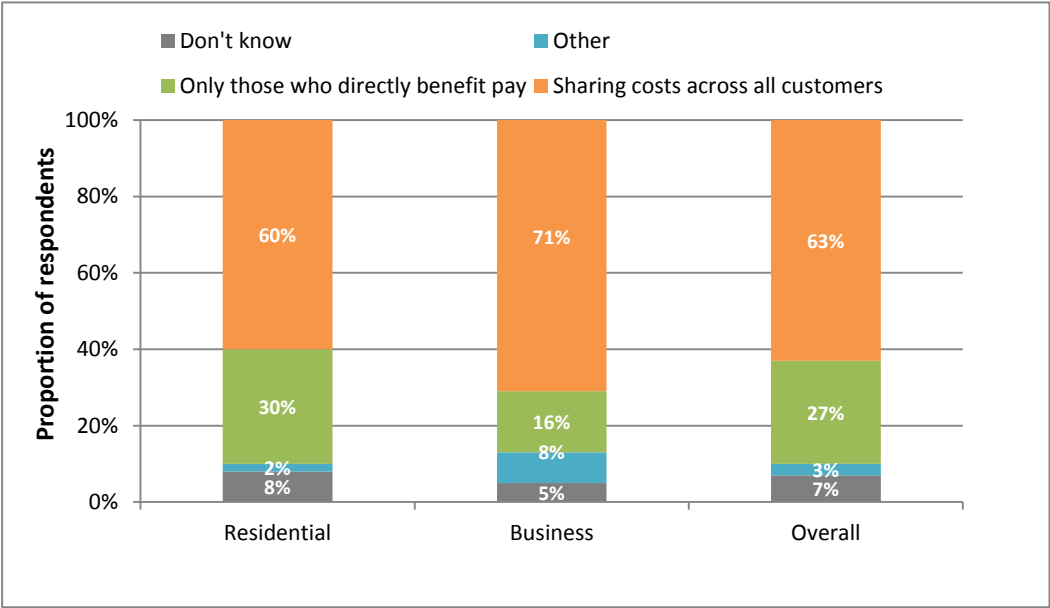
TasWater's charges for provision of water and sewer infrastructure to service new developments are summarised below, paid for and owned as follows:

- Works Internal – any infrastructure which is within a development is installed at the developer's cost and gifted to TasWater
- Works External – any infrastructure which is external to a development, for extension and or expansion, required to service the development installed at a developer's cost and gifted to TasWater. This component is broken down into whether sufficient system capacity already exists or not. If there is sufficient existing capacity, works external charges are not applicable
- Headworks charges – the payments by developers to TasWater for the proportional costs of the capacity consumed of existing headworks infrastructure, and or expansion of capacity required, as a result of a property development. TasWater's developer charges policy excludes developer liability for any headworks charges to encourage economic development in Tasmania.

Focus group participants, major customers and peak bodies revealed a range of views on this topic, from 'user pays' principles that the developer should pay all costs incurred through to costs being shared across all customers on the basis of encouraging economic development. No consistent view was uniformly expressed in these individual discussions.

In the telephone survey, the majority of both business and residential customers supported sharing costs across all customers, with businesses more strongly of this opinion. The figure below shows the response of survey participants on cost sharing for infrastructure associated with new development.

Figure 6: Preferences for sharing the cost of infrastructure upgrades due to new development



2.3.7 Trade waste policies and practices

Trade waste charges are levied on businesses according to the load they place on wastewater systems, from water volumes and the nature of contamination from the particular business operations.

Among telephone survey respondents, there was very high support overall (84%) for maintaining the current arrangements that trade waste costs should be paid by those customers who create the trade waste. However, major customers with large amounts of trade waste reported unsatisfactory support and service in setting up trade-waste agreements. This may reflect, in part, our transition toward full cost recovery for trade waste customers. Nonetheless, our PSP3 submission is focused on providing clear direction to trade waste customers and ensuring we communicate in plain English in our policies, pricing and guidelines.

2.4 How the feedback is reflected in our PSP3 submission

The table below contains a summary of key consultation issues that we discussed with customers, feedback received from customers and stakeholders on these issues and a description of how the feedback is reflected in our PSP3 submission.

Table 5: Summary of consultation results and how the feedback is reflected in our PSP3 submission

Our suggestions in the Consultation Issues Paper		Summary of feedback from customers	How the feedback is reflected in our PSP3 submission
Investment decisions and priorities	<ul style="list-style-type: none"> We proposed drinking water quality as our top priority, followed closely by dam safety and the related priority of water security As a second (but still high) priority, we proposed to focus on meeting environmental standards We proposed to place a lower priority on renewing our networks to maintain service reliability as we focus on achieving compliance first Our proposed investment and timing of major projects reflects these priorities This is also consistent with the priorities in our recently developed 10-year capital program 	<p>Telephone survey</p> <ul style="list-style-type: none"> Customers agree that drinking water quality is the top priority. Respondents in the telephone survey thought the environment was a second priority, followed by water security and dam safety <p>Focus groups, submissions and interviews</p> <ul style="list-style-type: none"> Focus group participants were confused by the meaning of 'dam safety' and identified an opportunity to clarify our communication on this issue Peak bodies, major customers and other stakeholders largely agreed that drinking water quality should be the top priority, with mixed views on whether dam safety, water security or the environment should be the second, third and fourth priorities <p>Regulators Forums</p> <ul style="list-style-type: none"> The water and sewerage industry regulators in Tasmania participated in a forum on 17 March 2017 to discuss priorities, trade-offs and outcomes in the PSP3 period (based on our LTSP model) In general, the regulators supported our trade-off modelling methodology to prioritise investment and outcomes in PSP3 	<ul style="list-style-type: none"> We have prioritised projects based on (1) the customer benefit delivered by the project, and (2) the cost of the project. Benefits are determined by the project's contribution toward achieving specified customer outcomes (such as improving environmental performance). The consultation results were used to determine the weighting applied to each customer outcome in our strategic framework As our highest risk and the majority of our customers' greatest focus, drinking water quality receives the first priority in PSP3 with key projects planned for completion early in the period (eg Small Towns improvements, System Optimisation, targeted compliance improvement projects) The consultation results reveal mixed views on customers' next highest priorities (dam safety / water security vs. environment) Our PSP3 submission is therefore based on project specific costs and benefits in terms of customer outcomes. Our plans include both high priority dam safety upgrades and sewerage upgrades to meet environmental standards in this context. A list of projects and outcomes planned in PSP3 is discussed in more detail in Chapter 6 (capital expenditure) With our primary focus on compliance, we propose to maintain, rather than improve, service reliability in PSP3. The majority of our customers support this approach
Proposed tariffs and tariff structures	<ul style="list-style-type: none"> We proposed to limit the annual price increase to 4.6% in PSP3 to balance customer affordability with the large investment needed to address drinking water quality and environmental challenges 	<p>Telephone survey</p> <ul style="list-style-type: none"> About 40% of survey respondents supported a 5% annual price increase in PSP3 to address compliance improvements But, almost no respondents supported an increase above 5% and, collectively, 53% of survey respondents supported a price increase less than 5% Regarding tariff structures, the average survey respondent felt that bills should be about 50% fixed / 	<ul style="list-style-type: none"> We acknowledge affordability is a key issue for many customers. As a result, we have retained our plan to limit price increases to 4.6% per annum in PSP3 to strike a balance between bill affordability and meeting our compliance obligations – while also maintaining a commercially prudent level of debt as we transition to cost reflective pricing by PSP5 Trade-offs between customer outcomes were made within this constraint and reflect priorities expressed by stakeholders during consultation

Our suggestions in the Consultation Issues Paper		Summary of feedback from customers	How the feedback is reflected in our PSP3 submission
		<p>50% variable, did not understand the ET methodology for sewerage charging and supported the retention of the fire service charge</p> <p>Focus groups, submissions and interviews</p> <ul style="list-style-type: none"> Focus group participants perceived prices as 'high', although the move from Council rates to TasWater bills is still not well understood Major customers generally did not support high price rises and many peak bodies raised concerns about the affordability of water bills in Tasmania <p>Regulators Forums</p> <ul style="list-style-type: none"> The regulators did not comment specifically on tariff levels, but generally accepted our modelling approach to reflect trade-offs between prices, service levels and the time to reach full compliance over the long term 	<ul style="list-style-type: none"> We are also committed to reviewing our Financial Hardship Policy in consultation with our customers, stakeholders and the TER during PSP3 to ensure it reflects best practice Our PSP3 submission maintains the current ratio of fixed and variable costs (despite the telephone survey response), as this is generally in line with our legislative requirements for our prices to be cost reflective Our PSP3 submission makes targeted changes to the ET methodology in response to complaints from specific business types (refer to Chapter 9 for more information), but generally retains the ET methodology for PSP3 given the complexity of making a change in our billing system and for customers transitioning to target tariffs. We are committed to reviewing the sewerage charging methodology ahead of PSP4 Our PSP3 submission also retains the fire service charge
Customer service standards	<ul style="list-style-type: none"> We proposed to provide the same standard of service across the state, rather than introduce differential standards, as the scope for savings is limited 	<ul style="list-style-type: none"> We did not receive any feedback from customers in support of introducing differential service standards 	<ul style="list-style-type: none"> Our PSP3 submission is based on providing the same standard of service across the state
Price and service trade-offs	<ul style="list-style-type: none"> We identified several service standards that could be relaxed to reduce upward pressure on bills if customers support this approach To limit price increases, we proposed to address compliance outcomes first in our long term plan, with service reliability to improve more slowly in the interim 	<p>Telephone survey</p> <ul style="list-style-type: none"> The majority of customers support compliance challenges being addressed as a first priority, and about 40% of customer support a 5% price increase per annum to this end But, the majority of customers prefer most service standards to remain the same as now, rather than relaxing them to reduce the planned price increases (apart from support for an increase in time for calls to our contact centre to be answered) <p>Focus groups, submissions and interviews</p> <ul style="list-style-type: none"> Focus group participants, major customers and peak bodies generally expressed a desire for TasWater to reduce its own costs first before increasing prices or 	<ul style="list-style-type: none"> Our highest priority is to focus on improving compliance outcomes in PSP3 In general, we propose to maintain current targets for most service standards rather than improving them. This will help to reduce upward pressure on bills We will investigate changes to our contact centre response time standard and consult with customers with a more specific proposal ahead of PSP4 To maintain service reliability in a cost effective way, we will use our improving data, information systems and processes to improve asset management decision making We have also initiated a Productivity Improvement Program to identify and realize cost savings in the business to further

Our suggestions in the Consultation Issues Paper		Summary of feedback from customers	How the feedback is reflected in our PSP3 submission
		<p>relaxing service standards</p> <p>Regulators Forums</p> <ul style="list-style-type: none"> • Our regulators generally supported our focus on improving compliance outcomes given the scale of challenges in these areas • No specific feedback was received on raising or lowering customer service standards, although the level of renewal expenditure was raised as an area for better understanding in the future 	<p>reduce upward pressure on bills</p>
Policies	<p>We explained our current policies for key issues raised by customers in PSP2 relating to vacant land, trade waste and new development and asked our customers:</p> <ul style="list-style-type: none"> • Should vacant land within serviced land continue to be levied a service charge? • Should the cost to augment infrastructure for new development be shared across all customers, or should only those who directly benefit contribute? • Should all customers contribute to the cost of managing trade waste, or should the costs be paid directly by those that generate the waste? 	<p>Telephone survey</p> <ul style="list-style-type: none"> • Of all survey respondents, 59% support maintaining the current vacant land charges and only 28% support removing the charge and spreading the cost across all customers • Overall, 63% of survey respondents support cost sharing across the entire customer base for development-driven infrastructure upgrades • In contrast, 84% of survey respondents felt that businesses responsible for creating trade waste should be responsible for the associated cost • Some trade waste customers reported unsatisfactory interactions with TasWater regarding billing, classifications and volumes <p>Focus groups, submissions and interviews</p> <ul style="list-style-type: none"> • Vacant land charges were poorly understood by focus group participants and represent an area of improvement for communication • 1-on-1 discussions revealed mixed feelings on whether the cost of new development should be shared by everyone or not 	<ul style="list-style-type: none"> • Our PSP3 submission is based on maintaining our current approach to vacant land charges • Our developer charges policy is largely unchanged from PSP2 and continues the approach of excluding headworks charges. This approach is supported by the majority of the customers we engaged • We also propose to maintain our user pays approach to trade waste • The language relating to trade waste charges and policies has been revised in PSP3 to ensure they are communicated in plain English. We continue to work with our trade waste customers proactively as they transition to target tariffs that reflect full cost recovery

3 Regulatory compliance

Key points

- As a water and sewerage service provider, we need to comply with a range of legislative requirements and meet the expectations of our regulators
- In collaboration with our main technical regulators (DHHS, EPA, DPIPWE), we have developed a risk-based approach to prioritising our compliance activities. This is a process of identifying and addressing areas of highest risk first and allowing us to achieve the greatest improvements in the shortest time
- In the long term, it means spending our customers' money prudently to address all of Tasmania's water and sewerage challenges in a logical and efficient way.
- Informed by this approach, we have reached general agreement with our technical regulators on their respective priorities for PSP3:
 - For drinking water (DHHS), reduction of highest risks guided by health-based targets
 - For environment (EPA), sewage treatment plants with discharges of highest environmental risk
 - For dams (DPIPWE), improving dams with risks that exceed the ANCOLD Limit of Tolerability
- Over the 20-year duration of our LTSP, we will deliver the following compliance outcomes:
 - Microbiological compliance of 100 per cent for drinking water systems
 - Effluent compliance of 93 per cent by volume measured against EPA standards
 - All dams deemed safe in accordance with Australian standards
- In the first three years of the LTSP, which forms the PSP3 period and is the focus of this document, we will deliver the following compliance outcomes:
 - Microbiological compliance of 100 per cent, removal of all boil water and public health alerts and a progressive reduction of public health risk in our water systems
 - Effluent compliance of 78 per cent by volume measured against EPA standards and mitigation of environmental risks for 90 per cent of the EPA's top 20 sites
 - Risk reduction of all but one dam to within tolerable levels, with the remaining dam managed through interim measures to reduce its risk appropriately

As described in Chapter 1 (Introduction), the water and sewerage services we provide to Tasmanians must meet legislative requirements and the expectations of a range of technical regulators, which cover the following areas:

- Drinking water – Director of Public Health, Department of Health and Human Services (DHHS) regulates the quality of drinking water from all public reticulated drinking water systems
- Environment – Director Environment Protection Authority (EPA) who regulate our sewage treatment plants (greater than 100 kL/day) and local government Environmental Health Officers for smaller sewage treatment plants (under 100kL/day)
- Dam safety – Water Management and Assessment branch, Department of Primary Industries, Parks, Water and Environment (DPIPWE)
- Water licences and allocations - Water Resources branch, DPIPWE, that manages the use of the state's water resources from rivers, creeks and lakes
- Safety – WorkSafe Tasmania regulates workplace safety with our Zero Harm program driving our ongoing commitment to workforce safety and wellbeing

- Customer complaints – the Ombudsman independently resolves the small number of customer issues and complaints that we can't resolve internally
- Fire safety – Chief Fire Office, Tasmania Fire Service ensuring that our water infrastructure is sufficient under the Industry Act for fire safety requirements and we manage the water resources on total fire ban days.

Each of these regulators has their own set of legislation, regulations, guidelines and Ministerial responsibilities to which they must respond. The costs for complying with our range of regulatory requirements are detailed in the chapters on capital expenditure (Chapter 6) and operating expenditure (Chapter 7). The majority of our compliance expenditure is focused on drinking water, the environment and dam safety. This chapter is focused on compliance and expectations of the regulators for each of these areas.

3.1 Tasmanian water and sewerage industry regulators forum

The TER initiated the Tasmanian Water and Sewerage Regulators Forum in 2016 to provide a forum for the state's water and sewerage industry regulators and TasWater to discuss strategic or priority water and sewerage issues. The organisations represented on the forum include:

- TasWater
- Tasmanian Economic Regulator
- Department of Health and Human Services (safe drinking water)
- Environment Protection Authority (environmental impacts from sewage treatment plant discharges) and
- Department of Primary Industries, Parks, Water and Environment (dam safety and water licensing).

The forum assists in developing a shared understanding of priorities. The shared understanding and objectives from the forum helps to ensure that we are focused on improving the right areas of performance with the support of the economic and technical regulators.

The forum meets quarterly, with organisations represented at regulator and CEO level. Quarterly forum meetings are preceded by meetings of senior officers from the regulator organisations, generally in the preceding week.

The forum first met in early December 2016 and then again in March 2017. At the March meeting we used our LTSP model to demonstrate different levels of compliance improvement over a 20 year period using different expenditure profiles (expressed as customer price increases). This helped regulators to understand the size of the expenditure that is needed for compliance improvement and how changing the balance of investment between compliance areas changes the outcomes in each area.

We outlined six scenarios with different balances of compliance focus and price increases:

- Scenario 1 – a medium price path, starting with 4.6% per annum price increases in PSP3 and reducing to CPI increases by PSP6 and beyond, with the highest weighting given to environmental outcomes
- Scenario 2 – a medium price path, with the highest weighting given to water quality
- Scenario 3 – a medium price path, with the highest weighting given to service reliability outcomes
- Scenario 4 – a medium price path, with equal weighting to all outcomes

- Scenario 5 – a high price path, 5% to 10% annual increases over 20 years, with full compliance achieved more quickly and an accelerated improvement to service reliability, but with higher bills for customers from an early stage.

Our preferred scenario (Scenario 6) was most similar to Scenario 4 (medium price path, balanced compliance focus), but weighted the outcomes to reflect customer preferences (refer to Chapter 2 Customer and Stakeholder Consultation), and includes the following characteristics:

- Drinking water quality as highest priority
- Environmental compliance and dam safety as an equal second priority
- Service reliability focused on critical assets (assets that, if they failed, would cause substantial interruption to the services we provide) and high impact/sensitive environments
- Projects reflect priorities discussed with individual regulators
- Price increases kept to 4.6% per annum in PSP3 to balance affordability with risk mitigation and compliance improvement, with targeted annual increases of 3.7% in PSP4 and PSP5 and 2.5% (CPI) thereafter to enable a smooth transition to cost reflective pricing by PSP5.

At the Regulators Forum in March 2017 the regulators provided general support for compliance outcomes for PSP3 and the contribution to longer term compliance outcomes. Given the long term task of lifting the performance of water and sewerage services, the regulators expressed support for the balance between the areas of compliance – water, environment and dam safety – against prices for customers. The regulators understand that significant investment across our water and sewerage systems is required to improve compliance levels. It is understood that while marked improvement in compliance is expected, the necessary investment needs to be spread out over time to minimise price impacts for customers.

3.2 Drinking Water – Director of Public Health, Department of Health and Human Services

3.2.1 Regulator functions and our compliance requirements

The functions of the Director of Public Health, as administered by the DHHS in relation to the provision of drinking water services, are to:

- Protect public health around the supply of drinking water and to develop and implement strategies to promote and improve public health
- Establish drinking water quality performance standards
- Monitor performance against standards and the *Public Health Act 1997* (and its associated Tasmanian Drinking Water Quality Guidelines 2015), *Fluoridation Act 1968*, *Fluoridation Regulations 1999* and Australian Drinking Water Guidelines 2011 (updated November 2016) and
- Report on and enforce compliance.

We are required to develop and implement a Drinking Water Quality Management Plan (DWQMP) under the *Public Health Act 1997*. The DWQMP must contain information specified by the Director of Public Health and be endorsed by our Chief Executive Officer. The plan must be reviewed and updated on an annual basis unless otherwise directed by the Director of Public Health. All changes to the plan are to be noted in a document amendment history.

In addition to the requirement for a DWQMP, the *Public Health Act* states that we must manage water in a manner that does not pose a threat to public health, and we are required to provide

potable water that complies with the health guideline values contained within the Australian Drinking Water Guidelines 2011 (ADWG).

The Tasmanian Drinking Water Quality Guidelines 2015 (TDWQG) strongly align with the best practice management principles outlined in the ADWG. The ADWG is reviewed on a rolling four yearly basis. We will continue to engage with DHHS in the application of the ADWG in the Tasmanian context as the national and state guidelines are updated and reviewed.

The ADWG contains a range of specific limits for water quality parameters that compliance is measured against. These include microbiological parameters, the presence of metals in the water we supply, disinfection by-products, pesticides and other general parameters.

3.2.2 Expectations of the public health regulator for PSP3

In March 2017 the Director of Public Health provided us with a list of actions to guide our priorities in PSP3 in relation to improving drinking water quality. These priorities are:

1. Remove boil water alerts and public health alerts in drinking water systems
2. Identify and implement critical control points in accordance with the ADWG framework
3. Increase knowledge of source waters through catchment risk assessments, and improve source protection through capital investments designed to reduce or eliminate public health risks
4. Identify opportunities to improve disinfection management and maintain suitable chlorine residuals in reticulation networks
5. Improve fluoridation performance through compliance with the Tasmanian Fluoridation Code of Practice and
6. Identify and implement strategies to remove and reduce disinfection by-product formation to levels below those specified in the ADWG.

Correspondence from the Director of Public Health on expectations and priorities for PSP3 is provided at Appendix 2.

3.2.3 Drinking water outcomes for PSP3

We manage 71 drinking water systems across the state. At the start of PSP3, we expect six of these will not meet the compliance requirements set out in the ADWG and will be subject to public health alerts (PHA). By August 2018 (early in the PSP3 period), we will complete projects for these systems that enable us to meet our compliance requirements and allow the PHA to be lifted. This aligns with the first priority identified by DHHS above.

At the end of FY2015/16, 99.2 per cent of our drinking water systems met the microbiological requirements set out in the ADWG and we will achieve 100 per cent compliance during PSP3. Correspondingly, most of the remaining priorities identified by DHHS above relate to ensuring we are appropriately managing the risk in our drinking water systems. This focus on risk reduction is to ensure that we maintain 100 per cent compliance going forward.

DHHS and the water industry in general are moving to a risk-based approach to ensure the quality of drinking water for customers. Proactively managing drinking water quality risk means that we can prevent people getting sick and the rate of illness in the community remains at a very low (tolerable) level. The more risks we can reduce or eliminate, the less likely people may get sick. This approach is called the Health Based Targets (HBT) method. The HBT use a measure known as Disability Adjusted Life Years (DALY) to determine the mitigation activities and level of water treatment required to achieve a tolerable level of health risk.

In alignment with the priorities set out by DHHS, we have a continuous program of work to assess the risk in our drinking water systems, from the source waters and catchments to the treatment plants and distribution networks.

To identify the activities required to reduce the risk in our systems to a tolerable level (informed by the HBTs), we have completed desktop microbiological catchment risk assessments and treatment barrier assessments for all systems. These studies have identified emerging catchment risks such as grazing and farming activities that require additional treatment barriers to ensure drinking water quality is maintained at a safe level.

As a result, we have identified \$203 million to be spent on improving drinking water quality over the PSP3 period to address these risks. The specific projects are outlined further in Chapter 6 (Capital Expenditure) and include water treatment plant upgrades, system optimisation activities, risk assessments and other water quality initiatives that are consistent with the priorities identified by DHHS above.

Over the PSP3 period, we will:

- Reach 100 per cent compliance (up from 99.2 per cent in FY2015/16) with the microbiological requirements of the ADWG by the end of the period
- Mitigate our drinking water quality risk at the same time, with a focus on progressively establishing and meeting health based targets for each system.

3.3 Environment – Director of Environment Protection Authority

3.3.1 Regulator functions and our compliance requirements

The functions of the EPA in relation to the water and sewerage sector include the assessment and regulation of significant wastewater treatment plants. The EPA's responsibilities in relation to these plants include:

- Undertaking environmental impact assessments in relation to proposals for new plants or significant changes to existing plants
- Developing legally binding environmental conditions for approved plants, which are included as part of the planning permit or as a stand-alone environment protection notice and
- Ensuring compliance with environmental conditions, largely through collection and evaluation of data on specified discharge limits and the impacts on the receiving environment.

Our compliance requirements are outlined, in part, in the licence limits specific to each of our sewage treatment plants. The licences typically specify limits that relate to parameters such as volume, level of nutrients and other water quality parameters of the treated effluent. We measure our compliance against these individual limits. We also report the percentage of statewide treated wastewater volume (by flow) that is compliant with EPA requirements.

The EPA regulates Level 2 sewage treatment plants (STPs), which are those with a throughput greater than 100kL/day. Smaller plants classified as Level 1 plants are regulated by the local council Environmental Health Officers who provide a key role in working with us to manage environmental impacts.

3.3.2 Expectations of the environmental regulator for PSP3

In November 2016 we established a Memorandum of Understanding (MoU) with the EPA to achieve accelerated environmental compliance and performance over the next three years. The MoU sets out the management and regulatory approach that we will adopt (in conjunction with the EPA) to

improve our environmental compliance and the performance of our wastewater network by December 2019.

We have agreed to focus on capital and operational expenditure projects which target the following:

- 13 STPs that account for 70 per cent of all treated wastewater from our network (the 'Big 13' STPs)
- The top 20 key environmental risks posed by any part of our wastewater network
- Enhanced statewide control of trade waste, tankered waste and leachates entering our sewerage network and treatment plants and
- Other statewide projects initiated during the MOU period that seek to either optimise wastewater infrastructure functionality through better control or to divert outputs to reuse rather than direct discharge into the environment.

Correspondence from the EPA on expectations and priorities for PSP3 is provided at Appendix 3.

3.3.3 Environmental outcomes for PSP3

We have identified approximately \$117 million of capital expenditure to be spent on improving environmental compliance over the PSP3 period to fulfil the agreed priorities under the MoU. The specific projects are outlined further in Chapter 6 (Capital Expenditure) and include sewage treatment plant upgrades, system optimisation activities and trade waste initiatives that are consistent with the focus areas identified in the MoU above.

In FY2015/16, our effluent compliance by volume from our STPs was 84 per cent as measured by the EPA, an improvement of three per cent from FY2014/15. It is important to note that the measurement of effluent compliance currently differs between TasWater and EPA Tasmania. The two measures both use seven parameters for an effluent sample. However, the EPA measure, used in OTTER's State of the Industry Report, allows for a partial pass where some of the parameters are compliant. TasWater's measure requires all parameters to be compliant to 'pass'.

As of 1 July 2017, both the EPA and the State of the Industry Report will use TasWater's more stringent measure. The effluent compliance figures used below and throughout this document refer to TasWater's more stringent measure.

As a result of focusing our investment on the 'Big 13' STPs in alignment with the EPA's priorities, our effluent compliance by volume using the more stringent measure will reach 78 per cent by the end of PSP3. This represents an increase of 16 per cent over the PSP3 period and an increase of 32 per cent over the PSP2 and PSP3 periods combined.

We will also mitigate environmental risks for 18 of the EPA's top 20 sites (90 per cent) during PSP3 through a combination of infrastructure upgrades and system optimisation activities.

3.4 Dam Safety – Department of Primary Industries, Parks, Water and Environment

3.4.1 Regulator functions and our compliance requirements

The Department of Primary Industries, Parks, Water and Environment is the regulator of dam safety.

We are regulated in accordance with the following legislative instruments:

- Water Management Act 1999 and
- Water Management (Safety of Dams) Regulations 2015.

Section 165G of the *Water Management Act* states that as an owner of a portfolio of dams, we "must, so far as is reasonably practicable, maintain and operate the dams so as not to cause, or be likely to cause, material harm or danger to any person or property."

The *Water Management (Safety of Dams) Regulations* set out the ongoing activities and reporting requirements of the Australian National Committee on Large Dams (ANCOLD) for dam safety. The requirements cover (among other items) risk assessments, dam surveillance and the need to take risk mitigation measures including for dams that pose a risk above a specified societal limit of tolerability.

We report annually on our compliance and progress against our Dam Safety Management Plan to DPIPWE. This includes all dams of significant or higher hazard category.

3.4.2 Expectations of the dam safety regulator for PSP3

We are responsible for approximately 300 water and wastewater storages, lagoons and weirs that are defined as a 'dam' under the *Water Management Act*. The *Water Management Act* references the ANCOLD Guidelines on Dam Safety Management 2003 (the ANCOLD guidelines). We manage our dams using a dam portfolio risk assessment process in line with these guidelines.

Although the *Water Management Act* applies to all dams, the emphasis of our regulator is generally on dams with a consequence category of 'significant' or higher as defined in the Australian National Committee on Large Dams (ANCOLD) guidelines for consequence categories.⁴

The majority of our dams are compliant with the ANCOLD guidelines for risk assessment⁵ which consider both the consequence category of the dam and the likelihood of failure. However, at the end of PSP2, nine dams will have a risk rating that exceeds the individual and societal risk criteria under the ANCOLD guidelines on risk assessment. These dams are a focal point for our regulator in PSP3.

Correspondence from DPIPWE on expectations and priorities for PSP3 is provided at Appendix 4.

3.4.3 Dam safety outcomes for PSP3

We are prioritising our compliance improvements towards dams within our portfolio that are rated as 'significant' or higher consequence category in accordance with the ANCOLD guidelines. We have identified approximately \$43 million to be spent on improving our dam safety over the PSP3 period.

For this investment, we will reduce the risk of eight of our dams, with only one remaining above the ANCOLD societal limit of tolerability at the end of the period. In the interim, this dam will be made safe through appropriate risk management controls (eg by lowering the dam water level).

⁴ ANCOLD, *Guidelines on the Consequence Categories for Dams*, 2012.

⁵ ANCOLD, *Guidelines on Risk Assessment*, 2003.

4 Customer service standards, customer contract and policies

Key points

- We are a service based organisation and we strive to improve the levels of service we deliver
- We achieved most of our customer service standard targets in the first year of PSP2 (the only year for which data is available at the time of our submission), and we have plans in place to improve in the areas where we fell short
- Our customers generally support maintaining our current targets for most service standards in PSP3
- Based on this feedback, and given the large investment needed to improve compliance levels, we will retain current targets for most service standards in PSP3 so that we do not put further upward pressure on prices
- We also have a suite of policies, provided as appendices to this document and summarised below, that outline how we make decisions about customer service issues such as connecting to our network, who will be charged, the services we provide and land development
- Our policies are largely unchanged in PSP3 from PSP2

Service standards define the level of service we aim to provide to customers. They reflect the needs and expectations of our customers and influence the amount of capital and operating expenditure required to meet those expectations.

The service standards are developed in accordance with the customer service code (the Code) which is set by the TER. The Regulator also requires TasWater to develop a customer contract in accordance with the Code, provide a description of the serviced land area that we cover, and prepare policies that outline how we make decisions relating to customers, connections and charges.

Each of these is described in more detail below.

4.1 Customer service standards

4.1.1 Our process for developing service standards

Our proposed service standards for PSP3 are developed in accordance with a service standards framework that has been agreed with the TER and that will be reflected in a revised version of the Code.

The process we used to develop service standards for PSP3 is summarised below:

- In collaboration with the TER, we revised the service standards framework to ensure it is relevant, fit for purpose and meaningful to customers
- We gathered data for our historical performance against each service standard to develop an evidence-based proposal for targets in PSP3
- We engaged with customers on their preferences for service standard targets, priorities and price and service trade-offs and
- We have proposed service standards based on customer feedback and we have reflected the impact of these service standards in our capital and operating expenditure.

4.1.2 Our historical performance against service standards

We monitor our performance against service standards to ensure we are meeting customer expectations. In the first year of PSP2 (FY2015/16), we achieved many, but not all, of our service standard targets.

Areas where we performed well include:

- We exceeded our targets to respond to Priority 2 bursts and leaks within three hours and Priority 3 bursts and leaks within three days
- The average duration for a planned water supply interruption was 130 minutes, or 50 minutes better than our target of a maximum of 180 minutes
- We exceeded our targets to restore planned and unplanned water supply interruptions within five hours
- We met our target to contain sewer spills within five hours
- The number of water and sewerage complaints from our customers to the Ombudsman was less than the target of a maximum of 0.5 complaints per 1,000 properties and
- Despite a greater volume of calls to our contact centre, we exceeded our target for percentage of calls answered by an operator within 30 seconds.

Although we met many of our customer service targets in FY2015/16, there were some areas where our performance did not meet the targets approved by the TER. Our performance for these targets, and our plans to improve our performance, are discussed in more detail in the sections below.

4.1.2.1 Attendance to priority 1 bursts and leaks

We fell just short of our 90% target to attend Priority 1 bursts and leaks within 60 minutes, having met this target only 87% of the time in FY2015/16.

To improve our performance in responding to Priority 1 bursts and leaks, we are giving greater consideration to replacement of critical water mains in our renewal program. We have implemented a new asset management information system (Maximo) which enables us to gather better data on the condition of our ageing networks to inform our asset management plans and also enables our field crews to respond more quickly when Priority 1 events do occur. As a result, we expect to meet our 90% target in the rest of PSP2 and PSP3.

4.1.2.2 Attendance to sewer spills

We also fell short of our 90% target for attending sewer spills within 60 minutes, having met this target only 74% of the time in FY2015/16.

To improve our performance for attending sewer spills within 60 minutes, we are developing planned maintenance programs and improving our asset management processes to direct our investment in areas that have the highest risk of sewer blockages. Our proposal for PSP3 takes an achievable, staged approach to meeting the 90% target as we implement these new procedures.

4.1.2.3 Average duration of unplanned water supply interruptions

The average duration of an unplanned water supply interruption was 199 minutes which was slightly longer than our target of a maximum of 180 minutes.

As with Priority 1 bursts, we have implemented a new asset management information system that enables us to gather better data on the condition of our ageing networks to inform our asset management plans and also enables our field crews to respond more quickly when unplanned interruptions occur. As a result, we expect to meet our target maximum duration for unplanned water supply interruptions of 180 minutes in the rest of PSP2 and PSP3.

4.1.2.4 Water and sewerage complaints

The number of water and sewerage complaints has been trending above the target of a maximum of 9 complaints per 1,000 properties (at 14.3 in FY2015/16) primarily due to a high volume of complaints relating to water taste and odour issues and permanent boil water alerts.

A high priority of our capital investment program in the remainder of PSP2 and early part of PSP3 is to improve drinking water quality. As these projects are completed, we expect the number of complaints to reduce which will help us to meet our target of a maximum of 9 complaints per 1,000 properties.

4.1.2.5 Non-revenue water

Our percentage of non-revenue water (33%) was higher than the target approved by the TER (14%) for FY2015/16. We experience high volumes of water loss in some systems and our current non-revenue water target (14%) is unachievable without substantial investment over a prolonged period of time. Further work is underway to assess existing data and determine the extent of non-revenue water in our systems, which will inform our strategic planning and prioritisation ahead of PSP4. It will also enable us to develop more appropriate targets for non-revenue water that reflect an economically efficient level of water loss.

Our customers did not consider non-revenue water to be a high priority issue during consultation. Based on this feedback, and since we do not have a shortage of source water in most systems, we have chosen to focus on issues that matter more to customers in PSP3 such as drinking water compliance and environmental compliance.

In the interim, we are focused on identifying unmetered connections and targeting renewal of critical network assets rather than large scale renewal of our water networks. This is in line with customer feedback (with service reliability given a lower priority than compliance) and enables us to gather better data during PSP3 that will allow us to optimise network replacement expenditure in the future.

4.1.2.6 Data quality and our historical performance

As our data quality continues to improve, we expect to have greater confidence in our performance data in the future. In proposing targets for PSP3, we have used data gathered over the last two years as a starting point and we have also taken into consideration the level of accuracy of this data. This is the reason that some targets in PSP3, such as sewerage main breaks and chokes, are different from those in PSP2 – but are in line with historical performance and customer expectations.

4.1.3 Our engagement with customers on service standards

Service standards and price and service trade-offs formed a key part of our customer engagement program. We asked customers and stakeholders about:

- Their views on the relative priority of achieving compliance standards, maintaining networks to ensure reliable services and having affordable bills
- What a reasonable annual price increase would be in PSP3
- Whether our response times to attend bursts and leaks, restore water supply interruptions, attend sewage spills, contain sewage spills or answer calls to our contact centre should be changed and
- Whether we should introduce different service standards in urban and regional areas of Tasmania.

A summary of feedback provided by customers during focus groups, in depth interviews, telephone surveys and submissions to our Consultation Issues Paper on customer service standards is provided below:

- The majority of customers agreed that our highest priorities should be to improve compliance outcomes in PSP3 (provide safe drinking water, ensure dam safety and meet environmental standards)

- While 41 per cent of customers supported annual price increases of 5 per cent in PSP3 (compared to 16 per cent in PSP2), it is clear that customers continued to be conscious of price. Almost no customers wanted annual price increases greater than 5 per cent in PSP3
- In general, customers preferred targets to remain the same for service standards where we have the greatest opportunity to make savings by relaxing them (eg response times for bursts/leaks and for sewage spills)
- However, the average respondent in our telephone survey was prepared to wait about three minutes for their call to our contact centre to be answered and
- The majority of customers did not express a desire to introduce differential service standards.

Further information on our stakeholder and customer engagement program for PSP3 is available in Chapter 2.

4.1.4 Our proposed service standards for PSP3

Given the large investment required to improve water quality, dam safety and environmental outcomes (the priority of our customers), we do not propose to put further upward pressure on expenditure and prices by improving service standards in PSP3.

Instead, our proposal is generally to maintain current targets for most service standards and to focus on meeting, rather than exceeding, these targets to avoid unnecessary expenditure. Our customers largely support this approach.

To maintain service reliability in a cost-effective way, we will make use of our improving data, information systems and processes to better allocate asset management investment and operational resources in PSP3. This will help to offset expenditure that may otherwise have been required in our networks to meet service standards while we focus on achieving compliance outcomes as a first priority.

One area where our customers have indicated possible interest in a reduction in service standards is our contact centre response time. Our current target is to answer 85% of calls within 30 seconds. Respondents to our telephone survey indicated that they were prepared to wait about three minutes on average for their call to our contact centre to be answered. At this time we have decided to retain our current target of 85% for PSP3 while we investigate possible changes, and impacts on customers, ahead of PSP4.

For PSP4 we will engage customers with a detailed proposal that reflects a review of our customer service processes, resource allocation to the activities that are important to customers and more specific cost and service data for the contact centre. The proposal will provide customers with a clear picture of cost efficiency, issue resolution and contact centre response time.

Finally, we have also initiated a Productivity Improvement Program that, in part, is investigating ways to provide our services (and meet our service standard targets) more efficiently in PSP3 than we have in the past. More information on cost savings associated with the Productivity Improvement Program is included in Chapter 7 (Operating Expenditure).

A summary of our historical performance against each service standard and proposed targets for PSP3 is shown in the table below.

Table 6: Proposed service standards for PSP3

RefService standard		PSP1	PSP2			PSP3		
		FY2014-15 actual	FY2015-16 actual	FY2016-17 target	FY2017-18 target	FY2018-19 target	FY2019-20 target	FY2020-21 target
1	Water main breaks (no. per 100km of water main)	28.3	32.9	No target	No target	35	35	35
2	Percentage of response times within 60 minutes to attend Priority 1 bursts and leaks ⁶	Not reported	87%	90%	90%	90%	90%	90%
3	Percentage of response times within 180 minutes (3 hours) to attend Priority 2 bursts and leaks ²	Not reported	98%	90%	90%	90%	90%	90%
4	Percentage of response times within 4320 minutes (3 days) to attend Priority 3 bursts and leaks ²	Not reported	91%	90%	90%	90%	90%	90%
5	Incidence of unplanned interruptions – water (no. per 1,000 properties)	166.3	167.4	No target	No target	170	170	170
6	Incidence of planned interruptions – water (no. per 1,000 properties)	32.3	14.3	No target	No target	20	20	20
7	Average duration of an unplanned interruption – water (minutes)	143	199	180	180	180	180	180
8	Average duration of a planned interruption – water (minutes)	292	130	180	180	180	180	180
9	Percentage of unplanned water supply interruptions restored within 5 hours ²	97%	93%	90%	98%	90%	90%	90%
10	Percentage of planned water supply interruptions restored within 5 hours ²	95%	89%	85%	90%	90%	90%	90%
11	Number of customers experiencing repeat unplanned water supply interruptions in a financial year	Not reported	Not reported	No target	No target	To be piloted		
12	Percentage of non-revenue water (of total sourced potable water) (unaccounted for water)	24%	33%	12%	10%	28%	28%	28%
13	Sewerage mains breaks and chokes (no. per 100km of sewer main)	57	61	98	93	65	65	65
14	Percentage of response times within 60 minutes to attend sewer spills, breaks and chokes ²	Not reported	78%	90%	90%	80%	85%	90%
15	Percentage of sewage spills contained within 5 hours ²	98%	100%	99%	99%	99%	99%	99%
16	Number of customers experiencing repeat sewage overflows on private property in a financial year	Not reported	Not reported	No target	No target	To be piloted		
17	Total water and sewerage complaints (no. per 1,000 properties)	11.6	14.3	9	9	11	10	9
18	Water and sewerage complaints to the Ombudsman (no. per 1,000 properties)	0.32	0.37	0.5	0.5	0.5	0.5	0.5
19	Percentage of calls answered by an operator within 30 seconds	89%	88%	85%	85%	85%	85%	85%

⁶ Denotes a 'minimum service standard'. Service standards associated with service response and resolution times are proposed as minimum service standards and should be interpreted as (for example) "We will arrive onsite to a Priority 1 water supply burst within 60 minutes" rather than an average standard which would be "On average we will arrive onsite to Priority 1 water supply bursts within 60 minutes".

4.1.5 Repeat service interruptions

Due to insufficient asset data quality, accuracy and completeness, as well as an absence of specific systems and processes, we have been unable to report repeat service interruptions to date. However, we acknowledge that repeat service interruptions are a frustration for customers.

Significant investment is required for us to record and report repeat interruptions for both water and sewerage services. We propose a pilot in PSP3 to understand and confirm the full implementation costs and associated benefits of the investment to measure and report on repeat interruptions.

Should the pilot show merit in measuring repeat interruptions of this nature, we will engage with customers on introducing these standards and appropriate targets in PSP4.

4.1.6 Differential service standards

Since our inception as a single business covering the entire state we have operated on the basis of the same price, same service for all customers. With the state's dispersed population we have a significant number of treatment plants that are similarly dispersed.

Much of the associated cost of these treatment plants (both capital and operating expenditure) arises from meeting drinking water quality and environmental compliance obligations and a comparatively small component of the cost relates to labour. Of the labour cost, the operators of these treatment plants are multi-skilled, particularly in regional areas, and are able to provide water and sewerage network services in addition to treatment services.

This means that when there is a break in the water or sewerage main, the local operators are able to respond. In practice, this means that response times are faster in some regional and remote areas than urban areas as the travel time is significantly reduced with local staff. This may be the reverse in other utilities, such as electricity and telecommunications, where personnel may have to travel for some distance.

Due to these factors there are no substantial cost savings to be realised through the implementation of differential service standards at this time.

In addition, we specifically asked customers in our Consultation Issues Paper whether we should introduce differential service standards for PSP3. We did not receive any feedback from customers in support of introducing differential service standards.

As a result, we will maintain the current approach of providing the same standard of service to customers across the state.

4.2 Customer contract

We have revised our customer contract for regulated services (the provision of water services or sewerage services) to be clearer and easier to understand for our customers. The contract is required under the Industry Act and is in line with the requirements of the Customer Service Code.

When we provide water services or sewerage services to customers, they are deemed by section 60 of the Industry Act to have entered into a customer contract for these services. The customer contract is a legally enforceable document.

The customer contract sets out matters such as our services, payments for services and the rights and obligations of customers including if there is a disagreement with us. In limited circumstances the customer contract may be varied, subject to approval by the Economic Regulator. All customers would be notified of a varied contract.

A copy of the customer contract is published on TasWater's website at www.taswater.com.au. In addition, we will provide a copy of the customer contract via mail or over the counter at one of our offices upon request.

A copy of the TasWater Customer Contract is included at Appendix 5 to this plan.

4.3 Description of serviced land

4.3.1 Water

Serviced land is land where we will permit a standard connection to our water or sewerage infrastructure.

Section 56U(1)(b) of the Industry Act requires our price and service plans to include a description of the land (identifiable by individual title or locality) we will permit to be connected to our water or sewerage infrastructure, ie a description of serviced land. We have identified serviced land using individual land titles.

We identify titles with a full service based on servicing factors and the standards in the *TasWater Supplement to Water Supply Code of Australia WSA 03-2011-3.1 MRWA Edition V2.0* (available on our website). This code details our minimum service pressure at peak hour demand and minimum flow rate:

- Minimum service pressure at the connection point is 220kPa, static head of 22m (section 2.5.3.3 of the code) and
- Minimum flow rate 15 litres/minute (L/m) at the connection point (section 2.12).

Land titles are defined as being water serviced land when they meet all of the following criteria:

- Can be supplied with treated water; and
- Are within 30 metres of our water reticulation main; and
- Can receive the minimum flow and pressure at the connection point; and
- Connection to our reticulation would not cross a land title owned by a third party; and
- The physical characteristics or location of the land title are not such as to require the application of unusual or unusually costly infrastructure, design, or installation techniques in order for the connection to be made.

Treated water means either fully treated water or disinfection only water supplies. Raw water supplies are excluded. Customers in serviced land receiving water that is not safe for drinking will receive a discount on the regulated variable consumption rate.

Land titles that do not meet the criteria listed above are unserviced for water.

Existing or new connections that receive untreated water (raw water) or directly connected to a bulk transfer main are connections outside our serviced land and are dealt with in accordance with section 6 of the Water and Sewerage Network and Charges Policies document.

4.3.2 Sewer

We have a range of sewerage infrastructure around the state depending on local conditions and topography.

Land titles are defined as being as sewer serviced land when they meet all the following criteria:

- Are within 30 metres of our sewer reticulation main; and
- Connection to our reticulation main would not cross a land title owned by a third party; and

- The physical characteristics or location of the land title are not such as to require the application of unusual or unusually costly infrastructure, design, or installation techniques in order for the connection to be made by us; and
- Are not otherwise considered unserviced land in accordance with section 3.4 of the Water and Sewerage Network and Charges Policies document.

Land titles that do not meet the criteria listed above are unserviced for sewer.

4.3.3 Unserved land

Unserved land is land, identified by land title, which is not within served land. We do not have any obligation to provide a connection to titles that are outside served land. Section 2 of our Water and Sewerage Network and Charges Policies (Appendix 6) and our Land Development Policies (Appendix 7) documents outline the circumstances when we will consider allowing unserved land to connect to our networks.

A list of pressure sewer schemes in unserved land is shown below.

Table 7: List of pressure sewer schemes established before 1 July 2015

Area	Type of system
Bell Buoy Beach	Pressure sewer scheme with privately owned pump stations
Boat Harbour	Pressure sewer scheme with TasWater-owned pump stations
Dunalley (near Dunalley Hotel)	Pressure sewer scheme with TasWater-owned pump stations
Lauderdale	Pressure sewer scheme with TasWater-owned pump stations
Low Head	Pressure sewer scheme with privately owned pump stations
Wynyard	Pressure sewer scheme with TasWater-owned pump stations

4.4 Policies

We have a suite of policies connected to PSP3 that outline decisions we have made about issues, such as connecting to our network, who will be charged, the services we provide and land development. These may be required either under legislation or under the TER's PSP3 Guideline. This section provides the key parts of the policies, with the full versions of the policies provided as Appendices 6 through 9.

Our policies are largely unchanged from PSP2. However, we have decided to consolidate a number of the required policies to make them clearer and easier to use for customers. All of the relevant information is provided in one document, including relevant charges and tariffs, saving customers time cross-referencing between several documents.

The Water and Sewerage Network and Charges Policies document includes the following policies and information as sections:

- Connections
- Served land description (information, details in section 4.3 above)
- Sub-metering
- Service charges
- Conditional connections (a non-regulated policy)
- Service introduction charges and
- Fees, charges and tariffs (information).

The Land Development Policies document includes the following policies and information as sections:

- Developer charges and
- Service Extension and Expansion.

Trade Waste and Service Replacement remain separate policies.

4.4.1 Water and Sewerage Network and Charges policies

4.4.1.1 Connections policy

The Connections Policy specifies the circumstances that must be met for us to permit a land owner to connect, relocate or adjust their connection to our water and/or sewerage infrastructure. We have revised our Connections Policy to provide greater clarity and consistency with our other policies and the requirements of the Customer Service Code.

A number of criteria must be met for us to connect a property to our water infrastructure and/or sewerage infrastructure within ten business days. Some of these include:

- The property is within 30 metres of our reticulation infrastructure; and
- The physical characteristics or location of the property are not such as to require the application of unusual or unusually costly works for the connection to be made; and
- The connection does not cross property owned by a third party requiring consent; and
- The applicant has paid, or has agreed in writing to pay, all applicable fees and charges.

The full criteria and policy are provided at Appendix 6 as part of the Water and Sewerage Network and Charges Policies document.

In addition we have created a new policy, the Conditional Connections Policy, to determine when and where we will permit connections to land that doesn't meet our Connections Policy. This policy is not a regulated policy. The policy forms section 6 within the Water and Sewerage Network and Charges Policies document.

4.4.1.2 Sub-metering policy

Sub-meters are individual water meters that measure water usage downstream of a master meter. A master meter is the meter installed at the connection point and measures the total volume of water supplied to a property.

The sub-metering policy outlines our approach to sub-metering and billing of existing and new strata schemes and multi-unit properties. It applies to all residential and non-residential strata schemes and multi-unit properties. We have not made any substantive changes to the policy, but have clarified the wording of the policy to make it easier to use.

Planning legislation does not require sub-metering of individual lots in strata schemes or units in multi-unit properties. However, property owners are encouraged to investigate the installation of plumbing that will support future sub-metering of their property to allow for more transparent allocation of costs.

Some of the key parts of the policy include:

- For new developments the installation of sub-meters is a choice of the property owner
- In existing strata schemes, all lot owners in a strata scheme must agree to sub-metering and
- In existing multi-unit properties, sub-metering is at the discretion of the property owner.

We provide further information, such as application forms and guidelines, on our website to support the application of sub-metering.

The full sub-metering policy is provided at Appendix 6 as part of the Water and Sewerage Network and Charges Policies document.

4.4.1.3 Service charges policy

We are required by law to connect and supply properties within ten business days that meet our Connections Policy. To make sure that we can service and supply all of the properties in the serviced area we have to spend money on maintaining pipes, pumps and running the treatment plants. There are significant public health and environmental benefits associated with piped, tested drinking water and sewage removal and treatment, and an associated increase in property values from the provision of these services.

Our approach shares the cost between properties that use our services now and properties that may use our services in the future. If we didn't do this, then properties that are connecting now are carrying the burden of those that aren't currently connected. Sharing the costs in this way also helps to minimise prices in sparsely populated geographical areas.

Our customer consultation (Chapter 2) found that most customers (59 per cent) supported the retention of service charges. Overall the consultation found that 44 per cent of customers supported the principle of charging vacant land and that the charging arrangements should be retained, while another 15 per cent disagreed with the principle, but thought the charges should remain.

The service charges policy is provided at Appendix 6 as part of the Water and Sewerage Network and Charges Policies document.

4.4.1.4 Service introduction policy

Service introduction is the construction of water and/or sewerage infrastructure to provide reticulated services to localities not previously receiving them.

The service introduction policy details the process we will follow once we receive a request to introduce water and/or sewerage service to a new locality. Where a service introduction request proceeds, then one-off service introduction charges are levied on the owners of properties within the service introduction area. The charge covers the property owner's share of the cost of installing, altering or using our assets so we can provide a regulated service to the owner's land. In addition, one-off or ongoing charges will also apply such as connection charges, fixed and variable consumption charges.

We will calculate service introduction charges based on the net present value (NPV) of the cost of providing the assets specific to the service introduction and subtracting the present value of the amount that would be recovered from the threshold amount of customers (being 80 per cent) through ongoing annual water charges and/or sewerage charges (being fixed charges or service charges). Any third party funding contributions will be subtracted from the NPV calculations.

The service introduction process has three stages:

- Stage 1 Initial Consultation – we will provide high level, preliminary design of the infrastructure, a map of the proposed service area and indicative service introduction charges per title for the service(s)
- Stage 2 Indicative Community Support – we will test whether there is broad community support of at least 50 per cent for the service introduction proposal to undergo detailed design and business case development. TasWater Board approval of the business case is conditional on the threshold in Stage 3 being reached and

- Stage 3 Community Commitment to Service Introduction – at least 80 per cent of owners of developed land titles within the proposed service introduction area must enter into an agreement committing to pay the service introduction charge and any other relevant charges.

Our previous policy used an 80 per cent threshold for both stage 2 and stage 3. The high threshold for initial support and subsequent resources applied by us to engage the community was out of proportion to the level of commitment by us or individual properties. The new 50 per cent threshold proposed in PSP3 is to test whether the majority of the customers are interested in learning more about the proposal for us to undertake detailed design.

The stage 3 threshold of 80 per cent continues as a ‘commercially viable’ test. The 80 per cent threshold is used in the calculation of the service introduction charge outlined above.

The service introduction policy is provided at Appendix 6 as part of the Water and Sewerage Network and Charges Policies document.

4.4.2 Land development policies

4.4.2.1 Developer charges policy and service extension and expansion policy

Developer charges refer to assets gifted to us by developers and cash payments made by developers to us for network or treatment infrastructure to support new developments.

Our developer charges approach has two key principles which support alignment of development to strategic land use planning and long term asset management planning:

- Any existing system capacity within serviced land is made available at no additional charge to developers and
- For works internal (infrastructure created within a development) and works external (infrastructure extending or expanding an existing system to service a development), developers pay no more than the costs required to service their development.

The customer consultation contained support for all customers contributing to the costs of economic development and for requiring developers to pay for specific development. These views are largely in line with our existing policy of incorporating growth into our infrastructure investment planning, and applying developer charges where development goes beyond the existing capacity of our systems.

We have, or are developing, long-term capital works strategies for each of our water and sewerage systems. We refer to these as Growth and Capacity Plans, part of our Strategic Asset Management Plan. The Growth and Capacity Plans detail the capacity of our systems to supply current and known future growth and our capital investment strategies to support this growth. These enable us to provide specific information to developers, upon request, about spare capacity within the system and the timing of any relevant upgrades. This means that the costs of development will reflect the actual costs in a particular system.

Where capacity is not available within serviced land the developer will need to install that capacity at their cost. The costs for works internal and works external will apply.

We may permit extension to our systems by developments outside serviced land where capacity is available. The developer will pay the costs of extension, including connection, to that system but will access the capacity in that system at no additional charge. The costs of works internal and works external will apply.

We may also permit extension to our systems by developments outside serviced land where sufficient system capacity is not available. The developer pays the costs of extension, including connection, to that system and expansion of the system to the level of capacity required to service

the development. Any spare capacity in that system that is less than the total required for the development will be made available at no additional charge. The usual costs of works internal and works external will apply.

For new developments that do not connect to our existing systems, all costs are paid by the developer. We may review these developments to assess whether strategic benefits are delivered by the development and the ongoing costs of the system, and at our absolute discretion accept these gifted assets. In this case we may also consider contributing to the water and/or sewerage development costs.

The Land Development policies are provided at Appendix 7.

4.4.3 Trade waste policy

We provide a service to collect, transport and treat liquid trade waste provided it is of an appropriate volume and quality to be safely accepted to our wastewater systems. Our sewerage network and treatment plants are typically designed for domestic waste. This means that there are additional costs associated with the management, transportation and treatment of liquid trade waste in our sewerage infrastructure.

Our customer consultation (Chapter 2) found there was very high support for the current arrangements that trade waste costs are be paid by those generating the waste and using the service.

We determine a customer's category by calculating a risk score based on the following four key elements: business activity, substance of concern, pre-treatment requirements and trade waste volume. A customer's risk score provides an indication of the expected demand placed on our sewerage infrastructure by the trade waste discharged by the customer.

We classify trade waste customers into four primary categories:

- Category 1: Dischargers of trade waste of low volume or strength, which provide minimal risk to our sewerage infrastructure and can be managed through cleaner production methods
- Category 2: Dischargers of trade waste of low to medium volume, which require physical pre-treatment at the source to make the trade waste acceptable for discharge to our sewerage infrastructure. Category 2 is further separated into 3 sub categories (2A, 2B and 2C) based on an assessment of the commercial and technical risk associated with accepting a customer's trade waste to our sewerage infrastructure
- Category 3: Dischargers of trade waste which through volume, composition or quality, individually or combined, pose a medium risk to the operation of our sewerage infrastructure and
- Category 4: Dischargers of trade waste, which through volume, composition or quality, individually or combined, pose a high risk to the operation of our sewerage infrastructure.

The TasWater Trade Waste Customer Category Guideline provides further detail on the categorisation of trade waste customers and is available on our website at www.taswater.com.au.

In addition, some trade waste is directly trucked to our STPs, we refer to these wastes as 'tankered wastes'. Tankered wastes are not accepted for direct discharge to sewer, in line with section 15 of the *Water and Sewerage Industry (General) Regulations 2009*. We apply a risk-based approach to determine whether we will accept certain types of tankered waste at designated receiving facilities.

The following types of fees and charges apply for each category of trade waste customer:

- Category 1 and 2 Trade Waste:
 - We will levy application fees, target trade waste charges and may levy additional charges for non-compliance
 - These charges will be in accordance with the Price and Service Plan 2018-21 and indexed annually by 2.5 per cent as approved by the Regulator
- Category 3 and 4 Trade Waste:
 - We will levy application fees, volumetric charges and mass load charges and may levy additional charges for non-compliance. We will determine the fees, charges and associated indexation annually
 - We will negotiate a transition period with each customer that reflects the reasonable time required for the customer to implement appropriate trade waste risk controls. During the respective transition period, volumetric and mass load charges will be levied at a percentage of the full cost. Any transition period must conclude with the customer paying 100 per cent of costs on, or before, 1 July 2020 to comply with legislative requirements
 - The agreed transition period may include, but is not limited to, time for funding, design, construction, installation and commissioning of pre-treatment where required. Approved transition periods will require customers to achieve long term sewer acceptance limits and full charges by the conclusion of the period
- Tankered Waste:
 - We will levy management fees and tankered waste category fees on a per kilolitre basis
 - We will determine the fees, charges and associated indexation annually.

The Trade Waste policy is provided at Appendix 8.

Trade waste charges are detailed in Chapter 9. We will also publish the schedule of fees and charges for each category of trade waste customer on our website at www.taswater.com.au.

4.4.4 Service replacement process

In the last regulatory period (2015-18) there remained a number of small towns across the state where our water supply did not comply with the Tasmanian Drinking Water Quality Guidelines (TDWQG). At the commencement of this regulatory period all of these towns will either:

- Have a compliant drinking water service; or
- A compliant drinking water service will be close to finalisation; or
- Service replacement will have occurred.

The towns of Pioneer and Mountain River have had their services replaced with water tanks and we have applied to TER for the removal of the titles in these towns from our serviced land.

Our process for service replacement is largely unchanged from the process used in PSP2, with only minor revisions to improve clarity (eg on the level of community support required to proceed). The process is provided at Appendix 9.

5 Demand Forecast

Key points

- Demand forecasts are used to plan the timing and size of infrastructure upgrades, predict operating costs and are a key variable in determining prices
- For PSP3, we developed a new demand forecasting model that is based on recent actual demand, expected population growth and variables such as location and customer type
- This allows us to improve the accuracy of our capital investment plans and revenue modelling which in turn helps to keep price rises to a minimum for customers
- We expect low, but positive growth in demand for most of our water, sewerage and miscellaneous services from 2018 to 2021 (around 0.5% per year, depending on the service)
- Our infrastructure plans are based on this demand forecast and underlying strategic land use planning, and our operating expenditure forecast, capital expenditure forecast and revenue requirement in PSP3 are based on the demand forecast outlined in this chapter

Demand forecasts are an important planning tool for TasWater and are a key variable in determining prices for PSP3. We use demand forecasts to plan the timing and size of infrastructure upgrades, predict operating costs and calculate unit prices for water and sewerage services.

5.1 Review of PSP2 forecast versus actual demand

The table below compares the forecast demand used in PSP2 with actual data in FY2015/16 (the only year of data currently available for PSP2).

Table 8: Comparison of forecast demand and actual demand in FY2015/16

Parameter	Equivalent 20 mm Connections	Equivalent 20mm fire service connections	Water Use (ML)	Wastewater ETs	Miscellaneous Services (transactions)
PSP2 Forecast	255,278		57,964	238,967	13,090
Actual Demand	235,350	20,781	58,865	231,848	19,902
Difference	853		901	-7,119	6,812
Difference (%)	0.3%		1.6%	-3.0%	52.0%

5.1.1 Comparison of equivalent 20mm connections⁷

In PSP2, we did not separately forecast demand for equivalent 20mm connections and equivalent 20mm fire service connections. However, the combined actual demand for these two categories in FY2015/16 is very similar to the overall PSP2 forecast (0.3% higher than forecast).

Our actual data for FY2015/16 and our demand forecasting method for PSP3 are both more clearly documented now than in our PSP2 submission. As a result, our PSP3 demand forecast is more robust than our PSP2 forecast.

5.1.2 Comparison of water use

Actual water use in FY2015/16 was 1.6% higher than forecast. This is due in part to FY2015/16 being a hotter than average year in Tasmania⁸, leading to slightly higher demand for outdoor water use.

⁷ This figure represents the total number of connections of all sizes converted into an equivalent number of 20mm connections. The relationship between the diameter of a metered connection and the potential flow that can be provided is used to determine the equivalency (eg a 100mm connection is equivalent to 25 x 20mm connections).

⁸ The mean annual temperature for Tasmania in 2016 was 0.88 °C above average according to the Australian Bureau of Meteorology.

5.1.3 Comparison of wastewater ETs

Actual wastewater ETs in FY2015/16 were lower than forecast for PSP2. This is partly due to the way ETs are calculated based on customer billing codes, which have been reviewed since the PSP2 submission as part of ongoing business improvement. The improvements to our customer billing database mean that the actual ETs are now more accurate than the PSP2 forecast.

5.1.4 Miscellaneous services

The number of transactions for miscellaneous services, such as special meter reads or land information requests, shows a significant discrepancy between the PSP2 forecast and actual data for FY2015/16. Miscellaneous services resulted in about 20,000 transactions in FY2015/16 which is about 7,000 more than forecast in PSP2.

The discrepancy arose because not all of TasWater's FY2015/16 miscellaneous charges were applied by the previous regional water corporations, resulting in a low PSP2 forecast. Our reporting has since improved and is reflected in our PSP3 forecast.

5.2 Method and assumptions for our PSP3 demand forecast

Our PSP3 forecast uses FY2016/17 as a base year, which itself is derived from actual customer and usage data recorded in FY2015/16. We forecast future demand using the following primary information:

- Population growth projections at the local government area (LGA) level using the Tasmanian Government's most recent median population growth estimates
- The projected change in the number of persons per household (statewide) based on Australian Bureau of Statistics (ABS) data and
- Assumed ratios for infill development compared to Greenfield development (statewide), based on published reports for Tasmania.

Climate variations have not been considered in the demand forecasting model, as we currently have insufficient data to correlate climate conditions with demand patterns for our customers (eg long term/climatic changes in rainfall variability affecting outdoor water use). We intend to review the impact of climate change factors for possible inclusion in our PSP4 demand forecast method.

No adjustments have been made for water restrictions, as actual water usage in FY2015/16 is based on consumption measured at the meter. This captures use trends from towns regularly placed under restrictions. Any future restrictions in other towns are likely to be dependent mainly on unexpected changes in seasonal rainfall that we are unable to predict with sufficient accuracy to include in the demand forecast model.

Future water consumption is based on actual water consumption in FY2015/16 as a starting point. While this was a hotter year than average, the increase in demand due to temperature is considered to be relatively small and we have not made any adjustments to the base year water consumption as a result.

Network water leakage has also not been considered as it does not affect revenue from water demand measured at the customer meter. A reduction in leakage would lessen the electricity and chemical costs associated with drinking water production, which is a potential improvement for future reporting periods.

5.2.1 Method for forecasting customer connections

The demand forecast for customer connections is based on 25 year population projections for LGAs published by the Department of Treasury and Finance.

The population forecast is then combined with a trend in the number of persons per households in Tasmania to arrive at a projected number of new households in the PSP3 period.

However, not all new households will result in new connections to the water or sewerage system. For residential growth, 6.5% of households are assumed to take up existing serviced lots through infill development and will not require the creation of new connections, nor will they lead to additional fixed revenue, as vacant lots within service areas pay fixed water and sewerage charges.

Commercial (non-residential) connections are assumed to grow only in line with population, as persons per household and infill/greenfield development has not been deemed relevant to the commercial customer base.

Industrial (non-residential) customers do not typically follow average growth trends and instead require analysis on a case-by-case basis. At the present time, TasWater has insufficient data to forecast changes in industrial customers during the PSP3 period and the demand forecast assumes their numbers will remain unchanged for PSP3.

Unlike water use, the number of water and sewerage connections in our demand model is influenced only by positive population growth as a declining population will not necessarily translate to a reduction in connections or reduced fixed charge revenue.

5.2.2 Method for forecasting water use

Growth in water use has been calculated on the assumption that volumes are proportional to population growth, which is in line with TasWater's network design capacity method. Hence, residential and non-residential water use is forecast to grow at the same rate as population (which could be up or down, depending on the locality). This includes commercial and industrial water use which can reasonably be expected to grow in line with population growth, despite our assumption (above) that industrial connection numbers will not grow (ie will remain static).

5.2.3 Method for forecasting trade waste

Trade waste customers overwhelmingly consist of connections with commercial billing codes: hence, growth is expected to occur based on the same influences as commercial connections, ie population growth.

5.2.4 Method for forecasting miscellaneous services

Miscellaneous services have also been scaled by population growth, but by the statewide average, as miscellaneous services data is not available by LGA.

5.2.5 Summary

Our proposed demand forecasting methods produces an individual growth rate for each financial year of the PSP3 period.

5.3 Forecast growth rates for PSP3

Based on the method outlined above, our modelled forecast growth rates for each demand type have been calculated for PSP3 as shown in the following table.

Table 9: PSP3 growth forecast for regulated services (annual percentage change)

Parameter	FY2018/19	FY2019/20	FY2020/21
Equivalent 20 mm Connections	0.74%	0.73%	0.73%
Equivalent 20mm Fire Service Connections	0.55%	0.54%	0.54%
Water Use (kL)	0.50%	0.48%	0.48%
Wastewater ETs by Customer Type:			

Parameter	FY2018/19	FY2019/20	FY2020/21
• Residential	0.81%	0.80%	0.80%
• Commercial	0.46%	0.45%	0.45%
• Industrial	0.00%	0.00%	0.00%
Wastewater ETs Total	0.71%	0.70%	0.70%
Trade Waste Customers by Category:			
• 1	0.51%	0.50%	0.49%
• 2A	0.45%	0.44%	0.44%
• 2B	0.52%	0.51%	0.51%
• 2C	0.47%	0.46%	0.46%
Total Miscellaneous Charges	0.57%	0.56%	0.55%

These are statewide values derived, where possible, from LGA growth trends. We expect low, but positive growth across nearly all services, with the exception of industrial customers at 0% growth. This aligns with Tasmania's population outlook provided by the Department of Treasury's projections.

Residential connections are forecast to increase more than other demand types, largely due to the expected reduction in persons per household and somewhat lessened by some development likely occurring on existing serviced lots.

Our proposed growth rates (above) compare well with the median population growth rates forecast by Treasury for the whole state (below), which are Treasury's medium population data series. Treasury has described this median prediction as being most similar to recent trends (refer to table below).

Table 10: Population growth in Tasmania

PSP Period	Calendar Year	Financial year	Population	Change in Population	Population Growth
-	2012	2011-12	512,334	–	–
PSP1	2013	2012-13	515,801	3,467	0.68%
	2014	2013-14	519,108	3,307	0.64%
	2015	2014-15	522,331	3,223	0.62%
PSP2	2016	2015-16	525,501	3,170	0.61%
	2017	2016-17	528,633	3,132	0.60%
	2018	2017-18	531,714	3,081	0.58%
PSP3	2019	2018-19	534,759	3,045	0.57%
	2020	2019-20	537,763	3,004	0.56%
	2021	2020-21	540,732	2,969	0.55%

Our forecast growth in water use is based on Treasury's population growth by LGA. However, the statewide growth in water use is less than the statewide growth in population. This is because:

- Many of the largest water users are experiencing lower than average growth. The top three water users by LGA are Launceston City, Glenorchy City and Hobart City, with PSP3 average growth rates of 0.46%, 0.54% and 0.36%, respectively, compared to the statewide population growth of 0.56%
- There is a difference in water use volume per person in each LGA, which can be attributed to:

- Location of major industrial customers, who typically use significant volumes of water relative to residential use and
- Relative density of residential zones: low-density lots typically use more water due to an increase in external use.

Our estimated growth in demand for miscellaneous charges is in line with unadjusted statewide population growth of 0.56% pa on average.

5.4 Forecast demand for PSP3

Using the method, assumptions and projected growth rates above, the forecast demand for connections, water usage and miscellaneous services is shown in the table below for the PSP3 period.

Table 11: PSP3 demand forecast summary for regulated services

Financial Year	FY2018/19	FY2019/20	FY2020/21
Equivalent 20mm connections (number)⁹	240,709	242,471	244,235
Equivalent 20mm fire service connections (number)	21,130	21,244	21,360
Water Usage (kL)	59,761,540	60,051,223	60,339,237
Wastewater ETs (number)	236,893	238,556	240,225
Trade Waste Customers by Category (number)			
• 1	1,038	1,043	1,048
• 2A	2,235	2,245	2,255
• 2B	119	119	120
• 2C	131	131	132
Miscellaneous Services (number of transactions)¹⁰	20,252	20,366	20,478
• Special read	4,581	4,607	4,632
• Land Information Certificate (56ZQ) request	13,393	13,468	13,542
• Section 56W consent	261	262	263
• Account establishment and closure	18,424	18,574	18,723
• Pressure and Flow Testing	6	6	6
• Restriction Charge	0	0	0

5.5 Aligning the PSP3 expenditure forecast and demand forecast

The TER's PSP3 guideline states that capital expenditure forecasts should be developed in a manner that is consistent with the demand forecast. We also consider that operating expenditure should be forecast in a manner that reflects PSP3 demand forecasts.

This is particularly pertinent for forecasting variable costs such as electricity and chemical costs and also extends to fixed costs such as meter reading, billing and customer service (where new connections can have an impact on costs).

Our alignment process has included a review of existing business cases that were developed prior to these demand forecasts being developed to ensure the PSP3 forecast costs align with the demand forecasts outlined in this chapter. However, where there is no alignment, we have sought to identify and explain any such departures in the operating expenditure and capital expenditure sections of our submission.

⁹ This figure is the equivalent number of 20mm connections that is representative of the total number of connections across all connection sizes. A detailed forecast of customer numbers by connection size for each year of PSP3 is contained in our demand forecast model.

¹⁰ The miscellaneous services listed in this table align with those listed in our PSP2 submission. These services represent those that are materially important in terms of the overall number of miscellaneous transactions and the revenue derived from these transactions. A detailed forecast of transactions for all miscellaneous services is contained in our demand forecast model.

6 Capital expenditure

Key points

- Our capital expenditure program is designed to address the many challenges we face such as ageing infrastructure and compliance obligations to improve outcomes for our customers
- To address these issues, we expect to invest \$386 million in our infrastructure in PSP2 - an increase of \$56 million above our PSP2 submission in order to accelerate the improvements
- In preparing for PSP3, we have developed our LTSP which reflects customer views and defines the outcomes we will deliver over a 20 year period in a manner that carefully balances prices, service standards and the time to reach full compliance
- In the first 3 years of the LTSP (which is PSP3), we will spend \$467 million in capital expenditure to deliver the following outcomes:
 - Microbiological compliance of 100 per cent, removal of all boil water and public health alerts and a progressive reduction of public health risk in our water systems
 - Effluent compliance of 78 per cent by volume measured against EPA standards and mitigation of environmental risks for 90 per cent of the EPA's top 20 sites
 - Risk reduction of all but one dam to within tolerable levels, with the remaining dam managed through interim measures to reduce its risk appropriately
 - For service reliability, maintain current standards by focusing investment on assets that, if they failed, would cause substantial interruption to the services we provide

With some of our infrastructure lasting 100 years or more, we build, operate and maintain our assets to provide services to both current and future generations of Tasmanians.

As a result, we take a long-term view when investing in new infrastructure for our customers. In doing so, we have engaged with our customers and stakeholders to develop a Long Term Strategic Plan (LTSP) that defines the outcomes we will deliver over a 20 year period and the careful balance between prices, service standards and the time to reach full compliance.

Our proposed capital expenditure (capex) in PSP3, which forms the first three years of the LTSP, is based on what matters most to our customers – with a primary focus on improving drinking water, environmental and dam safety compliance outcomes over the period.

We will continue to have a compliance focus during the balance of the first 10 years of the LTSP to achieve rapid improvements in these areas. In the second 10 years of the LTSP, we will begin to shift our focus to replacing our ageing networks to improve the reliability of our water and sewerage services.

To deliver the outcomes our customers want and keep price rises to an acceptable level, the LTSP spreads the required capex over a 20-year timeframe. The focus on compliance in the first half of the LTSP gives us time to collect the data required to optimise network replacement expenditure in the second 10 years of the LTSP.

The remainder of this chapter is structured as follows:

- A summary of our long term strategic plan
- The role of economic regulation in our capital expenditure
- Our capital planning and asset management framework
- Our capital expenditure in PSP2 and
- Our forecast capital expenditure in PSP3.

6.1 Our long term strategic plan

6.1.1 Our operating environment

As described in Chapter 1 (Introduction), TasWater started operations in July 2013 with the merger of the three former regional water corporations (Ben Lomond Water, Cradle Mountain Water and Southern Water) and the shared services provider, Onstream.

Now in our fourth year, we have delivered many improvements thanks to the foundations of an integrated, statewide business. These improvements have come through solid investment in infrastructure, especially in tackling water quality issues and our commitment to improving services to communities across the whole state.

We are very aware that our services must be affordable for our customers. However, we face significant challenges to ensure drinking water for all customers is clean and safe to drink, to reduce the impact of sewage treatment and disposal on the environment, and to maintain a secure supply of water by managing the safety of our dams.

At the same time, we have a large, geographically dispersed asset base that needs to be replaced as it ages to ensure a reliable supply of water to our customers and to efficiently collect and transport sewage.

While we are addressing many of these challenges through PSP2, at the start of PSP3 we will still have several tasks to address including:

- In the 18 months leading up to PSP3, we will have removed all but six townships across the state from boil water or do not consume alerts. This leaves the remaining six townships to address early in the PSP3 period (by August 2018)
- At the start of PSP3, a number of our drinking water systems have emerging catchment risks such as farming and grazing activities that will require additional treatment barriers in order to maintain compliance with the microbiological requirements in the ADWG and
- Nine of our dams will still be above the level of tolerability prescribed by ANCOLD guidelines at the start of PSP3.

For sewerage:

- At the start of PSP3, we expect 62% of total effluent volume will be compliant with licence discharge limits
- The rate of sewer mains breaks and chokes is above the median for similar sized water utilities in Australia and
- Many of our critical sewer pump stations adjacent to sensitive receiving waters are undersized and prone to overflow and are known to discharge onto beaches, recreational sites, schools and to shellfish leases.

Overall:

- Many of our existing assets were not designed to meet the modern day environmental and public health standards set by our regulators
- We have a disproportionately large number of treatment plants given the size of the population we service and our revenue base. All else being equal, this creates higher capital and operating costs for TasWater compared to our mainland counterparts and
- We have nonetheless also gained insight through a benchmarking study with our mainland counterparts on other areas of the business (eg Retail and Customer Services)

where we can improve our productivity and realise cost savings (discussed in more detail in Chapter 7).

It is not feasible for us to address all of these requirements in the short three year period of PSP3 given the scale of expenditure required and the need to strike a balance with customer affordability. Our LTSP provides the framework for engaging with customers, stakeholders and regulators to prioritise these outcomes over a 20-year period. The LTSP framework enables us to use the best balance of capital expenditure, operating expenditure and productivity gains (cost savings) to make system improvements that deliver positive outcomes for our customers.

6.1.2 Putting the customer at the centre of the LTSP

To ensure our activities and investment in the LTSP are aligned with the expectations of our customers and stakeholders, we revised our strategic framework based on meeting four enduring customer promises:

- Deliver a positive customer experience to you
- Give you value for money
- Provide you with safe drinking water and responsibly manage your sewage
- Build culture and skills for the long term benefit of Tasmania.

These customer promises each have a number of customer outcomes associated with them (see Table 1 in Chapter 1). In turn, we assigned measures of success and targets to each outcome to demonstrate when the outcome will be achieved and to enable customers and stakeholders to assess our progress over time.

Our consultation for PSP3 (see Chapter 2) sought feedback from our customers and stakeholders on a range of topics relating to the outcomes including investment priorities associated with each outcome, acceptable price increases to achieve the outcomes and customer service standards related to the outcomes.

This feedback was an integral part of the development of our LTSP. We assigned quantitative measures to link each project in our capital program to the customer outcomes in our strategic framework. We then prioritised the capital projects by comparing their relative costs and benefits (that is, their contribution to achieving measures of success for each customer outcome).

6.1.3 Making trade-offs between customer outcomes

Since it is not feasible to address all of the compliance and renewal challenges immediately, it is necessary to make trade-offs between achieving various customer outcomes over time. The main outcomes we modelled in the LTSP relate to environmental outcomes (effluent compliance), drinking water quality outcomes (public health risk), dam safety outcomes (societal risk) and value for money outcomes (price increases).

Service standards in the LTSP were modelled conservatively with service reliability outcomes based on a theoretical link between renewal expenditure (to replace ageing networks) and improvements in service reliability (fewer water main breaks, sewer spills or other service interruptions). Over the course of PSP3, we will gather data and investigate further benefits to improvements in service reliability from a mixture of renewal expenditure, pressure management of our water networks, real time monitoring of risk in our networks and opportunities to reline, rather than fully replace, our network assets.

The preferred scenario for our LTSP model contains a weighting to emphasise various compliance outcomes in accordance with the preferences expressed by our customers during consultation (refer to Chapter 2 for more details). The LTSP model includes the following characteristics:

- Drinking water quality as highest priority (ie projects that contribute to achieving this priority receive a greater weighting)
- Environmental compliance and dam safety as an equal second priority (ie projects that contribute to achieving these priorities receive the same weighting – and slightly less than water quality projects)
- Service reliability focused on critical assets and high impact/sensitive environments in PSP3
- The individual projects in the LTSP also reflect priorities discussed with our regulators and
- Price increases kept to 4.6% per annum in PSP3 to balance affordability with risk mitigation and compliance improvement.

Our technical regulators (EPA, DHHS, DPIPWE) have provided general support for the compliance outcomes in our LTSP over the PSP3 period and beyond. The regulators understand that significant investment is required to improve compliance levels and that, while marked improvement in compliance is expected, the necessary investment needs to be spread out over time to avoid price shocks on customer bills. The expectations of our regulators are described in more detail in Chapter 3.

6.1.4 The outcomes we will deliver in the LTSP and the PSP3 period

The LTSP is a living document that will be reviewed ahead of every PSP period. While the framework is enduring and reflects the customer promises and outcomes we expect to deliver in perpetuity, we understand that customer and stakeholder preferences may change over time with respect to investment priorities, acceptance of price increases or other trade-offs in the LTSP.

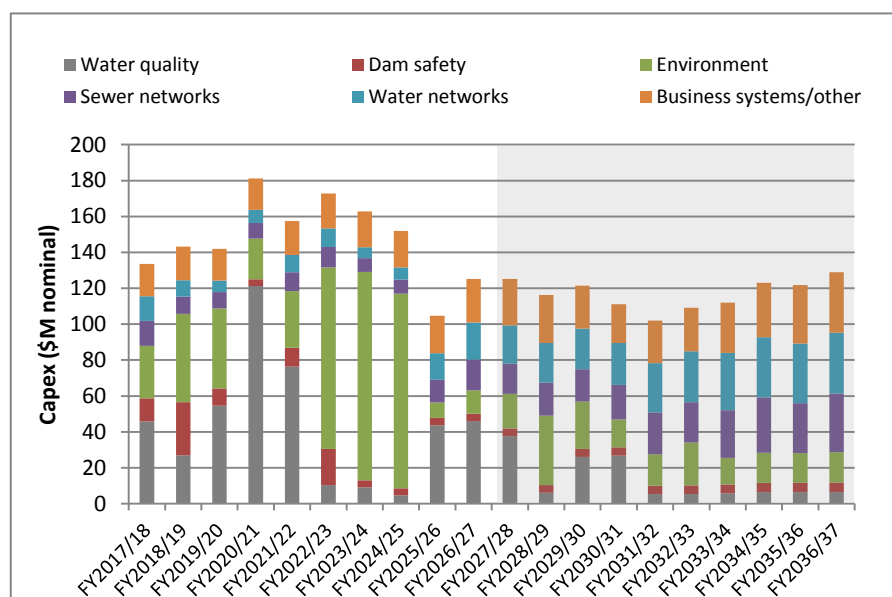
In that context, our first LTSP is a starting point and reflects customer and stakeholder preferences at the time of our PSP3 submission. Based on what our customers have told us for PSP3, and what we are able to deliver within the constraint of acceptable price increases and while maintaining prudent levels of debt, the key outcomes we will deliver for customers over the 20-year LTSP period are:

- For environment, we will achieve 93 per cent effluent compliance by volume measured against EPA standards
- For drinking water, we will achieve 100 per cent microbiological compliance for all our drinking water systems
- For dam safety, all of our dams will be below tolerable risk levels and
- For service reliability, we will achieve targets of 150 unplanned water supply interruptions per 1,000 properties and 31.7 sewer main breaks and chokes per 100km of main.¹¹

The capital expenditure required to deliver these outcomes is summarised in the figure below.

¹¹ These are the average values for large Australian water utilities in FY2015/16 based on the *National performance report 2015-16: urban water utilities* published by the Bureau of Meteorology in March 2017.

Figure 7: Forecast capital expenditure in the LTSP



Note: Shading of expenditure from FY2027/28 onward represents a lower degree of certainty in these years. We will refine our modelling in future versions of the LTSP as we collect better data.

The graph above shows a substantial amount of expenditure on water quality projects between FY2017/18 and FY2021/22 which reflects the high priority expressed by our customers for outcomes associated with these projects. Our greatest expenditure on water quality will occur in FY2020/21 and FY2021/22 when we will make substantial upgrades to our water treatment plants at Bryn Estyn and Forth.

In the first three years of the LTSP (which is PSP3), we will spend \$467 million in capital expenditure to deliver the following key outcomes for customers:

- For environment, effluent compliance of 78 per cent by volume measured against EPA standards and mitigation of environmental risks for 90 per cent of the EPA's top 20 sites
- For drinking water, achieving microbiological compliance of 100 per cent, removal of all boil water and public health alerts and a progressive reduction of public health risk in our water systems
- For dam safety, reducing the risk of all but one dam to within tolerable levels, with the remaining dam managed through interim measures to reduce its risk appropriately and
- For service reliability, maintain current standards by focusing investment on assets that, if they failed, would cause substantial interruption to the services we provide.

The outcomes we will deliver for customers in PSP3 and over the entire 20-year period of the LTSP are described in more detail in Section 6.5. This section also summarises the capital projects that are required to deliver these outcomes in the PSP3 period, and a more extensive list of projects is available in Appendix 12.

6.2 Our capital expenditure and the role of economic regulation

While our capex planning is based on achieving customer outcomes in line with our LTSP, we also need to satisfy specific requirements of the TER in our PSP3 submission.

The TER requires us to provide evidence to demonstrate that our capital expenditure in PSP2 and our forecast capital expenditure in PSP3 is both prudent (a clear need to incur the expenditure) and efficient (the most cost effective way to achieve the desired outcome).

The TER also requires us to separate our capital expenditure between regulated water and sewerage services and classify the cost driver according to the TER's definitions (see section below). We also need to provide an itemised list of major projects (generally, those greater than \$2 million) and the details of the project to the TER.

6.2.1 Cost drivers for categorising our capital expenditure

We have used the TER's cost drivers to set our prudence drivers for capex planning:

Table 12: Capex cost or prudence drivers and definition

Prudence driver	Definition
Compliance	Meeting regulatory obligations
Growth	Increasing the capacity of assets or construction of new assets, to meet growth in demand or to provide additional security of supply
Renewal of existing infrastructure	Replacing existing assets and generally maintaining service levels
Improvements	Improving service levels and reliability to meet customer preferences

In alignment with our LTSP, the majority of our capital expenditure in PSP3 is to meet our regulatory obligations. The compliance outcomes we plan to achieve in PSP3 has received general endorsement from our technical regulators (refer to Chapter 3) and we have a list of associated capex projects required to achieve these outcomes. Having received general endorsement from our regulators, these compliance-driven projects are considered to be prudent. These projects, as well as our planned renewal, growth and improvement projects, are discussed in more detail in section 6.5.

6.2.2 Escalation of costs

Capex escalation rates apply to PSP2 and PSP3 capex in this submission. This is needed to roll forward the regulatory asset base (RAB) for each year of PSP2, to derive the RAB for PSP3.

We have adopted the following escalation factors for capex:

- FY2016/17 to FY2020/21: The ABS 10-year average of historical change in the Producer Price Index (PPI) for 'Other heavy civil and engineering construction', which includes water and wastewater construction projects among other activities
- FY2021/22 and beyond: Midpoint of the Reserve Bank of Australia's (RBAs) inflation target band, which is 2.5% per annum.

The following table presents our recommended capex escalation rates.

Table 13: Capex escalation rates

Scenario	Source	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21	Beyond
Medium	ABS 10-year average	2.54%	2.54%	2.54%	2.54%	2.54%	2.5%

Capex is escalated at 2.54 per cent per annum for the PSP3 period, with 2.5 per cent used in our capital planning beyond FY2020/21. In FY2015/16, actuals not escalation apply.

6.3 Our capital planning and asset management framework

This section summarises our approach to capex planning, including how this has changed since development of the LTSP in FY2016/17. Our PSP3 capex forecasts largely reflect the improvements to

our approach brought about by the LTSP process, with the exceptions of projects that were started in PSP2.

6.3.1 Capital planning process and prioritisation for PSP2

Our capital works planning and prioritisation process in PSP2 was integrated with our Project Management Framework (PMF) for delivery of capital works projects and programs through the entire lifecycle of the asset. The process was developed based on approaches inherited from the three previous regional corporations and Water Services Association of Australia (WSAA) Guidelines.

Project and program prioritisation was completed annually through the use of a prioritisation tool that assessed risk of deferral and how projects aligned with our strategic objectives (which, in turn, reflected customer outcomes). The aim was to compare projects across asset classes, regions and drivers for internal review. The prioritisation process allowed us to develop a capital works program based on ability to address risk to the business and the achievement of corporate value drivers.

We assessed risks using our Corporate Risk Framework, which includes evaluating consequences in the areas of finance, assets, health and safety, water quality/public health, service delivery, reputation, environment, compliance, business benefit and growth.

This PSP2 capex prioritisation process generated:

- A detailed capital works program for the next financial year and
- A proposed capital works program for future years, as a rolling ten year program with high-level detail (aligning with PSP periods).

The capital works program was then presented to Asset Strategy, Planning and Performance for development of business cases. Where the project required Board approval, initial scrutiny was undertaken by the Capital Works Committee, a subcommittee of the Board, prior to presentation to the Board for consideration.

We worked with regulators to determine priorities in the water and waste water areas for PSP2:

- Drinking water compliance projects have been determined through liaison with the DHHS and the development of the Drinking Water Management Strategy and the Drinking Water Quality Management Plan. The aim of drinking water compliance projects is to improve health outcomes through the provision of treated water to communities or implementing service replacement for those communities where the cost to provide a potable supply is deemed excessive
- Waste water compliance projects have been determined through liaison with the EPA and the development of the Wastewater Management Strategy and the Wastewater Management Plan. The aim of waste water compliance projects is to achieve regulatory compliance at all STPs, which will improve environmental performance and outcomes
- Dam safety compliance projects have been determined through liaison with DPIW and the development of the Dam Safety Improvement Plan. The aim of dam safety compliance projects is to ensure that the risk associated with failure of a dam is below the level of tolerability specified in the ANCOLD guidelines.

The balance of projects to be completed over PSP2 were determined using project bid documentation, which ranked projects on risk of deferral and how the project would address the value drivers in the Corporate Plan.

6.3.2 Our improvements since PSP2

Areas where our planning processes have been improved to facilitate the development of this submission are an explicit and clearly documented focus on:

- The development of our LTSP with clear outcomes that have a customer service objective as a core consideration (described in Section 6.1)
- Improvements to the availability and reliability of data related to the condition of our assets and their performance, including the implementation of our Asset Management Information System (AMIS) and
- Structural changes to our Works Engine divisions and centre-led procurement.

Each of these initiatives (described in more detail below) have enabled us to accelerate our capital program in PSP2 and over subsequent PSP periods within the limitations of price increases and prudent debt levels.

6.3.2.1 Asset management

In PSP2 we began work to align our asset practices to the international asset management system standard, ISO55001.¹² The standard provides a high-level framework to guide the development of the business' asset management practices and plans. Working towards alignment demonstrates our ongoing commitment to business improvement, and ensures the effective and long-term management of our infrastructure assets to aid in the increased confidence of our customers and stakeholders. The first step of this journey was the development and adoption of key guidance and strategic documents, including:

- Asset Management Policy
- Strategic Asset Management Plan and
- Asset Management System Approach.

These documents define the broader direction and the key elements and requirements the organisation will need to consider to improve asset management capability to ensure efficient services are provided by our assets, to meet customer and stakeholder needs.

We have made, and will continue to make, progress on the development of specific asset management plans and responses, underpinned by the broader LTSP framework which includes specific objectives and targets around asset management for each of the proactive and reactive asset groups of:

- Sewer Networks (including sewer pipelines and sewage pump stations)
- Water Networks (including water pipelines and water pump stations)
- Sewage Treatment Plants
- Water Treatment Plants (including dosing stations)
- Reservoirs and
- Dams.

Using the service objectives for the LTSP, we have analysed our current data to:

- Establish our current asset management performance (where practicable with current data)
- Identify gaps in the data required to establish our plans, noting that there were inconsistencies and gaps in the data collected by various predecessor organisations and

¹² ISO55001:2014 Asset Management – Management Systems - Requirements

- Drive the ongoing development of cohesive, structured and practical asset management plans that are aligned with our financial and capital plans.

We are now collecting the required supporting data, or appropriate proxies, to finalise our asset management plans for every asset group, and to continue revising these plans and appropriately prioritising works and associated expenditure as we gather more and better data over the balance of PSP2 and over PSP3. This is reflected in our Asset Management Improvement Plan which is an evolving document.

During the balance of PSP2 and PSP3, for all our asset groups, we will be more robustly establishing the relationships between tactical objectives, the gaps in performance, the most cost effective response(s) to improving performance and the direct benefits resulting from works and expenditure.

6.3.2.2 Asset management information system (AMIS)

In January 2017 our new AMIS was implemented. The AMIS enables us to generate work orders that track jobs completed by our operators and, in doing so, provides accurate information on asset failures for use both in long term planning and for immediate and agile responses to issues that affect customers (eg responses to high priority water and sewerage service interruptions).

The AMIS will become a fundamental tool for the effective operation of the Asset Management System, supporting the embedding of the ISO55000 model, which will drive cultural change. The AMIS will allow improved capture, storage and analysis of asset data to inform effective decision making.

6.3.2.3 Works Engine group structural changes

Our Works Engine group consists of our asset management, project delivery and service delivery divisions and is broadly responsible for the identification of needs, development of solutions, and the design, construction and operation of assets that provide those solutions to customers.

In FY2016/17, we re-structured these divisions to align with our Corporate Plan and the direction in our LTSP to accelerate improvements in compliance, create customer focused teams to optimise system and asset performance, and to improve the efficiency and effectiveness of our planning and decision making processes. To this end, the Works Engine group restructure will:

- Deliver material improvements in productivity, drinking water and sewerage system performance by 30 June 2019
- Ensure minimal disruption to business as usual through the implementation of changes
- Create clear accountabilities and empowerment and
- Realise efficiencies and reduce rework/duplication.

6.3.2.4 Centre-led procurement structural changes

During PSP2, we consolidated our procurement function to ensure we procure and deliver projects in the most cost effective way. The role of the new procurement team includes:

- Provision of specialist procurement advice regarding probity, governance and methodology
- Assistance with development and release of tender, proposal and quotation documentation
- Administration of the tender or quotation process
- Management of tender evaluation process
- Contract negotiation and execution and

- Contract and category management.

Through FY2016/17 and FY2017/18, the team will be developing several contract and vendor panels. These will allow us to gain the best value for money outcomes when procuring goods and services.

6.4 Our capital expenditure in PSP2

This section sets out the previously approved PSP2 capex provision and changes that have occurred since. It also presents our justification that the actual and forecast PSP2 capex is prudent and efficient for inclusion in the RAB for the commencement of PSP3.

6.4.1 Approved capex for PSP2

The following table summarises the capex allowance approved by TER for PSP2.

Table 14: PSP2 approved capex by regulated service (\$'000s)

Regulated service	FY2015/16	FY2016/17	FY2017/18	PSP2 Total	Portion
Sewerage	49,519	55,401	62,798	167,718	51%
Water (incl. dams)	37,270	42,164	42,639	122,073	37%
Dual function ¹³	13,210	12,435	14,563	40,208	12%
Total	100,000	110,000	120,000	330,000	100%

The following table shows the capex budget that TER approved for PSP2 by prudency (or cost) driver.

Table 15: PSP2 approved capex by cost driver (\$'000s)

Cost driver	FY2015/16	FY2016/17	FY2017/18	PSP2 Total	Portion
Compliance	57,046	71,980	59,234	188,260	57%
Improvement	21,618	18,488	22,752	62,858	19%
Renewal	17,131	16,565	21,535	55,231	17%
Growth	4,205	2,967	16,479	23,651	7%
Total	100,000	110,000	120,000	330,000	100%

In 2015, we specified major projects and programs for PSP2 with an approximate total value of \$272 million as detailed below. The table below shows that for about 80% of the PSP2 budget, we specified the nature of capex and 20% was unspecified due to the state of our (inherited) capital planning at that time.

Table 16: PSP2 approved capex by function (\$'000s)

Service area	PSP2 Approved Capex	Portion of PSP2 Total
Water	110,000	33%
Sewerage	125,000	38%
Dual function	37,000	11%
Sub-total	272,000	82%
Other	58,000	18%
Total	330,000	100%

¹³ In PSP2, dual function was referred to as "Non-Network" and for brevity in some tables it may be referred to as "other". "Dual function" capex is comprised of costs that ensure the efficient operation of the regulated water and wastewater business such as fleet, software/hardware and support functions (e.g. laboratories and SCADA infrastructure).

The unspecified \$58 million was a provision of capex projects and programs for which we did not submit detailed information. The prudence for that value of capex (or more) of unspecified work was based on the magnitude of our assets that were generally not compliant with legislative obligations and which would require upgrading to become compliant.

For PSP2, we submitted to TER our top 10 water, top 10 sewerage and top 5 'dual function' (then referred to as 'non-network' or 'other') projects or programs, which as noted above comprised \$272 million capex. The details of what we submitted and how we performed (ie updated PSP2 capex) are presented Appendix 10.

6.4.2 Actual and forecast capex for PSP2

The following two tables summarise the updated actual and forecast capex for PSP2 available at the time this PSP3 submission was prepared (March 2017), compared to the capex approved in our PSP2 submission. It should be noted that planning and delivery of capital projects is dynamic in nature and it is difficult to forecast actual figures with certainty and the data in the following table may change as actual FY2016/17 data is confirmed. Nonetheless, we expect to maintain total capex at \$386 million in PSP2 with any change in forecast FY2016/17 expenditure (below) to be balanced with a corresponding change in FY2017/18 expenditure.

Table 17: Actual and forecast PSP2 capex versus approved PSP2 capex (\$'000s)

Description	FY2015/16	FY2016/17	FY2017/18	PSP2 Total
TER allowance	100,000	110,000	120,000	330,000
Total updated	130,877	121,805	133,596	386,278
Change (\$'000)	30,877	11,805	13,596	56,278
Change to budget (%)	31%	11%	11%	17%

The next table also provides details by service area for updated PSP2 capex.

Table 18: Actual and forecast PSP2 capex and variation to approved PSP2 capex by service (\$'000s)

Description	Project Count	FY2015/16	FY2016/17	FY2017/18	PSP2 Total	Portion Total
Water	45	41,741	60,419	66,402	168,562	44%
Sewerage	55	32,190	35,435	49,288	116,913	30%
Dual function	19	56,946	25,951	18,007	100,904	26%
Total	119	130,877	121,805	133,697	386,379	100%
TER allowance	36	100,000	110,000	120,000	330,000	na
Change	94	30,877	11,805	13,697	56,379	17%

Prior to PSP2, we specified 25 projects for TER's consideration in terms of prudence and efficiency. The actual and forecast capex is now comprised of a total of 119 specified projects, an increase of 94 projects. This means that for our PSP3 submission, we will specify projects or programs that account for all of the updated actual and forecast capex for PSP2. This is an important input to the RAB - the value of our assets for pricing purposes.

Further details of our actual and forecast capex for PSP2 are available in Appendix 11.

6.4.2.1 Approved capex compared to actual and forecast capex for PSP2

We have spent or forecast \$386 million for PSP2, rather than TER's approved budget of \$330 million for pricing purposes.

The updated result means that we have spent or will spend \$56.3 million or 17% more capex than TER allowed during PSP2 due to an increased need for renewal expenditure to meet customer service standards and to accelerate compliance improvements for drinking water systems. This overspend does not impact prices during PSP2. However, it will impact the RAB and, therefore, customers' charges in PSP3.

6.4.2.2 Actual and forecast capex by cost driver for PSP2

The next table compares our updated PSP2 capex with TER's PSP2 capex allowance by cost driver.

Table 19: Comparison of approved and forecast PSP2 capex by cost driver (\$'000s)

Prudency Driver	Allowed PSP2 Capex	Forecast PSP2 Capex	Change to PSP2 Allowance
Compliance	188,260	166,733	-21,527
Growth	62,858	32,510	-30,348
Improvement	55,231	71,938	16,707
Renewal	23,651	115,198	91,547
Total	330,000	386,379	56,379

The largest variation from budget is the \$60 million increase in renewals (see justification below).

6.4.2.3 Actual and forecast capex by service type for PSP2

The following table compares our updated PSP2 capex with capex allowed by TER by service type.

Table 20: Comparison of approved PSP2 capex to actual and forecast PSP2 capex by service (\$'000s)

Service	Allowed PSP2 Capex	Forecast PSP2 Capex	Change to PSP2 Allowance
Water projects	122,073	168,562	46,489
Sewerage projects	167,718	116,913	-51,805
Dual function	40,208	100,904	60,696
Total	330,000	386,379	56,379

6.4.2.4 Justification of changes reflected in updated capex for PSP2

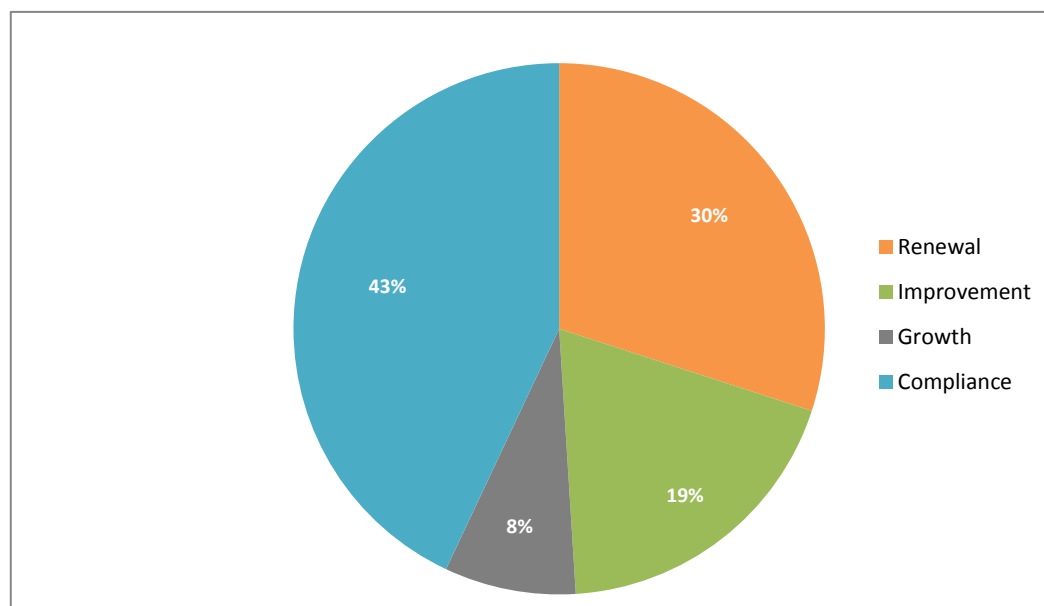
Through detailed asset planning we have specified 100% of PSP2 projects, taking the number of specified projects from 25 (pre-PSP2) to 119 projects. On the basis of this planning and our updated priorities for PSP2 reflecting customer and regulator expectations, the following has emerged:

- Compliance spend will be \$21.6 million less than the approved PSP2 compliance capex. This has resulted from the deferral of sewerage capex (refer further below). This has arisen, in part, due to our need to complete permitting and approvals with the EPA, and optimise options and business cases for sewage treatment plant upgrades
- Our actual forecast PSP2 capex for renewal expenditure is \$115.2 million or 30% greater than the amount approved in our PSP2 submission. The overspend is primarily due to reactive renewal of ageing infrastructure that had been poorly maintained in the past, and for which our condition and performance data was limited (making the failures difficult to predict). We have since implemented improved processes and systems which allow us to collect better data and target renewal expenditure to critical assets (those which have the greatest impact on customers if they fail) and to infrastructure adjacent to sensitive receiving environments. This is enabled, in part, by the implementation of our new AMIS which will allow us to more proactively plan renewal expenditure in PSP3 and optimise network replacement in the second 10 years of the LTSP

- The other two areas of spending result from improvement and growth cost drivers. We have exceeded TER's budget modestly for both, by about \$9 million each or individually less than 3% of the TER's \$330 million budget. For PSP2 the improvement capex is \$72 million or 19% of total updated PSP2 capex. Similarly, capex on growth is \$33 million or 9% of the updated total budget.

The following figure summarises the actual and forecast capex by cost driver.

Figure 8: Actual and forecast PSP2 capex by cost driver



We have developed business cases for each of the projects completed so far in PSP2 which set out the need and justification for the actual and forecast expenditure for PSP2 capex, on a project by project basis.

The following explains the changes against the TER PSP2 approved capex by service area at a high level:

- Water (including dams) spending of \$46.4 million more than budget is due improved cost estimates for managing the safety of our dams, a portion of planned PSP1 expenditure being carried over into PSP2 and an increase in our investment in improving drinking water quality for our customers
- Sewerage spending of \$50.8 million less than budget is due to deferral of sewerage capex, which has arisen due to our need to optimise options and business cases to build a robust and better prioritised spend on sewerage upgrades due to the significant capex required. Other reasons include reprioritisation of projects which redirected investment into drinking water quality and business systems capability
- Dual function (including corporate infrastructure and systems) spending of \$60.7 million more than budget. Some of the major items are:
 - Our Supervisory Control and Data Acquisition (SCADA) infrastructure and our Network Operations Centre to remotely monitor our assets to reduce operating expenditure (opex) and improve customer outcomes and
 - Our Asset Management Information System will enable increased operational utilisation, productivity and decreased opex through optimising planned maintenance and reducing reactive maintenance.

To provide further context, TER found that our PSP2 capex proposal captured our key water, waste water and dam safety risks and other identified capex projects in a manner that balanced the risk of deferring a project and corporate strategic objectives. We applied that process prior to PSP2 in an iterative fashion, considering financial, resource or other constraints and as the regulatory plans were developed. However, the process required refinement to balance compliance expenditure with greater levels of renewals, growth and performance improvement expenditure that became better understood during PSP2. Our improved data, asset management frameworks and decision making processes enable us to better target renewal expenditure in PSP3 to ensure our spending is in line with our forecasts.

The proposed \$330 million capex was determined through an assessment of our delivery capacity and financial constraints. In November 2014, 54% of the expenditure proposed in the capital works program for the first year of PSP2 had an approved business case and our PSP2 submission reflected this level of detailed understanding. We have been focused through PSP2 on our asset planning and prioritisation, which has improved the confidence in our capex forecasts.

During PSP2 we deferred some projects that had lower urgency from a compliance or operational perspective. We were also able to exceed the targets we initially set for the delivery of projects in the PSP2 period, leading to the higher level of spending than \$330 million. This was enabled primarily by our decision to reduce and freeze dividends to our owners to fully fund the expanded program and allow us to focus on high quality water quality projects such as removal of boil water alerts from regional towns – which is consistent with the focus of our LTSP.

The following two tables provide examples of the Top 20 changes (Top 10 new inclusions and Top 10 deferrals) that took place in PSP2 as part of our ongoing capital planning and delivery. The Top 10 new inclusions table shows capex on ten projects during PSP2 that did not form part of our original submission. Conversely, Top 10 deferrals table shows that substantial portions of capex forecast for PSP2 has been deferred.

Table 21: PSP2 Top 10 new inclusions (\$'000s)

Project / Program Title	PSP2 allowed 2015	PSP2 updated 2017	Variance to 'PSP2 allowed'	Status by end PSP2 Period
Small Town Water Supply Strategy	-	18,897	18,897	Construction
Ringarooma Valley Treated Water Supply	-	11,655	11,655	Complete
AMIS - Stage 2	-	13,193	13,193	Complete
Margate Water Main Upgrade Stage 2	-	6,317	6,317	Complete
Mole Creek Water Supply	-	4,257	4,257	Complete
Sewerage Inlet Works	-	5,461	5,461	Complete
Cambridge STP Wet Weather Emergency Storage & Plant Process Improvements	-	3,013	3,013	Construction
Kingston Sewer Pump Station E Rising Main	-	2,700	2,700	Complete
Rosebery Water Treatment Plant (WTP) – Construction	-	7,905	7,905	Complete
Gretna / Bushy Park / Glenora Water Supply Upgrade	3,200	5,260	2,060	Tender

Table 22: PSP2 Top 10 deferrals (\$'000s)

Project / Program Title	PSP2 allowed 2015	PSP2 updated 2017	Variance to 'PSP2 allowed'	Status by end PSP2 Period
Kingborough Sewerage Strategy – Treatment	29,250	14,990	-14,260	Underway
Ridgeway Dam - Upgrade Post Tensioned Anchors	15,000	1,154	-13,846	Underway
Tolosa Dam Replacement Infrastructure	23,446	9,961	-13,485	Underway
Kingborough Sewerage Strategy – Network	13,250	3,499	-9,751	Underway
Bridport Water Supply	9,600	-	-9,600	Deferred
Old Beach No 1 (Green Point Strategy)	8,500	48	-8,452	Deferred
Brighton STP Upgrade	7,870	389	-7,481	Deferred
Ti Tree Bend STP Biosolids Dewatering Facility	8,385	2,100	-6,285	Design
Conglomerate Dam Upgrade	9,600	4,580	-5,020	Deferred
Flagstaff Gully - Dam Safety Upgrade	5,000	200	-4,800	Design

6.4.2.5 Actual and forecast capex for PSP2 projects – water supply

The following tables present key information on our updated major water projects and programs.

Table 23: Actual and forecast PSP2 capex – major projects – water supply including dams (\$'000s)

Project Title	Cost driver	FY2015/16 (actuals)	FY2016/17 (actual and forecast)	FY2017/18 (forecast)	PSP2 Capex Total	Portion of PSP2 Total
Small Town Water Supply Strategy	Compliance	-	1,397	17,500	18,897	4.9%
King Island Treated Water Supply	Compliance	942	5,225	6,000	12,167	3.1%
Ringarooma Valley Treated Water Supply	Compliance	8,563	2,972	120	11,655	3.0%
Tolosa Dam Replacement Infrastructure	Compliance	1,594	8,367	-	9,961	2.6%
Flinders Island Water Supply	Compliance	5,439	2,174	436	8,049	2.1%
Rosebery WTP - Construction ^	Compliance	2,605	5,147	153	7,905	2.0%
Gretna / Bushy Park / Glenora Water Supply Upgrade	Compliance	230	1,950	3,080	5,260	1.4%
Conglomerate Dam Upgrade	Compliance	307	1,273	3,000	4,580	1.2%
Mole Creek Water Supply	Compliance	2,650	1,431	176	4,257	1.1%
Dam Safety Program of Works - Compliance Reports ^	Compliance	308	1,600	2,260	4,168	1.1%
Dam Safety Program of Improvement Works ^	Compliance	847	1,600	1,510	3,957	1.0%
Winnaleah Treated Water Supply	Compliance	382	3,009	-	3,391	0.9%
Avoca Full Treated Water Supply	Compliance	359	2,646	-	3,005	0.8%
Lake Mikany Dam Safety Upgrade	Compliance	91	212	2,165	2,468	0.6%
Margate Water Main Upgrade Stage 2	Growth	1,597	1,459	3,261	6,317	1.6%
Longford Water Supply System Trunk Main	Growth	167	2,200	950	3,317	0.9%
System optimisation - Water	Improvement	-	500	4,500	5,000	1.3%
Metering Program ^	Renewal	3,678	4,300	7,140	15,118	3.9%
Water Main Renewals Program ^	Renewal	5,156	4,200	3,770	13,126	3.4%
WTP Renewal Program ^	Renewal	950	3,310	1,200	5,460	1.4%
Reservoir Renewal/Upgrade Program ^	Renewal	586	1,388	710	2,684	0.7%
Girdlestone Reservoir Rectification	Renewal	47	1,173	850	2,070	0.5%

Note: ^ These projects are subject to ongoing planning and design. Final costs are subject to the outcomes of a full business case.

6.4.2.6 Actual and forecast capex for PSP2 major projects – water supply

The table above shows all of our specified water projects (including major projects exceeding \$2 million capex over PSP2). Of these, the largest ten projects by cost driver are:

Table 24: Actual and forecast major projects approved for PSP2 – water supply

Highlighted top ten major projects	Capex during PSP2 (\$000s)
Compliance	Top five water compliance projects
Small Town Water Supply Strategy	\$18,900
King Island Treated Water Supply	\$12,200
Ringarooma Valley Treated Water Supply	\$11,700
Tolosa Dam Replacement Infrastructure	\$10,000
Flinders Island Water Supply	\$8,000
Growth	Top water growth project
Margate Water Main Upgrade Stage 2	\$6,300
Improvement	Top water improvement project
System optimisation - Water	\$5,000
Renewal	Top three water renewal projects
Metering Program ^	\$15,100
Water Main Renewals Program ^	\$13,100
Water Treatment Plant Renewal Program ^	\$5,500

Note: ^ These projects are subject to ongoing planning and design. Final costs are subject to the outcomes of a full business case

6.4.2.7 Actual and forecast capex for PSP2 projects – sewerage

The following tables present key information on our updated major and other specified sewerage projects and program.

Table 25: Actual and forecast PSP2 capex – major projects – sewerage (\$'000s)

Project Title	Cost driver	FY2015/16 (actuals)	FY2016/17 (actuals and forecast)	FY2017/18 (forecast)	PSP2 Capex Total	Portion of PSP2 Total
Cambridge Wet Weather Emergency Storage & Plant Process Improvements	Compliance	3	10	3,000	3,013	0.8%
Ti Tree Bend - Digester	Compliance	155	1,255	1,450	2,860	0.7%
Rosebery STP - New Plant	Compliance	2,605	93	-	2,698	0.7%
Huonville Main Road Sewerage Pump Station Replacement	Compliance	120	255	2,285	2,660	0.7%
Ti Tree Bend STP Biosolids Dewatering Facility	Compliance	-	100	2,000	2,100	0.5%
Kingborough Sewerage Strategy - Treatment	Growth	437	5,170	9,383	14,990	3.9%
Kingborough Sewerage Strategy - Network	Growth	399	641	2,409	3,449	0.9%
Burnie STP Upgrade	Growth	265	1,664	600	2,529	0.7%
Sewerage Inlet Works	Improvement	4,540	921	-	5,461	1.4%
System optimisation - Sewer	Improvement	-	500	4,500	5,000	1.3%
Sewer Main Renewals Program ^	Renewal	3,747	4,525	3,400	11,672	3.0%
Sewer Pump Station Renewals Program ^	Renewal	5,476	3,301	1,410	10,187	2.6%
Sewage Treatment Plant Renewal Program ^	Renewal	2,301	5,530	1,890	9,721	2.5%
CCTV Inspection Program ^	Renewal	2,800	1,300	750	4,850	1.3%
Kingston Sewerage Pump Station E Rising Main	Renewal	-	1,000	1,700	2,700	0.7%
Combined System Program ^	Renewal	-	1,140	1,080	2,220	0.6%

Note: ^ These projects are subject to ongoing planning and design. Final costs are subject to the outcomes of a full business case

6.4.2.8 Actual and forecast capex for PSP2 major projects – sewerage

The table above shows all of our specified sewerage projects (including major projects exceeding \$2 million capex over PSP2). Of these, the largest ten projects by cost driver are:

Table 26: Actual and forecast major projects approved for PSP2 – sewerage

Highlighted top ten major projects	Capex during PSP2 (\$'000s)
Compliance	Top two sewerage compliance projects
Cambridge Wet Weather Emergency Storage & Plant Process Improvements	\$3,000
Ti Tree Bend - Digester	\$2,900
Growth	Top two sewerage growth projects
Kingborough Sewerage Strategy - Treatment	\$15,000
Kingborough Sewerage Strategy - Network	\$3,500
Improvement	Top two sewerage improvement projects
Sewerage Inlet Works	\$5,500
System optimisation - Sewer	\$5,000
Renewal	Top three sewerage renewal programs and/ or projects
Sewer Main Renewals Program ^	\$11,700
Sewerage Pump Station Renewals Program ^	\$10,200
STP Renewal Program ^	\$9,700
CCTV Inspection Program ^	\$4,900

Note: ^ These projects are subject to ongoing planning and design. Final costs are subject to the outcomes of a full business case

6.4.2.9 Actual and forecast capex for PSP2 projects –dual function

The following tables present key information on our updated major and other specified dual function projects and program.

Table 27: Actual and forecast PSP2 capex projects – dual function (\$'000s)

Project Title	Cost driver	FY2015/16	FY2016/17	FY2017/18	PSP2 Total	Portion of Total
Minor Projects Program ^	Compliance	2,903	3,200	5,440	11,543	3.0%
Electrical Program ^	Compliance	3,400	2,000	3,330	8,730	2.3%
Projects carried over from PSP1 @	Compliance	8,000	-	-	8,000	2.1%
SCADA Program ^	Improvement	8,568	3,000	2,800	14,368	3.7%
AMIS - Stage 2	Improvement	7,014	6,179	-	13,193	3.4%
Non-network IT ^	Improvement	1,950	2,000	2,000	5,950	1.5%
Asset Safety Rectification Program - Unplanned ^	Improvement	1,761	1,000	-	2,761	0.7%
Charles Street Office (Improvements & Equipment)	Improvement	2,037	23	-	2,060	0.5%
Fleet (Vehicles and Plant) Replacement Program ^#	Renewal	5,780	-	-	5,780	1.5%
Facility, Fleet and Plant upgrades and renewals	Renewal	-	5,300	4,100	9,400	2.4%
Direct to Asset Purchases	Renewal	5,922	-	-	5,922	1.5%
Reactive works @	Renewal	3,873	-	-	3,873	1.0%

Project Title	Cost driver	FY2015/16	FY2016/17	FY2017/18	PSP2 Total	Portion of Total
Miscellaneous Minor Works ^	Renewal	1,867	1,223	-	3,090	0.8%

Note: ^ Programs with large capex forecasts will be subject to significant review over time and in light of the LTSP. The costs are included for transparency, but readers should expect significant change over time.

Note: @ "Projects carried over from PSP1", "Reactive works" and "Miscellaneous Minor Works" are explained below.

Note: # Change of program title to Facility, Fleet and Plant upgrades and renewals from FY2016/17.

- Regarding the note @ - our description of the selected projects/programs in the table above are as follows:
- Projects carried over from PSP1 - This program was designed to contain projects which started in PSP1 with remaining capex under \$0.25 million. Projects were aggregated within this program to allow a simpler presentation. There were approximately 130 projects through different stages of delivery within the program
- Reactive works - This program was created retrospectively with the understanding that a significant amount of expenditure was being captured as operating costs by the (then) Operations and Maintenance division. The costs were subsequently reallocated to capex. The majority of these costs were related to the renewal of failing infrastructure
- Miscellaneous Minor Work - Due to ageing infrastructure and restriction on expenditure from previous organisations we adopted a budget allowance for the (then) Operations and Maintenance division to expend on high priority works (eg facility upgrades and works which aren't contained in other programs, such as network chlorination upgrades).

6.4.2.10 Actual and forecast capex for PSP2 major projects – dual function

The table above shows all of our specified dual function projects (including major projects exceeding \$2 million over PSP2). Of these, the largest ten projects by cost driver are:

Table 28: Top 10 actual and forecast PSP2 capex – major projects – dual function

Highlighted top ten major projects	Capex during PSP2 (\$000s)
Compliance	Top three dual function compliance projects
Minor Projects Program ^	\$11,500
Electrical Program ^	\$8,700
Projects carried over from PSP1	\$8,000
Improvement	Top three dual function improvement projects
SCADA Program ^	\$14,400
AMIS - Stage 2	\$13,200
Non-network IT ^	\$6,000
Renewal -	Top five dual function renewal projects:
Facility, Fleet and Plant upgrades and renewals	\$9,400
Direct to Asset Purchases	\$5,900
Fleet (Vehicles and Plant) Replacement Program ^	\$5,800
Reactive works	\$3,900

Note: ^ Programs with large capex forecasts will be subject to significant review over time and in light of the LTSP. The costs are included for transparency, but readers should expect significant change over time.

6.4.3 Justification of PSP2 capex trends

In addition to the justifications provided above, we note that a large proportion of our inherited infrastructure is ageing and in poor condition leading to low levels of compliance. The capital works program is focused on bringing ageing and non-performing infrastructure up to modern standards.

Our capex to date has had a strong focus on improving compliance for water and waste water systems through the construction and upgrade of treatment infrastructure. We are continuing to improve our understanding of our network assets through condition, performance and criticality assessments.

Our planned capex will, among other outcomes, allow us to:

- Reduce potential public health risks in our drinking water systems
- Remove permanent boil water alerts and public health alerts
- Improve our environmental performance through increasing the percentage of compliant effluent discharged
- Reduce sewer breaks, chokes and spills
- Address the 11 dams in our portfolio that present longer term risks to the public and
- Start to address our renewals backlog to maintain customer service standards.

Of the items above, the majority are compliance-related.

6.4.4 PSP2 capex prudence

The compliance projects we undertook in PSP2 have been endorsed by our technical regulators and are designed to achieve the outcomes expected by our regulators and customers. In that context, these projects are considered mandatory and are prudent by their nature (ie meeting a specific compliance obligation).

In PSP2, we also undertook many projects to replace ageing and failing infrastructure – some of which was reactive in nature due to limited condition and performance data for our assets. While we spent more in this area than was approved in our PSP2 submission, this was due to the need to meet our customer service standards set in PSP2 relating to, for example, water and sewerage interruptions caused by broken water mains and sewage spills.

Throughout PSP2 we have improved our asset management data, processes and decision making frameworks to enable us to proactively target renewal expenditure in the areas that matter most to our customers and regulators in PSP3 (eg high priority assets that, if they fail, would affect a large number of customers, or assets adjacent to sensitive receiving environments such as beaches, recreational sites and shellfish leases). All of this improves the accuracy of our renewal expenditure forecast for PSP3 to ensure that we do not spend more than planned.

Projects in PSP2 driven by growth in demand have been staged, where possible, to ensure a 'just in time' approach to meeting demand. This ensures that we continue to meet our customer service standards without over-investing in large infrastructure that may not be needed if expected growth does not eventuate in the long term.

6.4.5 PSP2 capex efficiency

As part of our capital planning and asset management framework (refer to Section 6.3), we assess a range of solutions during the development of a business case for our projects. As part of the process, a NPV is completed for all feasible options. The NPV compares expenditure including capex and opex changes over 30 years, for each of the options.

Having identified the most efficient option through the business case process, our procurement process is designed to ensure we deliver the project efficiently as well. Our planning and procurement model is based on:

- In-house planning staff, augmented by consulting expertise as required
- Active consultation and benchmarking through WSAA with other utilities around Australia to ensure we are keeping pace with good practice in the industry
- A capex prioritisation model consistent with best practice as identified by WSAA, which is underpinned by a comprehensive risk management framework that quantifies the risks of not proceeding with a project
- All major projects are subject to a rigorous business case that is first assessed by the Capital Works Committee (CWC) (a subcommittee of the Board) and subsequently approved by our full Board of Directors
- Our design work is generally outsourced and competitively bid
- The vast majority of our project work is undertaken by the private sector through an open tender procurement process and assessed on the basis of best value
- Bundling of like projects into larger packages of work to increase scale and attract higher levels of expertise and access to better technologies and value (eg Kingborough, Regional Water Supply Improvement, etc) and
- Where appropriate, projects are grouped by their geographical system, assets class, driver, region and/or required skill set to achieve delivery synergies where appropriate.

Where appropriate, we also use design and construct models of procurement and early contractor involvement for our capex projects.

6.5 Our forecast capital expenditure in PSP3

In summary, we forecast the following capex for PSP2 and PSP3.

Table 29: PSP2 and PSP3 capex (\$'000s)

Year	FY2015/16	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21	Total	Total
Regulatory period	PSP2	PSP2	PSP2	PSP3	PSP3	PSP3	PSP2	PSP3
Capex	130,877	121,805	133,697	143,362	142,736	181,076	386,379	467,175

The table above shows that in PSP3 we intend to invest \$467.2 million in capex projects and programs. This compares with actual and forecast PSP2 capex of \$386.3 million.

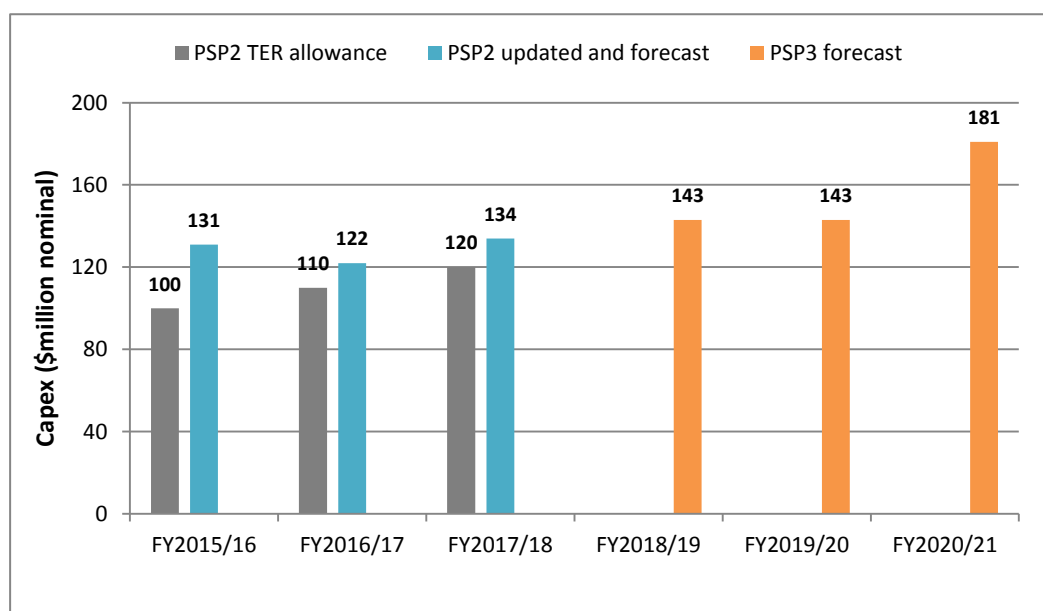
The following table provides a summary of forecast PSP3 capex by cost driver.

Table 30: PSP3 capex by cost driver (\$'000s)

Year	FY2018/19	FY2019/20	FY2020/21	Total
Growth	1,078	-	-	1,078
Renewal	23,328	21,739	22,869	67,936
Compliance	96,881	103,367	142,051	342,299
Improvement	22,074	17,630	16,156	55,861
Capex total	143,362	142,736	181,076	467,175

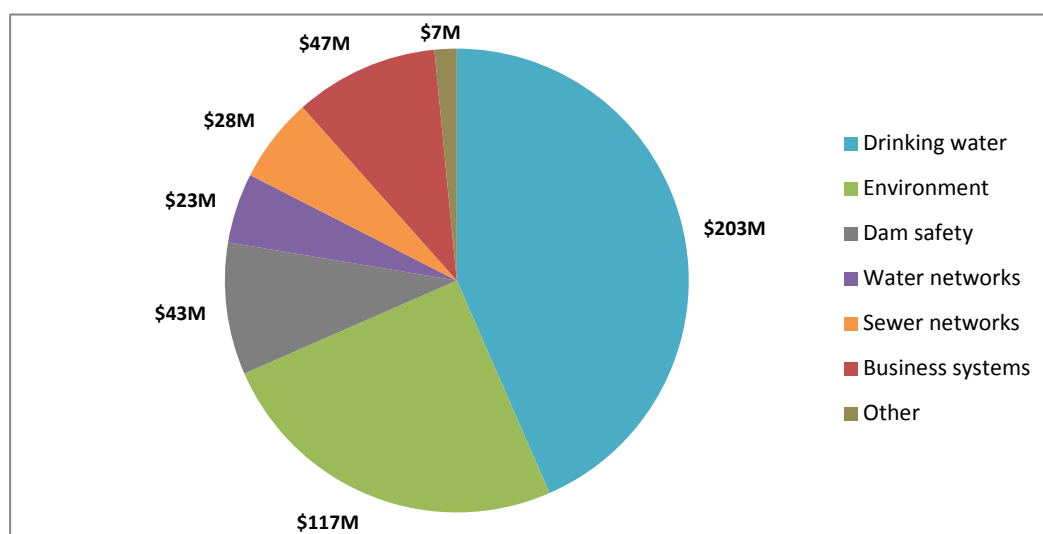
The following figure compares PSP2 (updated capex) and our forecast for PSP3 capex.

Figure 9: Comparison of approved PSP2 capex to actual and forecast PSP2 and PSP3 capex



The following figures depict forecast PSP3 capex by activity stream.

Figure 10: Forecast PSP3 capex by activity stream



The PSP3 planned capex is expected to improve regulatory compliance as summarised in the following table.

Table 31: Summary of outcomes to be achieved in PSP3

Customer outcome	Measure of success	End of PSP2 Commitment	Improvement through PSP3	Key benefits in PSP3	End of PSP3 Commitment	LTSP (20 yr) Commitment
Your drinking water is clean and safe to drink	No. of towns on permanent BWAs or PHAs	6	6	100% of towns on PHAs and BWAs will have drinkable water by August 2018	0	0
	Percentage of customers where microbiological compliance has been achieved <i>Note 1</i>	99%	1%	In accordance with priorities set by DHHS, all customers will receive water that meets microbiological compliance parameters. System optimisation activities will reduce the risk in our drinking water systems. Planning, design and construction will also commence for WTP upgrades that will further reduce system risk in PSP4 and beyond	100%	100%
You have a reliable supply of water	No. of dams above ANCOLD societal limit of tolerability <i>Note 2</i>	9	8	In accordance with priorities set by DPIPW, all but one dam will meet ANCOLD requirements, and this dam will be managed through interim measures to reduce its risk to an acceptable level	1	0
Your sewage is treated and disposed of with minimal impact to the environment and its users	STP effluent compliance by statewide volume <i>Note 3</i>	62%	16%	In accordance with priorities set by the EPA and our MoU, effluent compliance will be greatly improved and environmental risks will be mitigated for 90% of the EPA's top 20 sites	78%	93%

Notes:

We will achieve 100% microbiological compliance with ADWG guidelines by the end of PSP3. Our drinking water quality capex is then directed at maintaining compliance by reducing the risk in our systems.

PSP3 capex projects will lead to four dams being reduced from Very High Risk (above the Societal Limit of Tolerability). Another four dams will be reduced from the Very High Risk due to decommissioning (captured as opex).

The measurement of effluent compliance currently differs between TasWater and the EPA. Both measures use seven parameters for an effluent sample but the EPA measure allows for a partial pass where some of the parameters are compliant. TasWater's measure requires all parameters to be compliant to 'pass'. As of 1 July 2017, the EPA will use TasWater's more stringent measure. The figures used throughout this document refer to the more stringent measure.

6.5.1 Water supply – top 10 capex items forecast for PSP3

The table below provides the PSP3 Top 10 capex items (ie project or program) for water supply including dams, water treatment plants and water networks.

Table 32: PSP3 Top 10 capex items for water supply and dam safety (\$'000s)

ID	Activity Stream	Project or Program	Description	Forecast CAPEX			PSP3 Total
				FY2018/19	FY2019/20	FY2020/21	
1	DWQ	Project	Forth River Major Upgrade / Replacement	3,910	45,934	22,698	72,542
2	DWQ	Project	Bryn Estyn Major Upgrade / Replacement	5,922	6,307	96,202	108,431
3	Dams	Project	Pet Dam	3,728	4,002	-	7,730
4	Water Networks	Program	Metering Program	3,590	1,639	1,680	6,909
5	Dams	Program	Dams - Minor CAPEX	2,130	2,185	2,240	6,555
6	Water Networks	Program	Proactive Asset Management - Renewals	2,027	2,032	2,065	6,124
7	Dams	Project	Lake Mikany	6,077	-	-	6,077
8	DWQ	Program	WTP Renewal Program	1,935	1,940	1,971	5,846
9	Dams	Project	Flagstaff	5,219	-	-	5,219
10	DWQ	Project	System optimisation – Water	4,206	-	-	4,206

6.5.2 Sewerage – top 10 capex items forecast for PSP3

The table below provides the PSP3 Top 10 capex items (ie project or program) in nominal dollars for sewerage (including sewage treatment plants and sewerage networks), rounded to the nearest \$1,000.

Table 33: PSP3 Top 10 capex items for sewerage (\$'000s)

ID	Activity Stream	Project or Program	Description	Forecast CAPEX			PSP3 Total
				FY2018/19	FY2019/20	FY2020/21	
1	STPs	Project	Kingborough Sewerage - Treatment & Network	24,605	2,603	-	27,208
2	STPs	Project	Pardoe Sewerage Improvement Plan	533	9,611	14,558	24,702
3	STPs	Project	Northern Midlands Sewerage Improvement Plan - Longford STP	2,987	20,291	1,007	24,285
4	STPs	Program	STP Renewal Program	3,860	3,871	3,933	11,664
5	Sewer Networks	Program	Sewers Proactive Asset Management – Renewals	1,947	1,953	1,982	5,882
6	STPs	Project	Cambridge Wet Weather Emergency Storage & Plant Process Improvements	3,781	1,093	-	4,874
7	Sewer	Program	SPSs Proactive Asset	735	1,302	1,325	3,362

ID	Activity Stream	Project or Program	Description	Forecast CAPEX			
				FY2018/19	FY2019/20	FY2020/21	PSP3 Total
	Networks		Management – Renewals				
8	STPs	Project	Cambridge Optimisation	3,155	-	-	3,155
9	Sewer Networks	Program	CCTV Inspection Program	970	972	986	2,928
10	Sewer Networks	Program	Launceston Combined System Program	878	\$883	896	2,657

6.5.3 Business systems and other dual function – top eight capex items forecast for PSP3

The table below provides the PSP3 Top 8 capex items (i.e. project or program) in nominal dollars for business systems and other dual function assets, rounded to the nearest \$1000.

Table 34: PSP3 Top 8 capex items for business systems and other dual function (\$'000s)

ID	Activity Stream	Project or Program	Description	Forecast CAPEX			
				FY2018/19	FY2019/20	FY2020/21	PSP3 Total
1	Business Systems	Program	Facility, Fleet and Plant upgrades and renewals	4,686	4,369	4,480	13,535
2	Business Systems	Program	Minor Projects Program	4,260	3,495	3,584	11,339
3	Business Systems	Program	SCADA Program	3,377	2,905	2,957	9,239
4	Business Systems	Program	Non-network IT	2,130	2,621	2,688	7,439
5	Other Dual Function	Program	Electrical Program	2,318	1,547	2,365	6,230
6	Other Dual Function	Program	Asset Safety Rectification Program – Unplanned	1,159	1,162	1,183	3,504
7	Business Systems	Project	Rocherlea Redevelopment	533	1,311	-	1,844
8	Other	Program	Miscellaneous Minor Works	320	328	336	984

Appendix 12 summarises our capex forecast for PSP3 projects and programs.

6.5.4 PSP3 capex prudence

Chapter 3 outlines the expectations of our technical regulators – drinking water, environment and dam safety. The Drinking Water Quality Management Plan, Wastewater Management Plan and Dam Safety Management Plan separately provide details of our commitments to each of the technical regulators about projects and/or programs.

Our prudence drivers have been described above and it is noted that most compliance projects include a component of other cost drivers, for example, renewal, improvement and/or growth.

Our LTSP details the benefits of our capex and the manner in which we prioritise PSP3 and future capex. The derivation of benefits under the LTSP have been determined in line with the revised Strategic Framework developed through LTSP, which links strategic objectives to tactical objectives, and through to KPIs/specific measures of success. Through this process we have a renewed focus on

delivering services in line with customer expectations and as a result of detailed consultation with customers and regulators (stakeholders).

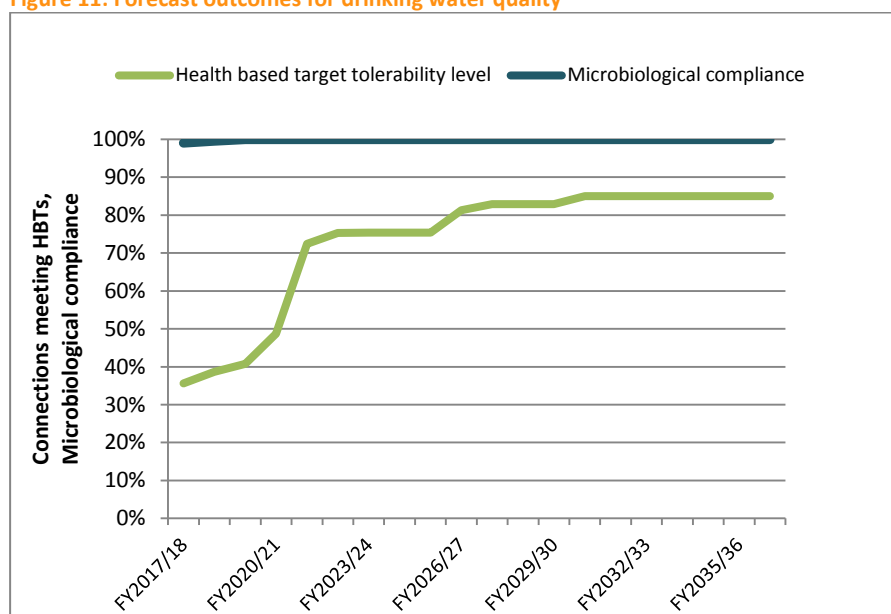
This has enabled us to address the need (prudence) but also the timing of projects (based on priorities established in consultation with customers and stakeholders). We have, therefore, established a prudent order of expenditure based on required service standards and an outward focussed engagement process.

Our renewal expenditure prudence is described further in our LTSP documentation and our supporting asset management strategies and plans. Our renewal expenditure is prioritised using a risk-based approach to delivering customer service outcomes.

6.5.4.1 Drinking water

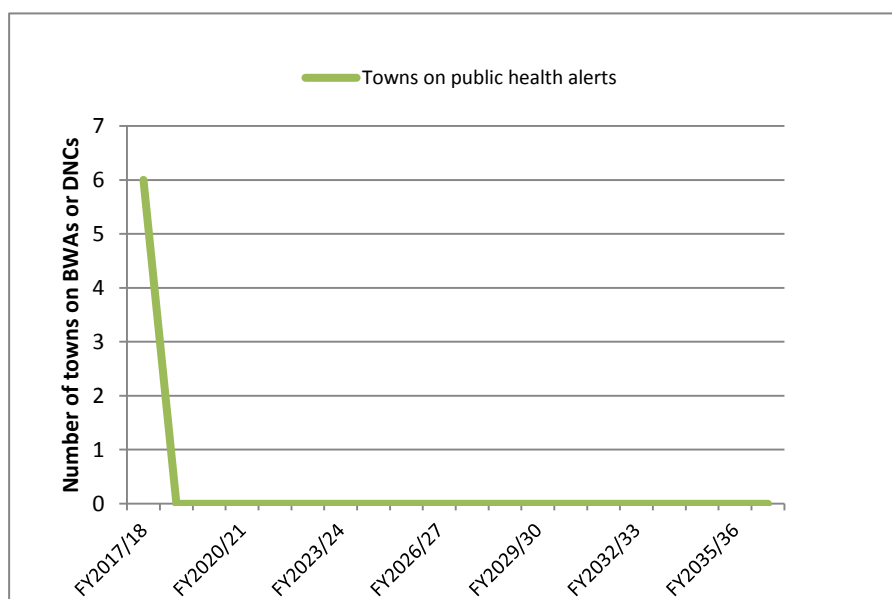
The graph below shows the forecast reduction in drinking water quality risk, defined as the percentage of customers receiving water that meets a tolerable health-based target for risk of illness. The health-based targets approach in the ADWG is about managing risks that may be present in each catchment that supplies our drinking water systems. This is about preventing future harm within the drinking water systems and maintaining 100% compliance with microbiological guidelines in the ADWG.

Figure 11: Forecast outcomes for drinking water quality



The graph below shows the forecast reduction in public health alerts (PHAs), both Boil Water Alerts and Do Not Consume alerts. PHAs are a public health sub-set of the broader Drinking Water Quality (DWQ) regulatory obligation and we expect to remove these by the end of the first quarter of FY2018/19.

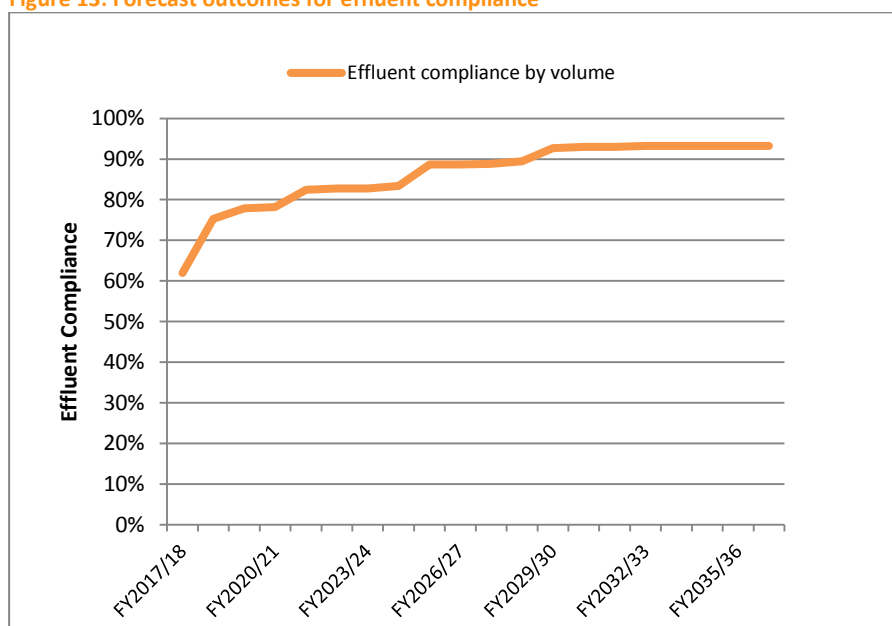
Figure 12: Forecast outcomes for public health alerts



6.5.4.2 Environment

The graph below shows the STP effluent quality compliance. This is defined as the percentage of STP effluent compliant with EPA licences, by statewide STP effluent volume.

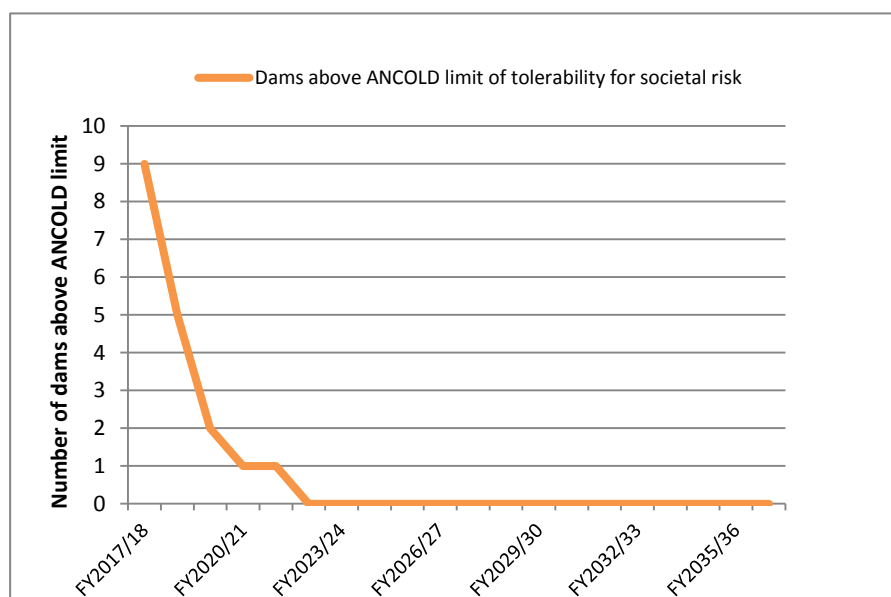
Figure 13: Forecast outcomes for effluent compliance



6.5.4.3 Dam safety

The graph below shows the reduction of number of dams plotting above the societal limit of tolerability. This is a key measure of dam safety compliance, in accordance with the ANCOLD guidelines.

Figure 14: Forecast outcomes for dam safety



PSP3 capex will move us to higher levels of compliance in accordance with LTSP, which demonstrates prudence on a quantifiable basis, which we will demonstrate in detail to TER's reviewing consultant.

The parameters in the above graphs have been endorsed by our technical regulators (as described in Chapter 3) and the compliance-driven projects in our PSP3 capital program are considered mandatory to achieve these outcomes. A list of capital projects that enable us to achieve these outcomes in PSP3 is contained in Appendix 12.

6.5.5 PSP3 capex efficiency

For PSP3, to ensure efficiency we prioritised expenditure according to the cost and benefit framework developed by the LTSP and optimisation model. We continue to assess options during the development of a business case and prepare a NPV including capex and opex changes over 30 years, to select the least cost option (for acceptable risk) and in terms of quantified benefits.

Our Procurement Policy requires market testing based upon the anticipated level of capex to ensure market efficiency and achieve value for money and continues to align with the procurement model described in Section 6.4.4.

In summary, we ensure capex efficiency in the following ways:

- Capital cost estimates: our cost estimates have been subject to a challenge process throughout the LTSP project, in particular for projects/programs with high capex and lower benefit. This challenge process is ongoing
- Business Cases: the business cases of projects and programs prioritised for PSP3 are a priority for development and/or review for robustness. Each business case for projects and programs with forecast expenditure in PSP3 will be challenged further to ensure that, for each project:
 - The most efficient response has been adopted through a comprehensive and robust options analysis
 - The current quantification of benefits is accurate and complete
 - The capex (and opex) estimates are sound, sufficiently detailed and reasonably accurate and
 - The most appropriate and efficient delivery mechanism has been chosen.

6.5.6 Key assumptions and risks in our PSPS3 capex forecast

Our capital cost estimates for projects in PSP3 are generally based on a deterministic best estimate for the preferred option with unit rates for all known project elements benchmarked against recent market rates for similar projects.

The cost estimates include an allowance for known risk and a contingency for unknown risks of 30% when the estimate is based on a concept design, 20% if a preliminary design is available and 10% if market testing has occurred.

For some large projects, such as the Launceston Sewer Improvement Program, risk-based cost estimates have been developed using a probabilistic approach that is typical for large construction projects. We are in the process of developing a cost estimation framework to improve the accuracy of our cost estimates in PSP3 and beyond.

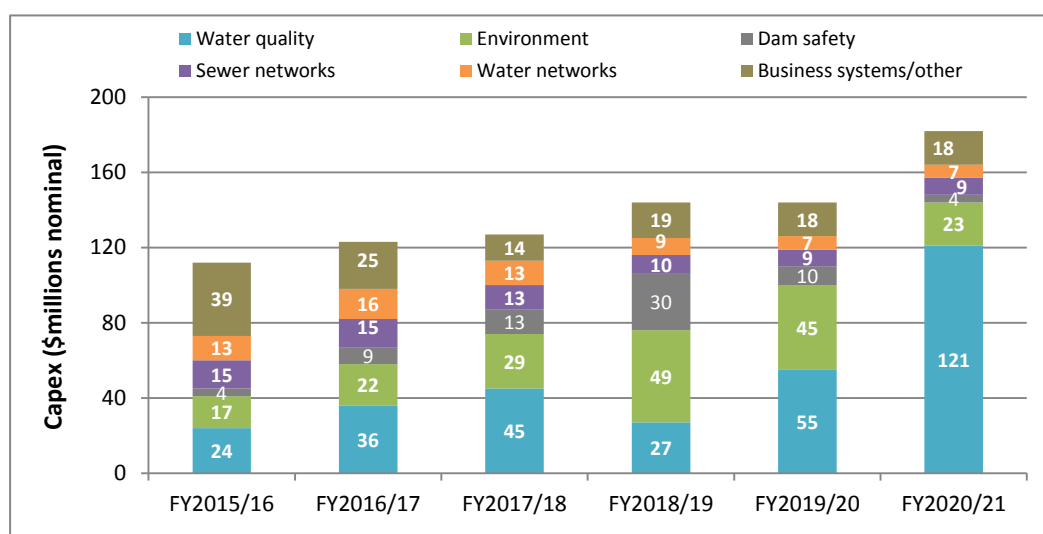
There is a risk that project costs are either greater or less than estimates in our PSP3 submission. This is particularly true for large projects that are relatively early in the planning and design process (eg Bryn Estyn WTP upgrade) and for which cost estimates tend to be more conservative given the greater degree of uncertainty and risk at this point in the project lifecycle.

Nonetheless, our capital expenditure forecast for PSP3 is governed by our decision to limit customer price impacts over the period. In that context, any reduction in capex costs for major projects will result in other projects, and their associated outcomes, being brought forward.

6.6 Summary of capex for PSP2 and PSP3

The following figure shows the composition of PSP2 and PSP3 capex by activity.

Figure 15: Actual and forecast capex in PSP2 and PSP3 by activity



The figure above shows the following:

- In PSP3 our expenditure on environmental compliance increases relative to PSP2
- In the early years of PSP3, our drinking water quality expenditure is not high but is instead focused on optimisation activities that quickly improve our compliance or reduce our risk for relatively little cost. Towards the end of PSP3, our expenditure on drinking water quality increases dramatically and focuses primarily on WTP upgrades
- Early in PSP2, we invested relatively heavily in business systems and other dual function assets and

- Dam safety expenditure increases at the start of PSP3 and diminishes to \$4 million in the final year of PSP3, when most dam safety issues will have been addressed.

7 Operating expenditure

Key points

- TasWater has significantly more infrastructure per customer than our mainland counterparts which increases our costs per customer by comparison
- A recent benchmarking study of Australian water utilities revealed the increased cost impact of these diseconomies of scale, but also identified areas where we can achieve cost savings to minimise price increases for customers
- As a result, we have initiated a Productivity Improvement Program to identify efficiencies and build up to a sustainable \$12 million per annum of operating cost reductions by FY2020/21
- At the same time, we are investing a large amount of capital in PSP3 to improve our compliance levels (eg new treatment plants). This will cause our operating costs to increase
- We forecast \$536 million of regulated opex over the three years of PSP3. Despite increasing operating costs as a result of our capex program, this represents a compound annual growth rate of only 2.4% per annum since the end of PSP2. This is possible because of a concerted effort to reduce costs for our customers through our Productivity Improvement Program

Our operating environment is different compared to our mainland counterparts. We have significantly more assets per customer than other water utilities (eg treatment plants, dams) which, all else being equal, increases our opex compared to those utilities. This is a result of the merger of 29 council water and sewerage entities ultimately into one business (TasWater), and a reflection of the population dispersion and geography of Tasmania.

To better understand our opex compared to our mainland counterparts, we participated in an FY2014/15 opex benchmarking study undertaken by consulting firm Third Horizon on behalf of the WSAA.

This study provided two main insights for us:

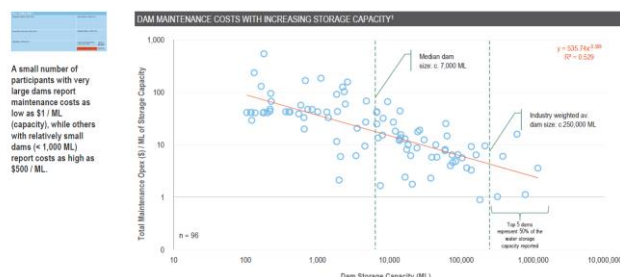
1. The diseconomies of scale that affect our small treatment plants and dams and
2. Other areas of the business where our effective cost to serve customers is higher than our similarly sized counterparts and which have become the focus of our Productivity Improvement Program to identify cost savings and reduce our operating costs.

Apart from rationalisation, decommissioning and technological innovation initiatives (which we are pursuing where economically efficient), there are relatively few opportunities to reduce the high costs associated with our many small treatment plants and dams. The following figures from the WSAA study illustrate the effects of scale.

Figure 16: Effects of scale on dams, water treatment, wastewater treatment and retail services

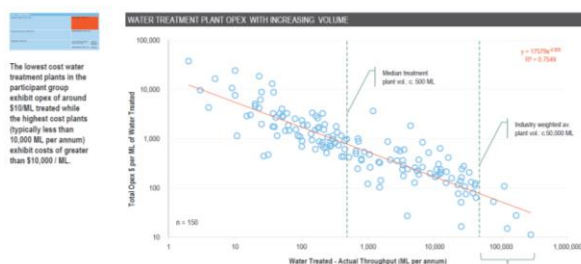
The data suggests that with every tenfold increase in storage capacity average dam maintenance costs reduce by 60% (on a \$ per ML storage capacity basis).

RAW WATER STORAGE – EFFECT OF SCALE



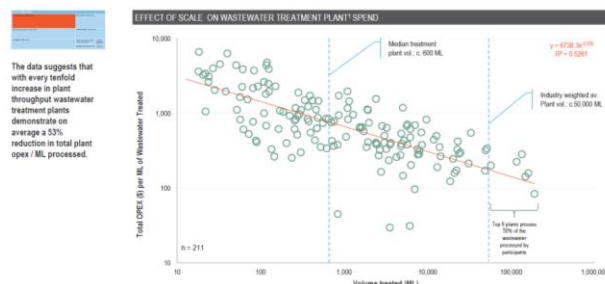
With every tenfold increase in Water Treatment plant volume average operating costs (including O&M, Electricity, Chemicals and Sludge Disposal) reduce by 66% (on a \$ per ML treated basis).

WATER TREATMENT – EFFECT OF SCALE



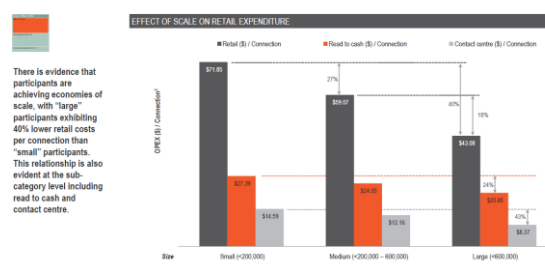
Wastewater treatment plants also exhibit significant economies of scale, with considerably higher opex efficiency on a \$ / ML basis achieved by plants that treat greater volumes of wastewater.

WASTEWATER TREATMENT – EFFECT OF SCALE



The scale of a utility (i.e. the number of customers served) significantly affects overall retail spend, most notably the contact centre.

RETAIL – EFFECT OF SCALE



For example, a small dam storage, such as many that we own, may have average maintenance costs of \$100 per ML of capacity while very large storages have costs of \$1 per ML of capacity.

The WSAA study also highlighted areas of the business where our opex is higher than our counterparts and where effects of scale have little influence. These areas have been the focus for our Productivity Improvement Program and it has helped us to identify approximately \$12 million of annual productivity savings that we are in the process of implementing to directly reduce opex for our customers. This is discussed further in Section 7.4.

Finally, our opex will increase as we improve our compliance levels at various plants in the future. As demonstrated in Chapter 6 (Capital expenditure), our capex is increasing over PSP3 to improve compliance outcomes as a high priority. These new assets will incur additional opex to run and maintain (eg power, chemicals, materials and services) in order to achieve the higher levels of compliance. This is discussed further in Section 7.6.

7.1 Setting the base year and forecasting

In accordance with the TER's PSP3 Guideline we have used FY2016/17 as the opex base year. However, at the time of submitting this draft PSP, a full year of FY2016/17 actuals is not available. We consider that forecasting using a full year of actual expenditure allows for a more rigorous assessment as the full actual expenditure detail is available for review. So, we have used FY2015/16 actuals to inform the calculation of the base year.

Therefore, to establish the base year costs for each opex category we have:

1. Started with FY2015/16 actuals
2. Removed any one-off or non-annual opex and included any non-annual opex, or opex not incurred in FY2015/16 but incurred going forward
3. Removed costs associated with FY2016/17 productivity savings
4. Increased costs that increase with demand, as demand is forecast to increase

5. Modified opex to reflect new additional assets as a result of the capex program and
6. Applied an escalation factor to each category separately.

Each of these factors is described below and summarised in the following table.

Table 35: Establishing the FY2016/17 base year (\$'000s)

Opex category	FY2015/16 actuals	One-off Adjustments	Productivity savings	Change in demand	New capex	Escalation	FY2016/17 base year
Salaries	86,643	-	-991	158	-	1,716	87,526
Materials and services	31,371	-	-732	137	-	-576	30,200
Chemicals	7,890	700	-56	53	-	431	9,018
Power	11,908	-	-1,168	57	-	3,429	14,226
Royalties	2,527	-	-	-	-	32	2,559
Facility management	7,074	-	-	2	-	50	7,125
Information systems	4,426	89	-	1	-	-14	4,502
Administration other	5,063	-	-513	1	-	118	4,670
Motor vehicle	3,661	-	-	4	-	23	3,689
Water sampling	3,524	-754	-	1	-	19	2,790
Consultancy	5,465	-	-	2	-	38	5,505
Regulatory costs	2,573	-	-	-	-	45	2,618
Customer collection	2,750	-	-	17	-	19	2,787
Insurance	1,500	-	-	-	-	35	1,535
Governance	1,076	-41	-	1	-	7	1,044
Community relations	309	106	-	0	-	3	418
Total	177,762	100	-3,460	434	-	5,377	180,212

Base year opex is \$180.2 million, which is only 1.4% higher than FY2015/16. Most of this increase is due to increasing input costs.

7.2 Escalation

We present our total cost and revenue forecasts in nominal terms in the following chapter on Revenue Requirement. For the removal of doubt, nominal cash flows are developed by applying 'inflation' or an annual escalation rate to real cash flows. The escalation rate is intended to reflect actual or likely forecast cost changes (both increases and decreases depending on the cost category) that can reasonably be expected to impact the costs. This escalation represents the change in opex that arises without any other adjustments to the opex forecast (one-off changes, the impact of capital expenditure, change in demand, etc).

Developing justifiable escalation rates becomes critical in this nominal cash flows context.

To forecast future costs we need to determine the rate at which costs will increase in the future. We show past actual and forecast escalation rates for each opex cost category, where available from

public sources (eg the Australian Bureau of Statistics, Federal and/or State Government). We do not consider it efficient or cost-reflective to simply apply a general measure of inflation, such as the CPI, to cost items where a better measure exists (eg PPI).

A summary of the escalation rates is presented below.

Table 36: Forecast escalation rates

Opex category	Index	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21
Salaries	Enterprise agreement, Wage Price Index	2.00%	2.00%	2.25%	2.25%	2.25%
Materials & services	PPI engineering construction	-1.87%	1.34%	5.88%	4.38%	5.66%
Chemicals	PPI chemical manufacturing	5.02%	5.02%	5.02%	5.02%	5.02%
Electricity	Australian Energy Regulator (AER) TasNetworks decisions, Hydro Tasmania forward contract prices	31.76%	4.28%	-5.82%	-6.55%	6.71%
Royalties	CPI	1.27%	2.00%	2.25%	2.25%	2.50%
Facility management	Professional services index	0.70%	1.30%	1.80%	2.00%	2.63%
Information systems	ABS IT index	-0.31%	-0.31%	-0.31%	-0.31%	-0.31%
Administration other	CPI, revenue, Professional services index, capex index	2.59%	2.96%	2.78%	2.80%	3.02%
Motor vehicle	CPI transport group	0.63%	0.63%	0.63%	0.63%	0.63%
Water sampling	Professional services index	0.70%	1.30%	1.80%	2.00%	2.63%
Consultancy	Professional services index	0.70%	1.30%	1.80%	2.00%	2.63%
Regulatory costs	CPI	1.75%	2.25%	2.25%	2.25%	2.50%
Customer collection	Professional services index	0.70%	1.30%	1.80%	2.00%	2.63%
Insurance	ABS insurance index	2.36%	2.28%	2.21%	2.13%	2.05%
Governance	Professional services index	0.70%	1.30%	1.80%	2.00%	2.63%
Community relations	Professional services index	0.70%	1.30%	1.80%	2.00%	2.63%
Weighted average		3.03%	2.04%	1.97%	1.80%	3.19%

Applying our cost escalation rates (above) changes each opex category. The table below sets out the impact of annual cost escalation rates on each opex category.

Table 37: Impact of escalation on opex (\$'000s)

Opex category	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21
Salaries	1,716	1,631	1,778	1,886	1,950
Materials & services	-576	418	1,671	1,332	1,807
Chemicals	431	458	495	520	551
Electricity	3,429	630	-833	-972	889
Royalties	32	51	59	60	68
Facility management	50	83	121	137	183
Information systems	-14	-15	-15	-16	-16
Administration other	118	119	124	128	142
Motor vehicle	23	26	28	26	26
Water sampling	19	30	45	51	69
Consultancy	38	72	101	114	153
Regulatory costs	45	83	36	62	139
Customer collection	19	32	49	55	75
Insurance	35	35	35	34	34
Governance	7	14	21	21	30
Community relations	3	13	14	15	21
Total	5,377	3,682	3,728	3,453	6,121

Our average escalation rate is 2.4% until the end of PSP3.

7.3 One-off costs

Some costs are incurred annually, while others are incurred periodically. Some costs that were incurred in FY2015/16 are not expected to be incurred again, while some new future costs are anticipated. Accordingly, we have made adjustment to:

- Remove one-off, or non-recurrent costs from the base year and
- Add costs that did not occur in FY2015/16, but are expected to be incurred in future years.

Table 38: One-off cost changes (\$'000s)

Opex category	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21	Total
Salaries	-	-993	-	-	-	-993
Materials & services	-	-	-	-	-	-
Chemicals	700	-	-	-	-	700
Electricity	-	-	-	-	-	-
Royalties	-	-	-	-	-	-
Facility management	-	-505	-	-	-	-505
Information systems	89	89	89	89	89	443
Administration other	-	-	-	-	-	-
Motor vehicle	-	183	183	-	-	366
Water sampling	-754	-299	-	-	-	-1,053
Consultancy	-	-	-	-	-	-
Regulatory costs	-	600	-600	-	600	600
Customer collection	-	-200	-	-	-	-200
Insurance	-	-	-	-	-	-
Governance	-41	41	41	-41	-	-
Community relations	106	399	-37	-22	-6	439
Total	100	-686	-325	26	682	-204

The large one-off adjustments are explained below.

7.3.1 Salaries

A one-off adjustment of -\$1.0 million is due to a step-change in labour costs, resulting in a net decrease to opex in FY2017/18.

In FY2015/16, 17 new FTEs were added to perform temporary roles: for example, 14 FTEs implementing our Asset Management Information System and other roles detailed below. However, these temporary FTEs will be removed in FY2016/17 as follows.

Table 39: Temporary roles

Role/Project	FTE	Justification
Asset Management Information System implementation	14	Roles no longer needed as Maximo has been implemented
Project Manager	1	Position was to manage the move to Devonport. The move has been completed
Contractor Management Safety Compliance project	2	Safety standards and requirements have been improved and lower staffing levels are required to maintain the new higher standard
Total	17	

Table 40: New roles

Role/Project	FTE	Justification
Asset Accountants	3	Increase in work volume as a result of increased regulatory reporting requirements and the increased reporting for the Capital Works Program

Corporate & Community Relations	2.8	Establishment of new Division. Additional General Manager role and conversion of 2 x part time to full time roles
Works Engine Change Project	1	Following completion of the reorganisation of the Works Engine Group an additional FTE was approved to support the Small Towns project
Total	6.8	

The combination of some roles ceasing and new roles created results in a net FTE decrease from 922.9 to 912.7 FTEs or 10.2 less FTEs.

Based on average total salary costs (including all associated on-costs such as superannuation, workers compensation insurance, payroll tax etc) of \$93,611 (an average of FY2015/16 total salary costs per FTE), the reduction in expenditure will be \$1.0 million in FY2017/18 (including an annual 2% salary increase) compared with FY2016/17.

7.3.2 Chemicals

The cost for chemicals for water treatment has increased substantially in recent years. A key contributor to the change has been the use of activated carbon to address taste and odour issues arising from the compounds geosmin and methylisoborneol released by algal blooms. Catchment conditions have changed in recent years with warmer than usual water and high nutrient levels.

Table 41: Change in activated carbon costs as an input to chemical costs (\$'000s)

Opex driver	FY2013/14	FY2014/15	FY2015/16
Activated carbon	2	351	719

It is expected that the additional cost of activated carbon will continue to increase. We forecast an additional \$0.7 million will be spent in FY2016/17 above FY2015/16 levels.

7.3.3 Facility management

7.3.3.1 Ground maintenance services

Ground maintenance and vegetation control are currently performed by contractors or our employees using a range of standards and processes. Some contracts date to pre-TasWater times. They provide an unnecessarily high level of service (over-service) at a commensurately high price.

To remove such cost inefficiencies where they occur, we will establish a single statewide contract with a single vendor. By FY2017/18, we will develop a ground maintenance standard and schedule that the vendor must meet, and our contract will include standard rates per service.

The benefits of this change include:

- Eliminating the requirement for our employees to perform ground and vegetation maintenance
- Reducing the number of vendors involved in ground and vegetation management
- Reducing the cost of such maintenance in regional and remote areas through the use of a single statewide contractor using standard rates and travel costs and
- The proposed contract will be executed by FY2017/18 with forecast permanent annual savings of \$0.4 million in FY2017/18.

7.3.3.2 Facilities maintenance services

Currently the bulk of facilities maintenance services and goods are not contracted and require a tender or quote process in order to obtain the best value for money. Services to regional and remote areas generally incur higher than necessary costs due to the limited number of qualified vendors in

those areas. In addition, there are administrative overheads costs incurred in procuring the necessary services on an ad hoc basis.

As a result our historical procurement approach not only incurred an additional cash cost but also took key staff from other tasks, imposing an 'opportunity cost' (foregone productivity) on the business.

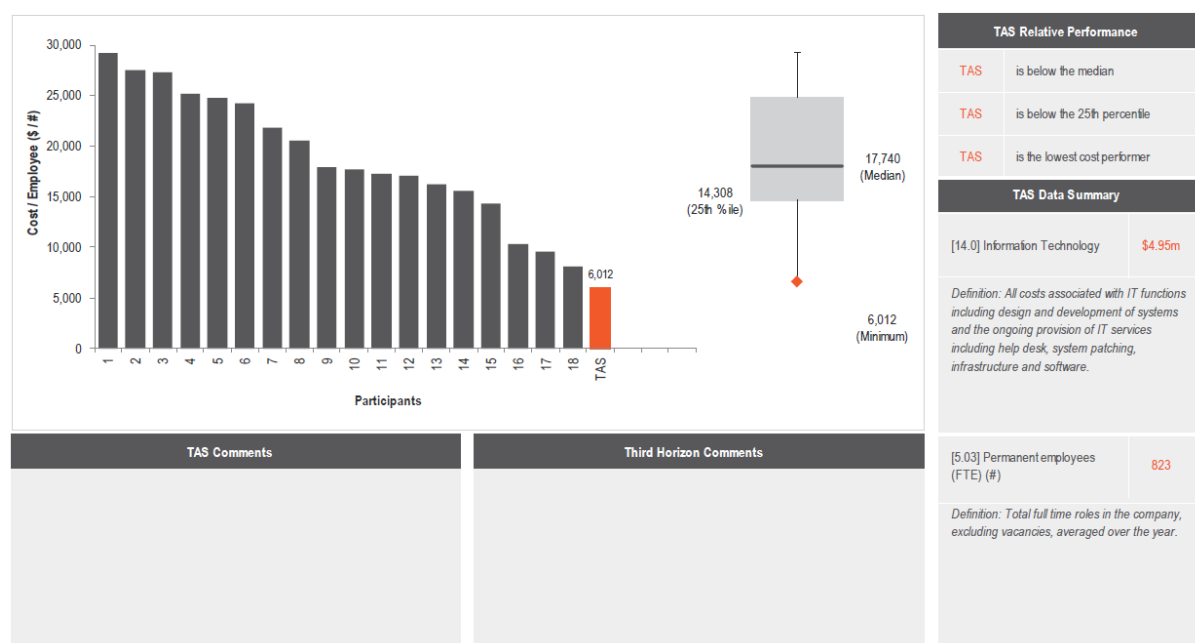
To improve on this situation, and save money, we are establishing a single statewide contract with a single vendor. The contract will include standard rates per service, with the vendor managing components of our previous administrative roles (excluding contract selection). This initiative is forecast to save approximately \$0.1 million annually.

7.3.4 Information systems

We are increasing our information technology (IT) maturity and the level of automation across the business to drive operational efficiencies, increase labour productivity and reduce opex. Accordingly, the amount of IT services will continue to increase.

Our expenditure on information systems is substantially below other Australian water utilities who participated in the FY2014/15 opex benchmarking study undertaken by consulting firm Third Horizon on behalf of the WSAA. This is shown in the graph below:

Figure 17: Total information technology spend per permanent employee



We estimate that the amount of our IT services will increase by 2% (\$0.1 million) each year with a corresponding increase in the cost as follows.

Table 42: Cost increases in information systems (\$000s)

Opex category	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21	Total
Information systems	89	89	89	89	89	443

This is an increase in the base level of information system costs which is separate to the escalation of costs which is considered below.

7.3.5 Water sampling

7.3.5.1 Program reviews and updates

By critically reviewing our sampling and analysis programs we have been able to renegotiate the frequency and scope of analysis required by our regulators.

Further savings may be possible as we refine our risk-based assessments using improved data sets. This may enable further reductions in costs, if supported by our regulators. This will save \$0.3 million annually.

7.3.5.2 External laboratory services contract

A tender process was recently completed to procure external laboratory services and was conducted in line with our normal processes for transparent and competitive procurement as described above.

Savings are expected from December 2016 onwards (FY2016/17), although some costs will also be incurred in the first year of the new contract related to transition and new software requirements. Full year savings of \$0.7 million will be realised in FY2017/18 and be repeated each year thereafter.

7.3.6 Regulatory costs

There are spikes in our regulatory costs caused by the preparation of the PSP3 submission. These \$0.6 million spikes occur every three years.

7.4 Productivity – cost savings initiatives

Since the creation of TasWater, we have focused on achieving cost savings as a result of the merger into one entity. In January 2016, the Productivity Improvement Program commenced with a brief to establish a business-wide program of work (beyond merger savings) which would deliver:

- Improved productivity
- Reduction in costs and
- Increase in revenue.

7.4.1 Productivity improvement three year program of work

The outcome for the productivity improvement program of work is to improve the affordability of customer bills, while delivering to customer and business requirements.

The program has been refined with the business focus on the key programs of work listed below.

Table 43: Three year productivity improvement program

Initiative	Deliverable	Update
Centre Led Procurement	Implementation of a Centre Led Procurement model to control spending for operating goods and services	Develop a Centre-Led Procurement team Develop Contracts and panels for operational goods and services Transition business to centre-led model
North West Program	The North West Program centralised the North West facilities, call centre and introduced a network operations centre	Initiative implemented January 2017
Power Cost Efficiencies	Engagement of consultant for management of market tariff and bill accuracy	Initiative implemented July 2016
Project Turbine	Implementation of an AMIS and upgrade of Navision finance system	Initiative implemented January 2017
Retail & Customer	Review of functions, systems, process and	Undertake value creation review and benchmarking

Initiative	Deliverable	Update
Service Program	structure of Retail & Customer Service Division	to identify quick wins Management Operating System (MOS) review of division to identify long term opportunities Review of billing system
Revenue Enhancement	Customer data review and audits to ensure accuracy of bills	Focus on customer data integrity ensuring billing for current charges
Service Delivery Program	Review of functions, systems, process and structure of Service Delivery	Undertake value creation review and benchmarking to identify quick wins MOS review of division to identify long term opportunities Create partnerships and alliances where relevant
Works Engine Group	Review of the operational divisions functions, process and structure within the business	Initiative implemented in January 2017
Zero Harm Program	Behavioural safety; fatality risk reduction program	Ongoing initiative
Project Delivery Review	Review of capital project delivery process, systems and structure	To commence FY2017/18

We have identified \$12.0 million worth of annual ongoing productivity savings, which will be progressively achieved between FY2016/17 and FY2020/21. These savings result from measures including:

- Consolidation of the northern and southern laboratories, and tendering of external laboratory service contract
- Labour savings in the Service Delivery division field workforce and
- A review of electricity tariffs.

Table 44: Productivity savings (\$'000s)

Opex category	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21	Total
Salaries	-991	-2,098	-2,171	-233	-	-5,494
Materials & services	-732	-2,562	-	-	-	-3,295
Chemicals	-56	-	-	-	-	-56
Electricity	-1,168	-	-	-250	-	-1,418
Royalties	-	-	-	-	-	-
Facility management	-	-	-	-	-	-
Information systems	-	-	-	-	-	-
Administration other	-513	-344	-	-	-	-856
Motor vehicle	-	-	-	-	-	-
Water sampling	-	-	-	-	-	-
Consultancy	-	-	-	-	-	-
Regulatory costs	-	-	-	-	-	-
Customer collection	-	-	-	-	-	-
Insurance	-	-	-	-	-	-
Governance	-	-	-	-	-	-

Opex category	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21	Total
Community relations	-	-	-	-	-	-
Unspecified	-	-	-	-	-889	-889
Total	-3,460	-5,004	-2,171	-483	-889	-12,007

7.5 Change in demand

As demand for our services increases some opex costs will also increase. As required by the PSP3 Guideline, we have considered the costs that vary with water use (variable costs) and the costs that are fixed, regardless of the volume of water deliveries (fixed costs). We have considered that a variable cost will vary with water usage over the course of the regulatory period.

The table below sets out the break-down of fixed and variable costs and the associated explanation.

Table 45: Fixed and variable cost analysis

Opex category	Variable (%)	Fixed (%)	Why
Salaries	30%	70%	Over half of our staff costs relate to operations and maintenance. To some extent, the number of staff required will vary with the demand for water and sewerage services. For example, if less water is pumped, then pump maintenance may occur less frequently or if small treatment plants are consolidated into fewer large treatment plants there may need to be less staff.
Materials and services	70%	30%	As above, a change in demand will have an impact on the cost of operations and maintenance and will lead to a portion of these costs decreasing if demand decreases materially.
Chemicals	100%	0%	Our chemicals are all used for the purpose of treating water and waste water. There is a direct correlation between the demand for our services and chemical usage.
Power	85%	15%	Most electricity is used to pump water and wastewater. The amount of electricity used for this purpose is strongly related to the demand for water and waste water services. However, a portion of the electricity cost is fixed, for example: the portion that relates to the access charge does not change with use.
Royalties	0%	100%	Royalty costs have been estimated based on a maximum cap. Accordingly, royalty costs will not further increase due to an increase in demand.
Facility management	5%	95%	Our facilities need to be managed irrespective of water use. However, the costs of managing facilities used primarily by staff may vary to a limited extent as the number of staff changes.
Information systems	5%	95%	These costs do not vary with water use, but will change marginally with a change in staff numbers.
Administration other	5%	95%	These costs do not vary with water use, but will change marginally with a change in staff numbers.
Motor vehicle	20%	80%	These costs do not vary directly with water use, but will change as the size and scope of the organisation changes.
Water sampling	5%	95%	The water sampling regime is largely a mandated requirement that needs to be undertaken regardless of water use.
Consultancy	10%	90%	These costs do not vary directly with water use, but will change as the size and scope of the organisation changes.
Regulatory costs	0%	100%	The regulatory regime (and therefore the cost of complying) is not dependent on demand.
Customer collection	80%	20%	The cost of collecting from customers will increase as the number of customers increase.
Insurance	0%	100%	These costs relate to the value of insurable assets, which does not vary with water use over the regulatory period.
Governance	10%	90%	These costs do not vary directly with water use, but will change as the size and scope of the organisation changes, including to a limited extent with staff numbers.
Community relations	5%	95%	Community consultation is a core part of our business and occurs irrespective of demand, except to the extent that new projects are required to meet new demand.
Weighted average	44%	56%	Used base year opex dollars to establish weighting. This may inform fixed and variable charges.

From FY2016/17 to FY2020/21 the increase in demand is projected to increase opex by \$1.7 million.

Table 46: Change in costs due to demand changes (\$'000s)

Opex category	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21
Salaries	158	143	291	142	143
Materials & services	137	112	284	123	123
Chemicals	53	52	109	51	51
Electricity	57	56	118	48	54
Royalties	-	-	-	-	-
Facility management	2	2	5	2	2
Information systems	1	1	3	2	2
Administration other	1	1	3	1	1
Motor vehicle	4	5	10	5	5
Water sampling	1	1	2	1	1
Consultancy	2	2	2	1	1
Regulatory costs	-	-	-	-	-
Customer collection	17	14	33	15	15
Insurance	-	-	-	-	-
Governance	1	1	2	1	1
Community relations	0	0	1	0	0
Total	434	389	861	392	399

7.6 Capex changes

As new capex is commissioned, there is often a change in opex. At this stage of our journey as a water utility, the introduction of new assets results in an increase in costs to operate and maintain the new equipment, especially where increased levels of compliance are achieved by that capital investment. For example, a new sewage treatment plant may have more treatment assets/additional process stages (incurring more electricity and chemical costs), or a higher level of compliance may require additional use of machinery to manage and dispose of biosolids.

As our capex program is designed to increase compliance, the new assets will increase our degree of compliance and consequently generally will have higher opex. Capex projects leading to opex cost savings are also included at the bottom of the following table. We have examined capex projects to be commissioned during PSP3 and have estimated that overall total opex needs to increase by \$2.7 million by the final year of PSP3, despite opex savings from some projects.

Table 47: Opex changes resulting from forecast capex (\$'000s)

Project Name	FY2018/19	FY2019/20	FY2020/21
Kingborough Sewerage Strategy - Treatment & Network	-	-	500
Rosebery WTP	326	326	326
King Island WTP	-	278	278
Burnie Sewage Treatment Plant Upgrade	240	240	240
Mathinna water supply system	175	175	175
Flinders Island water supply project	144	144	144
Bronte Park water supply system	123	123	123
Gladstone water supply system	120	120	120
Rossarden water supply system	100	100	100
Wayatinah water supply system	100	100	100
Cornwall water supply system	-	100	100
St Marys Reuse Upgrade	-	100	100
Colebrook water supply system	82	82	82
Gormanston water supply system	-	65	65
Ti Tree Bend - Digester	-	55	55
Judbury water supply upgrade	52	52	52
Bothwell Major Upgrade / Replacement	-	-	50
Gretna water supply system	40	40	40
Ringarooma Valley scheme	37	37	37
Epping Water supply system	-	28	28
Rocky Creek WTP	-	24	24
Conara water supply system	24	24	24
Herrick water supply system	-	13	13
Mole Creek	8	8	8
Kingston Sewer Pump Station E Rising Main	2	2	2
South Esk Disinfection Project	1	1	1
Deloraine Disinfection Project	1	1	1
West Tamar Disinfection Project	1	1	1
St Helens Disinfection Project	1	1	1
Manuka River (Strahan) Disinfection Project	1	1	1
Distillery Creek Disinfection Project	1	1	1
Dover Disinfection Project	1	1	1
North Esk Disinfection Project	1	1	1
Longford Disinfection Project	1	1	1
Cameron Bay Belt Press replacement	-74	-74	-74
Total	1,507	2,170	2,720

The remainder of capex projects are expected to have a negligible impact on (increasing or decreasing) opex and have not been included in the table above or our opex forecast for PSP3.

7.7 Service standards

As part of our submission, we have reviewed service targets (refer to Chapter 4). We used the FY2015/16 actuals to inform the establishment of the base year. We have compared the actual service standard achieved in FY2015/16 against the PSP3 targets as shown in the table below. The difference between FY2015/16 actuals and the PSP3 target is minor.

In total, eight PSP3 targets are lower than the FY2015/16 actuals and nine are higher. We consider that the PSP3 service targets are not sufficiently different to FY2015/16 actuals to justify an adjustment to opex forecasts on the basis of a change in service targets.

Table 48: Service targets

Service standard	FY2015/16 actual	PSP3 Target
Water main breaks (no. per 100km of water main)	32.9	35
Percentage of response times within 60 minutes to attend Priority 1 bursts and leaks	87%	90%
Percentage of response times within 180 minutes (3 hours) to attend Priority 2 bursts and leaks	98%	90%
Percentage of response times within 4,320 minutes (3 days) to attend Priority 3 bursts and leaks	91%	90%
Incidence of unplanned interruptions – water (no. per 1,000 properties)	167.4	170
Incidence of planned interruptions – water (no. per 1,000 properties)	14.3	20
Average duration of an unplanned interruption – water (minutes)	199	180
Average duration of a planned interruption – water (minutes)	130	180
Percentage of unplanned water supply interruptions restored within 5 hours	93%	90%
Percentage of planned water supply interruptions restored within 5 hours	89%	90%
Number of customers experiencing repeat unplanned water supply interruptions in a financial year	Not reported	To be piloted
Percentage of non-revenue water (of total sourced potable water) (unaccounted for water)	33%	28%
Sewerage mains breaks and chokes (no. per 100km of sewer main)	61	65
Percentage of response times within 60 minutes to attend sewer spills, breaks and chokes	78%	80%
Percentage of sewage spills contained within 5 hours	100%	99%
Number of customers experiencing repeat sewage overflows on private property in a financial year	Not reported	To be piloted
Total water and sewerage complaints (no. per 1,000 properties)	14.3	11
Water and sewerage complaints to the Ombudsman (no. per 1,000 properties)	0.4	0.5
Percentage of calls answered by an operator within 30 seconds	88%	85%

7.8 Total operating expenditure

Using the base year as a starting point, and making adjustments for escalation, one-off costs, productivity improvements, change in demand, capex changes and service standard changes (outlined in the sections above), we forecast that our opex will increase from \$177.8 million in

FY2015/16 to \$192.0 million by the end of PSP3. This is an average annual increase of approximately 2.4%.

This encouraging result has been achieved through our dedication to reducing costs through productivity measures. We have identified a total of \$12.0 million in permanent annual cost reductions. Further, our forecast cost escalations are low, averaging approximately 2.4% per annum, which is below the RBA mid-range CPI target. This demonstrates our commitment to constrain our opex wherever possible, even though our cost base will increase as we invest in new and upgraded infrastructure to achieve higher levels of regulatory compliance and asset maintenance.

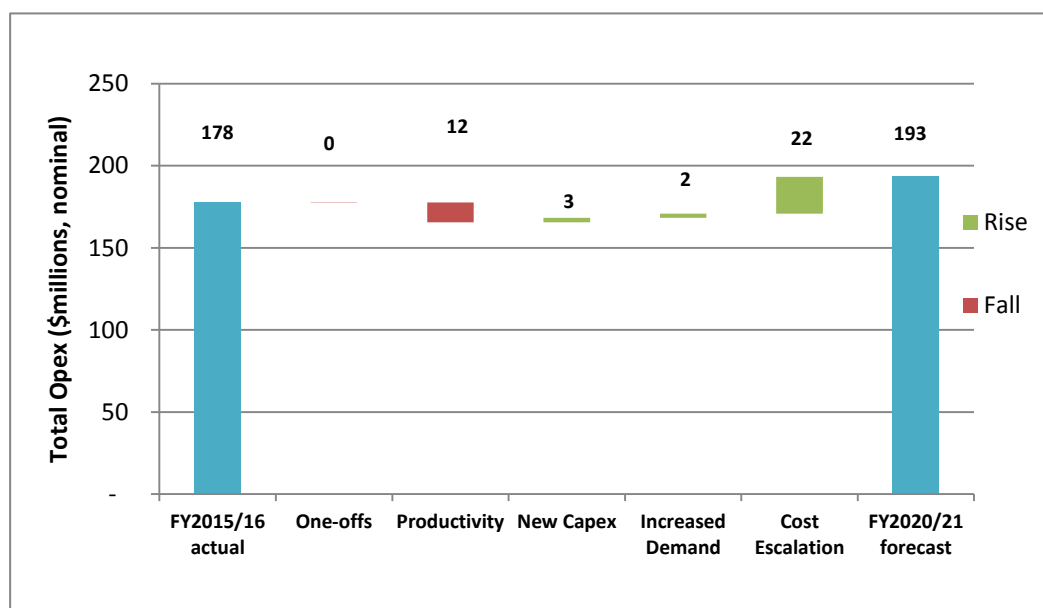
Table 49: Total opex (\$'000s)

Opex category	FY2015/16	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21
	PSP2			PSP3		
Salaries	86,643	87,526	86,209	86,106	87,901	89,994
Materials & services	31,371	30,200	28,168	30,123	31,577	33,507
Chemicals	7,890	9,018	9,527	10,131	10,702	11,305
Electricity	11,908	14,226	14,911	14,196	13,023	13,966
Royalties	2,527	2,559	2,610	2,669	2,729	2,797
Facility management	7,074	7,125	6,705	6,830	6,969	7,155
Information systems	4,426	4,502	4,578	4,654	4,729	4,803
Administration other	5,063	4,670	4,447	4,573	4,703	4,846
Motor vehicle	3,661	3,689	3,902	4,124	4,155	4,186
Water sampling	3,524	2,790	2,522	2,569	2,621	2,691
Consultancy	5,465	5,505	5,578	5,681	5,797	5,951
Regulatory costs	2,573	2,618	3,302	2,738	2,799	3,538
Customer collection	2,750	2,787	2,634	2,715	2,785	2,875
Insurance	1,500	1,535	1,570	1,605	1,639	1,673
Governance	1,076	1,044	1,099	1,163	1,144	1,174
Community relations	309	418	830	807	800	814
Impact of new capex	-	-	-	1,507	2,170	1,831
Total	177,762	180,212	178,592	182,192	186,243	193,107

The following figure summarises the changes in our forecast opex from FY2015/16 (the full year of actual costs, which informs our base year FY2016/17) across five years to arrive at forecast FY2020/21 opex (final year of PSP3).

The increase in costs is predominately driven by an increase in input costs as well as increased demand.

Figure 18: Change in total opex from FY2015/16 to FY2020/21



7.9 Cost allocation

7.9.1 PSP2

In PSP2, unregulated expenditure of \$3.8 million was excluded from the efficient operating cost build up. Direct unregulated expenditure such as power, chemicals and maintenance were budgeted against individual unregulated assets, where possible. In addition to these direct costs, a share of salaries and administration costs were allocated to unregulated expenditure based on the proportion of total revenue.

Regulated opex was allocated between water and sewerage. Where possible, costs were allocated directly between water and sewerage assets. Where direct allocation was not possible, an allocation of 53/47 was used. This reflected the ratio of water to sewer revenue. As a result, the allocation was as follows.

Table 50: PSP2 cost allocation

Opex category	Water	Sewer
Chemicals, Power & Royalties	53%	47%
Materials & Services	39%	61%
Water Sampling	17%	83%
Salaries & Related Personnel Expenditure	50%	50%
Governance	53%	47%
Information Systems	53%	47%
Customer Collection Expenses	53%	47%
Consultancy	53%	47%
Administration Other	53%	47%
Community Relations	53%	47%
Facility Management	53%	47%
Insurance	53%	47%

Motor Vehicle	53%	47%
Total	48%	52%

7.9.2 PSP3 guideline

The guideline requires that:

- Unregulated services are correctly classified and excluded from the regulated cost base
- We explain how shared costs (such as corporate costs) have been allocated between regulated and unregulated services according to the ring fencing guideline. The basis for excluding this expenditure should take account of the method used to determine the value of the assets excluded from the RAB
- Opex be allocated between water and sewerage and that the basis be clearly identified and justified and
- Opex be allocated between labour and non-labour and that the basis be clearly identified and justified.

7.9.3 PSP3 direct attribution

Our preference is to directly attribute costs to either water or sewerage and to either regulated or unregulated categories. This can be done when an expense relates to a particular asset. For example, for operational staff there is a record of work orders which relate to either a water or sewerage asset.

The TER requires us to generate regulatory accounts. The most recent was for FY2015/16 with directly attributed costs as shown below.

Table 51: Direct allocation (\$'000s)

Opex category	Regulated		Unregulated		Total Allocated	Total Unallocated
	Water	Sewer	Water	Sewer		
Salaries	15,127	13,207	-	110	28,444	58,199
Materials and services	8,654	13,211	-	57	21,923	9,448
Chemicals	4,026	3,842	-	-	7,868	22
Power	5,797	5,852	-	-	11,650	258
Royalties	2,527	-	-	-	2,527	0
Facility management	804	1,163	-	21	1,988	5,085
Information systems	-	-	-	-	-	4,426
Administration other	-	-	-	-	-	5,063
Motor vehicle	-	-	-	-	-	3,661
Water sampling	1,400	1,233	-	-	2,632	892
Consultancy	-	-	-	-	-	5,465
Regulatory costs	5	539	-	-	543	2,030
Customer collection	-	-	-	-	-	2,750
Insurance	-	-	-	-	-	1,500
Governance	-	-	-	-	-	1,076
Community relations	-	-	-	-	-	309

Opex category	Regulated		Unregulated		Total Allocated	Total Unallocated
	Water	Sewer	Water	Sewer		
Total	38,340	39,046	0	189	77,575	100,187

This means that approximately 44% of total opex was directly attributed. This requires that the remaining 56% needs to be allocated between water/sewerage and regulated/unregulated.

7.9.4 Unregulated cost allocation

Some of our activities fall outside of the PSP3 regulatory process. Accordingly, these costs should be removed from the regulated cost base to ensure that regulated customers do not pay for costs that only benefit unregulated customers.

However, quarantining these costs can be difficult as a portion will relate to shared overhead costs. The revenue for unregulated services can be used as a proxy for delivery of these services as the unregulated prices are set to recover costs or are continuing to move towards cost recovery. The revenue collected is shown below.

Reuse and/or recycled water schemes vary between unregulated services and least cost waste water disposal solutions. We consider reuse on a case by case basis when developing possible solutions for addressing non-compliant systems or treatment plants. The EPA requires that an assessment be undertaken for all waste water treatment plant improvement plans of opportunities to divert water from treated effluent for beneficial purposes including irrigation of agricultural, forestry or public land. The sensitivity of receiving environments is an important consideration, however the underlying premise is one of identifying the least cost solution for customers.

We hold various contracts for supply of irrigation water and we will progressively move toward full cost recovery over time (or least cost customer solutions in some reuse cases).

Table 52: Unregulated revenue (\$'000s)

Revenue item	Revenue collected
Trade Waste – Vol. Cat. 3 & 4	5,780
Trade Waste - Fixed Cat. 3 & 4	1,215
Biosolids Sales	1,713
Irrigation – Volumetric	1,081
Irrigation – Fixed	96
Consulting Income	1,427
Tankered Waste	693
Rent	445
Government Training Funding	70
Total	12,521

As \$12.5 million makes up approximately 4% of revenue, we have allocated 4% of total opex to unregulated costs which is approximately \$7.3 million. The RAB is similarly allocated between regulated and unregulated activities.

We do this as our unregulated charges are generally cost-reflective, or moving towards being cost-reflective. Therefore, the revenue recovered should equate to the costs.

Therefore, there is \$92.9 million in regulated costs to allocate between water and sewerage.

7.9.5 Water and sewerage regulated cost allocation

For some expenses, it is not possible to directly attribute a cost to either water or sewerage. For example, many corporate staff support the needs of the entire business and it is not practical or possible for staff to itemise the portion of their time spent on water or sewerage. Likewise, overhead costs support the entire business.

For the preparation of the FY2015/16 regulatory accounts, the remaining costs were allocated to water/sewer and regulated/unregulated. A common allocator was to allocate the remaining costs on the basis of the revenue split. However, as our regulated revenues do not reflect our underlying costs in many instances, we have investigated whether other allocation methods would better reflect the driver of the costs for our PSP3 submission.

Where a large portion of an opex category is directly attributed, we consider that the balance of the opex category should be allocated using the direct costs split. For example, if 53% of direct salary costs are attributed to regulated water, we will allocate 53% of the unallocated portion to regulated water.

An explanation of the allocation approach for each opex category is presented below.

Table 53: Allocation method

Opex category	Unallocated amount (\$'000)	Allocator	Reason	Water %	Sewer %
Salaries & Related	53,867	Direct staff	The balance of these costs are allocated on the basis of the direct cost split. This reflects the related expenditure such as training, annual leave, staff allowances which will closely match the direct expenditure. For overhead staff not directly attributed, we consider that overhead effort supports direct activities and should be allocated on the same basis as direct salary costs.	53%	47%
Materials and services	8,193	Direct Materials	Most material and services costs are directly attributed. Those that are not should be allocated using the direct cost breakdown.	40%	60%
Chemicals	22	Direct chemicals	Most chemicals costs are directly attributed. Those that are not should be allocated using the direct cost breakdown.	51%	49%
Power	258	Direct Power	Most power costs are directly attributed. Those that are not should be allocated using the direct cost breakdown.	50%	50%
Royalties	-	NA	NA	100%	0%
Facility management	4,802	Direct facility management	Many facilities service both water and sewerage assets so only approximately 30% of facility management costs can be directly attributed. The balance of the costs are allocated on the basis of directly attributed facility management costs.	41%	59%
Information systems	4,249	Direct staff costs	Overhead costs cannot be directly attributed. Information system costs will relate to the number of staff and should be allocated using direct staff costs.	53%	47%
Administration other	4,861	Direct staff costs	Overhead costs cannot be directly attributed. Administration other costs will relate to the number of staff and should be allocated using direct staff costs.	53%	47%
Motor vehicle	3,515	Direct staff	The use of motor vehicles is generally for field staff to	53%	47%

Opex category	Unallocated amount (\$'000)	Allocator	Reason	Water %	Sewer %
		costs	undertake operations and maintenance. Their use will be in proportion to the nature of the work being undertaken. Therefore, the costs are allocated on the basis of directly attributed staff costs.		
Water sampling	751	Direct Water sampling	Most water sampling costs are directly attributed. Those that are not should be allocated using the direct cost breakdown.	53%	47%
Consultancy	5,247	75% water 25% sewer	The nature of the consultancy costs varies considerably. However, there is an expectation of significant costs relating to dam safety, so we have weighted this split towards water	75%	25%
Regulatory costs	1,927	Total direct costs	This cost relates to our cost of complying with regulatory obligations, which will likely vary on the basis of total direct costs.	50%	50%
Customer collection	2,640	Revenue split	The costs of recovering revenue will vary in accordance with the amount of revenue collected.	51%	49%
Insurance	1,440	RAB split	The cost of insurance should be allocated on the basis of the underlying assets.	54%	46%
Governance	1,033	Total direct costs	These costs relate to the entire business and should be allocated on the basis of total costs.	50%	50%
Community relations	296	Future capex	Community relations expenses generally precede capex projects that may have a community impact. We have allocated these costs on the basis of anticipated capex expenditure.	42%	58%
Total	93,103			51%	49%

As a result of direct attribution and allocation, 51.2% of regulated costs relate to water and 48.8% relate to sewerage. Relative to PSP2, there is a slight increase in the water proportion.

We expect that our allocation will continue to improve in future years as we collect activity level cost data through our new AMIS.

7.10 Total regulated expenditure

The results of the direct attribution and the allocation are shown below. We will include total regulated costs in the revenue requirement for opex.

Table 54: Total regulated opex (\$'000s)

Opex category	FY2015/16	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21
Salaries	83,068	83,914	82,651	82,552	84,273	86,279
Materials and services	30,059	28,937	26,990	28,865	30,258	32,108
Chemicals	7,574	8,657	9,146	9,726	10,274	10,853
Power	11,431	13,657	14,315	13,629	12,502	13,407
Royalties	2,426	2,456	2,506	2,562	2,620	2,685
Facility management	6,769	6,819	6,417	6,537	6,670	6,847
Information systems	4,249	4,322	4,395	4,468	4,540	4,611
Administration other	4,861	4,483	4,269	4,390	4,515	4,652

Opex category	FY2015/16	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21
Motor vehicle	3,515	3,541	3,746	3,959	3,989	4,019
Water sampling	3,383	2,678	2,421	2,466	2,517	2,583
Consultancy	5,247	5,285	5,355	5,454	5,565	5,713
Regulatory costs	2,470	2,514	3,170	2,628	2,687	3,397
Customer collection	2,640	2,675	2,528	2,606	2,674	2,760
Insurance	1,440	1,474	1,508	1,541	1,574	1,606
Governance	1,033	1,002	1,055	1,116	1,098	1,127
Community relations	296	401	797	775	768	782
Change in capex	-	-	-	1,507	2,170	1,831
Total	170,462	172,816	171,268	174,781	178,691	185,260

8 Revenue requirement

Key points

- The TER specifies that we use the building block approach to determine our revenue requirement for PSP3 which is considered best practice economic regulation
- The 'building blocks' consist of the full recovery, within statutory limits, of the following main regulated costs: operating expenditure, regulatory depreciation and the cost of capital
- Our total revenue requirement in PSP3, if we were to fully recover costs at the statutory limit, is \$1.2 billion over PSP3
- However, our customers have told us that affordability is a key issue for them and that we need to balance compliance improvements with the impact of price increases
- As a result, we will manage the transition to our statutory revenue limit by PSP5. We propose a smooth path to full cost recovery over this period to limit price increases in PSP3 rather than moving to full cost recovery (and higher prices) immediately

We need to recover revenue to fund the regulated services that we provide to our customers. We have determined our revenue requirement using the post-tax building block method in accordance with the PSP3 Guideline. The revenue we will collect in each period reflects the following costs:

- Operating expenditure
- Return of capital: regulatory depreciation
- Return on capital: cost of capital - comprising the cost of the debt and equity that together make up the total amount of capital invested in the regulated business
- Offset for inflationary gain
- Working capital allowance and
- Tax allowance.

The PSP3 Guideline also requires us to consider the impact of annual price movements on our customers. During our engagement for the LTSP and PSP3 our customers told us that affordability is a key issue and asked us to balance the investment needed to improve compliance outcomes and meet service standards with the price impacts on their bills.

As a result, we propose to limit price increase in PSP3 to 4.6% per annum (refer to Chapter 9) which means that we will not recover revenue at our statutory limit.

The remainder of this chapter describes the revenue requirement for each component of the building blocks to fully recover our costs at the statutory limit. In Chapter 9, we outline our prices and price constraints and describe the impact it has on the actual revenue we will collect in PSP3.

8.1 Operating expenditure

Detailed opex forecasts are shown in Chapter 7. The following table summarises our historical and proposed PSP3 opex, split into water, wastewater, fixed and variable components consistent with the TER's PSP3 Guideline.

Table 55: PSP3 opex requirement (\$'000s)

Year	FY2015/16	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21
	PSP2 Actuals / forecast			PSP3 Forecast		
Water opex						
Fixed	54,451	54,356	53,903	54,834	56,159	57,636
Variable	32,744	34,108	33,881	34,363	34,918	36,530
Total	87,195	88,464	87,784	89,197	91,077	94,165
Sewer opex						
Fixed	48,179	48,016	47,567	48,381	49,616	51,146
Variable	67,832	70,444	69,798	71,566	72,916	76,478
Total	116,011	118,460	117,364	119,947	122,532	127,624
Total opex						
Fixed	102,631	102,372	101,470	103,215	105,775	108,782
Variable	100,576	104,552	103,678	105,929	107,834	113,007
Total	203,206	206,924	205,149	209,144	213,609	221,790

8.2 Regulated asset base

The RAB represents the asset value on which a business can earn a return (return on capital), and the value that is returned to the business over the economic life of the assets as regulatory depreciation.

We are required to establish, maintain and roll-forward two separate RABs:

- RAB_{EXISTING} - assets transferred to the previous regulated entities before 1 July 2011
- RAB_{NEW} - “new” assets purchased or constructed by the previous regulated entities and the current regulated entity after 1 July 2009.

The RAB for assets transferred to a previous regulated entity before 1 July 2011 will therefore gradually decline over time due to regulatory depreciation and disposals reducing the value of those assets, while the RAB for new assets will increase with expenditure on capital projects.

Each RAB is split between water and sewerage assets.

8.2.1 Opening RAB

The RAB roll-forward requires calculation of the RAB on 1 July 2018. This is calculated by:

1 July 2018 opening RAB = RAB at 1 July 2015

- + actual capital expenditure
- customer contributions
- regulatory depreciation
- proceeds from asset disposals
- + inflationary gain

The PSP2 RAB forecast is updated with actual values to date and updated forecasts for the remainder of PSP2 to roll forward the opening PSP2 RAB and establish a closing PSP2 RAB. The closing PSP2 RAB becomes the opening PSP3 RAB.

Table 56: Updated PSP2 RAB roll-forward (\$'000s)

RAB roll-forward	FY2015/16	FY2016/17	FY2017/18
Opening RAB	3,015,725	3,047,935	3,090,243
Capex	130,877	121,805	133,697
Disposals and written off assets^	-4,637	-902	-582
Depreciation – existing	-75,215	-76,350	-74,996
Depreciation – new	-29,003	-32,537	-33,342
Contributions	-35,047	-23,210	-20,941
Inflationary gain*	45,236	53,501	69,780
Closing	3,047,935	3,090,243	3,163,860

Note: ^ In PSP2 referred to as Sales.

Note: * The adjustment for inflationary gain is to reflect the increase in the RAB that is caused by inflation. The annual inflationary gain is calculated by multiplying the opening RAB by the historical or forecast CPI. This ensures that the RAB is maintained in current dollars. To ensure no double counting, the inflationary gain is subtracted from the annual revenue requirement. This adjustment is necessary as we are doing all calculations in nominal terms, whereas PSP2 calculations were undertaken in real terms.

On this basis, the closing RAB value is \$3,128 million on 30 June 2018. This becomes the opening value for PSP3. This opening RAB value can be broken down into new and existing, water and sewerage.

Table 57: Opening RABs (\$'000s)

RAB	1 July 2018 opening RAB
Water – existing	1,306,836
Water – new	392,840
Sewerage – existing	1,191,646
Sewerage - new	272,123
Total	3,163,445

8.2.2 Roll forward RAB

During PSP3, the forecast RAB is rolled forward in the same way. The roll-forward of the total RAB is shown below.

Table 58: Forecast PSP3 RAB roll-forward (\$'000s)

RAB roll-forward	FY2018/19	FY2019/20	FY2020/21
Opening RAB	3,163,445	3,261,184	3,354,557
Capex	143,362	142,367	180,886
Disposals and written off assets	-47	-488	-
Depreciation – existing	-72,929	-72,889	-72,690
Depreciation – new	-37,038	-42,017	-47,169
Contributions	-6,787	-6,976	-7,295
Inflationary gain*	71,178	73,377	83,864
Closing RAB	3,261,184	3,354,557	3,492,154

Note: *The adjustment for inflationary gain is to offset the increase in the RAB that is caused by inflation. The annual inflationary gain is calculated by multiplying the opening RAB by the historical or forecast CPI. This ensures that the RAB is maintained in current dollars. To ensure no double counting, the inflationary gain is subtracted from the annual revenue requirement.

The summary of the individual RABs is shown below.

Table 59: Opening RABs (\$'000s)

RAB	1 July 2018	1 July 2019	1 July 2020
Water – existing	1,306,836	1,298,928	1,290,640
Water – new	392,840	453,457	517,345
Sewerage – existing	1,191,646	1,182,811	1,173,619
Sewerage - new	272,123	325,988	372,953
Total	3,163,445	3,261,184	3,354,557

8.2.2.1 Contributions

Third party capital contributions are assets contributed by third parties. These include:

- Developer charges
- Connection charges
- Government grants and contributions
- Customer contributions and
- The value of gifted assets.

Third party capital contributions are netted off the value of the RAB.

Developer charges

We collected \$0.5 million in developer charges in FY2015/16. We expect to collect a slightly lower amount in FY2016/17 and beyond as the pace of development was greater in FY2015/16 due to the State Government's waiver of developer fees.

Table 60: Developer charges (\$'000s)

FY2015/16	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21
457	407	416	426	435	446

Customer connection charges

We collected \$3.3 million in customer connection charges in FY2015/16. Our forecast revenue from connection charges for the rest of PSP2 and PSP3 is based on forecast growth in demand for new connections (refer to Chapter 5 for more information on the demand forecast) and the associated charge for new connections (refer to Chapter 9 for more information on charges).

Table 61: Customer connection charges (\$'000s)

FY2015/16	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21
3,259	5,879	5,936	6,361	6,541	6,849

Government grants and contributions

In each of FY2014/15 and FY2015/16, we received \$5.0 million to compensate us for the waiving of developer fees. While Government was not explicit, we consider it reasonable to treat the revenue from Government in the same way as we would treat the revenue had it been received from developers. Accordingly, we have used it to offset the RAB.

As this funding arrangement has ceased, and no other Government grants are expected, we have forecast future grants to be \$0.

Table 62: Government grants and contributions (\$'000s)

Projects	FY2015/16	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21
Water	2,500	-	-	-	-	-
Sewerage	2,500	-	-	-	-	-
Total	5,000	-	-	-	-	-

Gifted assets

Assets are typically gifted when a developer transfers water and sewerage assets from a new estate to us. We then use those assets to service those customers. As we did not pay for the assets, it is appropriate that they be excluded from the RAB.

However, our capex forecast only includes capex undertaken by TasWater. Therefore, it is only necessary to remove gifted assets from the asset register for PSP2.

This is a customer-driven revenue stream and forecasting includes a high degree of uncertainty. It is not known whether the high levels of recent development will continue. Our development policies promote infill development over the creation of new subdivisions which tends to reduce the value of infrastructure donated to us.

Over the past three years, we received an average of \$17.2 million in gifted assets. However, the amount is very variable and outside our control. The year to date value for FY2016/17 is tracking lower than FY2015/16. This is due to TasWater's development policies promoting infill development over the creation of new subdivisions which tends to reduce the value of gifted assets.

Accordingly, we consider that FY2016/17 and FY2017/18 will be slightly below the recent average and we have not provided a forecast for PSP3 as neither the capex nor the gifted asset is included.

Table 63: Gifted assets (\$'000s)

FY2015/16	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21
26,332	16,924	14,588	-	-	-

8.2.3 Regulatory depreciation

In PSP2, the TER depreciation calculation method was based on a weighted average of our assets. This approach is typically used by regulators when a full asset register is unavailable. Since PSP2, we have completed and updated our asset register (approximately 300,000 assets). We now have a regulatory asset value and residual life for each asset. Therefore, we have calculated regulatory depreciation of each of our individual depreciating assets.

We have done this separately for each year by using the following formula:

$$\bullet \quad \text{Regulatory depreciation} = \left(\frac{\text{Residual regulatory asset value}}{\text{residual asset life}} \right)$$

The sum of these individual calculations is summed for each year to provide an overall depreciation value for each year. As the calculation is done separately for each asset, we are able to determine separate regulatory depreciation allowances for new and existing assets and water and sewer assets.

Calculating asset depreciation for each asset individually allows for the asset register to be updated annually and the appropriate adjustment made for depreciation. If a weighted average approach was adopted by TER, then a weighted average asset life would be applied to each asset in the asset register. This means that long-lived assets, such as pipes and dams would be depreciated too

quickly. Conversely, short-lived assets, such as computers and vehicles, would be depreciated too slowly. These short-lived assets would remain in the asset register far beyond their useful lives, if a weighted average life is used for depreciation.

On this basis, we recommend regulatory depreciation allowances, as follows.

Table 64: Regulatory depreciation (\$'000s)

Depreciation	FY2018/19	FY2019/20	FY2020/21
Water – existing	37,282	37,513	37,764
Water – new	20,127	22,659	26,308
Sewerage – existing	35,647	35,376	34,927
Sewerage - new	16,911	19,358	20,860
Total	109,967	114,906	119,859

8.2.4 Asset disposals and write-offs

We have identified the assets that have been and are forecast to be disposed or written off over PSP2 and PSP3. These values are deducted from the RAB in the year of disposal or write-off.

Table 65: Asset disposals and write-offs (\$'000s)

Asset	FY2015/16	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21	Total
Howden STP	-	-	-	-	350	-	350
Grassy Raw Water Rising Main	-	-	1	-	-	-	1
Grassy WTP	-	-	234	-	-	-	234
Hamilton Raw Water Pump and Rising Main	-	212	-	-	-	-	212
Dru Point SPS, Margate	-	190	-	-	-	-	190
Mole Creek Reservoir, Mole Creek	-	-	167	-	-	-	167
Muddy Creek SPS, Grindelwald	-	224	-	-	-	-	224
Jetty Road SPS, Stieglitz	-	188	-	-	-	-	188
Legerwood Bulk Water Pump Station and Secondary Bulk Water Pump Station	-	-	140	-	-	-	140
Waratah Dam	-	-	-	47	-	-	47
Redbill Point SPS, Beauty Point	-	65	-	-	-	-	65
Ringarooma Bulk Water Pump Station, Ringarooma	-	-	72	-	-	-	72
Main Road SPS, Huonville	-	-	-	-	138	-	138
Branhholm Water Pump Station, Branhholm	-	23	-	-	-	-	23
Wharf Road WTP, Currie	-	-	33	-	-	-	33
Tolosa Dam	-	-	7	-	-	-	7
17 Morrison St Site - Leasehold Improvements	1,961	-	-	-	-	-	1,961
Stores & Workshop Building	1,150	-	-	-	-	-	1,150
Asset Information Integration Fixed Asset Register	500	-	-	-	-	-	500
Leasehold improvements - Collins St Building	452	-	-	-	-	-	452
Stores & Workshop Building	417	-	-	-	-	-	417
Negara Cres, Delta Call Centre Renovation 2009	258	-	-	-	-	-	258
MapInfo Exponare - Corporate GIS Application	245	-	-	-	-	-	245
Goodwood siteworks	228	-	-	-	-	-	228
Negara Cres, Bravo Buildings Renovation 2009	203	-	-	-	-	-	203
Other asset register items (<\$200k each)	5,931	-	-	-	-	-	5,931
Total	11,345	902	654	47	488	-	13,436

8.3 Return on capital

Regulated businesses are able to recover a return on their investments. This return enables them to pay the interest on debt and to earn a return on equity (or 'profit') for the cash (rather than debt) invested in the business by its owners. This return on equity can be paid to owners through a dividend or re-invested in the business. We have decided to re-invest most of the return on equity in our expanding capital program to improve compliance and service levels.

This return is calculated using a method called the Weighted Average Cost of Capital (WACC). It is the same approach used by most regulated businesses. The total investment return is then calculated by multiplying the value of the RAB (capital invested) by the WACC. The calculation of the WACC can be complicated so the detail of the calculation and parameters is included as Appendix 13. The description below avoids the technical discussion and simplifies some elements of WACC to aid readability.

The WACC is calculated using a benchmark approach, rather than TasWater's specific parameters. The benchmark refers to a theoretical water business behaving efficiently and competitively. This is done so that the WACC reflects a typical firm. This means that our cost of capital does not take into account our local Government ownership or its actual levels of debt and equity.

The Industry Act requires¹⁴ that separate WACCs be used. Assets transferred to the previous regulated entities before 1 July 2011 are called Existing Assets. Assets purchased or constructed after 1 July 2009 are called New Assets.

We have calculated a post-tax nominal 'vanilla' WACC. This means that our WACC calculation does not include the impact of tax. However, as tax (or tax equivalents) are a legitimate business expense, it is appropriate that we recover the cost of tax. Under a post-tax nominal vanilla WACC, tax is included as a separate expense (refer Section 8.8). A pre-tax WACC is higher than a post-tax WACC as it accounts for tax in the WACC by adjusting the return on equity.

However, the cost of equity for existing assets is determined by the Industry Act to be 3% pre-tax. This is the return TasWater is to earn before it has paid tax. As we recover tax as a separate expense, the pre-tax return on equity is reduced by the amount of tax paid to calculate the post-tax return on equity for existing assets.

8.3.1 Existing assets

Existing assets earn a lower WACC (that is, we earn a lower return on our investment). The Industry Act has specified that TasWater should earn enough to pay interest on its debt and earn a set 3% on its equity investment. This is low by industry standards nationally, but reflects that the assets may have been partially funded by the rate payer/government before TasWater was created, so it acknowledges that TasWater may not expect a commercial return on its inherited assets.

¹⁴ Section 68(1A) of the *Water and Sewerage Industry Act 2012* (Tas)

Table 66: WACC parameters and calculation for existing assets

Parameter	PSP3	Explanation
Debt %	60%	This is based on an assumed gearing ratio typically used by regulated entities and economic regulators for the WACC calculation
Equity %	40%	All assets are funded through either debt or equity. Therefore, the equity % is 1-debt%
Corporate tax rate	30%	Based on the statutory corporate tax rate payable by privately owned companies. While TasWater does not pay tax, competitors, if any, would pay tax. Tax is only payable on the return on equity
Risk-free rate (RFR)	3.50%	TasWater raises its debt through the Tasmanian Public Finance Corporation (TasCorp). TasWater can raise debt more cheaply than a privately owned competitor. Therefore, the cost of debt that TasWater can recover in its prices is calculated by observing what interest rate similar companies pay on their loans
Debt risk premium (DRP)	2.49%	
Debt issuance	0.10%	
Cost of debt	6.09%	= RFR + DRP + debt issuance = 3.5% + 2.49% + 0.1%
gamma	0	
Cost of equity	3.0%	The Industry Act mandates that TasWater receive a 3% return on equity. This is a pre-tax value and is converted to a post-tax value in the formula below
EXISTING WACC	4.49%	= cost of debt * % level of debt + cost of equity * level of equity % * (1-tax rate) * (1-gamma) = 6.09 * 60% + 3% * 40% * (1-30%) * (1-0)

The existing RAB is then multiplied by the WACC (as presented above) to calculate the entire return on capital for existing assets able to be included in prices.

Table 67: Return on capital for existing assets (\$'000s)

Parameter	FY2018/19	FY2019/20	FY2020/21
Existing RAB	2,498,482	2,481,739	2,464,260
WACC (%)	4.49%	4.49%	4.49%
Return on capital	112,224	111,472	110,687

8.3.2 New assets

For new assets, TasWater can earn a commercial return. That is, enough to pay the interest on its debt and a 'benchmarked' commercial return on equity, similar to that which would be achieved if the funds were invested in commercial assets. This return is adjusted for risk, noting that the revenues of a water utility are relatively stable, so risk is low.

Table 68: WACC parameters and calculation for new assets

Parameter	PSP3	Explanation
Debt %	60%	This is based on an assumed gearing ratio typically used by regulated entities and economic regulators for the WACC calculation
Equity %	40%	All assets are funded through either debt or equity. Therefore, the equity % is 1-debt%
Corporate tax rate	30%	Based on the statutory corporate tax rate payable by privately owned companies. While TasWater does not pay tax, its competitors, if any, would pay tax
Risk-free rate (RFR)	3.50%	TasWater raises its debt through TasCorp. TasWater can raise debt more cheaply than a privately owned competitor. Therefore, the cost of debt that TasWater can recover in its prices is calculated by observing what interest rate similar companies pay on their loans
Debt risk premium (DRP)	2.49%	
Debt issuance	0.10%	
Cost of debt	6.09%	= RFR + DRP + debt issuance = 3.5% + 2.49% + 0.1%
Market risk premium (MRP)	6.5%	TasWater's owners then earn a return on the equity invested in the business. This provides the necessary incentives to invest in prudent and efficient infrastructure. The return is calculated to reflect commercial risk-adjusted returns earned by a similar business
Equity beta	0.70	
Gamma	0	
Cost of equity	8.05%	= RFR + MRP * equity beta = 3.5% + 6.50 * 0.7
New WACC	6.87%	= cost of debt * level of debt % + cost of equity * level of equity % = 6.09% * 60% + 8.05% * 40%

It is noted that the cost of equity above is not 3%, but rather about 8% for new assets. The new asset RAB is then multiplied by the new WACC (as presented above) to calculate the entire return on capital for new assets able to be included in prices.

Table 69: Return on capital for new assets (\$'000s)

Parameter	FY2018/19	FY2019/20	FY2020/21
RAB	664,963	779,445	890,298
WACC (%)	4.49%	4.49%	4.49%
Return on capital	45,684	53,549	61,165

8.4 Inflationary gain

We have presented all calculations in nominal terms, including the RAB roll-forward. In rolling forward the RAB we have included an inflationary gain which is the opening RAB times CPI. This means that the RAB continues to reflect contemporary asset replacement costs. When rolling forward the past RAB we use actual CPI and forecast CPI for rolling forward the RAB into the future.

This approach is consistent with the approach used by other regulators when a nominal WACC is used. As noted by the Queensland Competition Authority (QCA):

*The QCA's approach is to index the RAB value by the CPI inflation rate and use a nominal WACC to calculate the return on capital. An adjustment is then made to eliminate the double counting of inflation that would otherwise occur from the use of an asset value indexed for inflation and a nominal rate of return that also includes compensation for inflation.*¹⁵

¹⁵ Queensland Competition Authority, *Financial Capital Maintenance and Price Smoothing*, February 2014.

However, to ensure that we do not benefit from the inflationary gain to the RAB it is deducted from the revenue requirement calculation.

The calculation is shown below.

Table 70: Inflationary gain calculation (\$'000s)

Parameter	FY2015/16	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21
Opening RAB	3,015,725	3,047,935	3,090,081	3,163,445	3,261,184	3,354,557
CPI (%)	1.50%	1.75%	2.25%	2.25%	2.25%	2.50%
Inflationary gain	45,236	53,339	69,527	71,178	73,377	83,864

8.5 Working capital

Working capital is used by businesses to provide short term liquidity. It is necessary when we need to pay our bills before we collect revenue from our customers. This timing gap requires us to have additional funds in hand. There is an opportunity cost associated with holding additional funds. The working capital allowance allows us to recover the relevant costs.

We have based the working capital required on the FY2015/16 audited accounts and using the following standard formula:

Return on working capital = (accounts receivables + inventories – accounts payables) * (regulated opex / total opex) * Cost of debt

Table 71: Working capital calculation components (\$'000s)

Component	Value
Accounts receivable	46,622
Inventories	5,181
Payables	-26,324
Net working capital	25,479
Regulated opex / total opex (%)	96%
Cost of debt (%)	6.09%
Working capital allowance	1,490

We have then escalated the opening FY2015/16 working capital allowance by CPI. Therefore, the working capital allowance over PSP3 is set out in the table below.

Table 72: Working capital allowance (\$'000s)

Parameter	FY2015/16	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21
Working capital allowance	1,490	1,516	1,550	1,585	1,621	1,661
CPI (%)	-	1.75%	2.25%	2.25%	2.25%	2.50%

8.6 Treatment of assets used to provide unregulated services

Assets associated with providing unregulated services are to be excluded from the RAB in accordance with the Regulator's Accounting Ring Fencing Guideline (the Ring Fencing Guideline).

Unregulated services include:

- Providing water for irrigation

- Reusing water, discharged from a sewage treatment plant, for irrigation and
- Providing stormwater services via a combined sewerage/stormwater system.

We have identified and removed the costs associated with unregulated activities.

8.7 Tax

To ensure competitive neutrality is maintained, it is appropriate for a calculated tax allowance to be included in the revenue requirement. As a local government owned business, TasWater pays a competitive neutrality equivalent in lieu of tax. This is calculated on the basis of actual revenues and expenses in the statutory accounts. However, the tax calculation for the purposes of a regulatory process includes the total revenue requirement as the revenue. However, as TasWater's prices do not recover the total revenue requirement, it is expected that our actual profit will be lower than the profit implied by the regulatory tax calculation.

In order to avoid circularity in the calculation we have calculated tax only on the return on equity.

Table 73: Tax calculation (\$'000s)

Parameter	FY2018/19	FY2019/20	FY2020/21
RAB – existing	2,498,482	2,481,739	2,464,260
RAB - new	664,963	779,445	890,298
Total return on equity	51,383	54,867	58,225
Tax	15,415	16,460	17,468

8.8 Total revenue requirement for full cost recovery

Based on the above analysis, we have calculated the following revenue requirement based on fully recovering our regulated costs at the statutory revenue limit.

Table 74: Total revenue requirement for full cost recovery (\$'000s)

Component	FY2018/19	FY2019/20	FY2020/21
Opex	174,781	178,691	185,260
Depreciation	109,967	114,906	119,859
Return on capital	157,908	165,021	171,852
Inflationary gain*	-71,178	-73,377	-83,864
Working capital	1,585	1,621	1,661
Tax	22,021	23,514	24,954
Total	395,085	410,378	419,722

Note: *The adjustment for inflationary gain is to offset the increase in the RAB that is caused by inflation. The annual inflationary gain is calculated by multiplying the opening RAB by the historical or forecast CPI. This ensures that the RAB is maintained in current dollars. To ensure no double counting, the inflationary gain is subtracted from the annual revenue requirement.

In Chapter 9, we discuss the price caps we have imposed in PSP3 based on customer consultation and the resulting impact on the actual revenue we will recover over this period.

9 Prices and customer impacts

Key points

- During consultation for PSP3, our customers told us we should focus on improving compliance outcomes (water quality, environment, dam safety) and maintaining current standards for service reliability (rather than improving them)
- To achieve these outcomes, customers supported modest price increases – but affordability remains a key issue for many customers who recognise the trade-offs between outcomes
- Based on customer input we will limit price increases to 4.6% per annum in PSP3. If we were to fully recover our costs, our price increases would average 7.9% per annum. As a result, total bills will increase by \$56 a year in PSP3 for a typical residential customer
- We will deliver improved compliance outcomes within this price and revenue constraint – an approach which has been endorsed by our regulators (DHHS, EPA, DPIPW)
- Our LTSP is based on a managed transition to full cost recovery with price increases smoothed over the next 10 years before they reach CPI or less from FY2027/28 and beyond
- Finally, water and sewerage prices were set by 29 individual councils before 2009. We have a legislative requirement to transition all customers to the same prices by 1 July 2020 – which we will do in PSP3.

The TER must be satisfied that we will have sufficient revenue to meet our obligations and deliver the agreed standards of customer service while taking into account the impact of price changes on customers. The Regulator must also account for the impact of the rate of change of prices for customers.

The TER is also required to ensure that any tariff reforms are consistent with the pricing principles under the Industry Act, or represent a transition towards achieving those principles. The Industry Act specifies a transition period for the application of the pricing principles beginning on 1 July 2012 and ending on 1 July 2020.

In accordance with the Industry Act, the price for the provision of a regulated service must:

- give a regulated entity reasonable opportunity to recover the efficient costs it incurs in providing those services or complying with its regulatory obligations
- provide for efficient two-part, cost-reflective pricing
- provide effective incentives to promote economic efficiency, reduce costs, or otherwise improve productivity
- allow a regulated entity to receive a return on assets used in providing the regulated service and
- to the extent that it is commercially and technically reasonable, reflect the costs that are directly attributable to a particular customer or class of customers.

Historically, we have not recovered all of our costs for the supply of water and sewerage services to mitigate the impact of price increases on our customers. For ongoing sustainability, it is important that our prices move towards full cost recovery over time. However, our customers have told us that affordability remains a key issue for them in PSP3 and that we need to balance the impact of price rises with improvement in compliance outcomes over this period. Based on customer feedback, we will limit the target fixed and variable price increases to 4.6% per annum in PSP3 (rather than an average of 7.9% per annum if we were to fully recover costs).

The remainder of this chapter outlines our approach to pricing, our proposed prices and the price impacts on customers and on our business.

9.1 Our approach to pricing

To determine prices charged to customers we use the following approach:

- Step 1: Identify the total costs to be recovered
- Step 2: Calculate the prices required to recover these costs. These prices are called 'cost-reflective' prices
- Step 3: Calculate the target prices by increasing PSP2 prices by 4.6%
- Step 4: Outline the transitional arrangements to ensure that customers transition to target prices by the end of PSP3.

We charge three types of prices, as follows:

- Miscellaneous prices
- Water prices – fixed and variable and
- Sewerage prices – fixed.

9.2 Pricing zones

We propose to retain a single pricing zone (referred to as postage stamp pricing). All customers will face the same prices regardless of where they live or do business. The alternative is to charge different prices in different regions based on the costs of supply (referred to as nodal pricing). We propose to retain postage stamp pricing as:

- After the merger into a single entity we implemented postage stamp pricing for PSP2. To reverse this approach would add considerably to our administrative burden and customer confusion
- There are significant practical difficulties in disaggregating costs into different regions. We do not collect most costs by region. Any meaningful disaggregation would involve significant resources to estimate and would have high levels of uncertainty. We operate our business as a single network to minimise costs for all customers. Spending money to disaggregate costs should only be considered if the benefits are compelling, which they are not
- Our customers support retention of a single pricing zone
- The concept of paying the same price for the same service is generally viewed as equating to an equitable outcome for an essential service
- Uniform pricing is simple to understand, particularly given the many different pricing arrangements which previously existed in Tasmania and
- The theoretical benefits of nodal pricing are generally to enhance efficiency through a price signal. However, given that prices do not yet reflect costs, any price signal from nodal pricing will be muted.

For these reasons, we do not consider it appropriate to introduce pricing zones.

9.3 Customer classes

Customer classes approved as part of the 2015 Price Determination Investigation included:

- Full service (water) customers
- Full service (sewerage) customers

- Limited water quality customers
- Limited water supply customers and
- Combined limited water quality and limited water supply customers.

We propose to retain these customer classes.

9.4 Miscellaneous prices

In addition to the water and sewerage prices, we also have prices to recover the costs associated with ad hoc activities. We set these prices to recover costs and expect to recover revenue of approximately \$9 million annually in PSP3. This revenue reduces the amount of revenue that is required to be collected through water and sewerage prices.

Table 75: Miscellaneous prices and revenue (\$)

Service	Miscellaneous Prices			Miscellaneous Revenue			Revenue Type
	FY2018/19	FY2019/20	FY2020/21	FY2018/19	FY2019/20	FY2020/21	
Water Connections							
Standard 20mm water connection	2,226	2,309	2,418	3,389,567	3,486,820	3,654,750	Water - capital
Standard 25mm water connection	2,443	2,536	2,656	90,037	92,010	97,152	Water - capital
Non-standard water connection	POA	POA	POA	-	-	-	Water - capital
20mm meter supply & installation	409	422	439	622,552	637,328	663,148	Water - capital
>20mm meter supply & installation	POA	POA	POA	-	-	-	Water - capital
Sewer Connections							
Standard 100mm sewerage connection	1,596	1,652	1,723	2,258,538	2,324,803	2,433,583	Wastewater - capital
Non-standard sewer connection	POA	POA	POA	-	-	-	Wastewater - capital
Disconnection							
Standard disconnection (water and/or sewerage)	455	471	493	-	-	-	Shared
Relocation							
Standard water connection relocation - under 3 metres	1,490	1,546	1,618	37,907	39,546	41,630	Water
Water connection relocation - greater than 3 metres	POA	POA	POA	-	-	-	Water
Fire Service							
Fire service installation	POA	POA	POA	-	-	-	Water

Service	Miscellaneous Prices			Miscellaneous Revenue			Revenue Type
	FY2018/19	FY2019/20	FY2020/21	FY2018/19	FY2019/20	FY2020/21	
Water Metering Fees							
Special meter reads	60	61	63	272,811	281,808	292,223	Water
Meter testing - onsite	80	82	84	2,034	2,098	2,173	Water
Meter testing - offsite	POA	POA	POA				Water
Meter downsizing (50mm to 20mm)	375	389	409	9,529	9,957	10,509	Water
Meter downsizing (all others)	POA	POA	POA				Water
Sundry Fees							
Right to information request	39	40	40	879	895	911	Shared
Pressure and Flow Testing	106	109	112	646	666	692	Shared
Land Information Certificate (section 56ZQ) request	39	40	40	525,670	535,357	545,084	Shared
Account establishment and closure	49	50	51	899,828	925,169	951,300	Shared
Development Applications							
Minor	216	226	237	419,273	441,023	463,857	Shared
Medium	359	376	393	81,877	86,124	90,583	Shared
Major	691	723	756	62,998	66,266	69,697	Shared
Significant	1,166	1,220	1,276	26,566	27,945	29,391	Shared
Certificate for Certifiable Works (CCW) / Certificate for compliance (BAs & PAs)							
Minor	158	166	173	224,312	235,949	248,165	Shared
Medium	250	261	273	41,587	43,745	46,010	Shared
Major	300	314	328	19,991	21,028	22,117	Shared
Significant	418	437	457	6,957	7,318	7,696	Shared
CCW Exemption	41	42	44	8,923	9,386	9,872	Shared
Engineering design approval							
Minor	182	191	200	54,911	57,760	60,750	Shared
Medium	260	272	285	9,223	9,702	10,204	Shared
Major	300	314	328	4,250	4,470	4,702	Shared
Significant	418	437	457	1,479	1,556	1,636	Shared
Consent to Register and Legal Document							
Minor	149	156	163	61,795	65,000	68,366	Shared
Medium	149	156	163	7,270	7,647	8,043	Shared

Service	Miscellaneous Prices			Miscellaneous Revenue			Revenue Type
	FY2018/19	FY2019/20	FY2020/21	FY2018/19	FY2019/20	FY2020/21	
Major	149	156	163	2,908	3,059	3,217	Shared
Significant	149	156	163	727	765	804	Shared
Other regulated services							
Private filling stations (\$/kL)	1	1	1	342,750	358,517	375,008	Water
Public filling stations (\$/kL)	1	2	2	485,024	507,335	530,673	Water
Security deposit (one off fee for public filling stations)	50	50	50	-	-	-	Water
Portable metered standpipes (pro rata for time of use) (\$/kL)	1	1	1	-	-	-	Water
e-card credit top up (processing fee)	6	6	6	-	-	-	Water
Total – revenue offset				3,612,125	3,742,619	3,880,136	
Total – RAB offset				6,360,694	6,540,961	6,848,633	
Total				9,972,819	10,283,580	10,728,769	

These miscellaneous prices recover approximately \$10 to \$11 million annually during PSP3. The revenue associated with connections is considered to be related to capital and is used to reduce the RAB (refer Chapter 8) and the balance offsets the revenue to be recovered from fixed and variable water and sewerage prices.

9.5 Trade waste prices

Regulated trade waste prices are on a transition to cost reflective pricing. We propose to retain the risk-based approach used in PSP2 for determining the category of each trade waste customer.

The risk approach is based on a method outlined in the WSAA Australian Sewage Quality Management Guideline 2012, which is recognised nationally as the most comprehensive guideline to managing trade waste discharge to sewer. This method is outlined in more detail in TasWater's Trade Waste Customer Category Guideline which is available on the website at www.taswater.com.au. We are reviewing this Guideline to improve its clarity and to more accurately reflect the demands placed on sewerage infrastructure for some customer types. A revised Guideline will be published on our website alongside our final PSP3 submission in 2018.

The trade waste prices are made up of an application fee, an annual component and non-compliance fees as shown in the tables below.

Table 76: Trade waste application fee (\$)

Trade waste application fee	FY2018/19	FY2019/20	FY2020/21
Category 1	193	202	211
Category 2A	386	404	422
Category 2B	386	404	422
Category 2C	386	404	422

Table 77: Trade waste annual prices (\$)

Trade waste annual price	FY2018/19	FY2019/20	FY2020/21
Category 1	572	599	626
Category 2A	938	981	1,026
Category 2B	1,316	1,377	1,440
Category 2C	1,974	2,065	2,160

Table 78: Trade waste non-compliance (minor) fees (\$)

Trade waste non-compliance (minor) fee	FY2018/19	FY2019/20	FY2020/21
Category 1	1,145	1,197	1,252
Category 2A	1,876	1,962	2,053
Category 2B	2,633	2,754	2,880
Category 2C	3,948	4,130	4,320

Table 79: Trade waste non-compliance (major) fees (\$)

Trade waste non-compliance (major) fee	FY2018/19	FY2019/20	FY2020/21
Category 1	1,717	1,796	1,878
Category 2A	2,814	2,944	3,079
Category 2B	3,949	4,131	4,321
Category 2C	5,923	6,195	6,480

Some trade waste customers are unable to comply due to heritage or other site constraints at their properties. For these customers, we levy a fee to offset the impact they have on our sewerage systems as per the table below.

Table 80: Trade waste site constraint fee (\$)

Trade waste site constraint fee	FY2018/19	FY2019/20	FY2020/21
All trade waste categories	1,097	1,148	1,201

9.5.1 Solid waste macerators in health and aged care facilities

A number of aged care and health care facilities use disposable paper bedpans and similar containers that are shredded by a macerator device prior to discharge to our sewerage system.

This macerated trade waste¹⁶ adds additional loading and frequently causes blockages in our sewerage network, requiring our staff to spend time clearing the blockage. The cost of this is borne by all customers.

As trade waste, macerated material entering our sewerage system falls under the *Water and Sewerage Industry (General) Regulations 2009*. Schedule 2 of these regulations prohibits substances that are 'likely to cause an obstruction or blockage of a sewer or drain or treatment apparatus', the liquid waste is also likely to exceed the suspended solids limit in Schedule 3 of the same regulations. For this reason we refuse these devices to connect to our network in new applications. Other water utilities in other states actively prohibit these devices.

However, we recognise that a small number of facilities have these devices and may be unaware of their impact. . For PSP3, we are introducing a notional charge to reflect some of the costs of accepting this material. We will review this charge and acceptance of this material prior to PSP4 as part of our overall review of the sewerage charging methodology as we move toward cost reflective pricing. For comparison, SA Water in South Australia, charges \$653 per unit (2016/17). Our macerator fee is shown in the table below.

¹⁶ Trade waste under the Industry Act means 'means liquid waste generated other than in the course of domestic activities and includes liquid waste generated by any trade, industrial, commercial, educational, medical, dental, veterinary, agricultural, horticultural, scientific research or experimental activities'

Table 81: Trade waste macerator fee (\$)

Trade waste macerator fee	FY2018/19	FY2019/20	FY2020/21
All trade waste categories	50	52	55

Our estimate of cost reflective trade waste revenue is approximately \$3 to \$4 million annually over PSP3, as shown in the table below. This amount does not need to be recovered from water and sewerage prices.

Table 82: Trade waste annual revenue (\$'000s)

Category	FY2018/19	FY2019/20	FY2020/21
Category 1	390	410	431
Category 2A	2,393	2,514	2,641
Category 2B	170	179	188
Category 2C	269	282	297
Other fees and charges	67	69	73
Total	3,288	3,455	3,629

9.6 Water supply prices

9.6.1 Cost reflective water prices

We have developed prices which reflect the costs of providing water services – referred to as cost reflective prices. The following table shows our prudent and efficient water costs, net of revenue from other water miscellaneous prices.

Table 83: Water revenue requirement (\$'000s)

Year	FY2018/19	FY2019/20	FY2020/21
Fixed revenue requirement	172,679	180,207	184,690
Revenue from other water charges ¹⁷	-2,846	-2,945	-3,048
Net fixed revenue requirement	169,833	177,262	181,643
Variable revenue requirement	34,363	34,918	36,530
Total net revenue requirement	204,195	212,180	218,172

9.6.1.1 Cost reflective water prices – fixed

We propose to allocate fixed costs between customers based on connections (or serviceable land) and connection sizes.

As all connections share (or can potentially share) in the benefits of our infrastructure, cost reflective prices represent the share of the fixed costs of acquiring and maintaining water infrastructure each connection (or potential connection) can enjoy (or potentially enjoy).

We propose to allocate fixed prices based on connection size. The size of water connections directly affects the costs of network infrastructure. Larger water mains and more pumping capacity are required to service the water flows able to be drawn by larger connection sizes.

¹⁷ This includes revenue from miscellaneous services (refer to Section 9.5 of this chapter).

Water connection sizes also give an indication of the different water use potentials of different customers. The different water use potentials are a factor contributing to the design of water storages.

Table 84: Calculation of cost reflective prices – fixed

Parameter	FY2018/19	FY2019/20	FY2020/21
Water fixed revenue requirement (\$'000s)	169,833	177,262	181,643
Number of equivalent 20 mm connections	318,428	320,600	322,777
Water fixed price per 20mm equivalent (\$/20mm connection)	533.35	552.91	562.75

Our customers have many different connection sizes. We propose to use the same method of allocating fixed water costs to different connection sizes as used in PSP2. The PSP2 method is to use the ratio of the cross sectional area of a connection pipe relative to the cross sectional area of a 20mm connection pipe. The following table shows the connection multipliers for the different connection sizes available to customers and the corresponding cost reflective tariff.

Table 85: Cost reflective water prices – fixed (\$)

Connection size (mm)	Multiplier	FY2018/19	FY2019/20	FY2020/21
20	1.00	533.35	552.91	562.75
25	1.56	833.35	863.92	879.30
30	2.25	1,200.03	1,244.04	1,266.19
32	2.56	1,365.37	1,415.44	1,440.64
40	4.00	2,133.39	2,211.63	2,251.00
50	6.25	3,333.42	3,455.67	3,517.19
65	10.56	5,633.48	5,840.09	5,944.05
75	14.06	7,500.19	7,775.26	7,913.68
80	16.00	8,533.55	8,846.52	9,004.01
100	25.00	13,333.67	13,822.69	14,068.76
150	56.25	30,000.76	31,101.05	31,654.71
200	100.00	53,334.68	55,290.75	56,275.04
250	156.25	83,335.43	86,391.80	87,929.75

9.6.1.2 Cost reflective water prices – variable

Variable prices are charged on the basis of metered water use. Therefore, the variable tariff is net variable water costs divided by forecast demand. The variable price is the same regardless of connection size as variable costs do not vary with connection size.

Table 86: Calculation of cost reflective prices – variable

Parameter	FY2018/19	FY2019/20	FY2020/21
Water variable revenue requirement (\$'000s)	34,363	34,918	36,530
Water demand (kl)	59,745,823	60,030,407	60,313,381
Water variable price (\$/kl)	0.58	0.58	0.61

9.6.2 Target water prices

Based on customer consultation, we have applied a cap on price increases of 4.6% on the fixed and variable water charge to calculate target tariffs. As required by the Industry Act, we have maintained a two-part tariff with a fixed and a variable price.

9.6.2.1 Target water prices – fixed

As a result of our price cap, our fixed prices are approximately 30% below the full cost recovery price. Our target water prices for the fixed component are shown in the table below.

Table 87: Target water prices – fixed (\$)

Connection size (mm)	Multiplier	FY2018/19	FY2019/20	FY2020/21
20	1.00	344.64	360.49	377.07
25	1.56	538.49	563.26	589.17
30	2.25	775.43	811.10	848.41
32	2.56	882.27	922.85	965.30
40	4.00	1,378.54	1,441.96	1,508.29
50	6.25	2,153.98	2,253.06	2,356.70
65	10.56	3,640.22	3,807.67	3,982.82
75	14.06	4,846.44	5,069.38	5,302.57
80	16.00	5,514.18	5,767.83	6,033.15
100	25.00	8,615.90	9,012.23	9,426.80
150	56.25	19,385.78	20,277.53	21,210.29
200	100.00	34,463.61	36,048.93	37,707.18
250	156.25	53,849.39	56,326.46	58,917.48

We also have an annual charge for the provision of capacity to operate fire sprinklers and/or fire hydrants in the event of fire for those customers who receive these services. The fire service charge is unchanged from PSP2 and is set at 25 per cent of the fixed water price for the relevant connection size.

9.6.2.2 Target water prices – variable

The TER requires that the amount of the variable water usage price for a property must at least cover the cost of delivering water to that property. Variable prices should ordinarily be set to recover only variable costs directly related to providing water to the property.

We propose that the variable charge increase at 4.6%. This means that while we consider approximately 15% of our water costs to be variable, we seek to recover approximately 30% of our

water revenue through the variable charge. We acknowledge the benefits of aligning the variable costs with the variable price theoretically include:

- An efficient price signal whereby customers face a price signal that reflects the cost of us supplying the water. This will theoretically result in an optimally efficient level of water use
- Lower demand risk as any variation in actual demand relative to forecast will impact on costs and revenue in an offsetting manner.

However, for PSP3, we consider it appropriate to retain the existing split between fixed and variable prices noting that our estimate of variable costs is based only on short run variable costs. Regulators typically allow variable prices based on long run marginal costs (LRMC), which are normally higher. A LRMC includes a portion of the costs of future system augmentation needed to meet increasing demand. As a significant portion of our proposed capex over 20 years has a growth driver, a higher variable charge may result in lower water use growth and defer some capex.

Also, during consultation for PSP3 our customers expressed a desire for the variable charge to be a higher proportion of the total bill relative to the fixed charge. Any reduction in the variable charge would be counter to our customers' preferences and would also create volatility in the price path for this component between PSP2 and PSP3.

Our target water prices for the variable component are shown in the table below.

Table 88: Target water prices – variable (\$)

Parameter	FY2018/19	FY2019/20	FY2020/21
Water variable price (\$/kl)	1.07	1.12	1.17

The net impact of a target variable charge higher than the cost reflective price, and the target fixed charge below the cost reflective price is that our total target water revenue is substantially below our costs. By the end of PSP3, our regulated water revenue will be \$28 million less than our regulated water costs.

Figure 19: Comparison of cost reflective and target water price (total fixed and variable)

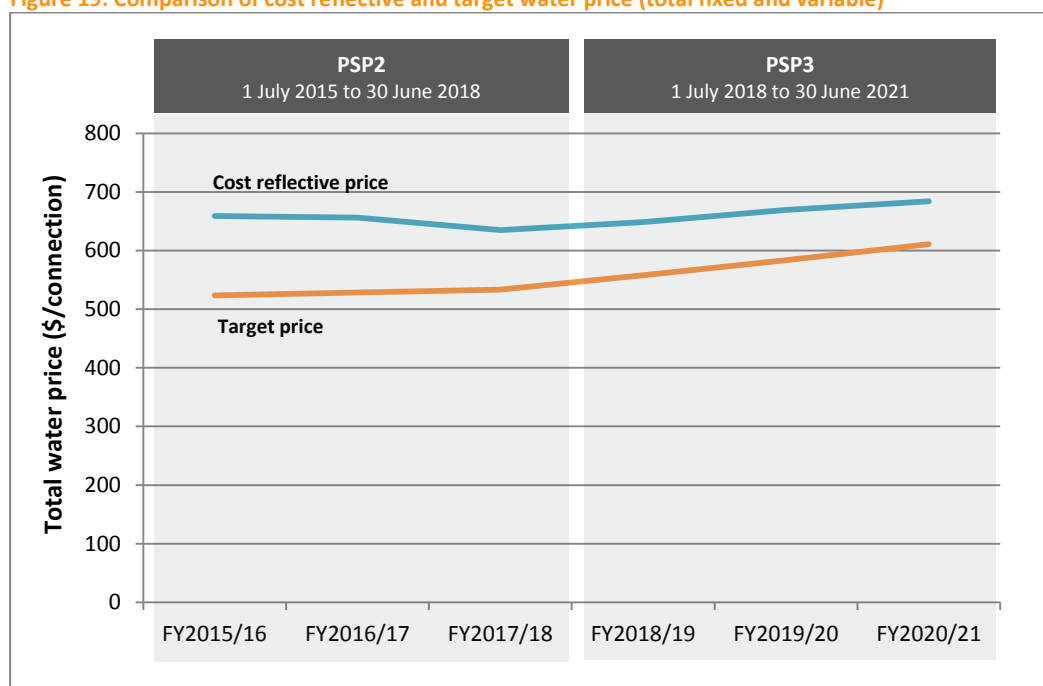


Table 89: Water costs and revenue (\$'000s)

Parameter	FY2018/19	FY2019/20	FY2020/21
Fixed Water Revenue	109,742	115,573	121,710
Variable Water Revenue	63,757	67,007	70,420
Regulated Water Revenue	173,498	182,580	192,130
Regulated water costs	204,195	212,180	218,172
Difference	30,697	29,600	26,043

9.7 Sewerage prices

9.7.1 Cost reflective sewerage prices

We propose to apply a single fixed sewerage charge – rather than a fixed and variable charge. To fully implement a variable sewerage charge would require installation of a discharge meter for every property. We do not consider this additional capex to be a priority, or likely to provide a net benefit. In lieu of individual meters, it is possible to base the discharge volume on the basis of metered water use. However, there are many instances where metered water use does not reflect the actual sewerage use.

We have calculated fixed and variable sewerage prices. However, in practice, we propose only to charge a fixed price. The revenue requirement used to recover cost reflective prices is shown below.

Table 90: Sewerage revenue requirement (\$'000s)

Parameter	FY2018/19	FY2019/20	FY2020/21
Fixed revenue requirement	150,840	157,255	158,554
Variable revenue requirement	37,204	37,999	39,948
Revenue from other sewerage charges ¹⁸	3,217	3,380	3,551
Total net revenue requirement	184,827	191,873	194,951

9.7.1.1 Cost reflective sewerage prices

As all connections share in the benefits of our infrastructure, cost reflective prices represent the share of the fixed costs of servicing each connection. We allocate fixed sewerage costs between customers based on their equivalent tenements. This mechanism allocates costs to different user types to reflect their likely utilisation of the sewerage system.

Sewerage prices are set to recover the costs of building, improving, maintaining and operating the sewerage pipes, pump stations and treatment plants that take away and treat sewage. The setting of the prices is intended to fairly reflect the costs of providing sewerage services to each customer.

Compared with water, there are a number of challenges in accurately measuring the costs of providing the service to different groups of customers. Measurement of water consumption is straightforward. Water meters are accurate and cost efficient for all of our water customers. Water consumption is highly variable not only between customers, but even within groups of customers, such as residential (20mm or 25mm connections). In addition, following investment over a number of years, almost all of our customers have water meters.

For sewerage, the situation is quite different. Sewage flow meters are very expensive in comparison with water meters and would only be cost efficient for some very large customers. As it is not practical or effective to meter sewerage connections, then a proxy, or estimation for sewage demand

¹⁸ This includes revenue from miscellaneous services (refer to Section 9.5 of this chapter) and trade waste (refer to Section 9.6).

must be used. There are a range of the methods and proxies used by water authorities around Australia to distribute the costs of sewerage between customers, each with their own strengths and weaknesses. All are estimations.

9.7.1.2 Our approach to sewerage prices for PSP3

We propose to use our existing ET methodology to apportion potential sewerage demand for across different customer groups for PSP3. We recognise that the ET methodology has limitations and there may be alternative approaches used in other jurisdictions that may be better suited to Tasmanian conditions and customer sewerage demand. However, with substantial numbers of customers below the current sewerage target prices, it would be too administratively complex and costly to calculate transition paths for them and the customers already on target prices.

In the course of PSP3, we will be undertaking a full review of alternative Australian sewerage charging methodologies and how these may or may not be suited to Tasmania and our sewerage cost profile. The review will require external assistance to support analysis of Tasmanian sewerage demand, which will include customer engagement, gathering of case studies and sewage data.

This review will take into account recent reviews, such as the 2014 Essential Service Commission of South Australia's (ESCOSA) *Inquiry into Reform Options for SA Water's Drinking Water and Sewerage Prices*. The ESCOSA review recommended that sewerage connection size was the most cost reflective approach of demand that a particular customer may have on the system. This is in the context of higher sewerage fixed costs and moving from property value based prices. The review notes that the approach used by a number of Victorian water authorities of using water consumption with a discharge factor as a proxy is regarded as being a high cost, complex and sometimes confusing approach by the Victorian Essential Services Commission.

We will use the findings of our review to inform a revised sewerage charging approach within our Price and Service Plan proposal for the fourth regulatory period (PSP4).

9.7.1.3 Equivalent tenement sewerage price methodology

The ET methodology uses the same industry standard approach used to calculate the size of the sewage pipes, pump stations, and treatment plants that are needed in a particular area due to development. That is, the design approach calculates expected demand from different types of land uses. The ET methodology takes this approach and uses it as a basis for apportioning demand for charging purposes.

One ET is the load that a typical single residential dwelling under dry weather flows has on our sewerage network. For example, this means that where a property has its potential sewerage load as four times as much as a residential property it will be assessed as four 4 ETs and will pay four times the fixed sewerage charge.

Our approach is underpinned by the *Section 64 Determinations of Equivalent Tenements Guidelines* produced by the NSW Water Directorate. Section 64 refers to that section of the *NSW Local Government Act 1993* in regards to developer charges. We have supplemented these guidelines where there are gaps or uncertainties, with former corporation information, guidance in the *WSAA Sewerage Code of Australia: Part 1 and TasWater Supplement to the WSAA Sewerage Code of Australia*.

To develop the Section 64 Guidelines, the NSW Water Directorate worked with large, medium and small water authorities in NSW to develop a set of agreed ETs for non-residential land use types. The ET figures for each land use are based on the following:

- Hunter Water values for water ET figures were adopted where data was available, as their values are based on a comprehensive database of local water users and

- Average values where the values were similar across the NSW water authorities.

Sewerage ET figures were generally determined from the water ET figures, based on actual average water use and an assumed discharge factor. As noted above, discharge factors are used directly at a connection scale by some water authorities. Some of the adopted values were based on an assumed proportion of other adopted ET figures including the comparison of internal fixtures or a comparison of the proportion of external usage. Internal usage was assumed to be split into 15% kitchen usage, 25% laundry usage, 30% toilet usage and 30% bathroom usage.

The ETs from the Section 64 Guideline have been adjusted by us or previous regional corporations to account for known local differences, to reduce administrative complexity, increase fairness or to respond to customer concerns. The discharge of trade waste is recouped separately through the application and payment of trade waste prices. The ET rates have been adjusted, or allow for this to be taken into account.

9.7.1.4 Equivalent tenement assessment process

To calculate the number of ETs under a title, we undertake the following steps:

1. Combined data sources such as site visits, local knowledge, Google maps, direct customer contact and council data, are used to ascertain the property type and associated property attributes. ETs for identified non-residential customers (eg commercial, industrial, primary industry, and community services) are determined based on their respective category and, within that category, the other relevant parameters including number of beds or rooms, number of staff and students, and gross floor area and/or applicable amenities
2. Attribute a default one (1) ET to all identified standard residential customers
3. Identify customers who have a property within serviced land that is not physically connected to TasWater's infrastructure but which has the ability to connect. These customers are charged at 60 per cent of the standard ET rate for a residential dwelling.

The schedule of the ET rates for different industries/property use types is provided at Appendix 14.

We have made some refinements to the schedule of ETs to increase consistency and to reflect changes in water use and resultant sewerage demand for different land use types. Some land uses have had further reductions to reflect the proportion of their sewerage load that is likely to be trade waste. These are noted in the ET schedule.

This list of categories is not exhaustive and we have the ability to assess the number of ETs on a case by case basis if the circumstances warrant it. For connections with multiple uses, we can combine these to calculate the total number of ETs.

9.7.1.5 Calculation of cost reflective fixed sewerage prices

The calculation of total ETs is shown in chapter 5.

We have developed prices which reflect the costs of providing sewerage services. The following table shows our prudent and efficient costs, net of revenue from other water prices.

Table 91: Calculation of cost reflective prices

Parameter	FY2018/19	FY2019/20	FY2020/21
Sewerage total revenue requirement (\$'000s)	184,827	191,873	194,951
ETs	240,058	241,736	243,419
Sewerage fixed price (\$/ET)	769.93	793.73	800.89

9.7.2 Target sewerage prices

We have set fixed charges to recover both fixed and variable costs. Based on feedback from our customers, we propose to retain a single fixed charge and to limit the price increase to 4.6% annually in PSP3. Sewerage prices will be as follows.

Table 92: Target sewerage prices

Parameter	FY2018/19	FY2019/20	FY2020/21
Fixed Target sewerage price (\$/ ET)	661.32	691.74	723.56

By the end of PSP3 the target price has moved to within \$80 of the cost-reflective price as shown below.

Figure 20: Comparison of cost reflective and target sewerage price

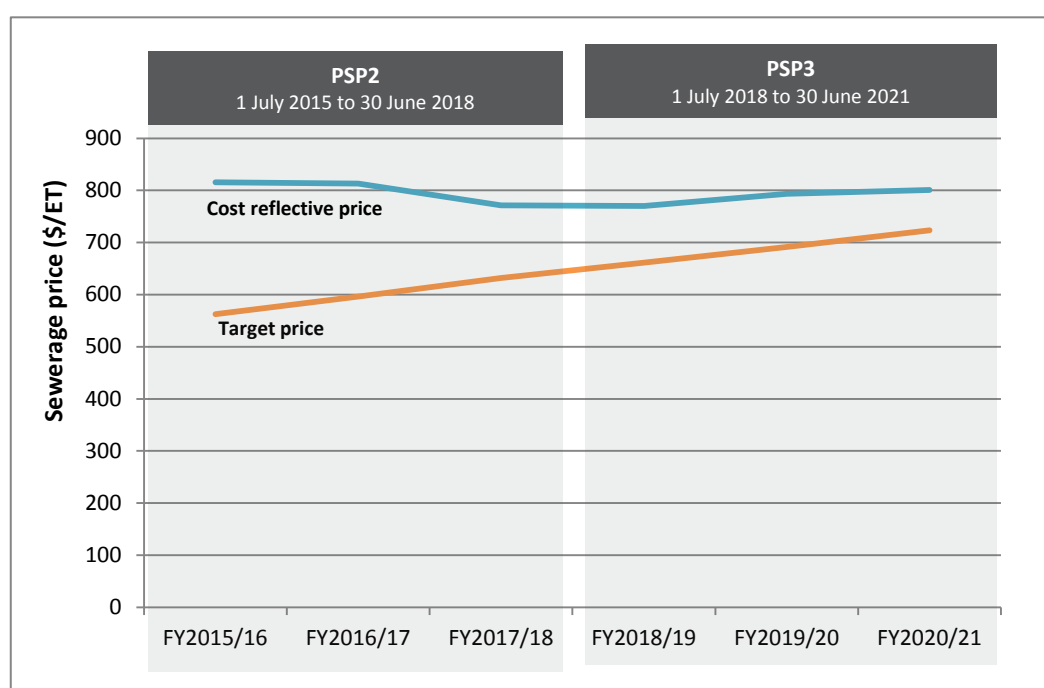


Table 93: Sewerage costs and revenue (\$'000s)

Parameter	FY2018/19	FY2019/20	FY2020/21
Regulated sewerage revenue	158,756	167,219	176,129
Regulated sewerage costs	184,827	191,873	194,951
Difference	26,071	24,654	18,822

9.8 Customer impacts

Many of our customers have low and/or fixed incomes and about 25% of our customers are eligible for concessions from the State Government. Our customers support the need for investment to improve compliance outcomes and maintain service standards, but they also support only modest price increases to make these improvements. As a result, a careful balance is required between prices, service standards and the time to reach full compliance.

Our LTSP provides the framework for making trade-offs between these outcomes. It has enabled us to chart an improvement path over 20 years while also minimising price impacts for customers and maintaining prudent debt levels for the business along the way.

In PSP3, the first three years of the LTSP, we are limiting price increases to 4.6% per annum. Over time, our LTSP is based on moving toward price increases of CPI or less as we transition to full cost recovery (with indicative increases of 3.7% in PSP4 and PSP5 and CPI thereafter).

9.8.1 Customer bill analysis

The table below shows example bills for customers at the target tariff over the PSP3 period based on various levels of water usage.

Table 94: Bill analysis (\$)

Water usage	PSP2			PSP3		
	FY2015/16	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21
50kl/annum						
Water Fixed	329	329	329	345	360	377
Water Variable	49	50	51	53	56	58
Sewerage	563	596	632	661	692	724
Total Bill	941	976	1,013	1,059	1,108	1,159
100kl/annum						
Water Fixed	329	329	329	345	360	377
Water Variable	97	100	102	107	112	117
Sewerage	563	596	632	661	692	724
Total Bill	989	1,025	1,064	1,113	1,164	1,217
150kl/annum						
Water Fixed	329	329	329	345	360	377
Water Variable	146	149	153	160	167	175
Sewerage	563	596	632	661	692	724
Total Bill	1,038	1,075	1,115	1,166	1,220	1,276
200kl/annum						
Water Fixed	329	329	329	345	360	377
Water Variable	194	199	204	213	223	234
Sewerage	563	596	632	661	692	724
Total Bill	1,086	1,125	1,166	1,219	1,275	1,334
400kl/annum						
Water Fixed	329	329	329	345	360	377
Water Variable	388	398	408	427	446	467
Sewerage	563	596	632	661	692	724
Total Bill	1,281	1,324	1,370	1,433	1,499	1,568

9.8.2 Transitional prices

Water and sewerage prices used to be set by 29 individual councils. Since the formation of TasWater, the TER has been transitioning individual prices towards a single set of target prices by the legislated date of 1 July 2020. At the conclusion of PSP2 96% of customers will have fully transitioned to target prices.

Approximately 7,500 customers will still not be at the target tariff at the end of PSP2. Of those not at target prices, 98% are within 20%. However, a small number of customers will face significant price increases over PSP3 to reach target prices. We will continue our approach to managing customers with large price increases by assigning a dedicated account manager.

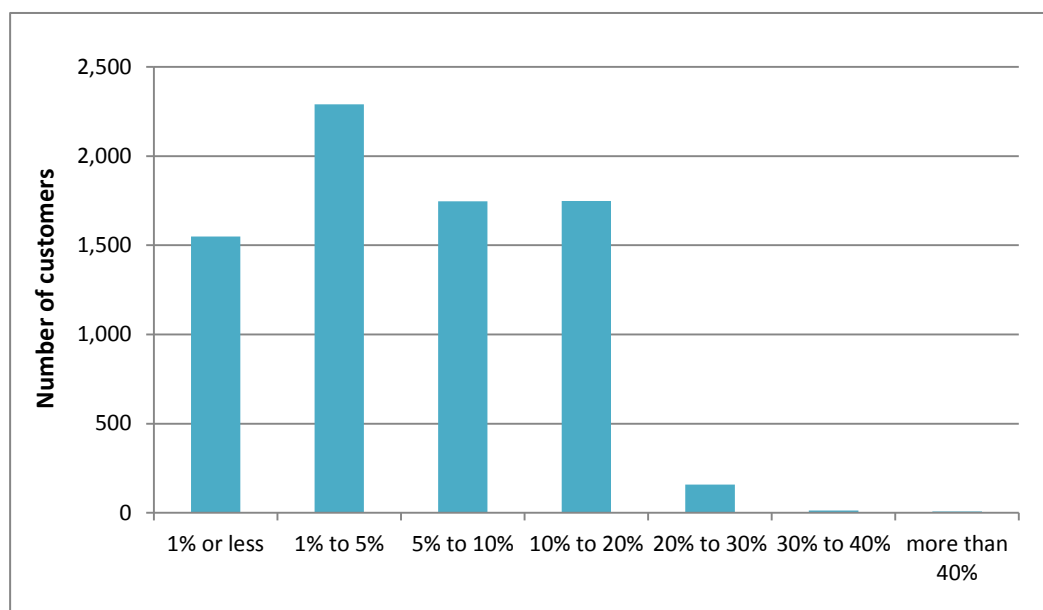
The account managers will work individually with those customers expected to see significant price changes. This will include early communication and explanation of price increases over the duration of the PSP period. Our account managers will work with customers to find an appropriate payment

option, including flexible payment plans for those that may have difficulty paying their accounts. In addition, residential, transitioning customers will also have access to our Hardship Assistance Program, as part of our Hardship Policy available on our website, under *Customers*.

We are committed to keeping bills as affordable as possible, but understand that even a modest price rise may be difficult for some customers to pay. Over the PSP3 period, we will review our Financial Hardship Policy in consultation with customers, stakeholders and the TER to ensure it reflects best practice.

The number of customers and the gap between their price and the target price is shown below.

Figure 21: Gap between transitional and target prices in FY2017/18 for combined service (number of customers)



We are setting prices to ensure that this transition is fully complete at the commencement of the final year of PSP3 (1 July 2020). For customers whose gap between their actual total bill (water and sewerage) and their bill if at target tariffs at the end of PSP2 is greater than \$300, the gap will close by one third in each year.

However, when the gap is small (less than \$300), we will close the gap more quickly, up to \$100 per year.

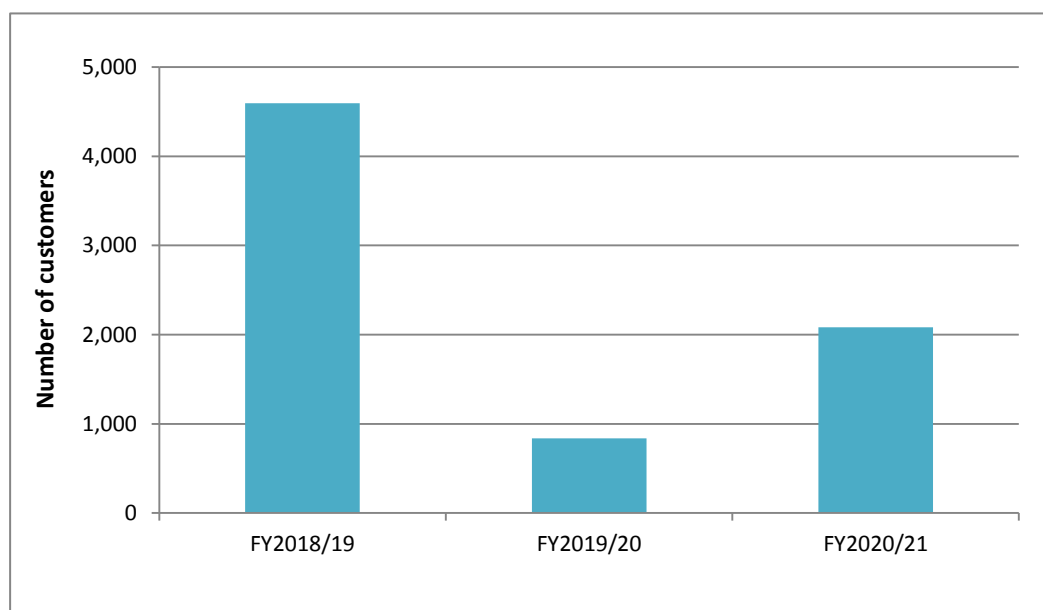
The table below shows examples of how the gap will be closed.

Table 95: Closing the gap (\$)

Gap at end of PSP2	1 July 2018	1 July 2019	1 July 2020
50	50	-	-
150	100	50	-
250	100	100	50
3,000	1,000	1,000	1,000

The number of customers reaching the target price in each year is shown below.

Figure 22: Reaching target prices (number of customers)



This means that 61% of the customers below the target price will reach the target price in the first year of PSP3. A further 11% will reach the target price in the second year and the remaining 28% will reach target prices in the final year of PSP3. At this time, all customers will be on target prices, as required.

For the circumstances described below customers will transition immediately to the target price:

- change in the property's predominant use
- altered connection arrangements due to successful development application
- previously unconnected properties connect to water and/or sewerage infrastructure (including new subdivisions)
- where a customer's property is already connected to water and/or sewerage infrastructure, but is currently not receiving charges (previously un-billed customer)
- newly discovered connection(s) to existing infrastructure
- changes to existing connections points (ie, change of connection size including installation of sub-meters)
- existing water service customer should also be receiving a fire service charge
- new trade waste customer (applying for a consent)
- Existing sewerage service customer who should be receiving a trade waste charge (previously unbilled trade waste)
- Adhesions (unless part of a development application)
- Demolition resulting in land becoming vacant
- Change of ownership
- Change from a permanent boil water alert or public health alert to a potable water supply (variable charge).

10 Conclusion and next steps

Having been formed on 1 July 2013, we are only part way through the reform journey that many of our Australian counterparts began over 20 years ago. We have made significant progress since our formation to improve water and sewerage services in Tasmania. However, we operate in a unique environment among comparable water utilities in Australia. This presents many challenges such as having more assets per customer than our peers, a low compliance base that requires major infrastructure upgrades to meet legislative obligations and a customer base for whom affordability is a key issue.

It is not feasible for us to address all of these challenges in the short time period of PSP3 given the scale of expenditure required and the need to strike a balance with customer affordability. Our LTSP provides the framework for engaging with customers, stakeholders and regulators to prioritise these outcomes over the long term.

Our consultation for PSP3 sought feedback from our customers and stakeholders on a range of topics relating to the outcomes. This included investment priorities associated with each outcome, acceptable price increases to achieve the outcomes and customer service standards related to the outcomes.

This customer feedback is at the heart of our LTSP and our PSP3 submission. As a result, we plan to make substantial improvements to drinking water, environment and dam safety compliance outcomes in PSP3 while maintaining service standards for customers. In doing so, we will limit price increases to 4.6% per annum to manage impacts to customer bills and maintaining prudent debt levels as we transition to cost reflective pricing by PSP5.

Our draft PSP3 submission is the first step in the price determination process. The process is expected to be completed in April 2018 to enable water and sewerage prices to be set from 1 July 2018. The following table summarises the key remaining activities and timetable from the TER's PSP3 Guideline.

Table 96: Key activities in PSP3

Activity	Date
TasWater to submit proposed price and service plan, attachments and populated data collection template to Regulator	30 June 2017
3 rd party advisor complete review and submit report to Regulator (after discussing recommendations and findings with TasWater)	30 September 2017
Draft report and draft price determination released for public consultation	December 2017
Consultation on draft report and draft price determination closes	End of February 2018
Final report published and final price determination gazette	April 2018
TasWater to submit revised 2018-21 Price and Service Plan reflecting Price Determination and Final Report	31 May 2018
Regulator approves Price and Service Plan	Mid-June 2018
Third price determination commences	1 July 2018

Appendix 1: Long Term Strategic Plan Summary

Long Term Strategic Plan 2018-2037



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Introduction

With infrastructure that can last 100 years or more, we build and operate water and sewerage systems to provide service to current and future generations of Tasmanians. As a result, we need to take a long term view when planning our investments.

This document represents our first Long Term Strategic Plan (LTSP) and sets out the outcomes we will deliver to customers over a 20 year period, from 2018 to 2037. Over this period, we still have much to do to provide the quality of service that Tasmanians should reasonably expect.

We are very aware that our services must be affordable for our customers. However, we face some major challenges to ensure drinking water for all customers is clean and safe to drink, to reduce the impact of sewage treatment and disposal on the environment, and to maintain a secure supply of water by managing the safety of our dams.

At the same time, we inherited a large, dispersed and ageing asset base that needs to be replaced as it reaches the end of its useful life in order to ensure a reliable supply of water to our customers and to efficiently collect and transport sewage.

It is not feasible for us to address all of these requirements at once given the scale of expenditure required and the need to strike a balance with customer affordability. The LTSP provides a framework for engaging with customers, stakeholders and regulators to prioritise water and sewerage outcomes over the next 20 years.

How the LTSP works with other plans

The LTSP has been developed to give direction to the whole business. It details our goals, customer preferences and stakeholder support. The detail of how the LTSP will be delivered is in the integrated set of strategies, projects, plans including the PSP that sit below the LTSP:



Who we are

TasWater is an incorporated company providing water and sewerage services to homes and businesses across Tasmania.

We started operations on 1 July 2013 following the merger of the three former regional Tasmanian water and sewerage corporations (Ben Lomond Water, Cradle Mountain Water and Southern Water) and the common services provider company, Onstream.

We are established under the *Water and Sewerage Corporation Act 2012* and the *Corporations Act 2001*. In addition we are subject to a range of legislative and regulatory instruments, including the:

- 1) *Water and Sewerage Industry Act 2008*
- 2) *Environmental Management and Pollution Control Act 1994*
- 3) *Public Health Act 1997*
- 4) *Land Use Planning and Approvals Act 1993*
- 5) *ANCOLD Guidelines on Dam Safety Management 2003*.

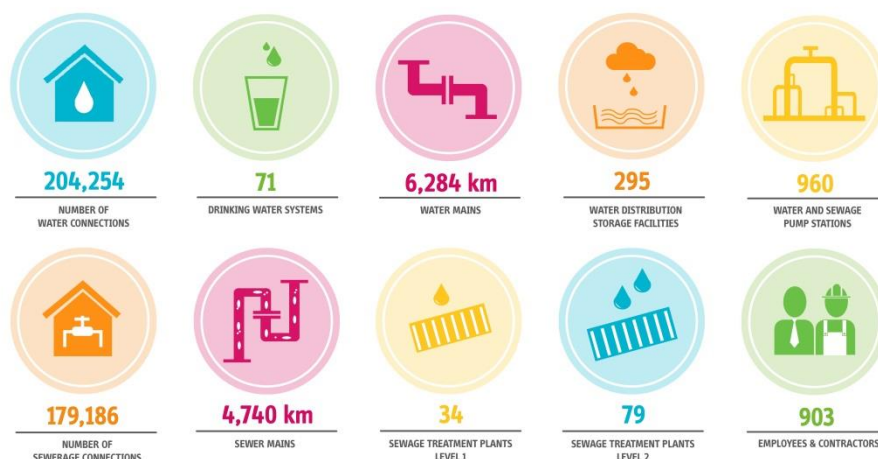
We are owned by the 29 Tasmanian councils who receive returns through dividends, tax equivalent payments and loan guarantee fees.

What we do

Our core business is to provide two essential services for Tasmanians:

- 1) The sourcing, treatment and reliable delivery of quality drinking water
- 2) The collection, transportation, treatment and safe return of the wastewater to the environment.

Key facts



Information as of 28 February 2017.

Our customer promises

Our strategic framework is anchored to our vision:

To be a trusted and respected provider of essential services that is making a positive difference to Tasmania.

This vision reflects the strong desire of the TasWater Board and employees of TasWater to focus on what really matters for our owners, customers and the community who depend on us for essential services.

In developing the LTSP we have engaged with Tasmanian customers and stakeholders to find out what they think our water and sewerage priorities should be for the future. This feedback has helped us to improve our strategic framework to reflect the value we aim to provide Tasmanians.

This LTSP has a section for each of the following customer promises and how we'll deliver on the outcomes in the years to come.

We promise to

Provide you with safe drinking water and responsibly manage your sewage

Deliver a positive customer experience to you

Give you value for money

Build culture and skills for the long term benefit of Tasmania

The outcomes you'll see

- Your drinking water is clean and safe to drink
- You have a reliable supply of water
- Your sewage is efficiently collected and transported
- Your sewage is treated and disposed of with minimal impact to the environment and its users

- You are satisfied with our service
- You find it easy to do business with us
- You are kept informed

- Your price increases are minimised
- The local economy benefits from our investment and capacity building

- Our work is conducted safely to protect our people, contractors and the communities we serve
- Our organisational culture supports us to make a positive difference to Tasmania
- Our people have the right capabilities to deliver your services

How can customers measure our success?

Our customer promises and outcomes are intended to be enduring and reflect the fact that we provide our services for the long term. Our intention is to achieve all of our customer promises and outcomes over time and our LTSP provides the roadmap for us to do this.

We have assigned measures of success to each customer outcome to demonstrate when the outcome will be achieved and to enable customers and stakeholders to assess our progress over time. In this first version of the LTSP, we have only modelled those measures of success:

- For which we have enough data to reasonably predict future outcomes based on various investment scenarios and
- That represent the key trade-offs relating to our most immediate challenges.

The measures of success we have modelled in this LTSP are highlighted in orange below.

Customer Promises	Customer Outcomes	Measures of Success
Deliver a positive customer experience to you	You are satisfied with our service	Customer satisfaction percentage
	You find it easy to do business with us	Customer effort score
	You are kept informed	Brand perception score
Give you value for money	Your price increases are minimised	Annual percentage price increase
	The local economy benefits from our investment and capacity building	Percentage of growth and capacity plans completed
Provide you with safe drinking water and responsibly manage your sewage	Your drinking water is clean and safe to drink	Percentage of customers where microbiological compliance has been achieved
		Percentage of customers where a tolerable health based target has been achieved
		Water quality complaints (per 1,000 properties)
	You have a reliable supply of water	Number of dams that plot above ANCOLD limit for tolerable risk
		Frequency of stage three water restrictions
		Unplanned interruptions (per 1,000 properties)
	Your sewage is efficiently collected and transported	Sewer breaks and chokes (per 100km main)
		Number of odour complaints (per 1,000 properties)
	Your sewage is treated and disposed of with minimal impact to the environment and its users	Number of spills to sensitive receiving waters
Build culture and skills for the long term benefit of Tasmania	Our work is conducted safely to protect our people, contractors and the communities we serve	Total recordable injury frequency rate
	Our culture and capabilities support us to make a positive difference to Tasmania	Cultural index

Service standards in the LTSP were modelled conservatively with outcomes based on a theoretical link between renewal expenditure (to replace ageing networks) and improvements in service reliability (fewer water main breaks, sewer spills or other service interruptions). Over the next few years, we will gather data and investigate further options that will enable us to optimise network replacement expenditure – and service reliability outcomes – for the next version of the LTSP.

How do we balance competing priorities?

Since it is not feasible to address all of our compliance and renewal challenges immediately while also minimising price impacts, it is necessary to make trade-offs between achieving various customer outcomes over time.

To do so, we sought feedback from our customers and stakeholders on a range of topics relating to investment priorities, acceptable price increases to achieve the outcomes and customer service standards related to the outcomes.

What our customers have told us

We engaged with our customers and stakeholders extensively during development of this LTSP, including focus groups, a telephone survey and individual discussions with major customers, peak bodies and our regulators.

In general, the feedback we have received is summarised below:

- Customers generally support improving compliance as a first priority (before service reliability), with drinking water quality most important, and environment and dam safety equal second
- About 40% of survey respondents support a 5% annual price increase in the first three years of the LTSP, although almost none support a higher increase
- Customer affordability remains a key issue, and focus group participants confirm this
- Customers generally prefer service standards to remain the same, rather than relaxing them to get cost decreases
- Service reliability should be focused on critical assets in the first 10 years of the LTSP (those assets that, if they fail, have the greatest impact on customers or receiving environments)
- Customers want TasWater to improve its productivity to the extent possible before increasing its prices further.

What our regulators have told us

The water and sewerage services we provide to Tasmanians must meet legislative requirements and the expectations of a range of regulators. Our key regulators are:

- The Tasmanian Economic Regulator (TER) who regulates the prices we can charge our customers and the standards of service we provide to our customers
- The Environment Protection Authority (EPA) who regulates environmental matters such as sewage treatment plant licensing and compliance
- The Department of Health and Human Services (DHHS) who regulates drinking water quality
- The Department of Primary Industries, Parks, Water and Environment (DPIPWE) who regulates water allocating licensing and dam permits.

Each of our technical regulators (EPA, DHHS and DPIPWE) have outlined their near term priorities for us which we have incorporated in our LTSP. The expectations of our regulators are summarised below.

Drinking water quality (Department of Health and Human Services)

In March 2017 the Director of Public Health provided us with a list of actions to guide our priorities in PSP3 in relation to improving drinking water quality. These priorities are:

- Remove Boil Water Alerts and Public Health Alerts in drinking water systems
- Identify and implement Critical Control Points in accordance with the Australian Drinking Water Guidelines (ADWG) framework
- Increase knowledge of source waters through catchment risk assessments, and improve source protection through capital investments designed to reduce or eliminate public health risks
- Identify opportunities to improve disinfection management and maintain suitable chlorine residuals in reticulation networks
- Improve fluoridation performance through compliance with the Tasmanian Fluoridation Code of Practice and
- Identify and implement strategies to remove and reduce Disinfection By-Product formation to levels below those specified in the ADWG.

Environment (Environment Protection Authority)

In November 2016 we established a Memorandum of Understanding (MoU) with the EPA to achieve accelerated environmental compliance and performance over the next three years. The MoU sets out the management and regulatory approach that we will adopt (in conjunction with the EPA) to improve our environmental compliance and the performance of our public wastewater network by December 2019. We have agreed to focus on capital and operational expenditure projects which target the following:

- 13 STPs that account for 70 per cent of all treated wastewater from our network (the 'Big 13' STPs)
- The top 20 key environmental risks posed by any part of our wastewater network
- Enhanced statewide control of trade waste, tankered waste and leachates entering our sewerage network and treatment plants
- Other statewide projects initiated during the MOU period that seek to either optimise wastewater infrastructure functionality through better control or divert outputs to reuse rather than direct discharge into the environment.

Dam safety (Department of Primary Industries, Parks, Water and Environment)

We are responsible for approximately 300 water and wastewater storages, lagoons and weirs that are defined as a 'dam' under the *Water Management Act 1999*. The *Water Management Act* references the Australian National Council on Dams (ANCOLD) Guidelines on Dam Safety Management 2003. We manage our dams using a dam portfolio risk assessment process in line with these guidelines.

Although the *Water Management Act* applies to all dams, the emphasis of our regulator is generally on dams with a consequence category of 'significant' or higher as defined in the Australian National Committee on Large Dams (ANCOLD) guidelines for consequence categories.¹⁹

The majority of our dams are compliant with the ANCOLD guidelines for risk assessment²⁰ which consider both the consequence category of the dam and the likelihood of failure. However, at the

¹⁹ ANCOLD, *Guidelines on the Consequence Categories for Dams*, 2012.

²⁰ ANCOLD, *Guidelines on Risk Assessment*, 2003.

end of PSP2, nine dams will have a risk rating that exceeds the individual and societal risk criteria under the ANCOLD guidelines on risk assessment. These dams are a focal point for our regulator in PSP3.

How we have used the customer and regulator feedback

We have assigned quantitative measures to link each project in our capital program to the customer outcomes in the LTSP. Capital projects were prioritised by comparing their relative costs and benefits (that is, their contribution to achieving measures of success for each customer outcome). Our LTSP also uses a weighting to emphasise the outcomes that our customers and stakeholders told us were most important.

Our LTSP is based on completing the highest priority projects in each year, up to a limit that is determined in part by the acceptable annual price increase.

Our regulators (EPA, DHHS, DPIPW) have provided general support for the compliance outcomes in our LTSP. The regulators understand that significant investment is required to improve compliance levels and that, while marked improvement in compliance is expected, the necessary investment needs to be spread out over time to avoid price shocks on customer bills.

Key customer outcomes over the next 20 years

Our starting point

We have been operating as TasWater since 2013, a relatively short time compared with water and sewage utilities nationally. While our predecessors had made much progress, our inherited systems have relatively low levels of environmental compliance and we face a substantial challenge to ensure drinking water for all our customers, including regional areas, is clean and safe to drink.

We also have one of the largest dam portfolios in the country with more than 320 dams, as defined under Tasmanian dam management legislation. The safety of each of these must be managed to protect communities nearby and maintain a secure supply of water.

We have significantly more infrastructure, like treatment plants and dams, per customer than other water utilities. This means that we have to spend more to operate and maintain this infrastructure compared with other utilities. This is a result of the merging of 29 council water and sewerage entities ultimately into one business (TasWater), and a reflection of the population dispersion and geography of Tasmania.

While we are addressing many of these challenges now, at the start of PSP3 in 2018 we will still have several substantial challenges to address including:

- Six townships across the state will continue to be on boil water or do not consume alerts, although we are planning for their removal in the first year of PSP3 (by August 2018)
- A number of our drinking water systems will not manage catchment risk in accordance with tolerable Health Based Targets currently in development by the Australian water industry
- Nine of our dams will still be above the level of tolerability prescribed by the ANCOLD guidelines
- We expect 62% of our total effluent volume will be compliant with licence discharge limits²¹
- Many of our critical sewer pump stations adjacent to sensitive receiving waters are undersized and prone to overflow and are known to discharge onto beaches, recreational sites, schools and to shellfish leases
- Many of our existing assets were not designed to meet the modern day environmental and public health standards set by our regulators and
- We will continue to have a disproportionately large number of treatment plants given the dispersion of the population we service and our revenue base.

What we'll achieve in the LTSP

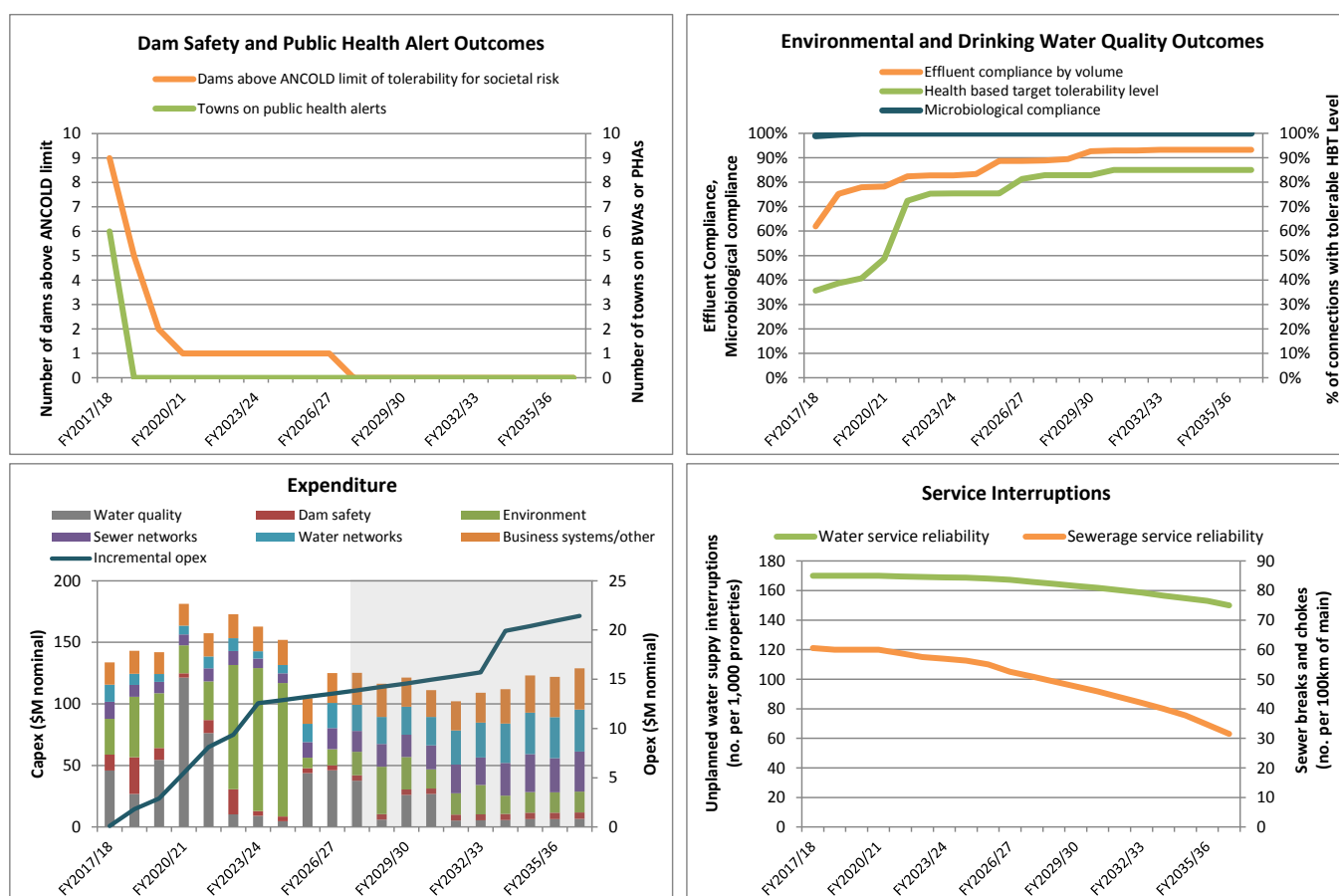
Based on what our customers have told us, and what we are able to deliver within the constraint of acceptable price increases while maintaining prudent levels of debt, the key outcomes we will deliver for customers over the 20-year LTSP are:

- Microbiological compliance of 100 per cent for drinking water systems

²¹ In FY2015/16 measurement of effluent compliance differed between TasWater and EPA. The two measures both use seven parameters for an effluent sample. However, the EPA measure, used in OTTER's State of the Industry Report, allows for a partial pass where some of the parameters are compliant. TasWater's measure requires all parameters to be compliant to 'pass'. As of 1 July 2017, the EPA and the State of the Industry Report will use TasWater's more stringent measure. All references in the remainder of this document to effluent compliance are to TasWater's more stringent measure.

- Effluent compliance of 93 per cent by volume measured against EPA standards
- All dams are deemed safe in accordance with Australian standards by FY2022/23
- Unplanned water supply interruptions and sewer main breaks and chokes reduced to the average level for large Australian water utilities²²
- To achieve value for money, we have identified \$12M in annual (ongoing) cost savings that will be progressively achieved in the first three years of the LTSP, growing to \$17.5M by the end of the first 10 years of the LTSP and
- A managed transition to cost-reflective pricing, with price increases trending to the Consumer Price Index (CPI) rate of increase or less from FY2027/28 and beyond.

The customer outcomes, and the expenditure required to deliver these outcomes, over the 20-year period of the LTSP are shown below.



Note: Shading of expenditure from FY2027/28 to FY2036/37 represents a lower degree of certainty in these years. We will refine our modelling in future versions of the LTSP as we collect better data.

Specific outcomes in the first three years of the LTSP (PSP3 period)

Over the first three years of the LTSP, which forms the PSP3 period, we will deliver the following outcomes to customers:

- Microbiological compliance of 100 per cent, removal of all boil water and public health alerts and a progressive reduction of public health risk in our water systems

²² Based on the average value for large Australian water utilities in FY2015/16, our 20 year targets are 150 unplanned water supply interruptions per 1,000 properties and 31.7 sewer main breaks and chokes per 100km of main

- Effluent compliance of 78 per cent by volume measured against EPA standards and mitigation of environmental risks for 90 per cent of the EPA's top 20 sites
- Risk reduction of all but one dam to within tolerable levels, with the remaining dam managed through interim measures to reduce its risk appropriately
- Maintain current service reliability standards by focusing investment on assets that, if they failed, would cause substantial service interruption or environmental impact and
- Limiting price increases to 4.6% per annum in PSP3 to achieve the above outcomes while managing impacts to customer bills and maintaining prudent debt levels as we transition to cost-reflective pricing by PSP5.

Given the ongoing challenges with data reliability, particularly relating to our underground assets, our initial aim for the first 10 years of the LTSP is to maintain current service standards while focusing on upgrades and repairs to critical assets. Over the course of PSP3 we intend to improve the reliability of our data and continue research into potential innovative practises to increase the life of our assets. By taking this approach we avoid over investing in potentially unwarranted upgrades during PSP3 and position ourselves to develop a more informed strategy for PSP4 and beyond.

Major capital expenditure projects to be delivered by the Plan

The major infrastructure investments listed below provide the most efficient combination of projects to deliver upon our customer promises and outcomes, and reflecting relative priorities of each. The infrastructure investment modelling has used:

- Customer and stakeholder consultation on our priorities
- Regulator priorities and feedback
- Weighting of benefits in line with these priorities
- Identification of projects and the relative contribution to outcomes.

The customer outcomes in our LTSP will be realised, in large part, through the delivery of hundreds of capital projects and programs over the 20-year period. Individual major projects greater than \$20 million are summarised in the table below (NB ongoing program expenditure is excluded).

Project	LTSP Expenditure (\$'000s)	Year of Completion
Launceston Sewer Improvement Plan (LSIP)	321,480	FY2025/26
Bryn Estyn Water Treatment Plant (WTP) Upgrade	164,358	FY2021/22
Fern Tree Water Quality Upgrade	87,120	FY2026/27
Forth WTP Upgrade	72,306	FY2020/21
Gawler River Water Treatment Upgrade	47,920	FY2030/31
Kingborough Sewerage Strategy – Treatment and Network	41,766	FY2019/20
Regional Water Supply Improvement Program (RWSIP) – Stage 2	40,798	FY2018/19
Pardoe Sewerage Improvement Plan (PSIP)	40,373	FY2022/23
Huon Valley Water Treatment Upgrade	33,918	FY2027/28
Northern Midlands Sewerage Improvement Plan (NMSIP) – Longford STP	26,374	FY2020/21
Ridgeway Dam upgrade	23,504	FY2022/23
Wynyard Sewage Treatment Plant (STP) Upgrade	22,939	FY2029/30
Northern Midlands Sewerage Improvement Plan (NMSIP) – Perth, Western Junction and Evandale	3,536+	FY2037/38+

How will our LTSP evolve over time?

Over the next 20 years we will face new challenges. Customer and stakeholder priorities will change, along with their expectations of our investment, price increases and focus.

This first version of our LTSP is a starting point and reflects customer and stakeholder preferences at the point in time of its development. To ensure the LTSP remains a living document that embodies the current and future needs of our customers, we will continue to:

- Regularly engage with customers and other stakeholders
- Build relationships with our regulators
- Improve the state's water and sewerage infrastructure to provide the services that the community expects
- Invest in and improve the quality of our data and analysis as a key driver of future sound investment decision making
- Invest in our people and in the community and
- Update our LTSP ahead of every Price and Service Plan submission.

The LTSP has been influenced by engagement with hundreds of our customers and stakeholders to ensure it is based on what matters most to Tasmanians.

Thank you to everyone who has played a part in developing the LTSP, and assisting us to realise our vision of being a trusted and respected provider of essential services that is making a positive difference to Tasmania.

Appendix 2: priorities

Drinking water quality regulator expectations and

Drinking water quality regulator expectations and priorities in PSP3

TasWater and DHHS staff have had several discussions about priorities and expectations for PSP3 in relation to drinking water quality which are summarised in the letter from DHHS below.

Department of Health and Human Services

GPO Box 125, HOBART TAS 7001 Australia
Ph: 1300 135 513
Web: www.dhhs.tas.gov.au



Contact: Cameron Dalglish
Phone: (03) 6166 0676
Email: cameron.dalglish@dhhs.tas.gov.au
File: PPH01723

Mike Brewster
Chief Executive Officer
TasWater
GPO Box 1393
HOBART TAS 7001

Dear Mr Brewster

Subject: DHHS Priority List for 2018-2021 Price and Service Plan

TasWater and Department of Health and Human Services (DHHS) staff have had several discussions about the priority list for the 2018-2021 Prices and Services Plan (PSP). I am writing to provide the updated public health priority list for capital works on non-compliant or currently inadequate drinking water supply systems in Tasmania.

The intent of the priority list is to guide TasWater's short- to medium-term capital works planning as you prepare your new Price and Services Plan.

I acknowledge that investments over the first two regulatory periods have produced water quality improvements and associated reduction of risks to public health. Thank you for this work.

The DHHS State Water Officer, Mr Cameron Dalglish, has had extensive discussions with TasWater's Product Quality Department in the development of this priority list. I understand that the discussions were productive and supportive. The outcome was that a number of 'themes' for prioritised action were identified, rather than simply naming individual supply systems. I support this approach for TasWater to identify activities and investments that will ensure that water is managed with negligible risk to the public. While this particularly applies to those supplies with already identified inadequacies, it leaves room to include as priorities supplies with newly identified risks.

This approach will enable TasWater some flexibility in prioritising their capital investment whilst taking into account their internal assessment processes to identify which supplies need to be addressed. The themes have been assessed to ensure they capture the supplies that will require investment in the next PSP period. Please note that this approach also assumes that projects currently underway and those with allocated funding will progress to completion.

The following priority list focuses on drinking water supplies. I acknowledge that TasWater will also plan to progressively address various shortcomings of sewage infrastructure under their control. In some instances these actions, along with those of other Tasmanian Government agencies and Local Government, will serve to reduce public health risks associated with recreational water exposure and aquaculture.

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Based on this approach, the following themes are identified for inclusion in the 2018-2021 PSP:

1. Remove Boil Water Alerts and Public Health Alerts in drinking water systems;
2. Identify and implement Critical Control Points in accordance with the ADWG framework;
3. Increase knowledge of source waters through catchment risk assessments, and improve source protection through capital investments designed to reduce or eliminate public health risks;
4. Identify opportunities to improve disinfection management and the maintain suitable chlorine residuals in reticulation networks;
5. Improve fluoridation performance through compliance with the *Tasmanian Fluoridation Code Of Practice*; and
6. Identify and implement strategies to remove and reduce Disinfection By-Product formation to levels below those specified in the ADWG.

Thank you for the opportunity to provide the DHHS priorities to your organisation. Should you wish to discuss these in detail, please contact Cameron Dalglish on 61 66 0676.

Yours sincerely



Dr Mark Veitch
A/Director Public Health

1 March 2017

Copy to: Dean Burgess - Director OTTER

Drinking Water Quality Management Plan and supporting documentation

Our capital and operating expenditure plans for PSP3 (refer to Chapter 6 and Chapter 7 respectively) reflect the priorities outlined in the letter from DHHS above.

The resulting outcomes we will deliver in PSP3 with respect to drinking water quality have been discussed through the Tasmanian Water and Sewerage Industry Regulators Forum (refer to Chapter 3). We have received general agreement from our regulators on the balance of outcomes we will deliver across drinking water quality, environment and dam safety.

Further documentation relating to our Drinking Water Quality Management Plan and associated strategies, frameworks and supporting data is available upon request during the price determination investigation.

Appendix 3: Environmental regulator expectations and priorities

Environmental regulator expectations and priorities in PSP3

TasWater and EPA staff have had several discussions about priorities and expectations in relation to environmental outcomes, which culminated in a memorandum of understanding between the two organisations in November 2016 (see copy below).

**MEMORANDUM OF UNDERSTANDING
ON
PUBLIC WASTEWATER MANAGEMENT**

**TASMANIAN WATER AND SEWERAGE CORPORATION PTY LTD
(TASWATER)**

AND

**ENVIRONMENT PROTECTION AUTHORITY, TASMANIA
(EPA)**

November 2016

1. Rationale

- a. The Tasmanian water and sewerage industry has undergone significant structural reform since the transfer in 2009 of responsibility for public drinking water and wastewater management from municipal councils to three regional water authorities. These authorities and their shared services provider merged in 2013 to form a single public utility, the Tasmanian Water and Sewerage Corporation Pty Ltd (TasWater).
- b. The reforms were driven by the need to achieve better social, economic and environmental outcomes from drinking water and wastewater management throughout Tasmania. TasWater's explicit objectives are to provide safe, environmentally responsible, efficient, sustainable, reliable and secure drinking water services and sewerage services to the Tasmanian community.
- c. The creation of a single water authority with state-wide reach represents the best opportunity yet to address significant legacy issues that challenge the delivery of affordable, high quality public drinking water and wastewater services in Tasmania.
- d. The magnitude of the water and sewerage task necessitates cooperation between TasWater, economic and technical regulators, industry and the community, to ensure TasWater is supported in balancing its pricing, service standard and compliance obligations in a manner acceptable to the community.
- e. For wastewater, legacy issues include ageing, undersized infrastructure, and outdated system design and configuration, largely attributable to the cost of servicing Tasmania's relatively small, dispersed population. Investment in wastewater asset upgrades has generally not kept pace with community needs or contemporary environmental standards.
- f. Tasmania's Environment Protection Authority (EPA) regulates 79 of the wastewater treatment plants operated by TasWater, principally through setting effluent quality limits to safeguard against unacceptable impacts upon receiving land and waters. The EPA, supported by EPA Tasmania also assesses TasWater's larger wastewater development proposals and investigates spill and odour issues arising from infrastructure failures. As the environmental regulator and through its technical expertise, the EPA has a fundamental responsibility to work with TasWater to improve Tasmania's public wastewater management present and future.
- g. However, TasWater and the EPA recognise that three years on from the corporation's formation, the rate of progress towards securing acceptable environmental outcomes from the public wastewater management network is inadequate and does not meet community expectations. By TasWater's metric, environmental compliance is currently at 42 per cent while the EPA analysis shows a downward trend in compliance for the last 5 years.
- h. TasWater and the EPA have agreed to address this situation by adopting a specific wastewater management and regulation strategy designed to achieve accelerated environmental compliance and performance in the next three years to 2019. This MoU describes the nature of that agreement and key components of the strategy.

2. Purpose

This MoU sets out the management and regulatory approach TasWater and the EPA will use to achieve a 20 per cent uplift over the next three years in environmental compliance and performance for Tasmania's public wastewater management network.

The MoU does not intend to create legally binding relations between TasWater and the EPA, nor does it fetter the EPA in its regulatory responsibilities under the *Environmental Management and Pollution Control Act 1994* (EMPCA).

3. Scope

This MoU concerns:

- a. CAPEX and OPEX for sewage infrastructure that yields the greatest environmental compliance and performance benefit for TasWater and the EPA effort, as identified through the following projects:
 - i. Big 13 - targeting those wastewater treatment plants that account for 70 per cent of all treated wastewater from TasWater's network;
 - ii. Top 20 - targeting key environmental risks posed by any part of the wastewater network and including infrastructure or operational practice; and
 - iii. Trade waste – targeting enhanced state-wide control of trade waste, tankered waste and leachate inputs to TasWater's network
 - iv. Any other state-wide TasWater project initiated during 2017-19 that seeks to:
 - a) Optimise wastewater infrastructure function through better control of inputs; or
 - b) Divert outputs (e.g. treated wastewater, biosolids) to reuse rather than direct discharge to the environment.
- b. Regulatory trade-offs to support successful delivery of projects listed in 3 a) above (referred to herein as 3 a) projects);
- c. Assessments for Level 2 or other environmentally relevant activities proposed by TasWater to support successful delivery of 3 a) projects;
- d. Wastewater management and regulatory data requirements, risk and compliance information and other evidence necessary to track delivery of 3 a) projects;
- e. Regulatory reform options, including the status quo, to support maintenance of enhanced compliance and ongoing improvement beyond the three-year term of this MoU;
- f. Strategic planning across the immediate (3-5 year), mid (10 year) and longer (20 year) terms; and
- g. Arrangements for incident response and compliance investigations in the event of wastewater infrastructure failures that lead to uncontrolled release of effluent or odour to the environment;
- h. Any other joint initiatives between TasWater and the EPA which further contribute to achieving the objective of this MoU.

4. Objective and Key Actions

The objective of this MoU is to provide for a 20 per cent uplift in compliance and performance improvement from Tasmania's public wastewater network by December 2019. In pursuing this, TasWater and the EPA will:

- a. Focus wastewater management and regulatory effort over 2017-2019 on those capital and operational improvements identified through 3 a) projects;
- b. Agree and implement reasonable regulatory trade-offs to support delivery of 3 a) projects, including:
 - i. Reducing the administrative regulatory burden in assessment and regulation when it is reasonable to do so; and
 - ii. Identifying wastewater regulatory functions that will not be fully delivered during this timeframe and agreeing minimum management and compliance requirements such as performance monitoring and reporting, care and maintenance arrangements, and incident response arrangements.
- c. Agree and obtain essential wastewater management and regulatory data requirements, risk information and other evidence necessary to support delivery of 3 a) projects, including ambient monitoring, effluent quality monitoring and compliance audit results;
- d. Agree and implement relevant metrics for measuring the success of 3 a) projects, track progress towards compliance and performance improvement, make timely and effective responses to unsatisfactory progress;
- e. Plan for ongoing compliance and performance improvements beyond the term of the MoU, including through:
 - i. Reviewing the current environmental regulatory framework that applies to TasWater, including merits or otherwise of:
 - a. a corporate licence covering all TasWater's Level 2 wastewater treatment plants;
 - b. regulating against network-wide plans for specific wastewater management issues such as infiltration and inflow, sewage sludge and biosolids and wastewater re-use;
 - c. current regulatory arrangements for other environmentally relevant wastewater management activities such as operation of sewage pumping stations;
 - d. current regulatory arrangements for trade waste; and
 - e. any other pertinent matters
 - ii. Strategic CAPEX planning across immediate, mid and longer terms, comprising TasWater's Wastewater Management Plan 2019-2021, and its 10 and 20 year strategic plans respectively, particularly to provide for effective decision-making on infrastructure renewals.
- f. Ensure management and regulatory responses to uncontrolled effluent discharge and odour incidents remain proportional to environmental risk;
- g. Pursue clear, strategic dialogue on the objective and actions under this MoU with the Tasmanian Government, other government agencies, industry and community entities with an interest in public wastewater management.

5. Principles

In implementing this MoU, TasWater and the EPA shall uphold the following principles:

- a. Good enough: Given the objective of effecting step change in environmental compliance and performance in three years, actions taken to support delivery of 3 a) projects will reflect the good enough principle – that is, management and regulatory effort will be applied to a level sufficient for successful project delivery, rather than applied at an optimum level.
- b. Best Practice: Actions taken under this MoU shall be consistent as appropriate with Good Commercial Practice, Best Practice Environmental Management, and Best Practice Regulation.
- c. Existing obligations and accountabilities: Nothing in or done under this MoU shall fetter:
 - i. the service provision, business and commercial obligations and accountabilities of TasWater under the *Water and Sewerage Industry Act 2008*, the *Water and Sewerage Corporation Act 2012*, and TasWater's Water and Sewerage Licence; or
 - ii. the environmental assessment, regulation, enforcement and policy obligations and accountabilities of the EPA under the *Environmental Management and Pollution Control Act 1994*, sub-ordinate legislation, and the *State Policy on Water Quality Management 1997*.

In implementing this MoU, TasWater and the EPA shall have regard to each other's existing obligations and accountabilities and associated community expectations.

- d. All-organisation implementation: TasWater and the EPA shall promote this MoU to staff to ensure it is understood, owned and implemented at all organisational levels.
- e. Other key wastewater stakeholders: In implementing this MoU, TasWater and the EPA shall have regard to the critical roles in public wastewater management of the Director of Public Health, the Office of the Tasmanian Economic Regulator, the Department of Primary Industries, Parks, Water and Environment, local government, industry and the community.
- f. Water and sewerage regulatory framework: In implementing this MoU, it shall be recognised that TasWater operates within an overarching economic and technical regulatory framework, and must achieve a workable balance between pricing, service standards and compliance.
- g. Transparency: This MoU shall be made publicly available. TasWater and the EPA will also ensure work under this MoU is clearly communicated when it is in the public interest to do so.

6. Relevant Legislation and Policy

The principal legislative and policy framework within which this MoU operates is established by:

- The *Environmental Management and Pollution Control Act 1994* (EMPCA);
- The *State Policy on Water Quality Management 1997* (SPWQM), pursuant to the *State Policies and Projects Act 1993*;
- *Water and Sewerage Industry (General) Regulations 2009*
- The *Australian Water Quality Guidelines for Fresh and Marine Waters 1992* (WQG);
- The *Water and Sewerage Industry Act 2008*; and
- The *Water and Sewerage Corporation Act 2012* (WSCA).

7. Roles and Responsibilities

The roles and responsibilities of TasWater and EPA Tasmania in implementing this MoU are:

Chief Executive Officer, TasWater	Oversee implementation of the MoU and update the TasWater board as appropriate
TasWater staff	Manage day-to-day MoU implementation, including through use of agreed operational protocols. Develop proposals and amend the capital and operational programs to align with the principles of the MoU Report progress against MoU objectives
Director, EPA	Oversee implementation of this MoU by EPA Tasmania. Update the Board, EPA, and the Secretary, Department of Primary Industries, Parks, Water and Environment, on MoU implementation as appropriate.
EPA Tasmania officers	Manage day-to-day MoU implementation, including through use of agreed operational protocols. Assess TasWater development proposals, regulate and undertake compliance investigations in accordance with the MoU principles, monitor and report compliance performance outcomes.

8. Governance

The following governance arrangements are established for the MoU:

- a. Steering Committee:
 - i. A Steering Committee will convene, comprising the CEO TasWater and Director EPA and their senior managers as relevant.
 - ii. The Steering Committee's Terms of Reference shall include:
 - a. Agreeing headline KPIs to be used for the duration of this MOU and which allow tracking progress toward 20 per cent uplift in environmental compliance and performance.
 - b. Overseeing delivery of 3 a) projects, agreeing regulatory trade-offs, monitoring KPIs, and determine responses to unsatisfactory progress.
 - c. Conducting biannual reviews of progress on initiatives identified in this MoU informed by a report on progress with commitments in the last six months and a schedule of commitments to be met in the next six months.
 - d. Planning for environmental compliance and performance improvement beyond the term of this MoU including reviewing the regulatory framework and identifying strategies for the immediate, mid and longer terms.
 - e. Engaging with stakeholders on the objective of the MoU and specific actions taken under it, including in pursuit of funding opportunities for 3 a) projects.
 - f. Considering key operational matters outside the 3 a) projects including incident and compliance investigation arrangements for sewage spills and odour issues, the standard of development proposals submitted by TasWater to the EPA.
 - g. Any other matters deemed necessary to the successful execution of initiatives under this MoU.

- iii. The Steering Committee may appoint TasWater and EPA Tasmania staff to joint working groups tasked with undertaking and reporting on specific activities identified in this MoU; and
- iv. The Steering Committee shall meet at least every two months. EPA Tasmania will provide administrative support to the Steering Committee.

9. External Engagement

- a. TasWater and EPA Tasmania will participate in the Water and Sewerage Regulators Forum to be established by the Office of the Tasmanian Economic Regulator, which will among other things consider the 3 a) projects and other initiatives carried out under this MoU; and
- b. TasWater may also convene as necessary, annual meetings with EPA Tasmania and other regulators, government and non-government entities on issues relevant to this MoU and particularly achievement of 20 per cent uplift in compliance and performance by December 2019.

10. Duration and Review

This MoU commences on the date of endorsement by TasWater and EPA Tasmania and continues for the three years to December 2019 or until terminated by written notice by either party.

Review may occur if there is a change in legislation or government policy pertinent to the MoU, or if TasWater's Water and Sewerage Licence is replaced or amended. In this event, the parties shall discuss the implications of the change, and review the MoU as required.

In addition, TasWater or EPA Tasmania may otherwise determine that a review is necessary, including in light of environmental compliance performance. Upon either party giving notice to the other of its desire for the MoU to be reviewed, the MoU must be reviewed according to mutually agreed criteria, in an agreed timeframe.

11. Dispute Resolution

Any difference or dispute that arises between TasWater and EPA Tasmania in respect of this MoU or matters within its scope, with the exception of investigation, compliance and enforcement action taken by EPA Tasmania, will be addressed at the lowest management level possible. Either party will refer issues that cannot be resolved at the lowest management level to more senior officers or the Steering Committee for consideration and resolution.

Agreement

Signed by an authorised representative of TasWater pursuant to s 126 of the Corporations Act 2001 (Cth) by:

Name: MICHAEL BREWSTER

Signature: 

Date: 2 DECEMBER 2016

In the presence of:

Witness

Signature: 

Name: LYNN WICKER

Address: 16A MAIN ROAD, MOSMAN

Occupation: EXECUTIVE ASSISTANT

Signed for and on behalf of the EPA by:

Name: Les Ford

Signature: 

Date: 2/12/16

In the presence of:

Witness Robin Wall

Signature: 

Name:

Address: 134 Macquarie Street HOBART.

Occupation: Business Services Manager
EPA Tasmania

Wastewater Management Plan and supporting documentation

Our capital and operating expenditure plans for PSP3 (refer to Chapter 6 and Chapter 7 respectively) reflect the priorities outlined in the memorandum of understanding above.

The resulting outcomes we will deliver in PSP3 with respect to the environment have been discussed through the Tasmanian Water and Sewerage Industry Regulators Forum (refer to Chapter 3). We have received general agreement from our regulators on the balance of outcomes we will deliver across drinking water quality, environment and dam safety.

Further documentation relating to our Wastewater Management Plan and associated strategies, frameworks and supporting data is available upon request during the price determination investigation.

Appendix 4: Dam Safety Regulator Expectations and Priorities

Dam safety regulator expectations and priorities in PSP3

TasWater and DPIPWE staff have had several discussions about priorities and expectations in relation to dam safety outcomes in recent years. We submit annual progress reports to DPIPWE on our Dam Safety Management Plan, with the next report due in July 2016. A copy of correspondence between DPIPWE and Southern Water (one of our predecessor organisations) setting out priorities and expectations with respect to dam safety is provided below. The intent of this letter and the actions pertaining to annual progress reports remain in effect.

Department of Primary Industries, Parks, Water and Environment
OFFICE OF THE SECRETARY

Hobart GPO Box 44, Hobart TAS 7001
Launceston PO Box 46, Kings Meadows TAS 7249
Devonport PO Box 303, Devonport TAS 7310
Ph 1300 368 550
Web www.dpipwe.tas.gov.au



Mr Mike Paine
Chief Executive Officer
Southern Water
PO Box 1060
GLENORCHY TAS 7010


Dear Mr Paine

DAM SAFETY REGULATION

I am writing to clarify and confirm the future regulatory arrangements and expectations between the Department of Primary Industries, Parks, Water and Environment (DPIPWE) and Southern Water with regard to dam safety management, in accordance with the requirements set out in the *Water Management Act 1999* (the Act) and the *Water Management (Safety of Dams) Regulations 2003* (the Regulations). This follows previous correspondence (dated 5 January 2010) which set out the expectations of this agency as the dam safety regulator after the Regional Water Corporations had first been set up.

Broadly, DPIPWE takes the view that Southern Water is expected to be proactive about meeting its statutory dam safety obligations, with DPIPWE's role being to provide guidance to and oversight of compliance with the statutory requirements. The legislation clearly identifies the dam owner as having primary responsibility for dam safety. Section 165G of the Act states that:

An owner of a dam must, so far as is reasonably practicable, maintain and operate the dam so as not to cause, or be likely to cause, material environmental harm or serious environmental harm or danger to any person or property.

Section 165C of the Act states that the Minister has the following function, among others:

To formulate measures to ensure the safety of dams and, in particular, plans to remove or minimise risks to persons or property or the natural environment arising from an incident;

In order to implement these provisions Southern Water had previously been requested (correspondence 5 January 2010) to carry out a Portfolio Risk Assessment of your dams of Significant or higher Hazard Category in accordance with the Australian Committee on Large Dams (ANCOLD) Guidelines on Risk Assessment 2003. The Portfolio Risk Assessment process enables a comparative estimation of risks over all of your dams and enables the identification and quantification of the required capital works and their relative priorities.

A number of notices had also been issued under Part 8 of the Act to complete surveillance reports and other works on some dams which were previously owned by the Councils and which subsequently have come into Southern Water's ownership.

I understand that the Portfolio Risk Assessment has been substantially completed and a program of works to address the issues arising from the assessment has been developed. Progress has been reported on in the six-monthly meetings held between staff from Southern Water, the other Regional Water Corporations and officers from DPIPWE.

In order to formalise the reporting process, however, we will in future require that a Dam Safety Management Plan be submitted on an annual basis. This should include a report on the work done in the past 12 months for each dam of Significant or higher Hazard Category, and a plan of what work is proposed in the next 12 months but also an indication of the proposed work scheduled over the next 5 years. The timing for submission of this report should be towards the end of the financial year, once your planning for capital works and operations has been established for the following financial year.

To start this process could you please provide the initial report by the end of May 2012. An update of the report recently provided to DPIPWE will meet this requirement. The report should be submitted under signature from an appropriate legal representative of the corporation and addressed to me. A presentation on and discussion of the report with the dam safety officers from the Department will also be arranged once DPIPWE has had time to assess the report. Following this, and subject to any further discussion, the Department will agree to the work plan for the next 12 months.

The overall objective of your Dam Safety Management Plan is to ensure that the safety risks of your portfolio of dams are all below the limit of tolerability and that they also satisfy the ALARP principle, as set out in the ANCOLD Guidelines on Risk Assessment (2003). The report must include details on how you propose to complete the Portfolio Risk Assessment process and complete the initial assessment of all dams of Significant or greater Hazard Category by June 2014, and how and when you intend to complete any remedial works required to meet the overall dam safety objective, to satisfy the ALARP principle.

Please note that the risk assessment process must include all relevant dams in your ownership, including those used for wastewater. Wastewater dams have not to date been included on the DPIPWE dams register, but they are included in the definition of a dam under Part 8 of the Act and, as such, must meet the same regulatory requirements as other existing dams. You should also ensure that all dams which are not currently registered on the DPIPWE dams register are appropriately documented and registered.

I appreciate that the completion of capital works for dam safety improvements will need to be considered in light of your other priorities for capital works arising from other regulatory requirements, particularly to meet health-related water quality and wastewater treatment requirements. The allocation of funds and changes to priorities that may be required to meet any dam safety requirements would be considered as part of the approval process for the three-year capital works plan and in consultation with the regulatory stakeholders.

If you have any queries in regard to these dam safety matters, please contact Ludovic Schmidt, the Manager Water Management on 6233 2576.

Yours sincerely



Kim Evans
SECRETARY

27 March 2012

Dam Safety Management Plan and supporting documentation

Our capital and operating expenditure plans for PSP3 (refer to Chapter 6 and Chapter 7 respectively) reflect the priorities outlined in the correspondence above.

The resulting outcomes we will deliver in PSP3 with respect to the environment have been discussed through the Tasmanian Water and Sewerage Industry Regulators Forum (refer to Chapter 3). We have received general agreement from our regulators on the balance of outcomes we will deliver across drinking water quality, environment and dam safety.

Further documentation relating to our Dam Safety Management Plan, Dam Safety Improvement Plan and associated strategies, frameworks and supporting data is available upon request during the price determination investigation.

Appendix 5: Customer Contract

Price and Service Plan 2018-21

DRAFT V1.0 – 7 June 2017

Customer Contract

CUSTOMER CONTRACT

TASMANIAN WATER AND SEWERAGE CORPORATION PTY LIMITED

ACN 162 220 653

This Contract is effective from 1 July 2018

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This Contract is about the provision of water and sewerage services to you at your property.

The Contract commences without you having to sign any documentation.

The terms of the Contract are approved by the Regulator under the Act.

In addition to this Contract, the *Water Management Act 1999* (Tas) and other consumer laws also contain rules about the provision of water and sewerage services and we will comply with these rules in our dealings with you.

1 INTRODUCTION

1.1 What do words used in this Contract mean?

Terms used in this Contract have the same meanings as they have in the Act, Regulations and Code. For convenience, an explanation of some terms is given in Schedule 1 of this Contract.

2 THE PARTIES

2.1 What is a Customer Contract?

The Contract is between:

- (a) Tasmanian Water and Sewerage Corporation Pty Limited ACN 162 220 653 (**TasWater**) (in this Contract referred to as 'we', or 'us') who provides services to you, where available; and
- (b) You, the Customer to whom this Contract applies (in this Contract referred to as 'you').

2.2 Who is covered by this Contract?

You are our Customer and covered by this Contract if you are:

- (a) the owner and occupier of a property that is connected to our Infrastructure; or
- (b) the owner (but not an occupier) of a property that is connected to our Infrastructure; or
- (c) the occupier of a property that is connected to our Infrastructure and is liable for a Service Charge.

If you are the owner or occupier of a property that is not connected to our Infrastructure but to which a Service is available from us and we impose a Service Charge, you are also our Customer and covered by this Contract, except for:

- (a) clause 4 (What Water Services do we provide?) apart from clause 4.2 (New Water connections to your property);
- (b) clause 5 (What Sewerage Services do we provide?) apart from clause 5.2 (New

sewerage connections to your property);

- (c) clause 6 (Trade Waste);
- (d) clause 9 (Water Meter installation, testing and maintenance);
- (e) clause 10 (Factors affecting Service); and
- (f) clause 11 (Disconnection or restriction of Services).

2.3 Who is not covered by this Contract?

You are not a Customer under this Contract if:

- (a) we have not authorised your connection to our Infrastructure; or
- (b) we have entered into a separate agreement with you under section 61 of the Act

2.4 When does this Customer Contract commence?

- (a) Subject to the payment of any Security Deposit under clause 3 (Am I required to pay a Security Deposit?), this Contract commences on 1 July 2018.
- (b) On its commencement, this version of the Contract replaces any previous contract between you and us unless:
 - (i) you have a separate agreement with us – for example a non-standard water or sewerage agreement under section 61 of the Act – in which case that other agreement will continue to apply; or
 - (ii) prohibited by law,and any rights and liabilities that have accrued under any previous contract or agreement with us will be merged into this Contract.

2.5 How can this Contract be varied?

We may vary this contract as permitted by the Act.

3 AM I REQUIRED TO PAY A SECURITY DEPOSIT?

3.1 When can I be required to pay a Security Deposit?

In certain circumstances we may require you to pay us a Security Deposit. These circumstances are set out in the Code. We will comply with the Code and other relevant legislation in relation to the requirement for, the use of, and return of the Security Deposit.

3.2 What happens if I don't pay a Security Deposit when you ask me to?

If you do not comply with our requirement for you to pay us a Security Deposit you cannot enter into this Contract.

4 WHAT WATER SERVICES DO WE PROVIDE?

4.1 Connection to your property

As long as your property is connected to our Water Infrastructure we will deliver Water to the Connection Point, except:

- (a) in the case of an Unplanned Interruption under clause 10.1 (Unplanned Interruptions) or a Planned Interruption under clause 10.2 (Planned Interruptions); or
- (b) where a declaration has been issued under clause 10.3 (Minister's declaration) or we have determined that the circumstances in clause 10.4 (Water shortages) apply; or
- (c) where we restrict or Disconnect supply under clause 11 (Disconnection or restriction of Services); or
- (d) in the case of events beyond our reasonable control that impact our ability to provide Water to you.

4.2 New Water connections to your property

As long as your property:

- (a) has not been Disconnected by us; and
- (b) meets the requirements of connection specified in our Connection Policy,

then we will arrange and provide for a connection(s) to your property within 10 Business Days (or such later date as we both may agree).

4.3 Water Quality

Subject to clause 4.4 (Non-potable Water), clause 4.5 (Water flow rate) and your property being connected to our Water Infrastructure, we will supply Water to the Connection Point at your property in accordance with relevant warranties contained in clause 8 (TasWater Warranties).

4.4 Non-potable Water

If you are a Limited Water Quality Customer we will supply Non-potable Water to the Connection Point at your property in accordance with the relevant warranties contained in clause 8 (TasWater Warranties), subject to the Non-potable Water not being suitable for consumption:

- (a) prior to boiling the water (if the consumption of that Water is subject to a notice to boil the Water prior to consumption); or
- (b) not being suitable for consumption at all (if the consumption of that Water is subject to a notice not to consume the Water).

Prior to entering into this Contract you acknowledge and agree that we have specifically made you aware:

- (c) of the need to boil the Water prior to consuming it, or not to consume the Water at all; (as applicable) and
- (d) that you should seek and adhere to any advice issued by the Department of Health and Human Services and/or the Director of Public Health; and

you accept all risks associated with your use of the Non-potable Water.

4.5 Water flow rate

We will supply Water to your property at the Minimum Flow Rate at the meter, or if there is no meter the tap nearest the Connection Point, except:

- (a) in the case of a Planned Interruption under clause 10.1 (Unplanned Interruptions) or an Unplanned Interruption under clause 10.2 (Planned Interruptions); or
- (b) where a declaration has been issued under clause 10.3 (Minister's declaration) or where we have determined that the circumstances in clause 10.4 (Water shortages) apply; or
- (c) where we are entitled to restrict or Disconnect supply under clause 11 (Disconnection or restriction of Services); or
- (d) where Your Infrastructure does not comply with the required conditions; or
- (e) where the Act or the *Water Management Act 1999* (Tas) provides otherwise; or
- (f) where You are a Limited Water Supply Customer.

4.6 Water pressure

We will use our reasonable endeavours to supply Water to your property at a Minimum Pressure at the Connection Point.

4.7 Testing

If you believe that we are not complying with our obligations under clause 8 (Warranties) or clause 4.6 (Water pressure) you can make a request in writing to us to undertake relevant testing.

If testing indicates that we are complying with our obligations, you may be required to pay the testing costs.

4.8 Rectification after testing

If testing carried out under clause 4.7 (Testing) indicates that we are not compliant with our

obligations, we must rectify any deficiency as soon as possible, or within a time we both may agree upon.

4.9 Special Needs Customers

You should notify us if you require Service for use of a dialysis machine or for other special health reasons or special needs. If you are eligible to be classified as a Special Needs Customer, we will make all reasonable attempts to provide a water supply that meets your reasonable health needs.

If you are a Special Needs Customer you will receive advance notification of any Planned Interruption to the Water Service under clause 10.2 (Planned Interruptions). In addition, we will make reasonable endeavours to contact you as soon as possible in the event of any Unplanned Interruptions.

4.10 Breaks of our Water Infrastructure

You should notify us if you become aware that your Water Service has been affected by a Break.

4.11 Our procedures for Breaks

If a Break occurs due to a failure or fault in our Water Infrastructure, we will make reasonable endeavours to:

- (a) promptly attend the site once we have been notified; and
- (b) take action to rectify the situation, taking into account actual or potential impact on you, others affected by the failure or fault, any affected property and the environment.

Where the Break results in an Unplanned Interruption to our Water Service, we will provide information about the Unplanned Interruption through a 24 hour telephone facility, including advising the estimated restoration time.

4.12 Responsibilities for rectifying Breaks

We will fix a Break in our Water Infrastructure at our cost, but if you contribute to the Break you may be liable to pay some of those costs.

You are responsible for arranging and paying for any blockages, leaks, bursts or spills in Your Water System to be fixed by a licensed plumber or drainer.

5 WHAT SEWERAGE SERVICES DO WE PROVIDE?

5.1 Connection to your property

If your property is connected to our Sewerage Infrastructure, we will remove the Sewage from

your property at the Connection Point, except:

- (a) in the case of an Unplanned Interruption under clause 10.1 (Unplanned Interruptions) or a Planned Interruption under clause 10.2 (Planned Interruptions); or
- (b) where we restrict or Disconnect supply under clause 11 (Disconnection or restriction of Services); or
- (c) in the case of events beyond our reasonable control which impact our ability to provide Sewerage Services to you.

5.2 New sewerage connections to your property

As long as your property has not been Disconnected by us we will arrange and provide for a connection(s) to your property within 10 Business Days (or such later date as we both may agree), provided that your property meets the requirements for connection under our Connection Policy.

5.3 Supply of Sewerage Services

We will provide the Sewerage Services to the Connection Point at your property in accordance with the relevant warranties in clause 8 (TasWater Warranties).

5.4 Blockage of our Sewerage Infrastructure

You should notify us if you are aware that your Sewerage Service has been impacted by a Blockage.

5.5 Our procedures for faults in our Sewerage Infrastructure

If a Blockage occurs due to a failure or fault in our Sewerage Infrastructure, we will make reasonable endeavours to ensure that we:

- (a) promptly attend the site upon being notified; and
- (b) take action to rectify the situation taking into account potential or actual impact on you, and others affected by the failure or fault, any affected property and the environment; and
- (c) minimise the inconvenience and damage to you; and
- (d) clean up the affected area as soon as possible in such a manner to minimise the risk to human health.

Where the Blockage results in an Unplanned Interruption to our Sewerage Service, we will provide information about the Unplanned Interruption through a 24 hour telephone facility, including advising callers of the estimated restoration time.

5.6 Responsibilities for cleaning Blockages

- (a) We will fix a Blockage at our cost, but if you contribute to the Blockage you may also be liable to contribute to those costs.
- (b) You are responsible for arranging for any blockage, leak, burst or spill in Your Sewerage System to be fixed by a licensed plumber or drainer.

6 TRADE WASTE

You may only discharge Trade Waste into our Sewerage Infrastructure if you are a Category 1 Trade Waste customer or a Category 2 Trade Waste customer.

If you are a Category 1 Trade Waste customer or a Category 2 Trade Waste customer this Contract and the Consent apply to your discharge of Trade Waste to our Sewerage Infrastructure.

If the Consent deals with a matter that is not contained in this Contract then the Consent applies in relation to that matter.

The minimum acceptable means of trade waste pre-treatment for a Category 1 Trade Waste customer or a Category 2 Trade Waste customer is specified in our Commercial Trade Waste Customer Pre-treatment Guideline (available on our website at www.taswater.com.au).

In addition to the rights we have under this Contract, if you do not comply with the requirements of this Contract or the Consent, we may apply trade waste non-compliance charges contained in our Price and Service Plan depending on the level of risk that the non-compliant activity presents to us.

The Trade Waste customer listing on our website (www.taswater.com.au) provides an indicative list that existing and potential Trade Waste customers can use to self-identify their likely Trade Waste category.

7 SERVICES WE ARE NOT RESPONSIBLE FOR

We are not responsible for:

- (a) the supply, installation, commissioning, maintenance or replacement of a Backflow Prevention Device installed at the outlet of a meter where the Backflow Prevention Device is greater than 25 millimetres; or
- (b) a private fire service; or
- (c) private extension, trunk services or property service pipes from private extensions; or
- (d) Your Infrastructure or infrastructure located beyond the Connection Point (excluding the Water Meter); or

- (e) any illegal connections; or
- (f) any services installed contrary to requirements under the Act; or
- (g) the provision of facilities and parts for the repair of any goods supplied to you pursuant to this Contract.

8 TASWATER WARRANTIES

We will provide the Services:

- (a) exercising due care and skill; and
- (b) in a proper and workmanlike manner and to a standard expected of a member of the water and sewerage industry in Tasmania; and
- (c) so that the Service complies with the applicable Health Regulations; and
- (d) so that the Service complies with applicable Environmental Regulations.

9 WATER METER INSTALLATION, TESTING AND MAINTENANCE

9.1 Water Meter installation and maintenance

In addition to our rights in the Act, we will install, read, test and maintain a Water Meter at your property. In accordance with the Act, the installed Meter remains our property and we may charge you for the cost of repair or replacement of it, if you wilfully or negligently damaged the Meter.

9.2 Access to the Water Meter

We may enter your property at all reasonable times without notice for the purpose of reading, testing, inspecting, maintaining and replacing the Meter.

9.3 Water Meter readings

Where your property has a Water Meter installed and owned by us, we will measure the quantity of Water supplied to you based on the Meter reading.

10 FACTORS AFFECTING SERVICE

10.1 Unplanned Interruptions

Your Services may be interrupted in the event of:

- (a) an emergency;
- (b) a situation where we need to avert danger to any person or property.

If an interruption occurs, we will minimise the inconvenience to you and restore the Services as soon as practicable.

10.2 Planned Interruptions

If there is a Planned Interruption to the Services, we will minimise the inconvenience to you and restore the Services as soon as practicable.

Where practicable, we will provide you with two Business Days' written notice of the Planned Interruption or publish a notice in a newspaper circulating generally in the area in which it is to take place detailing:

- (a) the extent, reason and time of the Planned Interruption; and
- (b) the time at which, or circumstances, if any, when the Services will return to normal.

If you are registered with us as a Special Needs Customer then we will contact you at least four Business Days before a Planned Interruption, unless you request a longer period of notice and it is reasonable and practical for us to accommodate your request.

10.3 Minister's declaration

In accordance with the Minister's approval under the *Water Management Act 1999* (Tas), we may interrupt, limit or place restrictions on the supply of our Water Service to you if the Minister declares a water supply emergency. You must comply with our supply conditions during this time.

10.4 Water shortages

We may interrupt, limit or place restrictions on the supply of our Water Services to you, if:

- (a) there is a shortage of Water; or
- (b) for any other unavoidable cause, we are unable to supply the quantity of Water which we would otherwise supply to you; or
- (c) we believe that the reduction or restriction is necessary to avoid future Water shortages.

We will provide you written notice of interruption or publish a notice in a newspaper circulating generally in the area in which the interruption is to take place detailing:

- (a) the extent, reason and time of the interruption; and
- (b) the time at which, or circumstances, if any, when the Service will return to normal.

If you are registered with us as a Special Needs Customer then we will contact you at least four Business Days before a Planned Interruption of the supply of our Water Services to you, unless you have requested a longer period of notice and it is reasonable and practical for us to

accommodate your request.

We will make all reasonable attempts so that, so far as is reasonably practical:

- (a) if you are a Special Needs Customer, you will continue to have Services provided despite the interruption; and
- (b) any inconvenience to you is minimised; and
- (c) if you are a Special Needs Customer, the provision of Services to you and/or the resumption of your Services following the interruption, takes priority, if necessary, over the needs of other customers.

11 DISCONNECTION OR RESTRICTION OF SERVICES

11.1 Disconnection or restriction of Water supply for non-payment for non-residential premises

- (a) If your property is a non-residential premises and you:
 - (i) fail to pay your Account by the due date; and
 - (ii) have failed to make alternate arrangements for payment;we may Disconnect or restrict the supply of Water to your property in accordance with clause 11.2 (Notice of Disconnection or restriction of supply of Water for non-residential premises) and clause 11.7 (Restoration of supply after restriction or Disconnection).
- (b) We will not take action to restrict the supply of Water to your property before we give you notice under clause 11.2 (Notice of Disconnection or restriction of supply of Water for non-residential premises).

11.2 Notice of Disconnection or restriction of supply of Water for non-residential premises

- (a) If your property is a non-residential premise and you fail to pay your Account by the due date, within seven days after that due date we will send you a reminder notice. This reminder notice will be sent to you in the same manner in which accounts are sent to you under clause 12.3 (How Accounts are sent).
- (b) If you fail to pay the amount specified in the reminder notice by the due date specified in that reminder notice, we may issue you a notice of Disconnection or restriction detailing:
 - (i) the extent and reason of the proposed restriction or Disconnection; and
 - (ii) the time at which the restriction or Disconnection is to occur; and
 - (iii) the time at which, or the circumstances, if any, in which the Service will cease

to be restricted or Disconnected.

11.3 Notice of restriction of supply of Water for residential premises

- (a) We may restrict the supply of Water Services to your property if it is residential premises and you have not paid a debt due in respect of the supply of the Water Service to your property. If you fail to pay your Account by the due date, within seven days after that required due date we will send you a reminder notice in accordance with the Customer Service Code. This reminder notice will be sent to you in the same manner in which accounts are sent to you under clause 12.3 (How Accounts are sent).

11.4 Minimum Flow Rate during restriction

If we restrict the supply of Water to you, we will provide a supply of Water no less than two litres per minute at the tap nearest the Meter, or if no Meter is installed, at the tap nearest the Connection Point.

You should contact us if you believe the restriction will cause a health hazard.

11.5 Disconnections and restrictions of Services for other reasons

We may also Disconnect or restrict the supply of Services to your property, if you have requested or agreed to the Disconnection or restriction or if we suspect on reasonable grounds that you have:

- (a) committed an offence relating to safety in respect of our Infrastructure; or
- (b) committed an offence relating to illegal use of our Infrastructure; or
- (c) taken or diverted, or are taking or diverting, Water or Sewage from our Infrastructure without our authority; or
- (d) engaged in conduct that has interfered with the supply of Services to other Customers or have jeopardised the safety of our Infrastructure.

11.6 Limitations on Disconnections or restriction

Except for an Unplanned Interruption, we will not take steps to restrict or Disconnect the supply of Water to your property:

- (a) without giving you notice under clauses 11.2 (Notice of Disconnection or restriction of supply of Water for non-residential premises) and clause 11.3 (Notice of restriction of supply of Water for residential premises); or
- (b) if you registered with us as a Special Needs Customer in accordance with clause 4.8 (Special Needs Customers); or
- (c) if you are experiencing financial hardship and have entered into payment assistance

arrangements with us and you are complying with those arrangements; or

- (d) on a Friday, public holiday, weekend, day before a public holiday, or after 3.00pm; or
- (e) if we believe that the restriction or Disconnection will cause a hazard having taken into consideration the consequences of the restriction or Disconnection to health, safety, the environment and any of your concerns; or
- (f) if it is a day of total fire ban declared by the Tasmanian Fire Service in the area where your property is located.

11.7 Restoration of supply after restriction or Disconnection

When the reasons for the Disconnection or restriction no longer exist we will restore the Services as soon as practicable.

12 YOUR ACCOUNT

12.1 When will your Account be sent?

Subject to clause 13.4 (Undercharging), an Account we issue you for the Services we provide to you:

- (a) must be issued within 30 days of the conclusion of the Billing Period to which the Charges in the Account relate; but
- (b) may be issued at any time during a Billing Period to which the Charges in the Account relate.

Your Account may include:

- (a) a Variable Water Charge;
- (b) a Fixed Sewerage Charge;
- (c) a Fixed Water Charge;
- (d) Trade Waste Charges;
- (e) any other Charges set out in our Price and Service Plan;
- (f) a Service Charge.

Some of our Charges may be imposed in advance.

Some of our Charges are subject to GST.

12.2 What information is on your Account?

Your Account will state:

- (a) the date the Account was issued;

- (b) your name, billing address and Account Number;
- (c) the address of your property and the Billing Period to which the Charges in the Account relate;
- (d) if a Water Meter is installed at your property, the details of any Water Meter reading (whether it is a Special Meter Reading or not) to which the Account relates, including the Meter registration number and the date the Water Meter was read, or if the reading is an estimation, a clear statement that the reading is an estimation;
- (e) if a Water Meter is installed at your property, the average daily rate of water use at the property to which the Account relates; and
- (f) if your property is a residential premises, a graphical illustration of your current water usage. If the data is available, the graphical illustration will include your usage for each Billing Period over the past 12 months and a comparison of your usage for the same period in the previous year;
- (g) the total amount of money you are required to pay, with each Charge payable under this Contract separately itemised on the Account;
- (h) the date by which you are required to pay the Account;
- (i) the options for payment that are available to you;
- (j) the services and options that we are able to offer you if you are experiencing financial difficulties;
- (k) details of our Enquiry facility, including a 24 hour service difficulties and faults telephone service number;
- (l) interpreter services we offer;
- (m) any outstanding credit or debit from previous Accounts;
- (n) any payments made by you to us since the previous Account was issued;
- (o) any available concessions and discounts and any concession or discount you are entitled to;
- (p) any adjustments that have been made to the amount otherwise owed in respect of the Account, including refunds, underpayments, concessions and discounts;
- (q) information about any interest that may be charged on any outstanding amount on your Account, including the applicable rate of interest and the date from which interest may be applied; and
- (r) the amount you are required to pay for the previous Billing Period in respect of the

property.

12.3 How Accounts are sent

You may nominate, in writing, a postal address or, alternatively, an email address to which your Account should be sent.

If you have provided us with an email address, you agree that we will send your Account to that address unless you request otherwise.

If you have not provided us with an email address, we will send your Account to the postal address of the property to which the Charges relate, or your last known postal address.

Your Account will be considered delivered to you if it is sent by one of those means outlined above.

12.4 How payments can be made

You may pay your Account by any of the following methods:

- (a) direct debit;
- (b) electronic means;
- (c) mail;
- (d) in person at a network of agencies or payment outlets;
- (e) through a facility provided by a provider of income support (if any).

You can also choose to elect to pay your Account in advance, including periodic payments in advance, using any of the above payment methods.

13 WHAT YOU PAY

13.1 Responsibility to pay the Account

You must pay us the amount of your Account by the due date specified, unless the amount is in dispute and has not been resolved in accordance with our Complaints, Enquiries and Disputes Management Policy, available on our website at www.taswater.com.au.

13.2 Concessions

- (a) You may be entitled to a concession pursuant to the *Water and Sewerage Industry (Community Service Obligation) Act 2009* (Tas). You must apply to us for the concession and establish your eligibility.
- (b) If you are eligible, we will ensure that the concession is granted from the date on which your application for concession was lodged and you must pay your Account less

the concession.

- (c) To obtain information on whether you are eligible see our website (www.taswater.com.au) or contact us.

13.3 Overdue Account balances

We may charge you interest at the Reference Rate on overdue Account balances.

The interest will accrue on a daily basis and will be calculated by applying the Daily Rate to the amount outstanding commencing on the day after the due date of your Account until the overdue amount is paid in full (with both days inclusive).

If not paid by you, interest will capitalise every 90 days. Unless payment is accepted by us on other terms, any part payment by you of an outstanding amount will go to reduce the amount of interest first.

13.4 Undercharging

If you have been undercharged as a result of our error, we may (except in the case of Fraud) adjust your next Account to recover the undercharged amount if:

- (a) the amount to be recovered is limited to the amount undercharged in the 12 months prior to us first becoming aware that you had been undercharged; and
- (b) the amount to be recovered is listed as a separate item on your next Account issued after we become aware of the undercharge, or on an Account specific to the undercharged amount and issued to you other than as part of a regular sequence of Accounts; and
- (c) an explanation is provided by us on your Account referred to in clause 13.4(b) as to how the undercharging occurred and how the amount owing has been calculated; and
- (d) we allow, where the total period in which you were undercharged was a period of 30 days or less, for you to pay the amount to be recovered over a 30 day period, which ends not less than 30 days after the day on which the Account, referred to in clause 13.4(b), is sent to you; and
- (e) we allow, where the total period in which you were undercharged was a period of more than 30 days, you to pay the amount to be recovered over a time period at least equal to that period in which undercharging occurred, up to a maximum of 12 months and beginning on the day on which the Account, referred to in clause 13.4(b), is sent to you; and
- (f) we allow you to pay the amount to be recovered through our flexible payment plan in accordance with clause 15.2 (Flexible payment plans).

13.5 Overcharging

If you have been overcharged due to our error, we will:

- (a) inform you within 10 Business Days of becoming aware that you have been overcharged; and
- (b) refund you the amount overcharged, together with any interest payable, in accordance with any reasonable instructions which you provide to us.

Where we receive no reasonable instructions for refund from you, then we will credit the amount overcharged, together with any interest payable, to your next Account.

The applicable interest rate we will pay on a refund on an overcharged amount is the Reference Rate.

The interest will accrue on a daily basis and will be calculated by us by applying the Daily Rate to the amount you have been overcharged. If not paid to you, interest will capitalise every 90 days.

Where interest is paid by us on a refund to you of an overcharged amount, interest will accrue from the date we received payment of the amount overcharged to the date we refund to you that amount or the date we credit the amount overcharged to your Account in full.

14 THE AMOUNT THAT WE CHARGE YOU

14.1 How are prices determined?

The Regulator has approved our Charges in its Price Determination as set out in our Price and Service Plan.

14.2 How are our charges varied?

Our Charges may vary for each financial year as set out in our Price and Service Plan.

14.3 Other fees and charges

- (a) We may only charge you up to the maximum amount for a number of miscellaneous fees as set out in our Price and Service Plan.
- (b) We may also charge you other fees, charges and amounts where we are entitled to do so under the Act or in the event any tax, levy or duty is imposed or passed onto us by any Government, including without limitation GST, carbon tax, or an environmental tax or any similar tax, levy or duty.

14.4 Dishonoured or declined payments

If payment of your Account is dishonoured or declined, we may recover from you an amount

charged by our financial institution. We may include this amount in the next Account issued to you, or where we are not going to send you another Account, in an Account sent to you otherwise than as part of a regular sequence of Accounts.

15 WHAT CAN YOU DO IF YOU ARE UNABLE TO PAY YOUR ACCOUNT

15.1 Are you experiencing financial hardship?

If you are experiencing financial hardship you should contact us and we will provide you with information about the options available to assist you under our Financial Hardship Policy.

15.2 Flexible payment plans

- (a) Subject to clause 15.3 (Eligibility for flexible payment plans), we will offer you a flexible payment plan having regard to your capacity to pay and the pattern of your consumption of Services.
- (b) Our flexible payment plan will:
 - (i) include how the total amount to be paid has been calculated; and
 - (ii) confirm the period over which you will pay the agreed amounts; and
 - (iii) specify the amount to be paid in each instalment; and
 - (iv) be able to be renegotiated at your request if there is a demonstrable change in your financial circumstances; and
 - (v) enables you and us, by agreement, to adjust the instalments required to be paid to account for the liability arising from consumption of Water or Sewage Services after the flexible payment plan has been entered into, if instalments are over a period of more than three months; and
 - (vi) be confirmed in writing to you prior to, or as soon as practicable after, the flexible payment plan commences.

15.3 Eligibility for flexible payment plans

We are not required to offer to enter into a flexible payment plan with you if:

- (a) within the previous 12 month period you have entered into more than two flexible payment plans with us and failed, without reasonable excuse, to comply with any or all of the terms and conditions of the flexible payment plans; or
- (b) you have entered into more than three flexible payment plans with us and failed, without reasonable excuse, to comply with any or all of the terms and conditions of the flexible payment plans.

15.4 Term of your flexible payment plan

Your flexible payment plan commences when you make your first payment to us and continues until the plan is completed.

16 YOUR RESPONSIBILITIES

16.1 Your Water System

The property owner is responsible for maintaining all of the pipes and fittings between our Water Infrastructure and the building and/or taps on the property and any damage caused by the failure of their Water System. If your property has a connection to our Water Infrastructure that is 25 millimetres or greater, you must supply, install, commission, maintain, and if required repair and/or replace a Backflow Prevention Device that is approved by us on Your Water System. For the avoidance of doubt the Backflow Prevention Device will be owned by you.

16.2 Your Sewer System

The property owner is responsible for maintaining all sewer pipes and fittings within the property up to the Connection Point.

16.3 Altering and unauthorised connection or use

You must not wrongfully:

- (a) take, use or divert any Water supplied by us; or
- (b) interfere with the operation of a Meter or prevent it from registering the quantity of Water supplied by us; or
- (c) discharge any substance into a System owned by us.

You must obtain our consent before carrying out any activity that may cause destruction of, damage to, or interference with our System.

16.4 Leaving, selling, or leasing your property

You must notify us at least five days before you vacate, sell or lease your property to another person.

17 LIABILITY

17.1 Conditions and warranties of the Contract

Except as otherwise provided in this Contract or prohibited by law, all other terms, conditions, or warranties implied by law (except those statutory guarantees implied pursuant to the

Australian Consumer Law), custom, or usage are excluded.

Despite any other provision of this Contract, nothing in this Contract is to be read as excluding, restricting or modifying the application of the Australian Consumer Law which cannot be excluded, restricted or modified.

Notwithstanding any other provision of this Contract, our liability, if any, for anything arising out of or in connection with the provision of any Service under this Contract (including a breach of a guarantee or warranty implied by the Australian Consumer Law in relation to the supply of any Service, not of a kind ordinarily acquired for personal, domestic or household use or consumption) is limited, at our option, to:

- (a) the supplying of the Service again; or
- (b) the payment of the cost of having the Service supplied again.

Notwithstanding any other provision of this Contract, our liability, if any, for anything arising out of or in connection with the supply of goods under this Contract (including a breach of a guarantee or warranty implied by any law (including any Legislative Requirements), except for any guarantee or warranty implied by sections 51, 52 or 53 of the Australian Consumer Law, in relation to the supply of any goods, not ordinarily acquired for personal, domestic or household use or consumption) is limited, at our option, to:

- (a) the replacement of the goods or the supply of equivalent goods;
- (b) the repair of the goods, however we cannot provide facilities and parts for the repair of any goods supplied to you by us pursuant to this Contract;
- (c) the payment of the cost of replacing the goods or of acquiring equivalent goods; or
- (d) the payment of the cost of having the goods repaired.

18 WHEN DOES MY CONTRACT TERMINATE?

18.1 Termination of this Contract

This Contract will terminate if you cease to be covered as described in clause 2.2 (Who is covered by this Contract?) for any reason.

The termination of this Contract does not affect any of your or our rights or obligations that accrue prior to termination.

19 WHAT CAN YOU DO IF YOU ARE NOT HAPPY WITH OUR SERVICES?

19.1 Complaints

If you are not satisfied with the solution offered or action taken by us, which includes if you believe the Water Meter is not accurate, you may make a complaint in accordance with our Complaints, Enquiries and Disputes Management Policy, which is available on our website at www.taswater.com.au.

20 PRIVACY

We will treat your personal information in accordance with our obligations under the *Personal Information Protection Act 2004* (Tas) and the *Privacy Act 1988* (Cth).

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SCHEDULE 1 – DEFINITIONS

Account means an account as defined in the *Water and Sewerage Industry (Customer Service Standards) Regulations 2009* (Tas).

Account Number means the number assigned to record your use of a Service provided by us and debits and credits in respect of the property.

Act means the *Water and Sewerage Industry Act 2008* (Tas).

Australian Consumer Law means the law as set out in Schedule 2 of the *Competition and Consumer Act 2011* (Cth).

Australian Drinking Water Guidelines means the current version of the Australian Drinking Water Guidelines published by the National Health and Medical Research Council.

Backflow Prevention Device means protection against the reverse flow of liquid within a piped plumbing system which could cause contaminants being drawn into our Water Infrastructure.

Billing Period has that same meaning as in the *Water and Sewerage Industry (Customer Service Standards) Regulations 2009* (Tas).

Blockage means a block, leak, burst or spill in our Sewerage Infrastructure.

Break means a block, leak, burst or spill in our Water Infrastructure.

Business Day means a day that is not a Saturday or a Sunday or a public holiday or a statutory holiday as defined in the *Statutory Holidays Act 2000* (Tas) in Hobart.

Category 1 Trade Waste customer means a customer discharging low volume and low impact Trade Waste which is minimal risk to the Sewerage Infrastructure and can be managed through cleaner production methods and/or the installation of pre-treatment devices approved by us.

Category 2 Trade Waste customer means a customer discharging low to medium volume and low impact Trade Waste which requires installation of a pre-treatment system approved by us at the source to make it acceptable for discharge to the Sewerage Infrastructure, and includes those customers in subcategories 2A, 2B and 2C as set out in our Price and Service Plan.

Charge includes the charges set out in clause 12.1 (When will your Account be sent?), a one-off fee or charge, a Volumetric Charge, a fee that is payable periodically, a scale of fees or charges and an amount of money determined using a method of calculation or by application of a policy.

Connection Point means the point at which your pipes connect with the Water Infrastructure or Sewerage Infrastructure or such other point as may be prescribed in the Regulations made and in force under the Act.

Connection Policy means the policy developed by us pursuant to section 56U of the Act which

forms part of our Price and Service Plan.

Consent means the specific terms and conditions that must be complied with in order for us to accept discharge of Trade Waste to our Sewerage Infrastructure from Category 1 Trade Waste customers or Category 2 Trade Waste customers specified in Schedule 2, in addition to any general terms and conditions of this Contract that are not inconsistent with those terms and conditions.

Contract means this document and includes any schedules, appendices and annexures to this Contract.

Customer means a person referred to in clause 2.2 (Who is covered by this Contract?).

Daily Rate means the Reference Rate plus 6% divided by 365 (or 366 during a leap year).

Disconnect means to physically prevent the flow of Water or Sewage.

Enquiry means a written or verbal approach you make which can be satisfied by us providing written or verbal information, advice, assistance, clarification, explanation or referral about a matter.

Environmental Regulations means requirements under the *Environmental Management and Pollution Control Act 1994* (Tas) and associated legislation.

Financial Hardship Policy means a financial hardship policy required under the *Water and Sewerage Industry (Customer Service Standards) Regulations 2009* (Tas).

Fixed Sewerage Charge means a recurrent charge for the provision of a regulated Sewerage Service to a Customer but not including a variable charge or a Trade Waste Charge.

Fixed Water Charge means a recurrent charge for the provision of a regulated Water Service to a Customer but not including a variable charge.

Fraud means dishonest activity causing actual or potential financial loss to us including but not limited to theft of money or property. Fraud usually involves deception including the deliberate falsification, concealment, destruction or use of falsified documentation or the improper use of information or position. The theft of property belonging to us but where deception is not used is also considered fraud. The concept of fraud can involve fraudulent or corrupt conduct by internal or external parties targeting us or fraudulent or corrupt conduct by us itself targeting external parties.

GST means goods and services tax within the meaning of the GST Act.

GST Act means *A New Tax System (Goods and Services Tax) Act 1999* (Cth).

Health Regulations means the regulation of health, public safety and monitoring with respect to the supply of drinking Water by the Director of Public Health, the *Public Health Act 1997* (Tas), the *Fluoridation Act 1968* (Tas) and associated subordinate legislation.

Infrastructure means Water Infrastructure or Sewerage Infrastructure.

Limited Water Supply Customer means a Customer that:

- (a) is connected to a Water main that periodically does not contain Water under positive pressure; or
- (b) has a connection designed to provide low or intermittent flow, such as where the Customer has been required to install, operate and maintain an individual tank or pump; or
- (c) is connected to a non-reticulation Water main that is subject to significant pressure variations due to either:
 - (i) a pumped supply where the low pressure is below 50kPa and the high pressure is above 500kPa; or
 - (ii) an inlet supply to a trunk reservoir such that when the reservoir inlet valve is open the pressure is below 50kPa; or
 - (iii) receiving a supply of Water that we determine to be inadequate.

Limited Water Quality Customer means a Customer receiving Water from a supply which has a permanent boil Water alert in place or a Customer receiving Non-potable Water from a supply that we have declared to be non-potable.

Meter has the same meaning as defined the Act.

Minimum Flow Rate means the Water flow rate as detailed in our Price and Services Plan.

Minimum Pressure means the minimum pressure as detailed in our Price and Service Plan.

Minister means the Minister for Primary Industries, Parks, Water and Environment.

Non-potable Water means Water that, on the basis of both health and aesthetic considerations, does not comply with the health guideline values contained in the Australian Drinking Water Guidelines and is therefore not suitable for drinking or culinary purposes.

Occupier has the same meaning as defined the Act.

Owner has the same meaning as defined the Act.

Planned Interruption, in relation to a property has the same meaning as defined in the *Water and Sewerage (Customer Service Standards) Regulations 2009* (Tas).

Price and Service Plan means our price and service plan approved by the Regulator under section 65 of the Act.

Price Determination means the Regulator's Price Determination for the period 1 July 2018 to 30 June 2021 published on 30 April 2018.

Reference Rate refers to the to the monthly 90-day bank accepted bill rate published by the Reserve Bank of Australia. The rate to apply in each quarter is the rate for the second month preceding the start of each new quarter. The reference rate will apply from the first Business Day of each new quarter up to and including the last business day of that quarter. The reference rate for the next quarter must be published on our website two weeks before the start of that quarter.

Regulation means any regulation pursuant to statute and includes the *Water and Sewerage Industry (General) Regulations 2009* (Tas).

Regulator means the Tasmanian Economic Regulator within the meaning of the *Economic Regulator Act 2009* (Tas).

Security Deposit means an amount not greater than 37.5 per cent of your annual bill, based on your previous billing history or the average use of a comparable Customer over a comparable period.

Service means the provision of a Water Service or a Sewerage Service by us.

Service Charge means a charge levied on a Customer under section 68A of the *Water and Sewerage Industry Act 2008* (Tas) in relation to a property which may be connected or unconnected to either Water Infrastructure or Sewerage Infrastructure.

Sewage means the waste matter which passes through sewers and includes Trade Waste.

Sewerage Infrastructure has the same meaning as defined the Act.

Sewerage Service has the same meaning as defined the Act.

Sewerage System has the same meaning as defined the Act.

Special Needs Customer means a Special Needs Customer as determined by us or the Regulator as having special needs in accordance with clause 4.8 (Special Needs Customers) of this Contract.

System means our Water Infrastructure or Sewerage Infrastructure.

Trade Waste has the same meaning as defined the Act.

Trade Waste Charge means a recurrent charge for the acceptance of Trade Waste from a Customer but does not include a Fixed Sewerage Charge.

Unplanned Interruption has the same meaning as defined in the *Water and Sewerage (Customer Service Standards) Regulations 2009* (Tas).

Variable Charge means a charge, for a regulated service, that varies according to the volume of the water delivered to, or sewage removed from, the property to which the charge relates.

Water has the same meaning as defined the Act.

Water Infrastructure has the same meaning as defined the Act.

Water Service has the same meaning as defined the Act..

Water System has the same meaning as defined the Act.

We, our or us means TasWater its officers, employees, agents and contractors.

Your Infrastructure means Your Sewer System and Your Water System.

Your Sewer System is defined in clause 16.2 (Your Sewer System).

Your Water System is defined in clause 16.1 (Your Water System).

You means a person who is a Customer.

INTERPRETATION

In this Contract, the following interpretations apply:

- (a) A reference to:
 - (i) one gender includes the others;
 - (ii) the singular includes the plural and the plural includes the singular;
 - (iii) a person includes a body corporate;
 - (iv) a party includes the party's executors, administrators, successors and permitted assigns;
 - (v) a statute, regulation or provision of a statute or regulation (**Statutory Provision**) includes:
 - (vi) that Statutory Provision as amended or re-enacted from time to time;
 - (vii) a statute, regulation or provision enacted in replacement of that Statutory Provision; and
 - (viii) another regulation or other statutory instrument made or issued under that Statutory Provision; and
 - (ix) money is to Australian dollars, unless otherwise stated.
- (b) "Including" and similar expressions are not words of limitation.
- (c) A reference to a clause or schedule is a reference to a clause of or a schedule to this Contract.
- (d) A reference to a Contract or document (including, without limitation, a reference to this Contract) is to this Contract or document as amended, novated or replaced.
- (e) Where a word or expression is given a particular meaning, other parts of speech and grammatical forms of that word or expression have a corresponding meaning.
- (f) Headings and any table of contents or index are for convenience only and do not form part of this Contract or affect its interpretation.
- (g) A provision of this Contract must not be construed to the disadvantage of a party merely because that party was responsible for the preparation of this Contract or the inclusion of the provision in this Contract.

- (h) If an act must be done on a specified day which is not a Business Day, it must be done instead on the next Business Day.
- (i) If there is any inconsistency between this Contract and any law, the law will prevail to the extent of the inconsistency.

DRAFT

SCHEDULE 2 - CONSENT

Conditions

1. Non-Acceptance of Trade Waste

You must not discharge any substances that do not comply with the Regulation, the Act, any other law, this Consent because conditions of this Consent have not been met or otherwise; or that are:

- (a) flammable and/or explosive substances;
- (b) radioactive substances (other than in accordance with the Radiation Protection Act 2005);
- (c) infectious wastes such as medical, clinical, veterinary or other
- (d) pathological wastes that may pose a threat to human health;
- (e) genetically engineered organisms;
- (f) persistent and/or toxic substances;

2. Pre-treatment

- (a) Where you are a Category 2 Trade Waste Customer you must have installed Pre-treatment Equipment to pre-treat and manage the Trade Waste from your property before it's discharged to our Sewerage Infrastructure.
- (b) This Pre-treatment equipment:
 - (i) can be existing, where it is accepted by us; or
 - (ii) can be new Pre-treatment Equipment as accepted by us, including requirements regarding the dates for installation and operation;
 - (iii) must be designed, installed and operated as per legislative requirements and manufacturers specifications;
 - (iv) design and specification documentation must be provided to our satisfaction if requested by us; and
 - (v) must be modified, replaced or repaired as directed by us if it is apparent to us it is inadequate, outdated, faulty or requires replacement.

3. Maintenance

- (a) All Pre-treatment Equipment, together with any other plant or infrastructure associated with the Trade Waste, must be maintained in good and efficient working order to our satisfaction.
- (b) Where specific Maintenance requirements for Pre-treatment Equipment are required by us, those requirements must be complied with.
- (c) Trade waste residues removed from any part of the Property must be disposed of in accordance with the law and to our satisfaction.
- (d) Records of Maintenance and cleaning of Pre-treatment Equipment, including the dates and methods of disposal of Trade Waste residue, must be made on a continuous basis, kept for a period of not less than 3 years after they are made and provided (upon request) to us.

4. Monitoring

- (a) You must conduct Monitoring at the relevant locations required by us, with any equipment and in accordance with any other requirements, we require.
- (b) We may from time to time; direct you to undertake new, additional or modified Monitoring and you must comply with any such direction.
- (c) You must maintain records of Monitoring in accordance with our direction.
- (d) The results of the analysis must be submitted to TasWater within one week of the results being received. All laboratory results and flow volumes, if required, are to be submitted as requested by us.

Schedule 2 - Consent

5. Inspection

You will allow a water and sewerage officer access to your property generally, and;

- (a) any Pre-treatment Equipment and any works associated with the creation, treatment, conveyance and discharge of Trade Waste;
- (b) any records, samples or other information relating to the maintenance or monitoring;
- (c) to take further samples or carry out inspections as we think fit. Additionally a water and sewerage officer must be given all assistance that is reasonably requested and must not be impeded by any person at the property.

6. Directions of Corporation

You must comply with any written or verbal notice or direction from us in accordance with the rights and obligations under the customer contract. In this Consent, any reference to a notice or direction to be given by us or any power, right or discretion expressed in favour of us, will be effectively given or exercised by any officer, employee or agent of us and must be complied with by you.

7. Customer must Notify

You must give not less than 30 days' written notice to us of any of the following events:

- (a) any change to the business conducted which may materially affect the Trade Waste discharge;
- (b) any intended change to the method of Pre-treatment;
- (c) any proposed transfer, sale or closure of the business or any proposal to cease possession of any part of the Premises;

8. Significant events

You must notify us as soon as practicable by telephone and then in writing within 48 hours, of the happening of any of the following events:

- (a) any major breach of this Consent;
- (b) any event which has already, or is likely to, cause material or detrimental impact to human health, the environment generally, property, or the Sewerage Infrastructure; and
- (c) that written notice must include details of the cause of the event, remedial actions that have or will be taken, together with actions proposed to ensure that the risk of the event occurring again is addressed, all to our satisfaction.

9. Powers and Obligations

- (a) Where obligations are imposed on you, you must ensure that any officer, employee, agent or any other party associated with you, complies with such obligations and any failure to comply by such other party will constitute a breach of this Consent by you.
- (b) This Consent will not operate to limit or fetter in any way, any power, right or discretion we have arising under the Act, Regulation or any other law.

10. Definition/Terminology

"Act" means the Act as defined in the Contract.

"Consent" means Consent as defined in the Contract.

"Maintenance" means any maintenance to be undertaken by you pursuant to the Consent.

"Monitoring" means any Monitoring to be undertaken by you pursuant to the Consent.

"New Pre-treatment Equipment" means any new Pre-Treatment Equipment specified by us to be installed by you.

"Pre-treatment" means any actions or works to be undertaken by you in respect of treating or managing of Trade Waste prior to its discharge.

"Regulation" means Regulation as defined in the Contract

Particulars of Consent

Section 1	Consent Details		
TasWater Ref:	Trade Waste Number	Install No.	Gentrack Installation No.
Type of Business:	Café/Restaurant	Trade Waste Code	eg MP01
Customer Category:	2A		
Issue Date:	1 July 2015		

Section 2	Property Details (Property from which trade waste is discharged to sewer)		
Property Address:			
	Suburb		Post Code

Section 3	Trade Waste Customer (Property Owner)		
Name(s):			
Property Address:			
	Suburb		Post Code
Contact Numbers:	(H)	(B)	(M)
Email:			

Section 4	Trade Waste Business Details		
Business Name(s):			
Postal Address:			
	Suburb		Post Code
Contact Numbers:	(H)	(B)	(M)
Email:			

Section 5	Consent to Discharge	
	This Consent authorises the Customer to discharge trade waste into the sewerage infrastructure of the corporation strictly in accordance with: <ul style="list-style-type: none"> The conditions of this consent All details and requirement set out in Schedule 1. 	
	Authorised Delegate for and on behalf of the corporation	
	Signature:	
	Name:	
	Title:	

Part 1	Trade Waste Charges			
Trade Waste Tariff:	Trade Waste Category	Financial Year		
		2015/16	2016/17	2017/18
	1			
	2A			
	2B			
	2C			

Part 2	Existing Pre-Treatment					
	Device	<i>Fox First Flush Stormwater Diversion System</i>	Capacity	N/A	Identifier	
	Device	<i>Holding Tank (underground)</i>	Capacity	3000L	Identifier	
	Device	<i>Clearmake Oil Water Separator</i>	Capacity	1000L/Hr	Identifier	12180
	Notes	<i>*Diversion system treats 250m² unroofed areas of site used for storing vehicles</i>				

Part 3	New Pre-Treatment Requirements			
	The owner must install a pre-treatment devices as specified in this table. Within the timeframe (date of Commissioning) specified by TasWater.			
	Device		Capacity	
	Device		Capacity	
	Device		Capacity	
	Deadline for installation and Commissioning of new Pre-treatment System			

Part 4	Maintenance Requirements		
	Pre-Treatment Equipment must be maintained in good working condition according to manufacturer's specification and be cleaned/serviced at no less than the intervals specified below. Material removed from devices during cleaning must be disposed of legally.		
	Device	<i>First Flush Stormwater Diversion System</i>	Frequency 52 weeks
	Device	<i>Holding Tank (underground)</i>	Frequency 26 weeks
	Device	<i>Clearmake Oil Water Separator</i>	Frequency
	Documentation of waste removal and cleaning of Pre-Treatment Equipment must be kept in accordance with the conditions of consent.		
	Special Conditions		

Appendix 6: Water and sewerage network and charges policies

Water and Sewerage Network and Charges Policies

1 July 2018



Policy approval and Responsibilities

The Chief Executive Officer of TasWater is responsible for implementing these policies.

Approved by the Board at its meeting on of 2018.

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Chairman

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1 Introduction

This document provides details on our policies and charges regarding water and sewerage connections to our network.

Information regarding land development, including developer charges, can be found in our *Land Development Policies* document.

This document incorporates a number of policies required by the Act, *Water and Sewerage Industry (Pricing and Related Matters) Regulations 2011* and by the Tasmanian Economic Regulator in connection with our Price and Service Plan for the period 2018-21.

These policies and information include:

- Connections
- Serviced land description
- Sub-metering
- Service charges and
- Service introduction charges

In addition, this document contains the Conditional Connections – Connections outside serviced land policy, which is not required under the legislative framework. This policy, at section 6, outlines the circumstances and conditions under we will consider connections to property titles that do not meet the requirements of the Connection Policy.

1.1 Further Information

For further information about these policies and how they apply to your circumstances, please contact us on 13 6992 or enquiries@taswater.com.au.

1.2 Relevant Legislation

- *National Measurement Act 1960*
- *Strata Titles Act 1998*
- *Water and Sewerage Industry Act 2008* (the Act)
- *Water and Sewerage Industry (Community Service Obligation) Act 2009*
- *Water and Sewerage Industry (Pricing and Related Matters) Regulations 2011*

1.3 Customer Charter

The Customer Charter explains our obligations consistent with the requirements under the Act and the Customer Service Code issued by the Regulator. It also outlines the rights and responsibilities of our customers and our commitment to providing reliable water and sewerage services. It explains our business practices and provides the customer with reasonable expectations around our services, pricing, processes and responsibilities.

2 Connections to Our Water and Sewerage Network

2.1 Aim

The aim of this section is to specify the circumstances that must be met for us to permit an owner of land to connect, relocate or adjust the owner's connection to our water or sewerage infrastructure.

2.2 Exclusions

This section does not cover situations where:

- The property is contained in a title that is outside our serviced land; or
- The property is contained in a title that is within our serviced land but is being subdivided; or
- There is a change in land use relating to the property contained in a relevant title within our serviced land.

2.3 Connection to our water infrastructure and/or sewerage infrastructure

We will connect a property to our water infrastructure and/or sewerage infrastructure if the following criteria are met:

- The person requests us to connect the property to the infrastructure; and
- The land title is within 30 metres of the infrastructure and for water services, can be supplied with treated water; and
- The physical characteristics or location of the land title are not such as to require the application of unusual or unusually costly infrastructure, design, or installation techniques in order for the connection to be made by us; and
- The connection does not cross property owned by a third party; and
- No plan of subdivision, other instrument, or other instrument of a type approved by us, specifies that connection to our infrastructure, or provision of regulated services by us will not occur; and
- The property will receive the minimum pressure and flow at the connection as described in the Supplement (available on our website at www.taswater.com.au); and
- The person has complied with all reasonable terms and conditions of connection imposed by us; and
- A land title has been issued or consent received from the landowner; and
- If necessary, a Certificate for Certifiable Work has been issued; and
- An Application for Water and Sewerage Connections form has been submitted to us by the applicant and completed to our satisfaction; and
- The applicant has paid, or has agreed in writing to pay, all applicable fees and charges.

If these requirements are met we will connect the property within 10 business days or such later date as agreed.

2.4 Relocation of a connection to our water infrastructure and/or sewerage infrastructure

We will permit an owner of land to relocate a water or sewerage connection on that land if the following criteria have been met:

- The person requests the relocation of the connection to the infrastructure; and
- The relocation will not result in our infrastructure crossing property owned by a third party; and
- A Certificate for Certifiable Work has been issued; and
- The property will receive the minimum pressure and flow at the connection as described in the Supplement; and

- The person has complied with all reasonable terms and conditions of connection imposed by us; and
- An Application for Water and Sewerage Connections form has been submitted by the applicant to us and completed to our satisfaction; and
- The applicant has paid, or has agreed in writing to pay, all applicable fees and charges.

2.5 Adjustment of a connection to our water infrastructure and/or sewerage infrastructure

Adjustment includes downsizing and/or disconnection of a standard water connection and disconnection of a standard sewerage connection. We will permit an owner of land to adjust a connection on that land if the following criteria have been met:

- The person requests the adjustment to the connection to the infrastructure; and
- The adjustment will not result in our infrastructure crossing a land title owned by a third party; and
- A Certificate for Certifiable Work has been issued; and
- The land title will receive the minimum pressure and flow at the connection as described in the Supplement; and
- The person has complied with all reasonable terms and conditions of connection imposed by us; and
- An Application for Water and Sewerage Connections form has been submitted by the applicant to us and completed to our satisfaction; and
- The applicant has paid, or has agreed in writing to pay, all applicable fees and charges.

2.6 Connection, Relocation and Adjustment Costs

Costs for the water and sewerage works component of connections, relocations of connections and adjustments of connections are detailed in our Price and Service Plan approved by the Regulator, provided in section 9 and available on our website at www.taswater.com.au. These are in addition to any other fees and charges applicable under the Price and Service Plan, including:

- Recurrent fixed charges and volumetric consumption charges in respect of the provision of water services and/or sewerage services to the property; and
- Relevant development assessment fees.

2.7 Other connections

In addition to standard connections, we may permit other types of connections to our network, including new land development. Additional charges and fees may apply for these connections. Refer to the relevant policy for more information.

Land development

New developments have the potential to increase demand on the capacity of our water infrastructure and sewerage infrastructure. Our *Land Development Policies* document provides details on how we support and manage development.

New services to existing localities

We will consider requests for the introduction of water and/or sewerage services to existing localities in accordance with section 7.

Connections outside serviced land

Under limited circumstances we will permit connections to our network outside serviced land. The considerations and assessment criteria for these connections are outlined in section 6.

3 Our Serviced Land

3.1 Background

Section 56U(1)(b) of the Act requires our price and service plans to include a description of the land, identifiable by individual title or locality, that we will permit to be connected to our water or sewerage infrastructure. This is the description of “serviced land”.

We have identified serviced land using individual land titles that meet the requirements of section 2.3.

3.2 Description of Serviced Land – Water

We identify serviced land based on servicing factors and the standards in the Supplement (available on our website www.taswater.com.au). The Supplement details our minimum service pressure at peak hour demand and minimum flow rate:

- Minimum service pressure at the connection point is 220kPa, static head of 22m (section 2.5.3.3)
- Minimum flow rate 15 litres/minute (L/m) at the connection point (section 2.12).

Land titles are defined as being as water serviced land when they meet all of the following criteria:

- Can be supplied with treated water; and
- Are within 30 metres of our water reticulation main; and
- Can receive the minimum flow and pressure at the connection point; and
- Connection to our reticulation main would not cross a land title owned by a third party; and
- The physical characteristics or location of the land title are not such as to require the application of unusual or unusually costly infrastructure, design, or installation techniques in order for the connection to be made.

Treated water means either fully treated water or disinfection only water supplies. Raw water supplies are excluded. Customers in serviced land receiving water that is not safe for drinking will receive a discount on the regulated variable consumption rate.

Land titles that do not meet the criteria listed above are unserviced for water.

Existing or new connections that receive untreated water (raw water) or directly connected to a bulk transfer main are connections outside our serviced land and are dealt with in accordance with section 6.

3.3 Description of Serviced Land – Sewer

We have a range of sewerage infrastructure around the state depending on local conditions and topography.

Land titles are defined as being as sewer serviced land when they meet all the following criteria:

- Are within 30 metres of our sewer reticulation main; and
- Connection to our reticulation main would not cross a land title owned by a third party; and
- The physical characteristics or location of the land title are not such as to require the application of unusual or unusually costly infrastructure, design, or installation techniques in order for the connection to be made by us; and
- Are not otherwise considered unserviced land in accordance with section 3.4 below.

Land titles that do not meet the criteria listed above are unserviced for sewer.

3.4 Unserviced land

Unserviced land is land, identified by land title, which is not within serviced land. We do not have any obligation to provide a connection to titles that are outside serviced land.

Pressure sewer schemes established before 1 July 2015 are defined as unserviced land. Table 1 below lists indicative areas.

Section 6 of this document and our *Land Development Policies* document each outline the circumstances when we will consider allowing unserviced land to connect to our networks.

Table 1: List of pressure sewer schemes established before 1 July 2015 (indicative only)

Area	Type of system
Bell Buoy Beach	Pressure sewer scheme with privately owned pump stations
Boat Harbour	Pressure sewer scheme with TasWater-owned pump stations
Dunalley (near Dunalley Hotel)	Pressure sewer scheme with TasWater-owned pump stations
Lauderdale	Pressure sewer scheme with TasWater-owned pump stations
Low Head	Pressure sewer scheme with privately owned pump stations
Wynyard	Pressure sewer scheme with TasWater-owned pump stations

4 Sub-metering

4.1 Aim

The aim of this section is to outline our approach to sub-metering of existing and new strata schemes and multi-unit properties. This policy applies to all residential and non-residential strata schemes and multi-unit properties.

4.2 Multi-unit properties

4.2.1 New multi-unit properties

All new multi-unit properties for which we issue a Certificate for Certifiable Work will have a master meter at the connection point. The owner will be billed for the fixed and variable charges with the fixed charge based on the master meter size and the variable charge based on the volume of water supplied through the master meter.

4.2.2 Sub-metering new multi-unit properties

All new multi-unit properties will have a master meter at the connection point. The owner of a new multi-unit property has the option of installing sub-meters for each unit.

The owner has the option of using a third party to undertake installation and reading of sub-meters in multi-unit properties, as these are unregulated services.

At our discretion, we may approve each unit being individually connected to our water main.

4.2.3 Existing multi-unit properties – no sub-meters

All existing multi-unit properties will have a master meter at the connection point. The owner will be billed for the fixed and variable charges with the fixed charge based on the master meter size and the variable charge based on the volume of water supplied through the master meter.

4.2.4 Sub-metering existing multi-unit properties

All existing multi-unit properties will have a master meter at the connection point. The owner of an existing multi-unit property has the option of installing sub-meters for each unit.

The owner has the option of using a third party to undertake installation and reading of sub-meters in multi-unit properties, as these are unregulated services.

4.2.5 Existing multi-unit properties with sub-meters

If the multi-unit property is already sub-metered, we will bill the owner for the fixed and variable charges with the fixed charge based on the master meter size and the variable charge based on the volume of water supplied through the master meter.

The owner has the option of entering into an agreement with us or a third party for the reading of sub-meters.

4.3 Strata schemes

4.3.1 New strata schemes

Until a property is strata titled, it will have a master meter at the connection point with fixed and variable charges the responsibility of the owner. The fixed charge is determined by the size of the master meter and the variable charge is determined by the volume of water measured by the master meter.

The subsequent installation of sub-meters is at the property owner's discretion and cost, as a property is strata titled after the completion of our development assessment process.

New strata schemes may be metered in only one of the following ways:

- (a) Single master meter only;
- (b) Master meter and sub-meters; or
- (c) Lots individually connected to our water main.

(a) Single master meter only

If the owner decides not to install sub-meters each lot owner will be billed for a proportion, determined by their respective general or special unit entitlement, of the fixed charge with the fixed charge determined by the size of the master meter.

The applicable variable charge will be determined by the volume of water measured by the master meter and can be billed either to the strata scheme's body corporate or to individual lot owners in line with Regulation 18 of the *Water and Sewerage Industry (Pricing and Related Matters) Regulations 2011*.

Where the variable charge is billed to the lot owners the amount must be apportioned on the basis of the general unit entitlement of the lot, or, if there is a special unit entitlement relating to the lot in respect of the liability for charges for water use, on the basis of the special unit entitlement of the lot.

(b) Master meter and sub-meters

If the owner decides to install sub-meters we will supply the sub-meters at no cost, to be installed at the owner's cost.

Sub-meters must be installed to our approved installation standards and remain our property. We will maintain the sub-meters.

Once sub-meters have been installed and tested the lot owner will be billed a fixed charge based on the size of the sub-meter and a variable charge based on the volume of water supplied to the lot as measured by the sub-meter.

In addition, each lot owner's bill will include a proportion, determined by the general or special unit entitlement, of:

- Fixed and variable charges for the common property(s) sub-meter(s) (if applicable); and
- Excess water supplied to the master meter (where the master meter reading is greater than the sum of the individual sub-meter readings).

Where the master meter reading is less than the sum of the individual sub-meter readings each lot owner will be billed for the volume of water supplied to the lot as measured by the relevant sub-meter. The smaller sub-meters are more accurate than master meters.

(c) Individual connection to our water main

Where there is no common property, no interposing pipe work and no requirement for a master meter we may, at our discretion, approve each lot being individually connected to our water main.

Where each lot is individually connected to our water main each lot owner will be billed a fixed charge (based on the size of each lot's individual meter) and a variable charge based on the volume of water supplied to each lot as measured by the lot's individual meter.

4.3.2 Existing strata schemes

Existing strata schemes are metered in one of the following ways:

- (a) Single master meter only;
- (b) Master meter and sub-meters;
- (c) No master meter and individual lot meters;
- (d) Lots connected individually to our water main;
- (e) Master meter but with some individual lots connected directly to our water main;
- (f) Multiple master meters; or
- (g) Multiple master meters but with some individual lots connected directly to our water main.

(a) Single master meter only

Each lot owner will be billed for a proportion, determined on the basis of the general or special unit entitlement, of the fixed charge with the fixed charge determined by the size of the master meter.

The applicable variable charge will be determined by the volume of water measured by the master meter and can be billed either to the strata scheme's body corporate¹ or to lot owners.

Where the variable charge is billed to the lot owners the amount must be apportioned on the basis of the general unit entitlement of the lot, or, if there is a special unit entitlement relating to the lot in respect of the liability for charges for water use, on the basis of the special unit entitlement of the lot.

(b) Master meter and sub-meters

If all lot owners in a strata scheme agree to sub-metering and the body corporate provides us with a copy of a unanimous resolution authorising the installation of sub-meters and a completed application form, we will supply lot owners with sub-meters at no cost to be installed at the lot owners' cost. We will maintain the sub-meters.

Sub-meters must be installed to our approved installation standards and remain our property.

Once sub-meters have been installed and tested, each lot owner will be billed a fixed charge (based on the size of the sub-meter) and a variable charge based on the volume of water supplied to the lot as measured by the sub-meter.

In addition, each lot owner's bill will include a proportion, determined on the basis of the general or special unit entitlement, of:

- Fixed and variable charges for the common property(s) sub-meter(s) (if applicable); and
- Excess water supplied to the master meter (where the master meter reading is greater than the sum of the individual sub-meter readings).

Where the master meter reading is less than the sum of the individual sub-meter readings, each lot owner will be billed on the volume of water supplied to the lot as measured by the relevant sub-meter.² The smaller sub-meters are more accurate than the, generally, larger master meters.

¹ Regulation 18(1) of the *Water and Sewerage Industry (Pricing and Related Matters) Regulations 2011*.

(c) No master meter and individual lot meters

Where there are meters on individual lots but no master meter, each lot owner will be billed a fixed charge (based on the size of each lot's meter) and a variable charge based on the volume of water supplied to the lot as measured by the lot's individual meter. In addition, if there is a meter for common property, each lot owner's bill will include a proportion, determined by the general or special unit entitlement, of the fixed and variable charge for the common property.

If the lot meters are not installed at the connection point we may, at our discretion and at our cost, install a master meter at the connection point to measure any water potentially lost between the connection point and the individual lot meters.

If we install a master meter, the individual lot meters and common property(s) meter (if applicable) will be deemed to be sub-meters and each lot will be billed a fixed charge (based on the size of the sub-meter) and a variable charge based on the volume of water supplied to the lot as measured by the sub-meter.

In addition, each lot owner's bill will include a proportion, determined by the unit (general or special) entitlement of:

- Fixed and variable charges for the common property(s) sub-meter(s) (if applicable); and
- Excess water supplied to the master meter (where the master meter reading is greater than the sum of the individual sub-meter readings).

Where the master meter reading is less than the sum of the individual sub-meter readings, each lot will be billed on the volume of water supplied to the lot as measured by the sub-meter. The smaller sub-meters are more accurate than the, generally, larger master meters.

(d) Individual connection to our water main

Where each lot in a strata scheme is individually connected to our water main and there is no common property, no interposing pipe work and no requirement for a master meter each lot owner will be billed a fixed charge (based on the size of each lot's individual meter) and a variable charge based on the volume of water delivered to each lot as measured by the lot's individual meter.

(e) Other metering configurations

Due to legacy plumbing arrangements some strata schemes are metered as follows:

- Master meter plus some lots individually metered; or
- Multiple master meters; or
- Multiple master meters plus some lots individually metered.

Where the above metering configurations apply, each lot owner will be billed for a proportion, determined on the basis of the general or special unit entitlement, of the sum of the individual fixed charges for all the meters required to meter all the lots in the strata scheme with the fixed charges determined based on the size of the individual meters.

In addition, each lot owner will be billed a variable charge for a proportion, determined on the basis of the general or special unit entitlement, of the sum of the volume of water measured by all of the meters in the strata scheme.

Common Property

The installation of a sub-meter for common property in a strata scheme is optional. Where common property is not sub-metered the difference between the volume of water measured at the master meter and the sum of the volume of water measured by each of the sub-meters for the individual lots will be deemed to be the water supplied to common property.

If all lot owners agree to the installation of a sub-meter(s) for common property, each lot owner's bill will include a proportion, determined on the basis of the general or special unit entitlement, of the fixed charge for the common property sub-meter.

The variable charge for common property, whether deemed as above, or measured by a sub-meter, can be billed either to the strata scheme's body corporate³ or to the individual lot owners.

Where the variable charge is billed to the lot owners the amount must be apportioned on the basis of the general unit entitlement of the lot, or if there is in respect of the lot a special unit entitlement in respect of the liability for charges for water use, on the basis of the special unit entitlement of the lot.

Apportionment of charges based on unit entitlements

Where details of the strata general or special unit entitlements are available from the Land Titles Office Cadastral Spatial Layer the apportionment will be based on those entitlements. Where this information is not available, the charges will be shared equally across all of the lots, unless the body corporate advises us of an alternative apportionment in writing in the form of a copy of a unanimous resolution.

Change to unit entitlements

Lot owners may change the unit entitlements that apply to their strata scheme. However unit entitlement changes must be made in accordance with the requirements set out in Section 17 of the *Strata Titles Act 1998*:

- (1) The unit entitlements of the lots created by a plan may be changed –
 - (a) by unanimous resolution of the body corporate; or
 - (b) by order under Part 9; or
 - (c) if the total unit entitlements of the lots subject to the change are not affected, by agreement between the owners of the lots and with the consent of the registered mortgagees and lessees of the lots.
- (2) A change of unit entitlements under subsection (1) does not take effect until the plan is changed by registration of an amendment including the change.

The body corporate must provide us with a copy the unanimous resolution authorising the change of unit entitlements together with evidence that the change to the plan has been registered, in line with Section 17(2) of the *Strata Titles Act 1998* detailed above.

Fire Services

Strata schemes may have a dedicated water service to a fire hose reel for fire protection purposes. Where such a service is provided a fire service charge will apply to the strata scheme and each lot owner's bill will include a proportion, determined by the general or special unit entitlement, of the applicable fire service charge.

Concessions

A lot owners' eligibility for a concession is unaffected by a strata scheme's meter configuration.

³ Regulation 17(2) of the *Water and Sewerage Industry (Pricing and Related Matters) Regulations 2011*.

4.4 Associated Documents

- TasWater Water Metering Guidelines
- TasWater Property Services Connection Standards Drawing - Water Services
- TasWater Boundary Backflow Containment Selection Requirements
- TasWater Sub-metering Application Form

5 Service charges

5.1 Aim

This section outlines the circumstances when we will apply a service charge and the amount of, or the method of determining the amount of, that service charge.

5.2 Policy

Service charges will be applied to unconnected titles within serviced land to ensure equity with other connected customers who would otherwise have to pay for the infrastructure.

We will apply a service charge to unconnected titles within our serviced land.

5.3 Amount of service charge

The amount of the relevant service charge is set out in our Price and Service Plan and is also available on our website www.taswater.com.au.

5.4 Notice to affected titles

We will not charge a service charge unless we first serve notice on the owner(s) of the land and publish a notice in a newspaper circulating generally in the area in which the affected land is situated. We will provide a copy of the notice at our offices and on our website www.taswater.com.au.

The notice will:

- Define the locality to which it applies;
- Specify the services available;
- Generally identify the land to which the services are available; and
- Fix a date on and from which the service charge will be payable, not less than three months from the date of the notice.

We are not required to serve notice when levying a service charge in respect of land that was the subject of a service rate or service charge under (the now repealed) section 95 of the *Local Government Act 1993* immediately prior 1 July 2009.

6 Conditional Connections – Connections outside serviced land

6.1 Aim

This section outlines the circumstances when we will consider connections to land titles that do not meet the requirements of the Connection Policy.

6.2 Policy

We may in our absolute discretion, permit connections to land titles that do not meet the requirements of the Connection Policy. We refer to these connections as conditional connections.

Connections made under this policy are non-standard connections. These connections are subject to a contract under section 61 of the Act.

Connection to any single title, existing or future, does not set a precedent for any future connection for neighbouring titles or in the area generally. Should a title choose to disconnect from our network, any future connection request will be subject to this policy.

6.3 Assessment for connections

We will consider the following when determining whether a connection to our infrastructure will be allowed:

- Impacts on water services within serviced land, as well as for titles that may be serviced through network growth and improvement
- Strategic benefits such as:
 - Social – for example a new school, community facilities, aged care facility;
 - Economic – local or regional land use plan, new enterprise (commercial, industrial or agricultural); and
 - Protecting human health.

6.4 Conditions of connection

We will apply conditions to these connections to reflect the reduced service and to manage impacts on our network and serviced land customers.

We may place limitations or requirements upon conditional connections including, but not limited to, such things as the size and/or number of connections, level of service, metering, restricted access times, limited flow and lack of surety of supply.

The same technical standards for connection as standard connections apply. These are outlined in the Supplement (available on our website at www.taswater.com.au).

7 Service introduction

7.1 Aim

This section outlines the circumstances and the terms and conditions that must be met for us to introduce water services and/or sewerage services (service introduction) to a locality and the charges that will apply.

7.2 Introduction of service

We will consider service introduction when a proposal is put forward for the introduction of water services and/or sewerage services. In order to proceed:

- Beyond preliminary design and community consultation, the service introduction proposal must be commercially viable; or
- It must have been identified that the absence of water services and/or sewerage services is causing significant and/or wide scale environmental harm and/or public health issues by the relevant council's Environmental Health Officer, the Environment Protection Authority (EPA) or the Department of Health and Human Services (DHHS).

7.2.1 Stage 1 Initial Consultation

We will consult with each relevant community on any service introduction proposal. As part of this consultation we will define the proposed service introduction area(s). Using the proposed service introduction area(s) we will provide high-level, preliminary design work, and indicative service introduction charges per title.

7.2.2 Stage 2 Indicative Community Support

Consideration of service introduction will only proceed to Stage 3 if at least 50 per cent of each relevant community support the proposal.

7.2.3 Stage 3 Community Commitment to Service Introduction

A detailed design and business case will be developed for service introduction as part of this stage. These will provide a more accurate estimate of the project costs and the service introduction charges.

For the proposal to progress to the procurement and construction stage, at least 80 per cent of the owners of developed land within the proposed service introduction area must enter into an agreement committing to connect to the relevant system and to pay the service introduction charge.

Developed land means land titles where there is an existing development and/or use that would reasonably be expected to require or receive reticulated drinking water services and/or sewerage services. This may include, but not be limited to, a residential dwelling or commercial premises. It would not include other uses that do not require drinking water, for example, irrigation or stock watering.

Following the conclusion of the Stage 3 consultation we will advise the community the results of the consultation and the next steps for the project.

7.3 Service introduction charges

We will calculate service introduction charges based on the cost of providing the infrastructure less the present value of the amount that would be recovered from 80 per cent of customers through ongoing annual water charges and/or sewerage charges.

Any third party funding contributions will be subtracted from the cost calculations. This calculation determines the commercial viability.

Service introduction charges will reflect the actual costs of providing the infrastructure.

Service introduction charges will be levied on the owner of land who has signed a contract committing to a connection from the date on which the title is able to connect to our water infrastructure and/or sewerage infrastructure and the agreement has commenced.

The owner of a title subject to a service introduction charge may elect to pay the charge:

- Upfront, at the time of their first TasWater water and/or sewerage bill; or
- Over a period of 12 months; or
- Over a longer period identified by us.

7.4 Connection Charges

In addition to service introduction charges, a connection charge for water services and/or sewerage services will be payable when the land title is connected to our water infrastructure and/or sewerage infrastructure in accordance with section 2 and the agreement has commenced. The list of connection and other charges is provided in section 9.

Ongoing fixed and variable charges will apply once the land title is connected and the agreement has commenced.

Land owners who choose not to connect to our services will become liable to pay service charges following once the requirements of our Services Charges Policy have been met (see section 5).

If the owner of a land title who had previously not signed a contract committing to a property connection subsequently requests connection to our water infrastructure and/or sewerage infrastructure after a service has been introduced, a service introduction charge (calculated in current day dollars) will be applied in addition to any applicable connection charges.

8 Definitions

Table 2: Definitions

Term	Meaning
Act	Means the <i>Water and Sewerage Industry Act 2008</i> .
Body corporate	Has the same meaning as in section 3 of the <i>Strata Titles Act 1998</i> .
Certificate for Certifiable Work	Means a certificate referred to in section 56TC(3) or section 56TC(4) of the Act that is issued by us under section 56TC of the Act.
Code	Means the Customer Service Code issued under the Act.
Common property	Has the same meaning as in section 3A of the <i>Strata Titles Act 1998</i> .
Concession	Means a concession granted under section 8 of the <i>Water and Sewerage Industry (Community Service Obligation) Act 2009</i> .
Connection point	Has the same meaning as in section 3 of the Act.
Connection charge	Means a charge calculated by reference to the costs that are associated with installing assets that are dedicated to the provision of water services and/or sewerage services to a particular customer.
Fixed charge	Has the same meaning as in section 3 of the <i>Water and Sewerage Industry (Pricing and Related Matters) Regulations 2011</i> .
Interposing pipe work	Means any pipe work that is between the connection point and the sub-meter and between the sub-meter and the strata titled lot. We do not own and are not responsible for providing and/or maintaining interposing pipe work.
Lot	Has the same meaning as in section 16(2)(a) of the <i>Strata Titles Act 1998</i> .
Master meter	Means a meter installed at the connection point that measures the total volume of water supplied to a strata scheme or a multi-unit property. A master meter may be connected to sub-meters.
Multi-unit property	Means a property which has more than one sole occupancy unit on one freehold title (ie a property not established as a strata scheme).
Owner	Means: <ul style="list-style-type: none"> (a) the registered proprietor of the land noted on the Folio of the Register maintained by the Recorder of Titles; or (b) the legal owner of general law land maintained by the Recorder of Titles.
Price and Service Plan	Means a price and service plan approved under section 65 of the Act.
Regulator	Means the Regulator referred to in section 11 of the Act.
Service charge	Means a charge levied under section 68A of the Act and detailed in section 5 of this document.
Serviced land	Means land that we will permit to be connected to its water infrastructure or sewerage infrastructure. We have identified this

Term	Meaning
	<p>land by individual title, in accordance with section 56U(1b) of the Act.</p> <p><i>Note: Information about our serviced land boundaries, including maps, is available on our website www.taswater.com.au, The List Map (maps.thelist.tas.gov.au) and for inspection by customers at our offices. For further information contact us during business hours on 13 6992.</i></p> <p><i>Serviced land boundaries will change over time as the capacity of the system changes.</i></p>
Sole occupancy unit	Means a building or other part of a building for occupation by one lessee, tenant or other occupier to the exclusion of any other lessee, tenant, or other occupier. A sole occupancy unit also included any part of the building that is common property or common property.
Standard sewerage connection	Means a 100mm or 150mm residential sewerage connection.
Standard water connection	Means a 20mm or 25mm residential water connection.
Strata scheme	Has the same meaning as in section 3 of the <i>Strata Titles Act 1998</i> .
Sub-meter	Means a water meter that measures individual usage of water downstream of a master meter. The minimum sub-meter size is nominally 20mm.
Sub-metering	Means the installation of individual water meters to measure the volume of water supplied downstream of a master meter.
Supplement	Means the <i>TasWater Supplement to Water Supply Code of Australia WSA 03-2011-3.1 MRWA Edition</i> (available on our website at www.taswater.com.au)
Unanimous resolution	Has the same meaning as in section 3 of the <i>Strata Titles Act 1998</i> .
Unit entitlement (also general unit entitlement and special unit entitlement)	Has the same meaning as in section 16 of the <i>Strata Titles Act 1998</i> .
Variable charge	Has the same meaning as in section 3 of the <i>Water and Sewerage Industry (Pricing and Related Matters) Regulations 2011</i> .
Water meter	Means a device, including equipment related to the device, for measuring the volume of water delivered to a property.

9 Water and Sewerage Network Charges and Fees

Regulated water and sewerage prices (\$)

Prices	FY2018/19	FY2019/20	FY2020/21
Water - \$ per 20mm connection	344.64	360.49	377.07
Water - \$ per kl	1.07	1.12	1.17
Sewerage - per ET	661.32	691.74	723.56

Fixed water connection price by connection size (\$)

Connection size	Multiplier	FY2018/19	FY2019/20	FY2020/21
20	1.00	344.64	360.49	377.07
25	1.56	538.49	563.26	589.17
30	2.25	775.43	811.10	848.41
32	2.56	882.27	922.85	965.30
40	4.00	1,378.54	1,441.96	1,508.29
50	6.25	2,153.98	2,253.06	2,356.70
65	10.56	3,640.22	3,807.67	3,982.82
75	14.06	4,846.44	5,069.38	5,302.57
80	16.00	5,514.18	5,767.83	6,033.15
100	25.00	8,615.90	9,012.23	9,426.80
150	56.25	19,385.78	20,277.53	21,210.29
200	100.00	34,463.61	36,048.93	37,707.18
250	156.25	53,849.39	56,326.46	58,917.48

Fire service charge by connection size (\$)

Connection size	Multiplier	FY2018/19	FY2019/20	FY2020/21
20	1.00	86.16	90.12	94.27
25	1.56	134.62	140.82	147.29
30	2.25	193.86	202.78	212.10
32	2.56	220.57	230.71	241.33
40	4.00	344.64	360.49	377.07
50	6.25	538.49	563.26	589.17
65	10.56	910.05	951.92	995.71
75	14.06	1,211.61	1,267.35	1,325.64
80	16.00	1,378.54	1,441.96	1,508.29
100	25.00	2,153.98	2,253.06	2,356.70
150	56.25	4,846.44	5,069.38	5,302.57
200	100.00	8,615.90	9,012.23	9,426.80
250	156.25	13,462.35	14,081.61	14,729.37

Prices for miscellaneous services (\$)

Service	FY2018/19	FY2019/20	FY2020/21
Water Connections			
Standard 20mm water connection	2,225.76	2,309.06	2,417.50
Standard 25mm water connection	2,443.27	2,535.52	2,655.86
Non-standard water connection	POA*	POA	POA
20mm meter supply & installation	408.80	422.06	438.65
>20mm meter supply & installation	POA	POA	POA
Sewer Connections			
Standard 100mm sewerage connection	1,596.41	1,652.14	1,723.40
Non-standard sewer connection	POA	POA	POA
Disconnection			
Standard disconnection (water and/or sewerage)	455.02	471.46	492.67
Relocation			
Standard water connection relocation - under 3 metres	1,490.03	1,545.76	1,618.28
Water connection relocation - greater than 3 metres	POA	POA	POA
Fire Service			
Fire service installation	POA	POA	POA
Water Metering Fees			
Special meter reads	59.55	61.17	63.08
Meter testing - onsite	79.97	81.99	84.47
Meter testing - offsite	POA	POA	POA
Meter downsizing (50mm to 20mm)	374.55	389.22	408.51
Meter downsizing (all others)	POA	POA	POA
Sundry Fees			
Right to information request	39.25	39.75	40.25
Pressure and Flow Testing	105.76	108.55	112.01
Account establishment and closure	48.84	49.81	50.81

Note: POA – Price on application

Appendix 7: Land development policies

Land Development Policies

1 July 2018

Policy approval and Responsibilities

The Chief Executive Officer of TasWater is responsible for implementing these policies.

Approved by the Board at its meeting on of 2018.

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Chairman

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1 Introduction

This document provides details on our policies regarding land development, including developer charges, service extension and expansion.

Information regarding connections to our water and sewerage infrastructure can be found in our *Water and Sewerage Network and Charges Policies* document.

This document incorporates a number of policies required by the *Water and Sewerage Industry Act 2008*, *Water and Sewerage Industry (Pricing and Related Matters) Regulations 2011* and by the Tasmanian Economic Regulator (TER) in connection with our Price and Service Plan for the period 2018-21.

These policies include:

- Developer charges and
- Service extension and expansion.

We have, or are developing, long-term capital works strategies for each of our water and sewerage systems. We refer to these as Growth and Capacity Plans. These will be used as the basis for determining whether capacity is available for development.

1.1 Further Information

For further information about these policies and how they apply to your circumstances, please contact our Development Services Department on 13 6992 or development@taswater.com.au.

1.2 Relevant Legislation

- Land Use Planning and Approvals Act 1993
- Water and Sewerage Industry Act 2008
- Water and Sewerage Industry (Pricing and Related Matters) Regulations 2011

1.3 Customer Charter

The Customer Charter explains our obligations consistent with the requirements under the Act and the Code issued by the TER. It also outlines the rights and responsibilities of our customers and our commitment to providing reliable water and sewerage services. It explains our business practices and provides the customer with reasonable expectations around our services, pricing, processes and responsibilities.

2 Developer Charges Policy

2.1 Aim

The aim of this section is to specify our application of developer charges and development assessment fees for new developments approved by the relevant planning authority.

2.2 Policy

2.2.1 Developer Charges

Developer charges may apply to new developments/uses approved by the relevant planning authority, where we decide to provide water and/or sewerage services to a development/use. If applicable, developer charges will be applied as follows:

Developments within serviced land where:

- The existing water and/or sewerage infrastructure can accommodate the demands of the proposed development/use (capacity) – developer charges will not apply for the available capacity; or
- Capacity is not available - will require the developer to, pay the cost of expansion of the system to the level of capacity required to service the development/use.

Developments outside serviced land where:

- Capacity is available within an existing system - the developer pays the costs of extension, including connection, to that system and may access the available capacity in that system at no additional charge; or
- Insufficient capacity is available within an existing system - the developer pays the costs of extension, including connection, to that system and expansion of the system to the level of capacity required to service the development/use. Any existing spare capacity in that system that is less than the total required for the development will be made available at no additional charge; or
- Where the development/use is not designed to connect to one of our existing systems (an Isolated Development/Use), all costs are paid by the developer.
In our absolute discretion, we may contribute to the costs of development/use in accordance with section 2.2.3 below.

For new developments we refer to two types of water and/or sewerage infrastructure:

- **Works Internal:** any infrastructure that is internal within a development site which is installed at a developer's cost and gifted to us; and
- **Works External:** any infrastructure which is external to a development site, for Extension and/or Expansion, required to service the development and which is installed at a developer's cost and gifted to us.

Additional charges may apply under our Price and Service Plan and our *Water and Sewerage Network and Charges Policies* document.

This approach is summarised in the following table:

	Sufficient System Capacity	Insufficient System Capacity
Works Internal	Developer pays all costs	Developer pays all costs
Works External – Extension	Developer pays costs of Extension required for the development*	Developer pays costs of Extension required for the development*
Works External – Expansion	Not applicable	Developer pays costs of Expansion required for the development**

* Any development connecting to an existing system will as a minimum pay for the cost of connection to the mains of the existing system.

** We will refer to the system's Growth and Capacity Plan (where available) regarding capacity upgrades or other works planned. We will discuss these plans with the developer.

2.2.2 Advice Regarding Works Required

Works external required for a development/use will be assessed by us on a case by case basis. A developer will only pay works external costs directly attributable to servicing their specific development/use.

As assessment is on a case by case basis, we will, upon request, provide details of the works required to service a proposed development/use (including mains connection costs) relating to any extension. The total works can then be independently costed by the developer.

2.2.3 Strategic Opportunities

In assessing a proposed development/use, we will consider any potential strategic benefits, such as alleviating public health issues or supporting economic development. If we believe there are sufficient strategic benefits we may fund any marginal cost over and above the cost of assets required to service the proposed development/use. The developer will pay the costs for assets required to support the development.

2.2.4 Development Services Fees

The following fees apply in relation to assessments, approvals and compliance activities for developments/use. Invoices will be issued when the fees become payable and are due within 30 days of issue.

- **Section 56W Consent Fee:** payable when we issue consent to build within two metres of our infrastructure
- **Certificate for Certifiable Work (CCW) and Certificate of Compliance (CoC) fee:** payable when you apply to us for a CCW that requires a CoC for either building and/or plumbing works
- **Development Application fee:** payable when you act on a planning permit which contains our conditions and prior to the issue of any other approval from TasWater
- **Engineering Design Approval and Development Compliance fee:** payable when you apply to us for our approval:
 - Of an engineering design for a development; or
 - To construct water and sewerage assets for a development that are to be transferred to us
- **Consent to Register a Legal Document fee:** payable when we issue our Consent to Register a Legal Document, such as a consent for registration of title documents for a subdivision development.

A full schedule of our development fees is provided in section 5 and on our website at www.taswater.com.au.

3 Service Extension and Expansion Policy

3.1 Aim

The aim of this section is to outline the circumstances, and the terms and conditions under, which we will extend and expand our water infrastructure and/or sewerage infrastructure.

3.2 Policy

3.2.1 Extension

Extension may be permitted following a written request from an individual title owner or as a result of a proposed development/use.

We will consider the following in assessing a potential extension that is not as a result of a proposed development/use:

- Impacts on existing customers or potential customers within serviced land; and
- Strategic benefits, such as:
 - Social – for example a new school, community facilities, aged care facility;
 - Economic – local or regional land use plan, new enterprise (commercial, industrial or agricultural); and
 - Protecting human health.

We will provide the technical requirements of the extension following a written request for extension. Permitted extensions must meet these technical requirements which include demonstrating that there will be no service reduction to existing customers.

Costs associated with extension to enable connection of unserviced land will be determined in accordance with Section 2 and Section 7 of our *Water and Sewerage Network and Charges Policies* document as relevant.

For information regarding requests, and associated costs, for the connection of property within the serviced land area to a current water system and/or sewerage system refer to our *Water and Sewerage Network and Charges Policies* document.

3.2.2 Expansion

Expansion may be permitted as a result of a proposed development/use that is to be serviced by connection to an existing water system and/or sewerage system that has insufficient capacity to service that development, in accordance with the laws relating to land use planning and approvals.

The costs associated with expansion will be determined in accordance with to section 2 or Section 7 of our *Water and Sewerage Network and Charges Policies* document as relevant.

4 Definitions

Table 1: Definitions

Term	Meaning
Act	Means the Water and Sewerage Industry Act 2008.
Certificate for Certifiable Work	Means a certificate referred to in section 56TC(3) or section 56TC(4) of the Act that is issued by us under section 56TC of that Act.
Code	Means the Tasmanian Water and Sewerage Industry Customer Service Code issued under the Act.
Planning Authority	Has the same meaning as in section 3 of the Land Use Planning and Approvals Act 1993.
Price and Service Plan	Means a price and service plan approved under section 65 of the Act.
Regulator	Means the Regulator referred to in section 11 of the Act.
Service introduction	Means the construction of water infrastructure and/or sewerage infrastructure by us to provide reticulated water services and/or sewerage services to established communities/townships not previously receiving reticulated water services and/or sewerage services.
Service introduction charge	<p>Means a charge, in respect of a property, that relates to the installation, alteration or utilisation of assets by us so as to enable the provision by us of a regulated service to the property but does not include:</p> <ul style="list-style-type: none">a connection charge; ora service charge; ora fixed charge; ora developer charge.
Serviced land	<p>Means land that we will permit to be connected to our water infrastructure or sewerage infrastructure. We have identified this land by individual title, in accordance with section 56U(1)(b) of the Act.</p> <p>Note: Information about our serviced land boundaries, including maps, is available on our website www.taswater.com.au and for inspection by customers at any of our offices. We can also be contacted during business hours on 13 6992 for further information.</p> <p>Serviced land boundaries will change over time as the capacity of the system changes.</p>

5 Development fees

Development Applications	FY2018/19	FY2019/20	FY2020/21
Minor	212.14	217.45	222.88
Medium	352.14	360.94	369.97
Major	677.36	694.30	711.65
Significant	1,142.58	1,171.14	1,200.42
Certificate for Certifiable Works (CCW) / Certificate for compliance (BAs & PAs)	FY2018/19	FY2019/20	FY2020/21
Minor	158.42	165.70	173.33
Medium	249.65	261.13	273.14
Major	300.01	313.81	328.25
Significant	417.61	436.81	456.91
CCW Exemption	40.60	42.46	44.42
Engineering design approval	FY2018/19	FY2019/20	FY2020/21
Minor	182.42	190.81	199.59
Medium	260.45	272.43	284.97
Major	300.01	313.81	328.25
Significant	417.61	436.81	456.91
Consent to Register and Legal Document	FY2018/19	FY2019/20	FY2020/21
Minor	148.84	155.68	162.84
Medium	148.84	155.68	162.84
Major	148.84	155.68	162.84
Significant	148.84	155.68	162.84
Sundry fees	FY2018/19	FY2019/20	FY2020/21
Land Information Certificate (section 56ZQ) request	39.25	39.75	40.25

Appendix 8: Trade waste policy

Trade Waste Policy

Aim

The purpose of this policy is to outline our commitment to the efficient and effective management of liquid trade waste.

We provide industrial and commercial trade waste services across Tasmania, including collection, conveyance, storage and treatment. We manage the associated risks to people, the environment and our assets.

This policy also outlines how we apply charges for trade waste services.

Policy

We are committed to the effective and efficient management of trade waste discharge to sewer to prevent harm to people, the environment and our sewerage infrastructure.

To achieve this, we will:

- Apply a responsive risk-based approach to the management of trade waste
- Have systems, procedures and agreements that:
 - Protect the safety of people in the community and employed by us
 - Protect the environment
 - Outline how we will manage the risks associated with acceptance of trade waste
 - Support the efficient and effective operation of our sewerage infrastructure
- Have appropriate, clear agreements with trade waste customers that detail the obligations for using our trade waste services
- Fully recover the costs of providing trade waste services on an equitable basis, including the cost of conveyance, treatment, storage, disposal, maintenance and repair of damage to the sewerage infrastructure and
- Provide customers with financial policy certainty to encourage trade waste minimisation through sustainable, clean and innovative trade waste management practices.

Trade Waste Consent

Our consent is required (under section 56ZI of the Act) before a person discharges anything into our sewerage infrastructure. It is unlawful not to have our consent.

We will provide a trade waste service of collecting, conveying and treating trade waste where the waste is of an appropriate volume and quality to be accepted for discharge into our sewerage infrastructure. The conditions of acceptance and the associated charges may differ depending on the level of risk associated with the trade waste discharged and the receiving sewage treatment plant.

Customer categories

We determine a customer's category by calculating a risk score based on the following four key elements: business activity, substance of concern, pre-treatment requirements and trade waste volume.

A customer's risk score provides an indication of the expected demand placed on our sewerage infrastructure by the trade waste discharged by the customer.

Our Trade Waste Customer Category Guideline provides further detail on the categorisation of trade waste customers and is available on our website at www.taswater.com.au.

We classify trade waste customers into four primary categories:

- **Category 1:** Dischargers of trade waste of low volume or strength, which provide minimal risk to our sewerage infrastructure and can be managed through cleaner production methods
- **Category 2:** Dischargers of trade waste of low to medium volume, which require physical pre-treatment at the source to make the trade waste acceptable for discharge to our sewerage infrastructure. Category 2 is further separated into three sub-categories (2A, 2B and 2C), based on an assessment of the commercial and technical risk associated with accepting a customer's trade waste to our sewerage infrastructure
- **Category 3:** Dischargers of trade waste which through volume, composition or quality, individually or combined, pose a medium risk to the operation of our sewerage infrastructure
- **Category 4:** Dischargers of trade waste, which through volume, composition or quality, individually or combined, pose a high risk to the operation of our sewerage infrastructure.

Tankered Waste

In line with regulation 15 of the *Water and Sewerage Industry (General) Regulations 2009*, tankered wastes are not accepted for direct discharge to sewer. These substances pose risks for:

- The health and safety of our staff and the community
- The environment and
- Our sewerage network and treatment processes.

We apply a risk-based approach to determine whether we will accept certain types of tankered waste at designated receiving facilities.

Fees and Charges

The following types of fees and charges apply for each category of trade waste customer:

- Category 1 and 2 Trade Waste:
 - We will levy application fees, target trade waste charges and may levy additional charges for non-compliance
 - These charges will be in accordance with the Price and Service Plan.
- Category 3 and 4 Trade Waste:
 - We will levy application fees, volumetric charges and mass load charges and may levy additional charges for non-compliance. We will determine the fees, charges and associated indexation annually

- We will negotiate a transition period with each customer that reflects the reasonable time required for the customer to implement appropriate trade waste risk controls. During the respective transition period, volumetric and mass load charges will be levied at a percentage of the full cost. Any transition period must conclude with the customer paying 100 per cent of costs on, or before, 1 July 2020 to comply with legislative requirements
- The agreed transition period may include, but is not limited to, time for funding, design, construction, installation and commissioning of pre-treatment where required. Approved transition periods will require customers to achieve long term sewer acceptance limits and full charges by the conclusion of the period.
- Tankered Waste:
 - We will levy management fees and tankered waste category fees on a per kilolitre basis
 - We will determine the fees, charges and associated indexation annually.

We will publish the schedule of fees and charges for each category of trade waste customer on our website at www.taswater.com.au.

Responsibility for Charges

The trade waste customer is responsible for ensuring:

- They have our consent to discharge trade waste to our sewerage infrastructure from their property and
- Payment of all charges levied by us for the provision of the trade waste service to the trade waste customer's property.

Definitions

Act means the *Water and Sewerage Industry Act 2008*.

Application Fee means the cost imposed by us for assessment of an application and making a determination about accepting trade waste to sewer.

Consent has the same meaning as in the Customer Contract.

Customer has the same meaning as in the Act.

Customer Contract has the same meaning as in the Act.

Fixed sewerage charge has the same meaning as in the Customer Contract.

Mass load charge is the charge applied to the quantity (in kilograms) of pollutant discharged by a customer to our sewerage infrastructure.

Non-compliance charge is the charge applied when a customer fails to comply with the conditions applicable in accordance with the consent permitting the customer to discharge trade waste to our sewerage infrastructure. The charge is a multiple of the target trade waste charge where multipliers are used to calculate the non-compliance charges to be applied to reflect either a minor or major non-compliant event.

Regulator means the Regulator established under section 11 of the Act.

Trade waste has the same meaning as in the Act.

Trade waste charge means a recurrent charge for the acceptance of trade waste from a customer but does not include a fixed sewerage charge. The trade waste charge comprises:

- An annual management component calculated based on an apportionment of time spent on the administrative and technical components required to adequately manage each category of customers and
- A usage component which is calculated based on the deemed average trade waste discharge volumes for customers in each category.

Volumetric charge is the charge applied to the volume (in kilolitres) of trade waste discharged by a customer to our sewerage infrastructure

We or **us** means TasWater.

Legislation

- Environmental Management and Pollution Control Act 1994
- Environmental Management and Pollution (Waste Management) Regulations 2010
- Water and Sewerage Industry Act 2008
- Water and Sewerage Industry (General) Regulations 2009
- Water and Sewerage Industry (Pricing and Related Matters) Regulations 2011

Associated Documents

- Trade Waste Pre-treatment Guidelines – provides information regarding our pre-treatment requirements
- Trade Waste Customer Category Guideline – provides guidance on how we categorise trade waste and how we calculate trade waste charges
- Price and Service Plan 2018-21 – explains our investment priorities, revenue requirements and pricing for the period
- Customer Contract - including the Commercial Trade Waste Consent

Responsibilities

The Chief Executive Officer of TasWater is responsible for implementing this policy.

Approved by the Board at its meeting on of 2018.

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Chairman

Appendix 9: Service replacement process

Service Replacement Process

Aim

The aim of this document is to detail the process we will follow where service replacement may be required for existing water services.

Overview

A small number of our water services in the past may not have complied with the Tasmanian Drinking Water Quality Guidelines (TDWQG) and by extension the Australian Drinking Water Guidelines (ADWG).

The Economic Regulator, through our water and sewerage operating licence, and the Director of Public Health, through the provisions of the *Public Health Act 1997*, require all drinking water systems to comply with the health requirements of the ADWG. In practice, this means that most of our drinking water systems require full treatment. Historically this provided us with only two options: conform to the requirements of ADWG or instigate service replacement.

Service replacement means that we would no longer provide a reticulated drinking water service to a locality. This solution is only considered when all other reasonable solutions have been considered.

We may provide, at our discretion, an irrigation supply in response to community demand. All costs for this unregulated supply will be borne by the local community through individual agreements.

Service Replacement Process

Our framework for the assessment of options for how water services are provided to communities within small towns includes our *Water Quality Policy*, and the supporting *Small Towns Water Supply Guideline*. These are available on our website at www.taswater.com.au.

The Policy and Guideline seek to balance the compliance obligation to provide a safe drinking water supply and the economic justification, in line with our legislative obligations, of major investment in towns with very small populations. They also incorporate non-economic considerations that may warrant the installation of treatment infrastructure in meeting compliance obligations. These include consideration of a range of criteria relating to community health, regional planning, growth and demographic issues, town sustainability and organisational reputation. Public safety is the principal objective in determining our preferred approach for a locality.

We will follow the process outlined in this paper where service replacement is a possible solution to address water quality issue.

The process provides 'review points' at the end of each major section of the process to allow us to engage with the TER, provide details of the process taken to date and in principle agreement to proceed to the next stage.

Engagement informs and drives the service replacement process. We will engage with our customers in the relevant localities, the local council and regulators (Economic Regulator, Department of Health and Human Services, EPA and the Tasmania Fire Service). Other stakeholders will also be engaged as required.

This engagement is an important part of the decision-making process for determining the form of the preferred solution and to make sure we meet our legal obligations.

In some cases it is not possible to get all customers to indicate their preferences. We will make all reasonable endeavours to engage with the community, including methods such as telephone contact, direct mail outs, advertisements in local shops and/or newspapers and community meetings.

The second part of the community engagement is to get formal agreement from individual customers. For each customer we will provide details of the service replacement offer and an agreement to accept the offer.

Customers will be provided with up to 150 days (5 months) to accept or reject the offer (the 'offer period').

Our *Water and Sewerage Network and Charges Policies* document, available on our website, details our policies regarding service charges (Section 5), connections (Section 2) and serviced land (Section 3).

We will proceed to seek an amendment to serviced land at the end of the offer period if 80 per cent of more of customers have accepted the offer. Should this threshold not be met at the end of the offer period we will consult with the relevant regulators to determine an acceptable resolution.

The service replacement process is detailed in the series of flowcharts that follow.

Figure 1: Service replacement overview

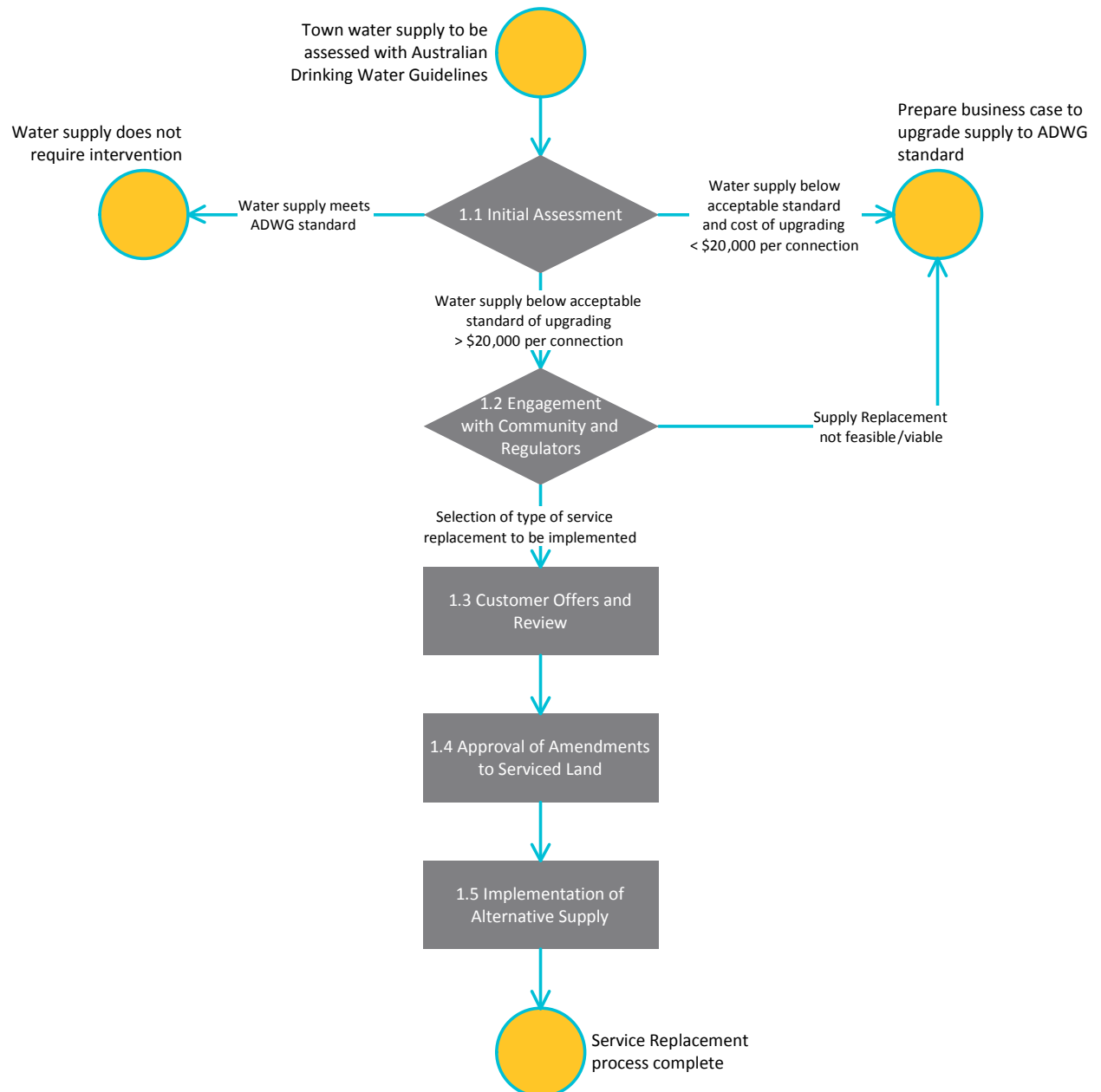
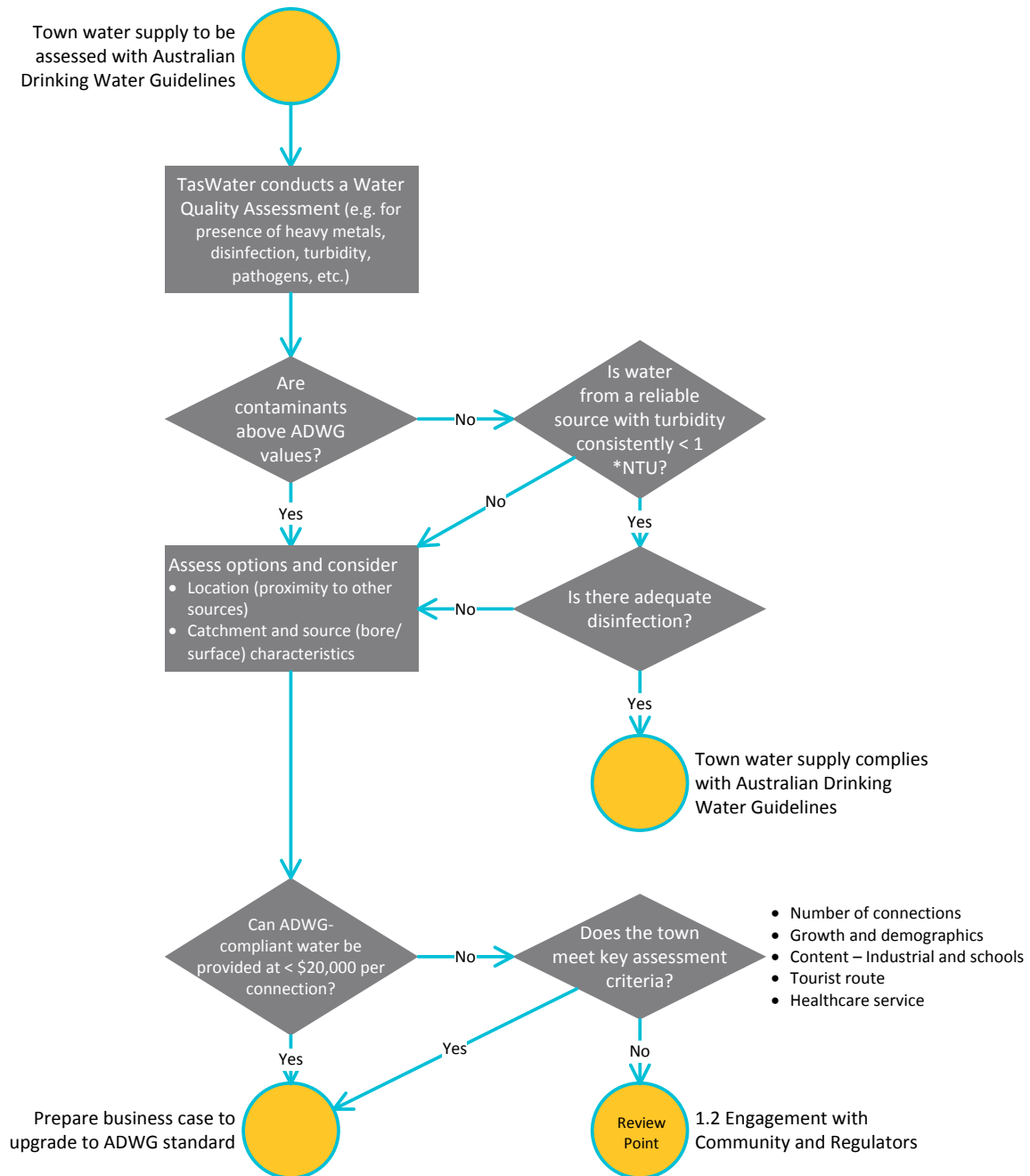
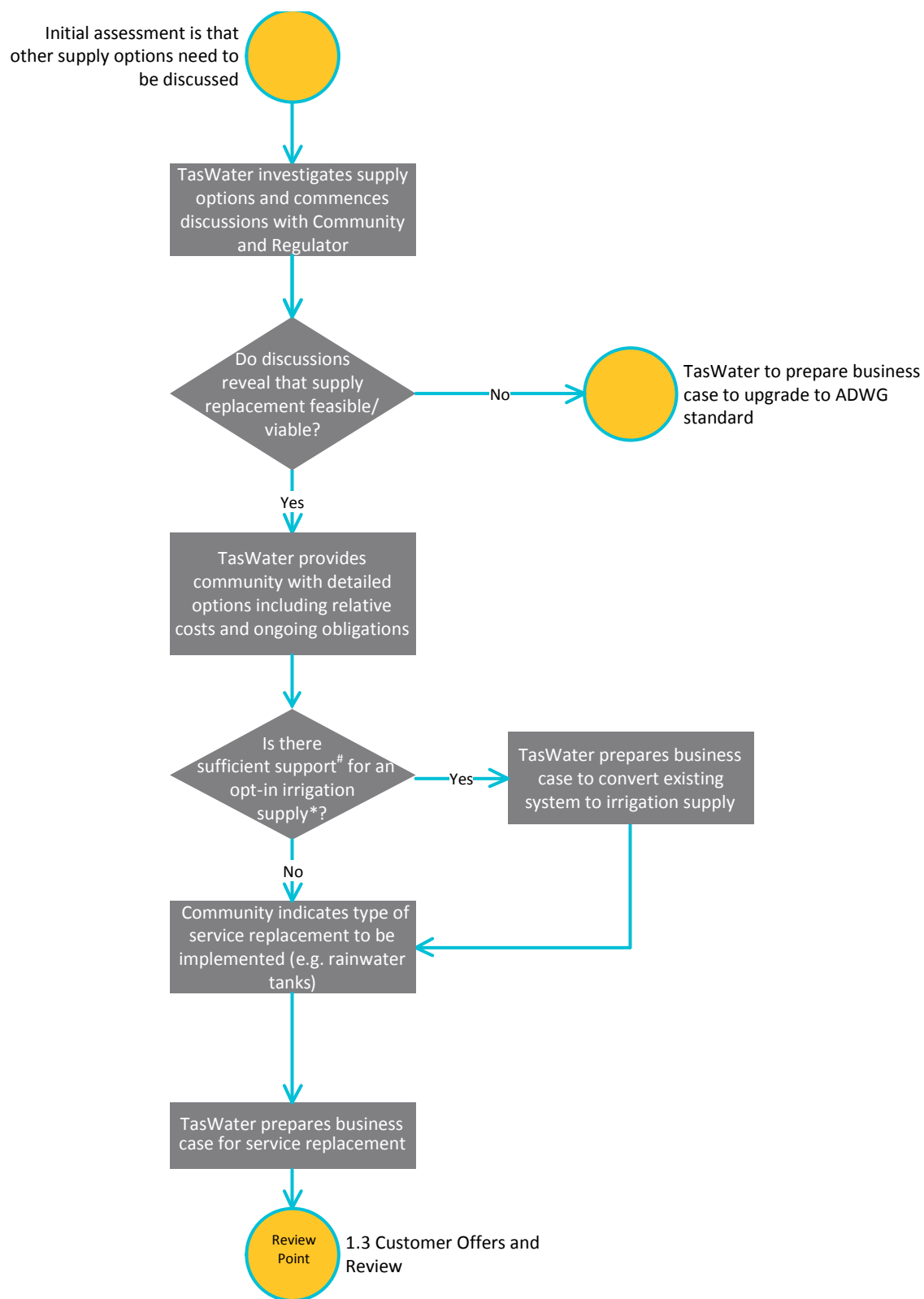


Figure 2: 1.1 - Initial assessment



* NTU is a Nephelometric Turbidity Unit, a measure of the water's clarity affected by fine suspended particles.

Figure 3: 1.2 – Engagement with community and regulators



Sufficient support is 80 per cent of customers in serviced area
*To be maintained at the user's expense.

Figure 4: 1.3 – Customer offers and review

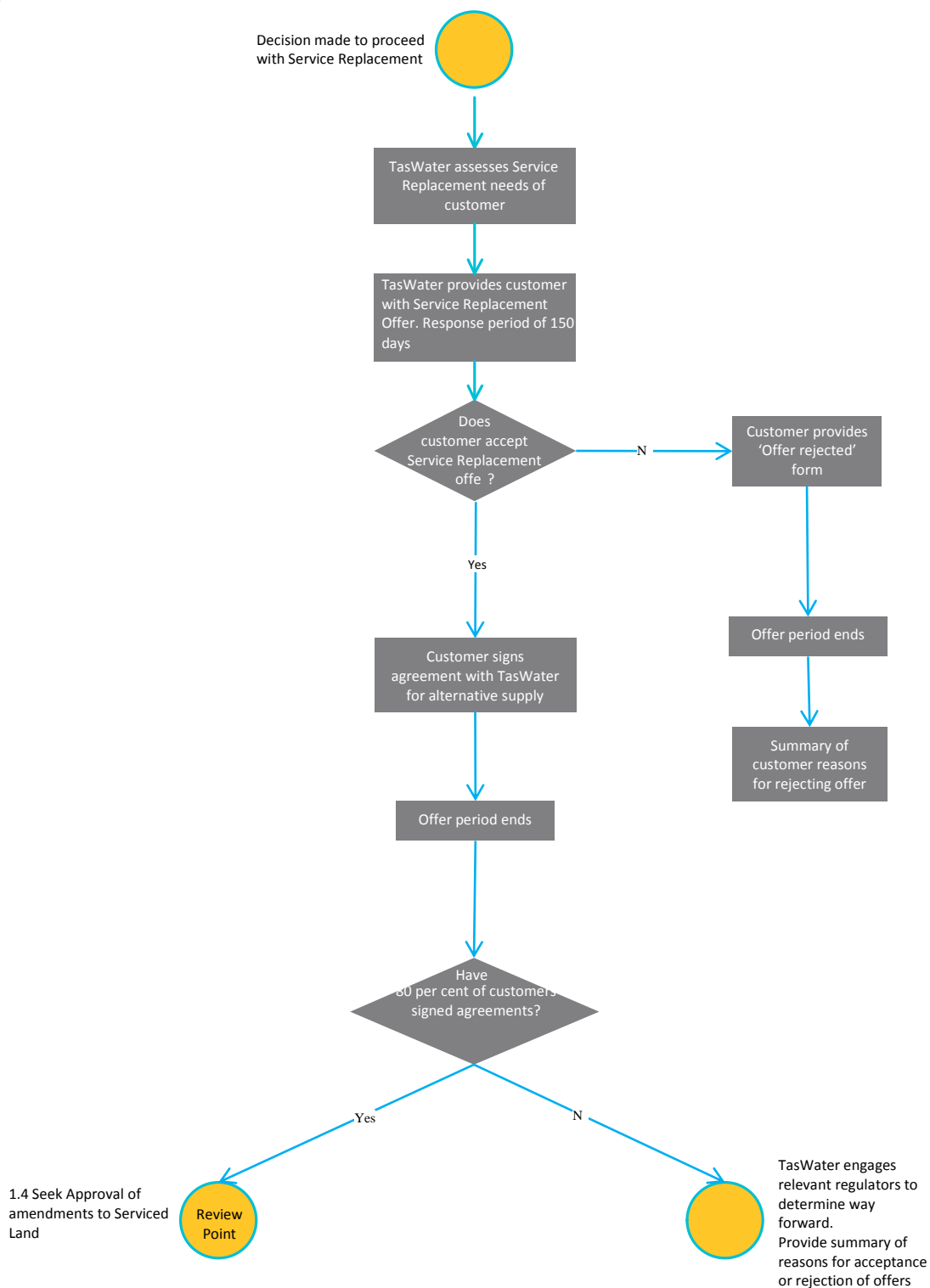


Figure 5: 1.4 – Amendment to Serviced Land

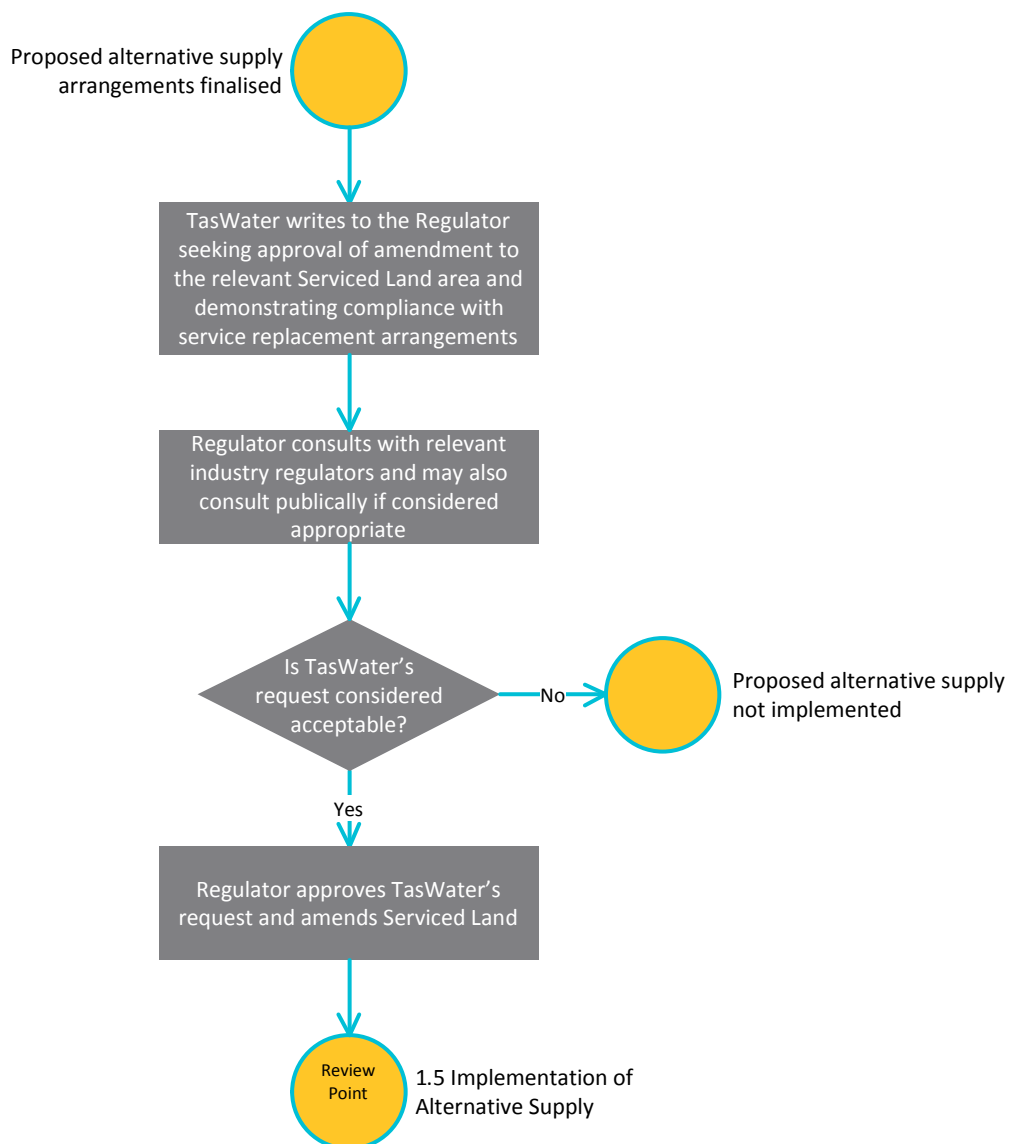
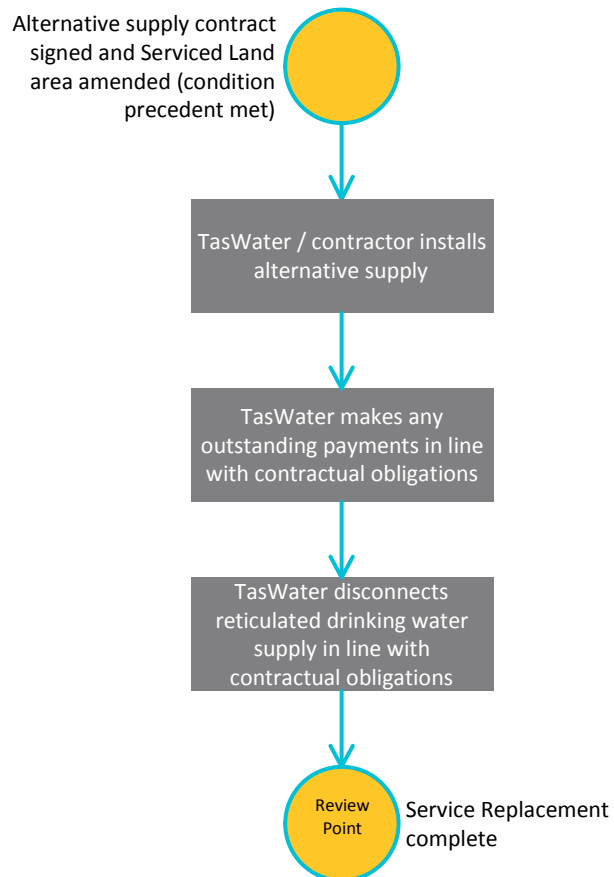


Figure 6: 1.5 – Installation of alternative supply



Appendix 10: Our capital expenditure in PSP2

PSP2 water supply capital expenditure

In 2015, we submitted specified water projects/programs and estimated capex to TER for PSP2 as follows.

Top 10 highest individual capex projects allowed for PSP2 – water supply (\$'000s)

Project	Driver	Capex
Tolosa Dam Decommissioning	Compliance	24,000
King Island Water Supply Upgrade	Compliance	16,000
Ridgeway Dam – Upgrade Post Tensioned Anchors	Compliance	15,000
Scottsdale – Bridport Pipeline	Growth	12,000
Flinders Island Water Supply	Compliance	11,000
Ringarooma Valley Treated Water Supply	Compliance	10,000
Rosebery WTP	Compliance	6,000
Margate Water Main – Stage 2	Growth	6,000
Avoca Treated Water Supply	Compliance	5,000
Lake Mikany – Filter Buttress	Compliance	5,000
Total		110,000

Since 2015, PSP2 projects have been updated. The following table sets out updated capex for each year and an updated PSP2 total where a project corresponds with a Top 10 project (above), the table below (far right column) also shows the original total capex estimate allowed by TER, for comparison.

Due to the nature of capital planning, where priorities change, not all projects submitted in the Top 10 reappear in PSP2 (below). Other projects have been prioritised and brought forward to PSP2. Other items were deferred.

In the table below, we have only compared the 2015 and 2017 PSP2 capex totals where the originally submitted project (2015) still appears in the updated PSP2 capex profile (2017).

Updated capex for PSP2 compared to pre-PSP2 estimate – water supply (\$000s)

Project Title	Cost driver	FY2015/16	FY2016/17	FY2017/18	PSP2 Updated Total	PSP2 2015 Total #
King Island Treated Water Supply	Compliance	942	5,225	6,000	12,167	16,000
Tolosa Dam Replacement Infrastructure	Compliance	1,594	8,367	-	9,961	24,000 *
Flinders Island Water Supply	Compliance	5,439	2,174	436	8,049	11,000
Rosebery WTP - Construction	Compliance	2,605	5,147	153	7,905	6,000
Avoca Full Treated Water Supply	Compliance	359	2,646	-	3,005	5,000
Lake Mikany Dam Safety Upgrade	Compliance	91	212	2,165	2,468	5,000
Ringarooma Treated Water Pipeline - Legerwood	Compliance	930	-	-	930	10,000

Note: * Prior to PSP2 the \$24 million estimate related to decommissioning not replacement.

Note: # Comparison is provided for transparency to assist TER identify a capex sample. Not all pre-PSP2 capex estimates are as different to the update for the entire project as it appears (ie pre-PSP2 estimates that are higher than updated estimates may result from capex being deferred to PSP3 or beyond). In other cases, we may have overestimated the capex in 2015 and have reallocated to other projects.

The annual costs and resulting total for PSP2 (above) reflect actuals and forecast for PSP2 as at March 2017.

In some cases (above), the project title, project scope and/or project descriptions have changed, making reconciliation at a high-level difficult. Project descriptions are available at Appendix 10. We

will work with TER's reviewing consultants to assist with detailed reconciliation if the appendices require clarification.

PSP2 sewerage capital expenditure

In 2015, we submitted specified sewerage projects/programs and estimated capex to TER for PSP2 as follows.

Top 10 highest individual capex projects allowed for PSP2 – sewerage (\$'000s)

Project	Driver	Capex
Kingborough Sewerage Strategy - Treatment	Compliance	30,000
Wynyard STP – Major Plant Upgrade	Compliance	17,000
Kingborough Sewerage Strategy - Network	Compliance	14,000
Electrical Switchboard Renewal at SPSs *	Renewal	12,000 *
Rosebery STP – Construction of new plant	Compliance	10,000
Ti Tree Bend STP Centrifuge – Biosolids Reduction	Compliance	9,000
Brighton STP Rationalisation	Compliance	9,000
Legana STP Upgrade	Compliance	9,000
Evandale – Western Junction Major STP Upgrades	Compliance	8,000
Longford STP Process Improvements	Compliance	7,000
Total		125,000

Note: * Since 2015, this project has been allocated to individual projects and individual SPS.

Since 2015, PSP2 projects have been updated. The following table sets out updated capex for each year and an updated PSP2 total where a project corresponds with a Top 10 project (above), the table below (far right column) also shows the original total capex estimate allowed by TER, for comparison.

Due to the nature of capital planning, where priorities change, not all projects submitted in the Top 10 reappear in PSP2 (below). Other projects have been prioritised and brought forward to PSP2. Other items were deferred.

In the table below, we have only compared the 2015 and 2017 PSP2 capex totals where the originally submitted project (2015) still appears in the updated PSP2 capex profile (2017).

Updated capex for PSP2 compared to pre-PSP2 estimate – sewerage (\$'000s)

Project Title	Cost driver	FY2015/16	FY2016/17	FY2017/18	PSP2 Updated Total	PSP2 2015 Total #
Ti Tree Bend - Digester [@]	Compliance	155	1,255	1,450	2,860	4,500 [@]
Rosebery STP - New Plant	Compliance	2,605	93	-	2,698	10,000
Ti Tree Bend STP Biosolids Dewatering Facility [@]	Compliance	-	100	2,000	2,100	4,500 [@]
Wynyard Sewer Improvement Plan *	Compliance	-	-	-	-	12,000 *
Kingborough Sewerage Strategy - Treatment	Growth	437	5,170	9,383	14,990	30,000
Kingborough Sewerage Strategy - Network	Growth	399	641	2,409	3,449	14,000

Note: [@] In 2015, this project was submitted as a single \$9 million project. The table above presents two key components separately - for comparison we have split the pre-PSP2 estimate evenly into two \$4.5 million estimates.

Note: * Prior to PSP2, the \$17 million included \$12 million for PSP2 and \$5 million for PSP3 - this project has been deferred beyond PSP2.

Note: # Comparison is provided for transparency to assist TER identify a capex sample. Not all pre-PSP2 capex estimates are as different to the update for the entire project as it appears (ie pre-PSP2 estimates that are higher than updated estimates may result from capex being deferred to PSP3 or beyond). In other cases, we may have overestimated the capex in 2015 and have reallocated to other projects.

The annual costs and resulting total for PSP2 (above) reflect actuals and forecast for PSP2 as at March 2017.

In some cases (above), the project title, project scope and/or project descriptions have changed, making reconciliation at a high-level difficult. We will work with TER's reviewing consultants to assist with detailed reconciliation if the appendices require clarification.

PSP2 dual function capital expenditure

In 2015, we submitted specified dual function (then referred to as 'non-network' or 'other') projects, programs and estimated capex to TER for PSP2 as follows.

Top 5 highest individual capex projects allowed for PSP2 – dual function (\$000s)

Project	Driver	Capex
Asset Management Information System	Improvement	12,000
Fleet (Vehicles and Plant) Replacement Program	Renewal	9,000
Asset Safety Rectification Program	Improvement	6,000
Minor Plant and Equipment Program	Renewal	5,000
Miscellaneous Minor Works Program	Renewal	4,000
Total		37,000

Since 2015, PSP2 projects have been updated. The following table sets out updated capex for each year and an updated PSP2 total where a project corresponds with a Top 5 dual function project (above), the table below (far right column) also shows the original total capex estimate allowed by TER, for comparison.

Due to the nature of capital planning, where priorities change, not all projects submitted in the Top 5 reappear in PSP2 (below). Other projects have been prioritised and brought forward to PSP2. Other items were deferred.

In the table below, we have only compared the 2015 and 2017 PSP2 capex totals where the originally submitted project (2015) still appears in the updated PSP2 capex profile (2017).

Updated capex for PSP2 compared to pre-PSP2 estimate – dual function (\$000s)

Project	Cost driver	FY2015/16	FY2016/17	FY2017/18	PSP2 Updated Total	Pre-PSP2 estimate #
Asset Management Information System	Improvement	7,014	6,179	-	13,193	12,000
Fleet (Vehicles and Plant) Replacement Program	Renewal	5,780	-	-	5,780	9,000
Asset Safety Rectification Program	Improvement	1,761	1,000	-	2,761	6,000
Minor Plant and Equipment Program *	Renewal	617	-	-	617 *	5,400
Miscellaneous Minor Works Program	Renewal	1,867	1,223	-	3,090	4,500

Note: * The Minor Plant and Equipment Program was consolidated within the Building and Facilities Program. The program was removed as a separate line item within the Capital Works Program as Building and Facilities Program is managed by same division and has a matching driver (Renewal). To allow for removal of Minor Plant and Equipment Program, Building and Facilities Program was increased.

Note: # Comparison is provided for transparency to assist TER identify a capex sample. Not all pre-PSP2 capex estimates are as different to the update for the entire project as it appears (ie pre-PSP2 estimates that are higher than updated estimates may result from capex being deferred to PSP3 or beyond. In other cases, we may have overestimated the capex in 2015 and have reallocated to other projects.

The annual costs and resulting total for PSP2 (above) reflect actuals and forecast for PSP2 as at March 2017.

In some cases (above), the project title, project scope and/or project descriptions have changed, making reconciliation at a high-level difficult. We will work with TER's reviewing consultants to assist with detailed reconciliation if the appendices require clarification.

Appendix 11: Updated actual and forecast capex for PSP2

Actual and forecast PSP2 Capex Projects – water supply including dams (\$'000s)

Project Title	Project description	Cost driver	FY2015/16 (actuals)	FY2016/17 (actuals and forecast)	FY2017/18 (forecast)	PSP2 Total	Portion of PSP2
Small Town Water Supply Strategy	Provision of treated water and other solutions to the towns of Colebrook, Conara, Cornwall, Epping Forest, Gladstone, Gormanston, Herrick, Judbury, Mathinna and Rossarden	Compliance	-	1,397	17,500	18,897	4.9%
King Island Treated Water Supply	One WTP and a pipeline between Grassy and Curry together with minor reticulation upgrade (Preferred Option) <ul style="list-style-type: none"> Grassy Dam is a large water source with good raw water quality characteristics – hardness is manageable A 28 km pipeline is required to take water from the Grassy WTP to the new reservoir site identified at Currie Works to improve the operability of the Grassy Dam including installation of ultrasonics to address algal issues and raising of the dam wall to ensure compliance with ANCOLD guidelines. The operation of a WTP at Grassy will require less energy to operate than Option 1, as it does not need to remove the identified hardness characteristic of Admirals Beach bore water One WTP and raw water supply minimising the ongoing operational and maintenance costs 	Compliance	942	5,225	6,000	12,167	3.1%
Ringarooma Valley Treated Water Supply	Treated water for the communities of Ringarooma, Derby, Winnaleah and Legerwood to remove BWAs	Compliance	8,563	2,972	120	11,655	3.0%
Tolosa Dam Replacement Infrastructure	Dam safety risk reduction and water quality improvement.	Compliance	1,594	8,367	-	9,961	2.6%
Flinders Island Water Supply	Removal of BWAs at Lady Barron and Whitemark. Compliance with ADWG	Compliance	5,439	2,174	436	8,049	2.1%
Rosebery .WTP - Construction	New WTP and associated network upgrades	Compliance	2,605	5,147	153	7,905	2.0%
Gretna / Bushy Park / Glenora Water Supply Upgrade	Water quality compliance for Gretna. Extension project in Bushy Park, Glenora	Compliance	230	1,950	3,080	5,260	1.4%
Conglomerate Dam Upgrade	Upgrades to Old Beach SPS Nos. 2 to 8 and reconfiguration of the network to mitigate overflow risk throughout the Old Beach sewerage system	Compliance	307	1,273	3,000	4,580	1.2%
Mole Creek Water Supply	Provision of treated water to the town of Mole Creek	Compliance	2,650	1,431	176	4,257	1.1%
Dam Safety Program of Works - Compliance Reports	Regulated activity by DPIPW	Compliance	308	1,600	2,260	4,168	1.1%
Dam Safety Program of	Minor dam safety upgrades	Compliance	847	1,600	1,510	3,957	1.0%

Project Title	Project description	Cost driver	FY2015/16 (actuals)	FY2016/17 (actuals and forecast)	FY2017/18 (forecast)	PSP2 Total	Portion of PSP2
Improvement Works							
Winnaleah Treated Water Supply	Need to confirm if the existing arrangement is suitable into the future	Compliance	382	3,009	-	3,391	0.9%
Avoca Full Treated Water Supply	Provision of treated water to the town	Compliance	359	2,646	-	3,005	0.8%
Lake Mikany Dam Safety Upgrade	Install full height filter buttress on embankments A and B	Compliance	91	212	2,165	2,468	0.6%
Bryn Estyn WTP - Permanent installation of carbon filter	Supply and install permanent carbon filter to avoid future instances of the recent taste and odour issues from reoccurring in the Hobart area	Compliance	1,446	290	-	1,736	0.4%
Swansea (Meredith) Dam – Rectification and Improvement Project (Stage 2)	Provide security to water supply by ensuring dam can be operated at a higher level	Compliance	-	-	1,650	1,650	0.4%
Ridgeway Dam - Upgrade Post Tensioned Anchors	Remove Dam from above the ANCOLD societal limit of tolerability (SLoT)	Compliance	782	252	120	1,154	0.3%
Legerwood - Ringarooma Treated Water Pipeline	Provide treated water to the community of Legerwood	Compliance	930	-	-	930	0.2%
National Park Fluoride & Chlorine Building Rebuild	New chlorine storage and dosing room, New fluoride storage and dosing room, New small store operator area, new dosing injection valve pit	Compliance	-	-	900	900	0.2%
National Park, Westerway, Fentonbury Water Supply	Upgrade or install new retic storage reservoirs at National Park and Westerway (which will supply Fentonbury) to supply potable water during periods of elevated turbidity, install automated valve operations at National Park and Westerway, install in line monitoring and alarming at National Park and Westerway.	Compliance	-	-	700	700	0.2%
Fire hydrant condition assessment	To produce and manage a rolling five-year Fire Hydrant Condition assessment program. Contractors to be engaged test and maintain all hydrants and provide performance information to TasWater	Compliance	-	300	300	600	0.2%
Mole Creek Reticulation Network Improvements	Two stages - Reservoir Works and pressure reduction works	Compliance	-	436	-	436	0.1%
Bothwell WTP upgrades	Eliminate safety risks and improve plant performance	Compliance	-	-	300	300	0.1%
Flagstaff Gully - Dam Safety Upgrade	Remove Dam from above ANCOLD SLoT	Compliance	-	-	200	200	0.1%
Lake Isandula Dam - Increase	Increase spillway capacity	Compliance	-	50	100	150	0.0%

Project Title	Project description	Cost driver	FY2015/16 (actuals)	FY2016/17 (actuals and forecast)	FY2017/18 (forecast)	PSP2 Total	Portion of PSP2
spillway capacity							
Pet Dam Safety Upgrade	This option is for the full upgrade works recommended in the DSR. The major features include raising the crest level of the dam by 300mm to meet the dry freeboard requirements during a 1:10,000 Annual Exceedance Probability (AEP), installing a localised filter around the outlet conduit where it exits the original embankment on the downstream face, reconstructing the spillway crest and spillway walls to ensure a positive cut-off to the foundation and embankment including a filter for protection against piping, upgrading the spillway by straightening and rebuilding the chute, upgrading the scour outlet to safely discharge the outflow at its full capacity and reinstalling survey targets on crest and transfer the levels in order to monitor the dam deformations after the upgrade works	Compliance	-	-	100	100	0.0%
Margate Water Main Upgrade Stage 2	Security of Supply to southern Kingborough	Growth	1,597	1,459	3,261	6,317	1.6%
Longford Water Supply System (Railway Bridge - Mountford Farm) Trunk Main	The pipeline between Longford and MacKinnon's Hill reservoir operates as a distribution and rising main which limits the operability of the Longford and Perth water supply system. This project is to duplicate the existing pipeline to allow for a separate rising main and distribution pipeline	Growth	167	2,200	950	3,317	0.9%
Port Sorell Reservoir & Network Upgrades	Make an assessment of treated water storage requirements for the Port Sorell reticulation, based on this assessment if required provide additional storage and network configurations to feed from this storage into the reticulation. This may require land acquisition	Growth	-	-	300	300	0.1%
Triabunna Water Supply Reticulation Reservoir Project	New large reservoir	Growth	3	-	100	103	0.0%
System optimisation - Water	Water compliance improvement	Improvement	-	500	4,500	5,000	1.3%
Burnie Cam Pipeline Construction	This project will allow the decommissioning of the Cam WTP	Improvement	566	91	1,100	1,757	0.5%
Consolidated OH&S Upgrades - Planned	Upgrades at reservoir sites to allow for inspections	Improvement	1,481	109	-	1,590	0.4%
Swansea (Meredith) Dam – Rectification and Improvement Project (Stage 1)	Works incorporated in stage 1 include: • Construction of a downstream dam filter • Geotechnical investigation and detailed design for the proposed dam liner and main embankment repair	Improvement	-	-	950	950	0.2%

Project Title	Project description	Cost driver	FY2015/16 (actuals)	FY2016/17 (actuals and forecast)	FY2017/18 (forecast)	PSP2 Total	Portion of PSP2
	<ul style="list-style-type: none"> Geotechnical investigation and conceptual design for a possible temporary storage option to facilitate stage 2 works, if required Construction of pipework to utilise access to the future Tasmanian Irrigation (TI) Swan Valley Irrigation Scheme (SVIS) 						
Orford Lower Prosser Dam Storage Works	Reinstate gates to increase storage	Improvement	-	-	100	100	0.0%
Bronte Park Water Meter Installation	Install meters to all properties. There is 1 x 100mm connection for the Bronte Park village, 1 x 50mm for the holiday apartments with the balance being 20mm connections. TasWater will need to replace the service valves as they are not water marked approved valves compliant with TasWater standards	Improvement	-	80	-	80	0.0%
Metering Program	Water Meter renewals	Renewal	3,678	4,300	7,140	15,118	3.9%
Water Main Renewals Program	Improve asset performance (reduced outages/low pressure events)	Renewal	5,156	4,200	3,770	13,126	3.4%
WTP Renewal Program	WTP renewals (civil, mechanical, electrical)	Renewal	950	3,310	1,200	5,460	1.4%
Reservoir Renewal/Upgrade Program	Reservoir renewal to ensure maximum life of reservoir is reached	Renewal	586	1,388	710	2,684	0.7%
Girdlestone Reservoir Rectification	A root cause analysis of the source of leakage flow will need to be conducted and subsequent to the findings of that analysis satisfactory rectification works will be required	Renewal	47	1,173	850	2,070	0.5%
Fluoride Program	WTP renewals (civil, mechanical, electrical)	Renewal	-	200	600	800	0.2%
Unplanned Statewide Meter Renewals	Renew failed water meters	Renewal	-	500	-	500	0.1%
Orford WTP renewal	Eliminate safety risks and improve plant performance	Renewal	22	456	-	478	0.1%
Deloraine WTP – DAFF Cell Replacement	To ensure risk of DAFF cell failure is managed and supply to customers is maintained	Renewal	13	122	-	135	0.0%
Total			41,741	60,419	66,301	168,461	100.0%
No. of water projects	45						

Actual and forecast PSP2 Capex Projects – sewerage (\$'000s)

Project Title	Project description	Cost driver	FY2015/16 (actuals)	FY2016/17 (actuals and forecast)	FY2017/18 (forecast)	PSP2 Capex Total	Portion of PSP2 Total
Cambridge Wet Weather Emergency Storage & Plant Process Improvements	No spill for 1 in 5 event	Compliance	3	10	3,000	3,013	0.8%
Ti Tree Bend - Digester	Thicken the digested sludge by the provision of recuperative thickening and provide heating and mixing to the second digester and operate the two digesters in parallel	Compliance	155	1,255	1,450	2,860	0.7%
Rosebery STP - New Plant	New STP	Compliance	2,605	93	-	2,698	0.7%
Huonville Main Road Sewerage Pump Station (SPS) Replacement	reduced sewage spills	Compliance	120	255	2,285	2,660	0.7%
Ti Tree Bend STP Biosolids Dewatering Facility	Installation of a centrifuge to improve sludge drying processes at the plant.	Compliance	-	100	2,000	2,100	0.5%
Northern Midlands Sewerage Improvement Plan	Rationalisation of 4 STP into 1, subsequently the Longford STP will comply with EPA requirements	Compliance	-	345	1,500	1,845	0.5%
LSIP – Concept		Compliance	1,288	392	-	1,680	0.4%
St Helens STP Inlet Works & Esplanade SPS	The proposed renewal of the SPS will increase the storage at the pump station and install appropriate pumps to improve system operation	Compliance	92	602	911	1,605	0.4%
Ambient Monitoring	Meet legal requirements	Compliance	500	400	650	1,550	0.4%
Davis St, Smithton SPS Upgrade	Upgrade of the Davis St SPS allow for greater capacity and prevent future overflows	Compliance	96	156	1,250	1,502	0.4%
Environmental Management and Sustainability Program	Improved compliance with EPA requirements and improved NPI results	Compliance	850	600	-	1,450	0.4%
Torrens St, Richmond SPS Renewal	Upgrade the Torrens Street SPS including new wet well, emergency storage and rising main	Compliance	11	959	94	1,064	0.3%
Launceston Sewer Improvement Program	Rationalise six treatment plants into one. Construct new STP at Ti Tree Bend. Create storage and pumping configuration from sites of existing STPs to newly constructed STP	Compliance	-	-	1,000	1,000	0.3%
Orford STP Outfall Upgrade	New outfall	Compliance	896	80	-	976	0.3%
Jetty Road, Bicheno SPS Upgrade	The upgrade of Jetty Road SPS requires the installation of compliant storage at Jetty Road and upgrade of the current pump capacity in order to meet the peak wet weather flow (PWWF) requirements defined for the catchment and	Compliance	-	587	291	878	0.2%

Project Title	Project description	Cost driver	FY2015/16 (actuals)	FY2016/17 (actuals and forecast)	FY2017/18 (forecast)	PSP2 Capex Total	Portion of PSP2 Total
	subsequent upstream catchments						
Bridport STP Improvement Program	There is land near to the STP available for purchase the creation of a reuse scheme will improve the hydraulic capacity of the system and will remove the requirement to renew/upgrade the outfall	Compliance	677	82	-	759	0.2%
Wynyard STP Sludge Drying Facility	Install sludge drying bed	Compliance	2	402	-	404	0.1%
Brighton STP Upgrade	Upgraded Brighton (Honeywood) STP and decommission primary lagoon at William St	Compliance	259	30	100	389	0.1%
Carrick STP - Upgrade Works and Outfall Pipeline	Relocation of the existing outfall from an unnamed tributary of the Liffey River to the higher flow Meander River	Compliance	-	200	130	330	0.1%
Westbury STP Upgrade and Reuse	Investigation into reuse for the Westbury STP has highlighted requirement for STP upgrade for influent as well as installation of reuse to address issues with low flow Quamby Brook	Compliance	9	-	250	259	0.1%
Lauderdale Pressure Sewage Scheme (LPSS) - Electrical Investigations	To determine if there are potentially other sub-standards electrical installations it is proposed to conduct a general audit of the LPPS customer connections looking at the overall systems, but with a focus on the electrical installations	Compliance	-	125	110	235	0.1%
Orford SPS & Network Upgrade	Renew and augment high risk SPSs within Orford & Triabunna	Compliance	120	12	-	132	0.0%
Legana STP Upgrade	Project will allow for proposed developments in Legana and Grindelwald to occur	Compliance	-	-	100	100	0.0%
Jason St SPS and Esplanade SPS Rising Main Replacements (St Helens)	Replace Rising Mains at Jason St SPS and Esplanade SPS	Compliance	-	-	100	100	0.0%
Coles Beach SPS Upgrade	Containment of ARI 1 year storm event	Compliance	-	96	-	96	0.0%
Smithton retic Odour Control		Compliance	-	-	50	50	0.0%
Old Beach No 1 SPS (Green Point Strategy)	Upgrades to Gagebrook SPS No. 1 and the Old Beach SPS No. 1, upsizing of the rising main and upgrades to Old Beach SPS Nos. 2 to 8 and reconfiguration of the network to mitigate overflow risk throughout the Old Beach sewerage system	Compliance	48	-	-	48	0.0%
Kingborough Sewerage Strategy - Treatment	Upgraded Blackmans Bay STP, decommission Margate, Electrona & Howden STPs	Growth	437	5,170	9,383	14,990	3.9%
Kingborough Sewerage Strategy	New pump stations, rising mains	Growth	399	641	2,409	3,449	0.9%

Project Title	Project description	Cost driver	FY2015/16 (actuals)	FY2016/17 (actuals and forecast)	FY2017/18 (forecast)	PSP2 Capex Total	Portion of PSP2 Total
– Network							
Burnie STP Upgrade	Upgrade to the STP to allow for the increase of waste produced by the Lion Dairy upgrade	Growth	265	1,664	600	2,529	0.7%
Burnie Network Upgrades	Treat the trade waste from Lion Dairy	Growth	1,353	52	-	1,405	0.4%
Windsor Park SPS Rising Main Replacement and Pump Upgrades	Upgrade rising main and SPS pumps to enable pumping of design PWWF	Growth	-	-	100	100	0.0%
Sewerage Inlet Works	Provide new inlet screening to priority STPs to minimise OHS cleaning issues and increase effluent quality	Improvement	4,540	921	-	5,461	1.4%
System optimisation - Sewer	Sewer compliance improvement	Improvement	-	500	4,500	5,000	1.3%
Wynyard STP - Dedicated Bypass Line	Rising main from Fonterra factory bypassing the TasWater network	Improvement	8	186	1,800	1,994	0.5%
Inflow and Infiltration Rectification Program	Program to investigate inflow and infiltration in various systems	Improvement	758	500	500	1,758	0.5%
Northern Midlands Sewerage Improvement Plan (NMSIP) – Planning	Rationalisation of 4 STP into 1, subsequently the Longford STP will comply with EPA requirements	Improvement	35	370	600	1,005	0.3%
Pardoe STP - Belt Press Upgrade	Belt press replacement	Improvement	935	25	-	960	0.2%
STP AS4024 Machine Safety Audit and Upgrade	Carry out an AS4024 Machine Safety Audit of Southern STPs and implement detailed design and construction phases	Improvement	287	250	250	787	0.2%
SPS Fall Prevention and Lightweight Lids	Provide a safe work place at SPS by installing light weight lids and handrails	Improvement	282	168	-	450	0.1%
Cameron Bay Belt Press replacement	Replace belt press	Improvement	15	182	250	447	0.1%
Digester Vacuum-Pressure Relief Valve Upgrade	Retro-fit all digesters with a new, separate vacuum-pressure relief arrangement	Improvement	-	-	350	350	0.1%
Backflow Prevention Installation at various STPs and SPSs	Installation of backflow prevention at various sites	Improvement	-	-	200	200	0.1%
Sorell, Midway Point Strategy	New sludge handling and odour management and/or rationalisation of STPs	Improvement	-	-	100	100	0.0%
Sewer Main Renewals Program	Sewer Main Renewals	Renewal	3,747	4,525	3,400	11,672	3.0%
SPS Renewals Program	Replacement of pumps and mechanical components within SPSs	Renewal	5,476	3,301	1,410	10,187	2.6%

Project Title	Project description	Cost driver	FY2015/16 (actuals)	FY2016/17 (actuals and forecast)	FY2017/18 (forecast)	PSP2 Capex Total	Portion of PSP2 Total
STP Renewal Program	STP renewals	Renewal	2,301	5,530	1,890	9,721	2.5%
CCTV Inspection Program	Improved performance of reticulated sewer networks (reduction in blockages, overflows, etc)	Renewal	2,800	1,300	750	4,850	1.3%
Kingston SPS E Rising Main	Replace new rising main on new alignment	Renewal	-	1,000	1,700	2,700	0.7%
Combined System Program	Allow for expenditure in the Launceston Combined System region	Renewal	-	1,140	1,080	2,220	0.6%
Prince of Wales Primary Digester Roof Replacement	Prefabricated roof replacement	Renewal	5	59	1,845	1,909	0.5%
Prince of Wales Belt Press replacement	Replace belt press	Renewal	33	1,165	-	1,198	0.3%
Cradle Valley STP Membrane Renewal	Replace membranes	Renewal	-	-	900	900	0.2%
Cameron Bay Digester #3 Cleanout & Roof Replacement	Primary digester No.3 cleaning out and recommissioning and replacement of the roof, piping and structure, subject to condition assessment	Renewal	738	5	-	743	0.2%
Willis St SPS Upgrade	This project is to upgrade the existing SPS facility to improve reliability and operation	Renewal	45	-	-	45	0.0%
Total			32,190	35,435	49,288	116,913	100.0%
No of sewerage projects	55						

Actual and forecast PSP2 Capex Projects – dual function (\$'000s)

Project Title	Project description	Cost driver	FY2015/16 (actuals)	FY2016/17 (actuals and forecast)	FY2017/18 (forecast)	PSP2 Capex Total	Portion of PSP2 Total
Minor Projects Program	Ensure efficient and prudent funding of projects that do not fall into any of the other programs currently provided	Compliance	2,903	3,200	5,440	11,543	3.0%
Electrical Program	Electrical switchboard and safety renewals	Compliance	3,400	2,000	3,330	8,730	2.3%
Work In Progress (FY2014/15)	Various Minor Projects <\$500k carried over from PSP1	Compliance	8,000	-	-	8,000	2.1%
SCADA Program	Implementation of SCADA	Improvement	8,568	3,000	2,800	14,368	3.7%
AMIS - Stage 2	Implementation of an AMIS statewide	Improvement	7,014	6,179	-	13,193	3.4%
Non-network IT	Maintain ongoing operation of TasWater's business systems	Improvement	1,950	2,000	2,000	5,950	1.5%
Asset Safety Rectification Program - Unplanned	Improved OH&S statistics and compliance with WST requirements	Improvement	1,761	1,000	-	2,761	0.7%
Charles Street Office (Improvements & Equipment)	Office Improvement due to increase of personnel	Improvement	2,037	23	-	2,060	0.5%
North West Office Relocation	Relocation of TW office staff to an adequate office. Previously located at Forth WTP	Improvement	695	1,143	-	1,838	0.5%
Electrical Assets Condition Assessment	Investigation	Improvement	1,096	500	-	1,596	0.4%
Fencing and Site Security	Program for site-related expenditure	Improvement	1,350	-	-	1,350	0.3%
Asset Condition Inspection and data improvement program	To inspect the condition of assets (both water and sewer) and use the opportunity to improve associated asset information	Improvement	113	324	337	774	0.2%
Rocherlea Redevelopment	Rocherlea redevelopment	Improvement	-	59	-	59	0.0%
Facility, Fleet and Plant upgrades and renewals	Replace vehicles and plant as appropriate	Renewal	-	5,300	4,100	9,400	2.4%
Direct to Asset Purchases	Maintain ongoing operation of TasWater's business systems and account for Opex to Capex expenditure and direct to asset expenditure	Renewal	5,922	-	-	5,922	1.5%
Fleet (Vehicles and Plant) Replacement Program	Fleet renewal	Renewal	5,780	-	-	5,780	1.5%
Opex To Capex	Maintain ongoing operation of TasWater's business systems and account for	Renewal	3,873	-	-	3,873	1.0%

Project Title	Project description	Cost driver	FY2015/16 (actuals)	FY2016/17 (actuals and forecast)	FY2017/18 (forecast)	PSP2 Capex Total	Portion of PSP2 Total
	Opex to Capex and direct to asset expenditure						
Miscellaneous Minor Works	Ability to cater for miscellaneous minor capital investment requirements that crop up periodically during normal operations	Renewal	1,867	1,223	-	3,090	0.8%
Minor Plant and Equipment	Replace minor plant and equipment	Renewal	617	-	-	617	0.2%
Total			56,946	25,951	18,007	100,904	100.0%
No. of dual function projects	19						

Appendix 12: List of major capex projects for PSP3

Forecast PSP3 Capex – Major Projects (\$'000s)

Project No.	Project description	Program description (if applicable)	Benefit Category	Quantified Outcome	FY2018/19	FY2019/20	FY2020/21	Capex from previous years	Capex in later years	Total Capex (all years)	PSP3 Capex Total
Drinking Water Quality											
Project 1	Forth River Major Upgrade / Replacement	Major DWQ Projects	Drinking Water Quality	Additional 7.5% of customers will receive drinking water from systems with public health risk that meets HBTs	3,915	46,174	47,347	3,818	-	101,253	97,436
Project 2	Bryn Estyn WTP Major Upgrade / Replacement	Major DWQ Projects	Drinking Water Quality	Additional 23.7% of customers will receive drinking water from systems with public health risk that meets HBTs	5,918	6,068	71,553	-	73,342	156,880	83,538
Project 3	System optimisation - Water	WTP Optimisation Program	Drinking Water Quality	Required to establish current asset condition and performance, and short-term optimisation opportunities	4,206	-	-	4,102	-	8,308	4,206
Project 4	Rocky Creek WTP	Small Towns existing project	Drinking Water Quality	1 less BWA/PHA and additional 0.3% of customers will receive drinking water from systems with public health risk that meets HBTs	3,678	-	-	310	-	3,988	3,678
Sewage Treatment Plants											

Project No.	Project description	Program description (if applicable)	Benefit Category	Quantified Outcome	FY2018/19	FY2019/20	FY2020/21	Capex from previous years	Capex in later years	Total Capex (all years)	PSP3 Capex Total
Project 18	Kingborough Sewerage Strategy - Treatment & Network	Major Projects	STP Effluent Quality (ie Environment)	Additional 2% of statewide STP effluent will be compliant with EPA requirements	24,605	2,603	-	23,398	-	50,605	27,208
Project 19	Pardoe Sewerage Improvement Plan	PSIP	STP Effluent Quality (ie Environment) & Asset Management	Additional 4.2% of statewide STP effluent will be compliant with EPA requirements. 19 fewer 'High Risk' STP assets (will be achieved at completion of project post-PSP3)	533	9,611	14,558	-	15,699	40,399	24,700
Project 20	Northern Midlands Sewerage Improvement Plan - Longford STP Upgrade	NMSIP	STP Effluent Quality (ie Environment) & Asset Management	Additional 0.329% of statewide STP effluent will be compliant with EPA requirements. 8 fewer 'High Risk' STP assets	2,987	20,291	1,007	2,586	-	26,869	24,283
Project 21	Cambridge Wet Weather Emergency Storage & Plant Process Improvements	Major Projects	Shellfish and Public Waterways Health	Reduction in spills to shellfish leases / public waterways	3,781	1,093	-	18	-	4,891	4,873
Project 22	Cambridge Optimisation	Top 20: STPs Optimisation	High Environmental Risk	1 less STP which currently poses High Environmental Risk (as per EPA MoU)	3,155	-	-	1,534	-	4,688	3,155

Project No.	Project description	Program description (if applicable)	Benefit Category	Quantified Outcome	FY2018/19	FY2019/20	FY2020/21	Capex from previous years	Capex in later years	Total Capex (all years)	PSP3 Capex Total
Project 23	St Marys Reuse Upgrade	STP Upgrades	STP Effluent Quality	Additional 0.055% of statewide STP effluent will be compliant with EPA requirements	1,295	1,151	-	-	-	2,446	2,446
Project 24	Geeveston Optimisation	Top 20: STPs Optimisation	High Environmental Risk	1 less STP which currently poses High Environmental Risk (as per EPA MoU)	263	1,617	553	-	-	2,433	2,433
Project 25	STPs Optimisation (various)	Big 13: STPs Optimisation	STP Effluent Quality	Additional 5% of statewide STP effluent compliant with EPA requirements	2,261	-	-	-	-	2,261	2,261
Project 26	Turriff Lodge Optimisation	Top 20: STPs Optimisation	High Environmental Risk	1 less STP which currently poses High Environmental Risk (as per EPA MoU)	526	1,617	-	-	-	2,143	2,143
Dams											
Project 42	Pet Dam	Dams Improvement - Dams plotting above SLoT	Dam Safety - Very High Risk Dams	1 less dam plotting above the societal limit of tolerability	3,728	4,002	-	104	-	7,834	7,730
Project 43	Lake Mikany	Dams Improvement - Dams plotting above SLoT	Dam Safety - Very High Risk Dams	1 less dam plotting above the societal limit of tolerability	6,077	-	-	-	-	6,077	6,077
Project 44	Flagstaff	Dams Improvement - Dams plotting above SLoT	Dam Safety - Very High Risk Dams	1 less dam plotting above the societal limit of tolerability	5,219	-	-	310	-	5,528	5,219

Project No.	Project description	Program description (if applicable)	Benefit Category	Quantified Outcome	FY2018/19	FY2019/20	FY2020/21	Capex from previous years	Capex in later years	Total Capex (all years)	PSP3 Capex Total
Project 45	Upper Reservoir	Dams Improvement - Dams required to satisfy ALARP principle	Dam Safety - High Risk Dams	1 less dam still to be made to satisfy the ALARP principle	3,485	-	-	850	-	4,335	3,485
Project 46	Swansea - Stage 2	Other Dams Projects	Dam Safety - High Risk Dams	1 less dam still to be made to satisfy the ALARP principle	3,195	-	-	-	-	3,195	3,195
Project 47	Lake Isandula	Dams Improvement - Dams plotting above SLoT	Dam Safety - Very High Risk Dams	1 less dam plotting above the societal limit of tolerability	107	1,966	-	104	-	2,072	2,072
Sewer Networks											
Project 54	Jason St SPS and Esplanade SPS Rising Main Replacements (St Helens)	Capacity	Shellfish and Public Waterways Health Sewer Systems Capacity	Reduction in spills to shellfish leases / public waterways and 1 more sewer network system with sufficient capacity	1,080	-	-	-	-	1,080	1,080
Project 55	Windsor Park SPS Rising Main Replacement and Pump Upgrade	Capacity	Shellfish and Public Waterways Health Sewer Systems Capacity	Reduction in spills to shellfish leases / public waterways and 1 more sewer network system with sufficient capacity	1,080	-	-	-	-	1,080	1,080

Project No.	Project description	Program description (if applicable)	Benefit Category	Quantified Outcome	FY2018/19	FY2019/20	FY2020/21	Capex from previous years	Capex in later years	Total Capex (all years)	PSP3 Capex Total
Project 56	Stock Route (South) Sewer Pump Station (Cressy)	Capacity	Sewer Systems Capacity	1 more sewer network system with sufficient capacity (will be achieved at completion of project post-PSP3)	-	648	-	-	5,531	6,178	648
Project 57	Smithton retic Odour Control	Corrosion & Odour Management Program	# of Customer Complaints	Reduction in odour-related complaints	-	-	57	47	1,938	2,041	57
Water Networks											
Project 58	Burnie Cam Pipeline Construction		NPV Positive	NPV Positive	609	-	-	3,350	-	3,959	609

Forecast PSP3 Capex – Major Programs (\$'000s)

Program	Description	FY2018/19	FY2019/20	FY2020/21	PSP3 CAPEX Total
Drinking Water Quality					
Water Treatment Plant Renewal Program	Asset Management	1,935	1,940	1,971	5,845
Sewage Treatment Plants					
Sewage Treatment Plant Renewal Program	Asset Management	3,860	3,871	3,933	11,663
Dams					
Dams - Minor CAPEX	Dams - Minor CAPEX	2,130	2,185	2,240	6,554
Dams - Compliance Reporting	Dams - Compliance Reporting	1,278	1,311	1,344	3,933
Sewer Networks					
CCTV Inspection Program	Condition Assessment	970	972	986	2,927
Combined System Program	N/A	878	883	896	2,656
Inflow and Infiltration Rectification Program	Capacity	852	874	896	2,622
Sewer Main Renewal Program					
<i>Sewers Proactive Asset Management – CCTV</i>	Asset Management	365	367	372	1,103
<i>Sewers Proactive Asset Management - L3 Condition assessment</i>	Asset Management	122	123	124	368
<i>Sewers Proactive Asset Management – Renewals</i>	Asset Management	1,947	1,953	1,982	5,881
<i>Sewers Reactive Asset Management – Maintenance</i>	Asset Management	418	419	425	1,261
<i>Sewers Reactive Asset Management – Renewals</i>	Asset Management	626	628	37	1,891
Sewage Pump Station Renewal Program					
<i>SPSs Proactive Asset Management - L1/2 Condition Assessment</i>	Asset Management	138	245	249	631
<i>SPSs Proactive Asset Management - L3 Condition assessment</i>	Asset Management	46	82	83	211
<i>SPSs Proactive Asset Management – Renewals</i>	Asset Management	735	1,302	1,325	3,361
<i>SPSs Reactive Asset Management – Maintenance</i>	Asset Management	158	279	284	721
<i>SPSs Reactive Asset Management – Renewals</i>	Asset Management	237	419	426	1,081
Water Networks					
Metering Program	Asset Management	3,590	1,639	1,680	6,907
Water Main Renewal Program					

Program	Description	FY2018/19	FY2019/20	FY2020/21	PSP3 CAPEX Total
<i>Proactive Asset Management - L1, L2 Condition Assessment</i>	Asset Management	406	407	413	1,225
<i>Proactive Asset Management - L3 Condition assessment</i>	Asset Management	271	271	276	817
<i>Proactive Asset Management – Renewals</i>	Asset Management	2,027	2,032	2,065	6,123
<i>Reactive Asset Management – Maintenance</i>	Asset Management	348	349	354	1,050
<i>Reactive Asset Management – Renewals</i>	Asset Management	811	813	826	2,450
Reservoir Renewal/Upgrade Program	Asset Management	580	586	1,183	2,348
Business Systems and Other					
Asset Safety Rectification Program – Unplanned	Business Systems / Corporate / Safety	1,159	1,162	1,183	3,504
Minor Projects Program	Business Systems / Corporate / Safety	4,260	3,495	3,584	11,338
Non-network IT	Business Systems / Corporate / Safety	2,130	2,621	2,688	7,439
Facility, Fleet and Plant upgrades and renewals	Business Systems / Corporate / Safety	4,686	4,369	4,480	13,534
SCADA Program	Business Systems / Corporate / Safety	3,377	2,905	2,957	9,238
Electrical Program	Electrical program	2,318	1,547	2,365	6,229

Appendix 13: Weighted average cost of capital justification

1 Background

TasWater's RAB consists of two components, 'existing' assets and 'new' assets. A separate WACC applies to each component of the RAB: a commercial rate of return on both debt and equity for 'new' assets, but for existing assets the WACC incorporates a commercial rate on debt but a legislated 3% pre-tax return on the equity portion.

TasWater's approved RAB for post 2009 assets / new capital expenditure, or the 'asset value for pricing purposes', is multiplied by the WACC (X%) to generate an annual revenue stream that is called the 'rate of return'.

In the Tasmanian economic regulatory environment (and in all jurisdictions except the Australian Capital Territory) the WACC is likely to reflect a benchmarked cost of capital (including a benchmarked or 'ideal competitive' – not actual - capital structure and cost of debt and equity among other parameters). This is important for the reader to keep in mind when considering this document.

Its implication is that TER does not have to reflect TasWater's actual financial statements, including actual amount of debt or actual cost of debt (interest rates), to be delivering a sensible benchmark WACC. Indeed, matching actuals with regulatory decisions can remove incentives for the regulated entity (in this case TasWater) to drive down costs. A degree of alignment, however, can help to ensure the regulated entity's financial viability (sometimes called "financeability").

Moreover, a good benchmark will likely incorporate a degree of forecasting of what will occur during PSP3, so perfect alignment is often not practically achievable (or advisable) unless the regulator and TasWater wanted to change the WACC and customer charges each year of the price path.

This approach has not been adopted, as one of the benefits of a price and service plan is to provide price certainty to customers and reduce the administrative burden of recalculating prices more frequently than every three (or in some jurisdictions four to five) years.

2 Overall approach to the WACC

A pre-tax WACC was used for PSP2. TasWater proposes to use a post-tax vanilla WACC for PSP3. The AER uses a post-tax vanilla WACC in its post-tax revenue model used to assess the prudence and efficiency of Australia's transmission and distribution networks.

The following formula describes the post-tax vanilla WACC for new assets and capex.

$$WACC_{post-tax\ vanilla, NOMINAL} = R_d G + R_e (1 - G)$$

Where:

R_d = cost of debt = $RFR + DRP + debt\ issuance\ costs$

RFR = risk-free rate

DRP = debt risk premium

G = gearing ratio

R_e = cost of equity = $RFR + \beta_e MRP$

β_e = asset beta

MRP = market risk premium.

The following formula describes the post-tax vanilla WACC for existing assets.

$$EXISTING\ WACC_{post-tax\ vanilla, NOMINAL} = R_d G + EXISTING\ R_e (1 - G)$$

Where:

$$EXISTING R_e = Z[1 - t(1 - \gamma)]$$

Z = statutory nominal pre-tax return on equity = 3%

t = corporate tax rate = 30%

γ = gamma

R_d = cost of debt

G = gearing ratio

TasWater agrees broadly with the key WACC inputs established in PSP2. However, we propose some (generally modest) changes to some parameters. The drivers for the changes reflect recent regulatory decisions made in other jurisdictions.

Our proposed parameters are summarised in the table directly below. In many cases, the parameters are influenced by market data which changes over time. To isolate the impact of our recommended changes to the underlying methodology from the changes in market data, we have updated the PSP2 approach with contemporary market data.

2.1 WACC parameters

We propose the following parameters:

Parameter	PSP3	Change from PSP2?	Reason if "Yes"
Gearing ratio	60%	No	-
Corporate tax rate	30%	No	-
Risk-free rate (RFR)	3.50%	Yes	Change in method to calculate the 10-year averaging approach. Consistent with IPART's approach.
Debt risk premium (DRP)	2.49%	Yes	Change in method to calculate the 10-year averaging approach. Consistent with IPART's approach.
Debt issuance	0.10%	Yes	Consistency with recent regulatory decisions.
Cost of debt	6.09%	Yes	Recalculated.
Market risk premium	6.5%	Yes	Consistency with TasNetworks and recent regulatory decisions for regulated water businesses.
Equity beta	0.70	Yes	Consistency with TasNetworks and recent regulatory decisions for regulated water businesses.
Gamma	0	Yes	TasWater's owners cannot benefit from franking credits.
Cost of equity	8.05%	Yes	Recalculated.
EXISTING WACC - post-tax vanilla <small>NOMINAL</small>	4.49%	Yes	Recalculated.
WACC - post-tax vanilla <small>NOMINAL</small>	6.87%	Yes	Recalculated.

3 Risk free rate (RFR)

3.1 Recent regulatory decisions

Australian regulators have typically used either a simple 10-year trailing average, an 'on-the-day' rate, or a combination of both to calculate the risk-free rate, as summarised in the following table.

Entity	Review	Risk free rate method
10-year average		
AER (National)	Rate of Return guideline (p.4) ²³	Simple 10-year trailing average updated annually (changes the WACC and therefore changes customer charges in each year of the price path)
ESC (Victoria)	2018 Water Price Review — Guidance Paper (p.43) ²⁴	Simple 10-year trailing average updated annually (changes the WACC and therefore changes customer charges in each year of the price path)
ESCOSA (South Australia)	SA Water Regulatory Determination 2016 (p.117) ²⁵	Simple 10-year trailing average updated annually (changes the WACC and therefore changes customer charges in each year of the price path)
On-the-day		
QCA (Queensland)	Trailing average cost of debt review (p.ii) ²⁶	On-the-day rate (20 trading day average)
Economic Regulation Authority (Western Australia)	2016 Weighted Average Cost of Capital for the Freight and Urban Rail Networks and for Pilbara railways (p.3) ²⁷	On-the-day rate (40 trading day average)
Hybrid		
IPART (NSW)	2013 WACC methodology review (pp.3 and 14) ²⁸	Average of a simple 10-year average (50% weighting) and on-the-day rate (40-day average) (50% weighting) - not annually updated
TER (Tasmania)	PSP2 Final Report	Average of one to 10-years of historic time weighted averages, similar effect to a 5-7 year average (50% weighting) and on-the-day rate (40-day average) (50% weighting) - not annually updated
Actual debt costs		

Regulators using a 10-year average justify this decision by observing that, in practice, the cost of capital used in project evaluations or business valuations are often more stable than current market rates and informed by longer term expectations. A 10-year estimation period acknowledges that regulated entities typically have large debt levels, funded by long term debt instruments.

Using a long averaging approach allows for the cost of debt estimate to reflect the actual cost of debt and does not require an entity to refresh its debt in a short period immediately before

²³ Australian Energy Regulator, 2013, Better Regulation Rate of Return Guideline, <https://www.aer.gov.au/system/files/AER%20Rate%20of%20return%20guideline%20-%20December%202013.pdf>

²⁴ Essential Services Commission, 2016, 2018 Water Price Review Guidance Paper, <http://www.esc.vic.gov.au/wp-content/uploads/2016/12/2018-Water-Price-Review-Guidance-Paper.pdf>

²⁵ Essential Services Commission of South Australia, 2016, SA Water Regulatory Determination 2016: Final Determination, <http://www.escosa.sa.gov.au/ArticleDocuments/334/20160606-Water-SAWaterRegulatoryDetermination2016FinalReport.pdf.aspx?Embed=Y>

²⁶ Queensland Competition Authority, 2015, Final Decision: Trailing average cost of debt, [http://www.qca.org.au/getattachment/c3018296-ee5-4b55-acfa-6073ff5c478d/Final-decision-Trailing-average-cost-of-debt\(820.aspx](http://www.qca.org.au/getattachment/c3018296-ee5-4b55-acfa-6073ff5c478d/Final-decision-Trailing-average-cost-of-debt(820.aspx)

²⁷ Economic Regulation Authority Western Australia, 2016, Determination on the 2016 Weighted Average Cost of Capital for the Freight and Urban Railway Networks, and for Pilbara railways, <https://www.erawa.com.au/cproot/14527/2/Att%201%20Rail%20-%20WACC%20Final%20Determination%20of%20WACC%202016%2061%202017.PDF>

²⁸ Independent Pricing and Regulatory Tribunal, 2013, WACC Methodology: Research — Draft Report, https://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/draft_report_-_wacc_methodology_-_september_2013.pdf

commencement of a regulatory period, which will often not lead to a least cost debt management outcome.

IPART, whose hybrid approach most closely resembles TER's, uses a simple 10-year average and publishes its calculation method in a spreadsheet.²⁹

3.2 PSP3 approach

Some other regulators (eg AER, ESC and ESCOSA) update the WACC parameters annually, and then update prices annually. This approach can be undertaken for any WACC method, and is not contingent on any particular approach.

Annual updating may lead to price instability – or, more likely, will have no impact as TasWater's prices are still below its upper revenue limit.

We do not consider that indexing the cost of debt on an annual basis in our new methodology provides sufficient benefits to outweigh the increased administrative costs.

3.3 Cost of debt and financeability in the context of WACC

As alluded to above, the WACC can potentially be used to address in part, any 'Financeability Test' considerations. That is, the WACC decision is part of the suite of TER's decisions that can be used to ensure the establishment of prudent and efficient costs (to protect customers from unneeded spending), balanced by ensuring that TER's decisions provide sufficient funds for TasWater to remain financially viable, whilst delivering its required levels of service in accordance with customer and stakeholders' reasonable and lawful expectations.

The cost of debt method can help ensure financeability. That is, to the extent that TER's approved cost of debt reflects TasWater's actual cost of debt prior to PSP3 and forecast cost of debt during PSP3, its financial sustainability with respect to debt will be ensured (all other factors being equal).

In simple terms, a realistic debt cost helps to ensure that TasWater can meet its loan repayments (noting that benchmark capital structures versus actual levels of debt are also relevant).

Due to its existing debt portfolio (approximately \$430 million to December 2016), TasWater has an established average cost of debt for existing loans of about 4.7% (including the government guarantee fee). This will have lowered by the start of PSP3. TasWater refinances about 10% of its existing loans each year, including in PSP3, resulting in refinancing 30% of existing debt during PSP3.

In addition, and consistent with TasWater's new Long Term Strategic Plan (LTSP), TER will likely approve additional capital expenditure (capex) during PSP3. This will result in TasWater establishing new loans at interest rates available during PSP3, which will impact the rate of refinancing. Accordingly, TasWater will likely change more than 30% of its loans (and therefore cost of debt) during PSP3.

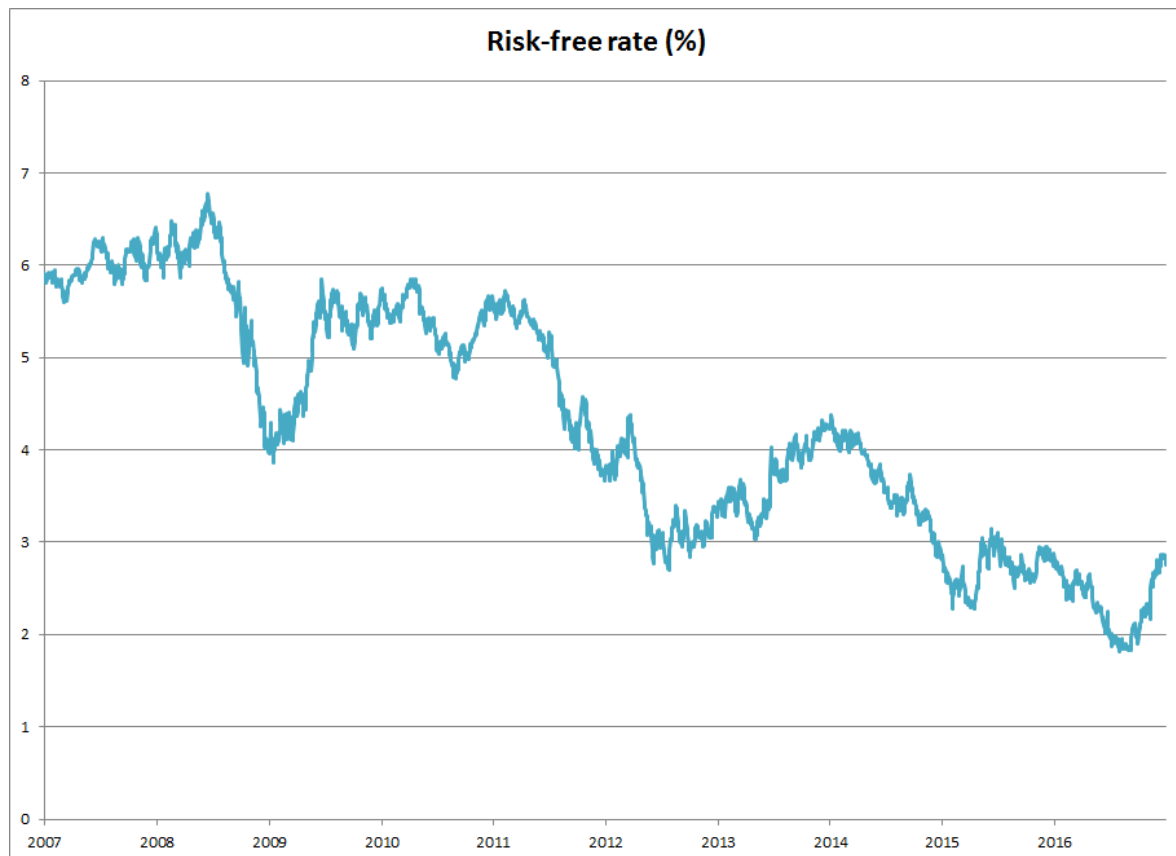
3.4 Analysis of methods

The options presented below are all on the basis that the WACC will be set at the beginning of PSP3, and not adjusted throughout the period.

PSP3 begins on 1 July 2018. To derive an RFR appropriate for that date, we have used the most recent data for this analysis. We have referred to the Commonwealth Government bond yields up until 31 March 2017.

Over the past 10 years the risk free-rate has been volatile, ranging between 1.8% and 6.8%.

²⁹ Independent Pricing and Regulatory Tribunal, 2017, Spreadsheet of WACC model – February 2017, <https://www.ipart.nsw.gov.au/Home/Industries/Special-Reviews/Regulatory-policy/WACC/Market-Update/Spreadsheet-of-WACC-model-February-2017>

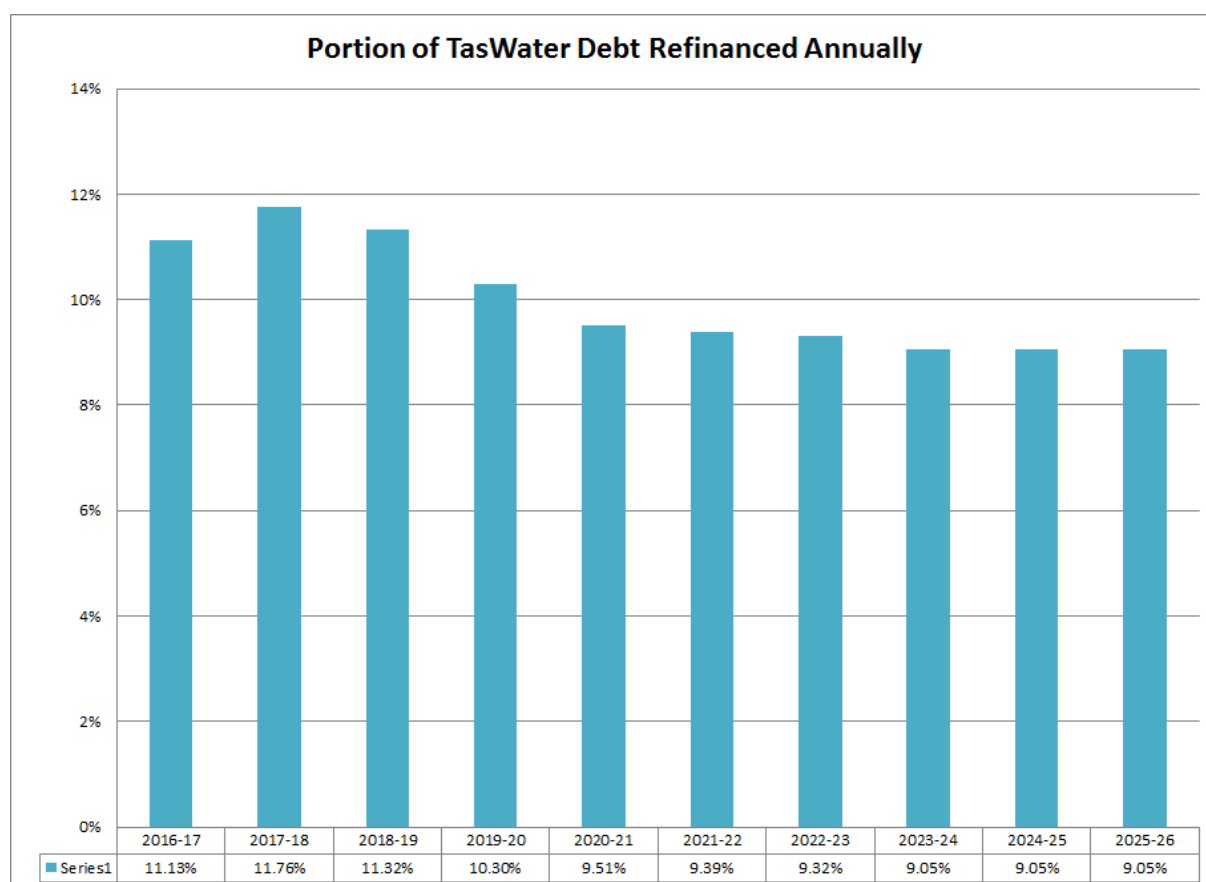


Based on current regulatory precedent, there are four options for determining the risk-free rate:

1. 10-year average
2. On-the-day rate
3. A weighted average of the 10-year average and an on-the day rate and
4. Actual cost of debt pass-through.

3.4.1 10 year average

The 10-year average approach recognises that regulated entities fund long-lived assets with long-term debt. Likewise, TasWater's debt maturity profile shows that approximately 10% of debt is refinanced each year for the next 10 years.

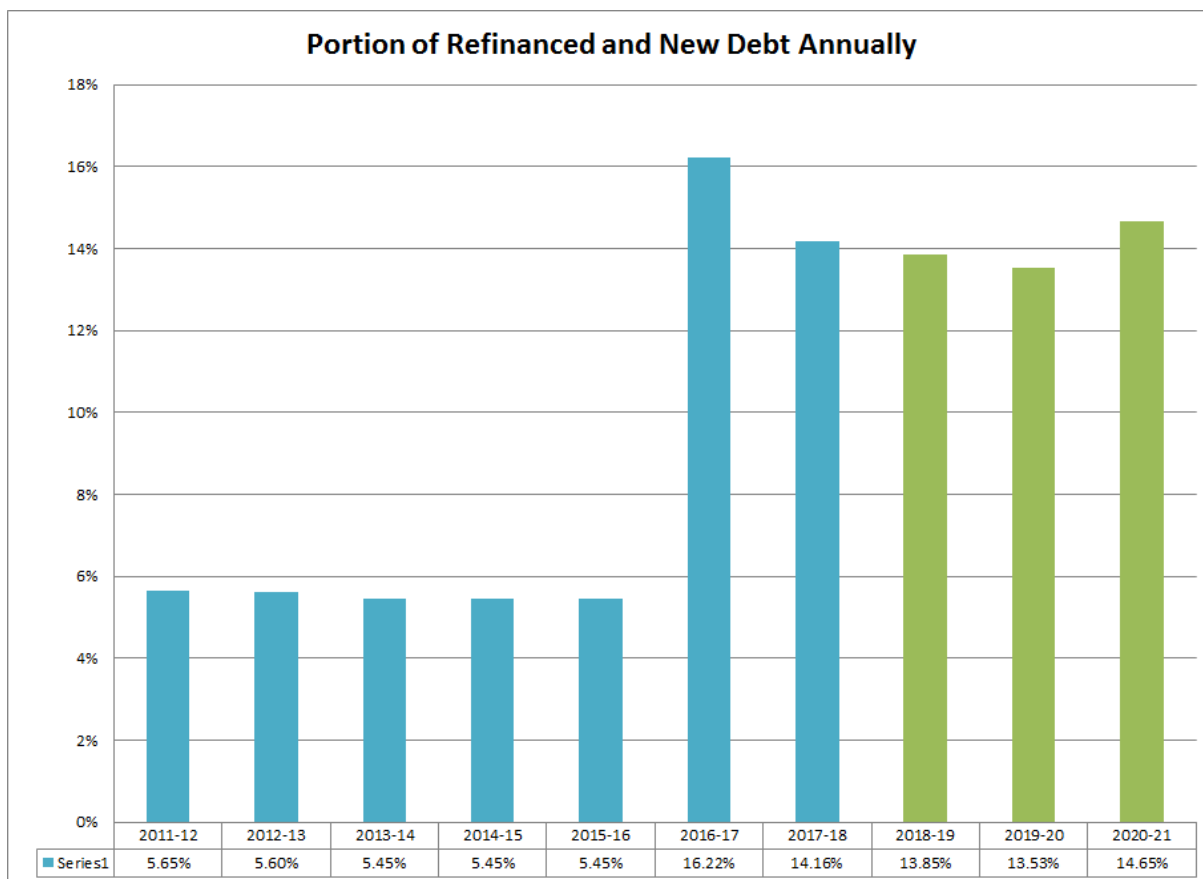


In PSP3 and PSP4, refinancing is forecast to be as follows.

Summary	PSP3	PSP4
Portion of debt to be refinanced	31%	28%
Rounded portion of debt refinanced	30%	30%

This means it may be reasonable to assume 30% of TasWater's existing loans will reach maturity and be refinanced during PSP3 at the prevailing interest rates.

However, TasWater's debt levels will continue to increase to fund the capital plan. This means that in addition to refinancing, new debt will also be required.



Summary		PSP3
Portion of new and refinanced debt in PSP3		42%
Portion of debt prior to PSP3		58%

On this basis, it may be reasonable to assume that 42% of debt will be raised during PSP3 while 58% relates to the prior period.

3.4.2 On-the-day rate

As shown above, the on-the-day rate is inherently volatile, and does not take into account the actual cost of debt incurred by TasWater. It can move very quickly and could result in TasWater under- or over-recovering its cost of debt. It could also lead to volatility between PSPs and the on-the-day approach could lead to very different risk-free rates. A longer average will be much more stable.

3.4.3 Hybrid

An average between the above two approaches can allow for the cost of debt to broadly reflect the actual debt profile, while also allowing for current conditions to be a strong influence going forward into PSP3. Given our preference is not to roll-forward the WACC and recalculate prices every year, this means that the first year data point of the 10-year average (1 July 2008) will be 13 years old by the end of PSP3 (30 June 2021).

To reflect this, the weighting of the 10-year average with the on-the-day rate could be modified by matching the future cost of debt components (reflected in the on-the-day estimate) with the term of PSP3. Given that TasWater will refinance or raise new debt of approximately 42% over PSP3, it may be reasonable to use a 42% weighting for future debt costs, and 58% for existing debt costs.

However, we acknowledge that this 58/42 split is not too different from the 50/50 split used in PSP2. To deviate from the 50/50 split and to base the split on actual debt raising activity would require recalculation for every PSP.

Therefore, TER’s previous approach to use a 50/50 split (also adopted by IPART) is more appropriate.

3.4.4 Actual cost of debt

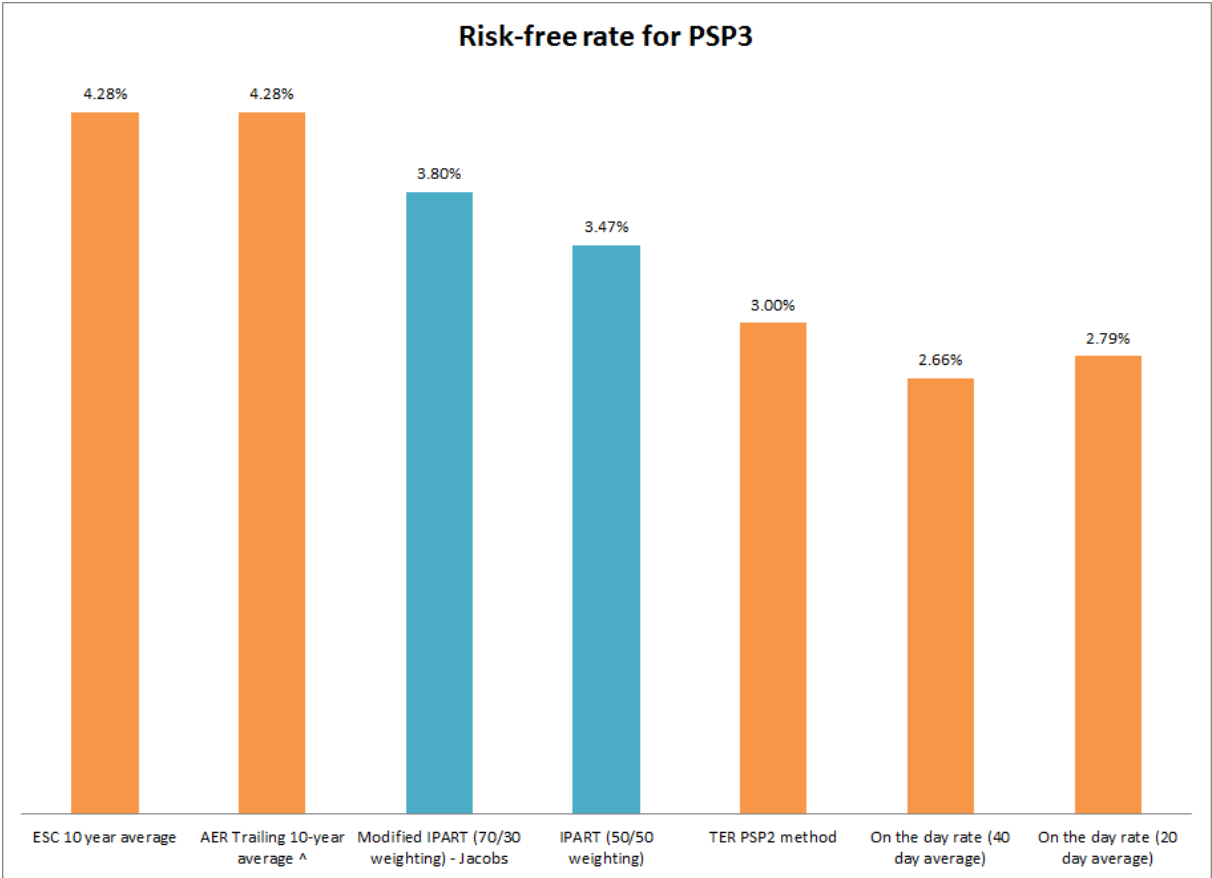
The approach used for by the ICRC in the ACT does not seem to provide incentives for the entity to procure debt for least cost. As the cost of debt is simply a pass-through, the entity receives no benefit by managing its debt better, or punishment if worse. This is not in customers’ best interests.

We do not consider that this lack of regulatory incentive will necessarily produce the best outcome for customers of the available options. It is not in keeping with economic regulatory precedent in other Australian jurisdictions. Nor does it adopt a benchmarking approach, which TER and other regulators have adopted in terms of capital structure and the range of other WACC inputs.

We recommend not using this approach, unless TER seeks to revisit all WACC input parameters determined using regulatory precedent under the benchmarking approach adopted by other Australian regulators.

3.4.5 Summary of options

The following figure summarises risk free rates from the methods discussed above. The data employed for each is current data (suitable for the PSP3 draft submission), spanning 2007-2016.



Of the methods presented above, we consider that the outer options (marked orange) may not be suitable because they either cause the WACC and customer charges to be altered annually during a PSP period, or understate the impact of the previous 10 years on the average actual cost of debt faced by TasWater at the start of PSP3.

In contrast, the options highlighted in blue balance recognition of the impact of past years on TasWater's average cost of debt whilst incorporating a component of current (forward looking) market estimates to reflect the 30-50% of TasWater's total debt likely to be re/financed in PSP3 – and incentivising TasWater to negotiate least cost debt, which is better for customers.

3.4.6 Risk free rate - summary

Consistent with many aspects of TER's approach for PSP2, our approach to the risk free rate for PSP3 is based on:

- Using a ten-year averaging period for the weighted average
- Using a 40-day averaging period for the on-the-day component
- Combining the 10-year average with the 40-day average and
- Using a 10-year Government security.

Importantly, our calculation methodology uses a simple average to calculate the 10-year average. This is consistent with other regulators, most closely resembles TasWater's refinancing timeframe and incentivises TasWater to negotiate least cost debt.

Accordingly, we recommend a risk free rate of 3.50% for PSP3.

4 Debt risk premium

The debt risk premium (DRP) is the amount above the risk free rate (RFR) that a business has to pay to acquire debt funding from financial markets and is related to, among other factors, a firm's credit rating. The DRP increases in line with how risky a business is perceived to be. It also varies over time with changing market circumstances.

Regulators overwhelmingly tend to use the same approach for calculating the debt risk premium as the risk free rate, so we will adopt the above arguments in this section.

Our discussion of this matter is divided into:

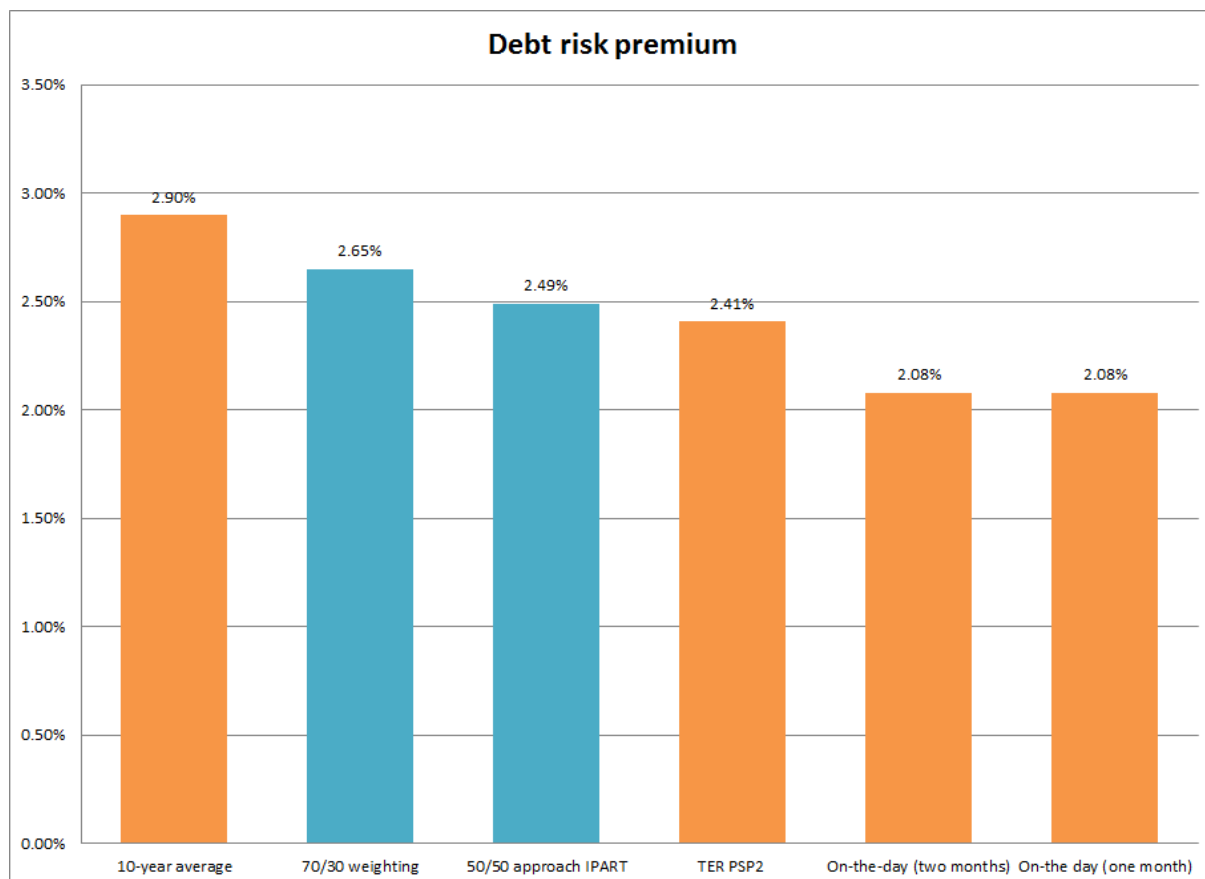
- The 'raw' DRP - does not account for transaction costs associated with acquiring debt and
- (Additional) debt-issuance costs.

4.1 Raw debt risk premium

We have retained, in part, the approach that TER considered appropriate for deriving the DRP for PSP2.³⁰ Specifically, we propose retaining the data set that TER used in determining the raw DRP for PSP2 (ie the FNFCBBB10M series from the RBA's website³¹).

Under TER's approach for PSP2, and using updated data, the raw DRP would be 2.412%. TER's approach was similar to that of the RFR, the only difference being that TER used the last two monthly observations in place of the 40-business-day observation. This is because the relevant data series is monthly rather than daily.³² In effect, the approaches are equivalent and we agree with TER.

The resulting DRP for the options presented in the risk free rate discussion are as follows.



Based on the options described above, the debt risk premium could range from 2.1% to 2.9%. However, for the reasons we applied to the RFR, we do not recommend the orange highlighted options. Instead, we recommend the same 50/50 hybrid approach that we recommend for the RFR.

³⁰ Tasmanian Economic Regulator, *2015 Water and Sewerage Price Determination Investigation – Final Report*, p.45

³¹ www.rba.gov.au/statistics/tables/csv/f3-data.csv

³² Tasmanian Economic Regulator, *2015 Water and Sewerage Price Determination Investigation – Final Report*, p.44

4.2 Debt issuance costs

In securing debt from lenders, a firm incurs transaction costs. These costs are not captured in the raw DRP.

The final decision of the Queensland Competition Authority (QCA) on Dalrymple Bay Coal Terminal (DBCT) Management's 2015 draft access undertaking (DAU) acknowledged that both DBCT Management and the DBCT User Group (ie DBCTM's customers) considered debt-issuance costs of 0.108% to be appropriate.³³ Critically, there was no disagreement between DBCT Management and its customers on this point.

We note that the Economic Regulation Authority of Western Australia (ERAWA) include debt raising costs of 0.125%.³⁴ This allowance reflects the direct costs of:

- Gross underwriting fees
- Legal and roadshow fees
- Company credit rating fees
- Issue credit rating fees
- Registry fees and
- Paying fees.

IPART also includes a 12.5 basis points allowance for debt raising costs.³⁵

These regulators determined the costs that would be incurred to raise or refinance debt. We have not sought to replicate their calculations, but consider it appropriate to rely on their method. The tight cluster of estimates gives confidence to apply their findings to other regulated utility businesses.

While TasWater does not incur debt issuance costs directly, this is a function of requirement to raise all debt through the state-owned TasCorp. Under the principles of benchmark regulation, the WACC should be set to reflect a benchmark firm, which does not have access to Government-raised debt. Accordingly, a benchmark firm would need to pay for debt issuance costs.

We propose the inclusion of a debt issuance cost of 0.10% as this is the value calculated by two out of three other regulators.

4.3 Loan guarantee fees

Loan Guarantee fees (LGF) are a competitive neutrality payment to local government shareholders (paid as part of total distributions) that are driven by loans and cost of debt. The LGF ranges:

- From the commencement of TasWater, from 0.40% to 1.53% and
- As at December 2016, from 0.17% to 1.36%.

The purpose of the LGF is to neutralise the competitive advantage of TasWater in having access to funding through TasCorp.

³³ Queensland Competition Authority, 2016, Final Decision: DBCT Management's 2015 draft access undertaking, <http://www.qca.org.au/getattachment/081401b3-903e-4aea-b9fd-9da8e544cf94/Secondary-Undertaking-Notice%E2%80%9494Attachment%E2%80%9494QCA-decisi.aspx>

³⁴ Economic Regulation Authority Western Australia, 2013, Rate of Return Guidelines: Meeting the requirements of the National Gas Rules, <https://www.erawa.com.au/cproot/11953/2/Rate%20of%20Return%20Guidelines.PDF>

³⁵ Independent Pricing and Regulatory Tribunal, 2016, Review of Prices for Sydney Water Corporation: From 1 July 2016 to 30 June 2020 – Final Report, https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/investigation-legislative-requirements-water-metropolitan-water-sydney-water-corporation-pricing-investigation-commencing-from-1-july-2016/final_report_-_review_of_prices_for_sydney_water_corporation_-_from_1_july_2016_to_30_june_2020.pdf

This is a real and legitimate cost incurred by TasWater. However, we do not propose to recover these costs through the cost of debt as:

- It would be inconsistent with benchmark regulation as a benchmark firm would not incur these expenses but would pay a cost of debt consistent with the addition of the risk-free rate + debt risk premium + debt issuance costs and
- Distribution to customers is a matter for TasWater's Board of Directors and its distribution policy should not influence regulated prices.

5 TasWater's total cost of debt - calculated

TasWater's proposed cost of debt for PSP3 combines the following three inputs:

- RFR
- DRP and
- Debt-issuance cost.

The total cost of debt for TasWater in PSP3, resulting from the methods presented, is as follows.

Method	Risk free rate	Debt Risk Premium	Debt Issuance Cost	Total Cost of Debt
Hybrid - IPART (50/50 weighting)	3.50%	2.49%	0.10%	6.09%

6 Market risk premium (MRP)

The MRP is the additional return that an equity investor requires to be compensated for the risk of investing in a market portfolio of risky assets - as against purchasing a risk-free asset.

The MRP is a key component of the cost of equity and, in turn, the WACC. In PSP2, TasWater proposed an MRP of 6.0%, which TER accepted.³⁶

6.1 Our position

Our view is that all the state-owned regulated network monopolies should have the same MRP. Not having this consistency would mean that the Tasmanian Government implicitly endorses an outcome where regulated water and electricity³⁷ utilities in Tasmania operate in different *overall* market environments.

For example, if the MRP applied for determining the WACC for a water utility is lower than that for an energy utility, this would suggest that the overall market risk involved in investing in water utilities is different from that of energy utilities. This would be implausible, as both these entities do in fact operate in the same overall market.

Other than TasWater, the other government owned network monopoly that is regulated in Tasmania is TasNetworks (electricity distribution and transmission assets). The AER is responsible for the economic regulation of TasNetworks.

³⁶ Tasmanian Economic Regulator, *2015 Water and Sewerage Price Determination Investigation – Final Report*, p.43

³⁷ TasGas Networks, the natural-gas distribution service provider in Tasmania, is not owned by the State Government and is not subject to regulatory pricing determinations

6.2 Recent regulatory decisions

Entity	Review	MRP
AER (National)	Rate of Return guideline (p.4) ³⁸	6.50%
ESC (Victoria)	2018 Water Price Review — Guidance Paper (p.43) ³⁹	NA
ESCOSA (South Australia)	SA Water Regulatory Determination 2016 (p.117) ⁴⁰	6.00%
QCA (Queensland)	Dalrymple Bay Coal Terminal Review (p.81) ⁴¹	6.50%
Economic Regulation Authority (Western Australia)	2016 Weighted Average Cost of Capital for the Freight and Urban Rail Networks and for Pilbara railways (paragraph 58) ⁴²	7.40%
IPART (NSW)	2013 WACC methodology review (pp.3 and 14) ⁴³	7.35%
Range		6.00 – 7.40%
Mid-point		6.70%
Average		6.75%

6.3 AER's decision on TasNetworks' proposals

The AER's recent draft decision for TasNetworks' electricity distribution arm (formerly Aurora Energy), over the FY2017/18 to FY2018/19 regulatory period, found an MRP of 6.5% to be appropriate.⁴⁴ A previous decision on Transend (formerly the electricity transmission network provider, and now part of TasNetworks) for FY2014/15 to FY2018/19 also assigned an MRP of 6.5%.⁴⁵

As the AER's remit spans Tasmania and many other states, we acknowledge that many specialists have contributed to the debate on what the MRP should be. Indeed, over the last five years, the list of academics and consultants that have advised on this topic includes:

- Stephen Gray (SFG Consulting and Frontier Economics)
- McKenzie and Partington
- NERA
- Houston Kemp
- Martin Lally
- Competition Economics Group and
- Capital Research.

The AER's analysis was very thorough and considered:

³⁸ Australian Energy Regulator, 2013, Better Regulation Rate of Return Guideline,

<https://www.aer.gov.au/system/files/AER%20Rate%20of%20return%20guideline%20-%20December%202013.pdf>

³⁹ Essential Services Commission, 2016, 2018 Water Price Review Guidance Paper, <http://www.esc.vic.gov.au/wp-content/uploads/2016/12/2018-Water-Price-Review-Guidance-Paper.pdf>

⁴⁰ Essential Services Commission of South Australia, 2016, SA Water Regulatory Determination 2016: Final Determination, <http://www.escosa.sa.gov.au/ArticleDocuments/334/20160606-Water-SAWaterRegulatoryDetermination2016FinalReport.pdf.aspx?Embed=Y>

⁴¹ Queensland Competition Authority, 2016, Final Decision: DBCT Management's 2015 draft access undertaking, <http://www.qca.org.au/getattachment/081401b3-903e-4aea-b9fd-9da8e544cf94/Secondary-Undertaking-Notice—Attachment—QCA-decisi.aspx>

⁴² Economic Regulation Authority Western Australia, 2016, Determination on the 2016 Weighted Average Cost of Capital for the Freight and Urban Railway Networks, and for Pilbara railways, <https://www.erawa.com.au/cproot/14527/2/Att%201%20Rail%20-%20WACC%20Final%20Determination%20of%20WACC%202016%2061%202017.PDF>

⁴³ Independent Pricing and Regulation Tribunal, 2013, WACC methodology: Research – draft report, https://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/draft_report_-_wacc_methodology_-_september_2013.pdf

⁴⁴ Australian Energy Regulator, 2016, Draft Decision: TasNetworks distribution determination 2017-18 to 2018-19, <https://www.aer.gov.au/system/files/AER%20-%20Draft%20decision%20-%20TasNetworks%20distribution%20determination%20-%20Overview%20-%20September%202016.pdf>

⁴⁵ Australian Energy Regulator, 2015, Rate of return fact sheet – April 2015, https://www.aer.gov.au/system/files/AER%20-%20Rate%20of%20return%20-%20Fact%20sheet%20-%20April%202015_7.pdf

- Historical stock returns dating back to 1883
- The dividend growth model - for the two month period up to end-July 2016, the dividend growth models produce a range of market risk premium estimates between 7.54 per cent to 8.86 per cent
- Implied volatility
- Dividend yields
- Yield spreads
- Surveys of investors
- Broker reports
- Valuation reports and
- Other regulators.

We consider that the AER's analysis of these issues is more comprehensive than other regulators. We do not consider there to be value in seeking to replicate their analysis and we consider it appropriate to rely on their findings.

In addition to TasNetworks, the AER has recently arrived at an MRP of 6.5% for other distribution and transmission entities.⁴⁶

Based on the advice that the AER has considered, and the spread of entities across the states under its purview, we consider that a 6.5% MRP for PSP3 is robustly supported by recent (post-PSP2) regulatory precedent and is therefore appropriate.

6.4 Recommendation

For consistency between regulated water and energy network service providers in Tasmania, and acknowledging the AER's recent determinations, for PSP3 we recommend that TER apply a market risk premium to TasWater of 6.5%.

⁴⁶ See decisions including:

Australian Energy Regulator, 2016, Final Decision: Amadeus Gas Pipeline Access Arrangement 2016 to 2021, <https://www.aer.gov.au/system/files/AER%20-%20Final%20decision%20Amadeus%20Gas%20Pipeline%20Access%20Arrangement%20-%20Overview%20-%20May%202016.pdf>

Australian Energy Regulator, 2016, Final Decision: Australian Gas Networks Access Arrangement 2016 to 2021, https://www.aer.gov.au/system/files/AER%20-%20Final%20decision%20Australian%20Gas%20Networks%20Access%20Arrangement%20-%20Overview%20-%20May%202016_0.pdf

Australian Energy Regulator, 2016, Final Decision: ActewAGL Distribution Access Arrangement 2016 to 2021 Overview, https://www.aer.gov.au/system/files/AER%20-%20Final%20decision%20ActewAGL%20Distribution%20Access%20Arrangement%20-%20Overview%20-%20May%202016_0.pdf

Australian Energy Regulator, 2015, Final Decision: TransGrid transmission determination 2015-16 to 2017-18 Overview, <https://www.aer.gov.au/system/files/AER%20-%20Final%20decision%20%28Substituted%29%20TransGrid%20transmission%20determination%20-%20Overview%20-%20July%202015.pdf>

Australian Energy Regulator, 2017, Final Decision: Powerlink transmission determination 2017-18 to 2021-22 Overview, <https://www.aer.gov.au/system/files/AER%20-%20Powerlink%202017-22%20-%20Final%20decision%20overview%20-%20April%202017.pdf>

Australian Energy Regulator, 2017, AusNet Services transmission determination 2017-2022 Overview, <https://www.aer.gov.au/system/files/AER%20-%20AusNet%20Services%202017-22%20-%20Final%20decision%20overview%20-%20April%202017.pdf>

7 Equity beta

A regulated firm's asset beta is a relative measure of the underlying business risk of the entity relative to the risk of the market as a whole. The equity beta reflects not only this business risk but also the financial risk borne by equity holders from the use of debt to partially fund the business.

TasWater proposed an equity beta of 0.65 for PSP2. TER accepted this estimate.⁴⁷

7.1 Recent decisions

Entity	Review	Equity beta
AER (National)	Draft decision on TasNetworks (section 3-9)	0.70
ESC (Victoria)	2018 Water Price Review — Guidance Paper (p.43) ⁴⁸	NA
ESCOSA (South Australia)	SA Water Regulatory Determination 2016 (p.125) ⁴⁹	0.70
QCA (Queensland)	Gladstone Area Water Board 2015-20	0.70
Economic Regulation Authority (Western Australia)	2016 Weighted Average Cost of Capital for the Freight and Urban Rail Networks and for Pilbara railways (paragraph 58) ⁵⁰	0.65
IPART (NSW)	Review of prices for Sydney Water Corporation (pp.125) ⁵¹	0.70
Range		0.65 – 0.70
Average		0.69

7.2 Recommendation

Taking all the regulatory evidence together, we consider that an equity beta in the range 0.65 to 0.70 for TasWater would be reasonable. However, a number of recent regulatory decisions for water entities have provided for an equity beta of 0.70 and the AER's TasNetworks decision (as noted in our comments regarding the MRP) indicates that an equity beta of 0.70 is appropriate.

Accordingly, TasWater recommends an equity beta of 0.70 for PSP3.

8 TasWater's cost of equity - calculated

Based on our recommendations above we have recalculated the cost of equity as follows.

Method	Risk free rate	Market risk premium	Equity beta	Total Cost of Equity
Hybrid - IPART (50/50 weighting)	3.50%	6.50%	0.70	8.05%

⁴⁷ Tasmanian Economic Regulator, 2015 *Water and Sewerage Price Determination Investigation – Final Report*, p.45 (Table 4.12)

⁴⁸ Essential Services Commission, 2016, 2018 Water Price Review Guidance Paper, <http://www.esc.vic.gov.au/wp-content/uploads/2016/12/2018-Water-Price-Review-Guidance-Paper.pdf>

⁴⁹ Essential Services Commission of South Australia, 2016, SA Water Regulatory Determination 2016: Final Determination, <http://www.escosa.sa.gov.au/ArticleDocuments/334/20160606-Water-SAWaterRegulatoryDetermination2016FinalReport.pdf.aspx?Embed=Y>

⁵⁰ Economic Regulation Authority Western Australia, 2016, Determination on the 2016 Weighted Average Cost of Capital for the Freight and Urban Railway Networks, and for Pilbara railways, <https://www.erawa.com.au/cproot/14527/2/Att%201%20Rail%20-%20WACC%20Final%20Determination%20of%20WACC%202016%2061%202017.PDF>

⁵¹ Independent Pricing and Regulatory Tribunal, 2016, Review of prices for Sydney Water Corporation: From 1 July 2016 to 30 June 2020 – Final Report, https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/investigation-legislative-requirements-water-metropolitan-water-sydney-water-corporation-pricing-investigation-commencing-from-1-july-2016/final_report_-_review_of_prices_for_sydney_water_corporation_-_from_1_july_2016_to_30_june_2020.pdf

9 Gamma

TasWater proposed a gamma of 0.50 for PSP2. TER accepted TasWater's proposal.⁵²

9.1 What is gamma?

In its final decision on DBCT Management's 2015 DAU, the QCA described why 'gamma' was important for establishing the annual-revenue building blocks:

"The Australian tax system allows companies to provide their shareholders with credits (ie dividend imputation credits) to reflect company taxes paid on profits that are distributed as dividends. Shareholders then use these credits to reduce their own tax liabilities. Therefore, imputation credits effectively reduce a company's cost of capital.

The value of dividend imputation credits is captured by a parameter known as 'gamma', which is the product of the:

- *Utilisation rate—a value-weighted average over the utilisation rates (of imputation credits) of all investors in the market*
- *Distribution rate—the ratio of distributed imputation credits to company tax paid.⁵³*

The 'gamma' parameter recognises that shareholders can benefit from imputation credits associated with dividends. It does this by applying a downward adjustment to the annual revenue requirements for a regulated entity. Under the modelling framework we have proposed for PSP3, gamma reduces the taxation-allowance building block for TasWater. The formula is as follows:

$$\text{Tax allowance} = \text{Corporate Tax Rate} \times (1 - \text{Gamma}) \times \text{Taxable Income}$$

As noted above, the value of gamma is the product of the utilisation rate and distribution rate.

9.2 The QCA's decision on gamma

The QCA considers that a gamma of 0.47 is appropriate. This is based on the product of the:

- *Utilisation rate of 0.56.* This means that the QCA considers that 56% of investors in the market can benefit from imputation credits
- *Distribution rate of 0.84.* This means that the QCA considers that the benchmark regulated firm distributes 84% of its profits in dividends.

We focus on utilisation-rate aspects to explain why gamma may more properly be zero for TasWater.

9.3 Alternative to 0.5 or zero (0) gamma

Another approach would be for TER to adopt 0.25, to align with the decision of the Australian Competition Tribunal (ACT) in relation to AusNet Services and other utilities.

We note that the ACT has derived 0.40 in other matters, but that the broad view is for the figure of 0.25 to apply for gamma.

Such an approach if adopted by TER may reflect a hybrid (midpoint) approach balancing a pure benchmark entity method (resulting in a 0.4-0.5 gamma) with an actual taxation status/local government ownership approach (resulting in a zero gamma).

⁵² Tasmanian Economic Regulator, 2015 *Water and Sewerage Price Determination Investigation – Final Report*, p42

⁵³ Queensland Competition Authority, 2016, Final Decision: DBCT Management's 2015 draft access undertaking, <http://www.qca.org.au/getattachment/081401b3-903e-4aea-b9fd-9da8e544cf94/Secondary-Undertaking-Notice—Attachment—QCA-decisi.aspx>

9.4 Why gamma could reasonably be zero for TasWater

The QCA's analysis canvasses a scenario where shareholders of the regulated entity *can* benefit from imputation credits. Indeed, the QCA considers that 56% of investors in the market can benefit from such credits. However, we challenge the validity of this argument in a situation where all shareholders in the regulated entity cannot benefit from imputation credits. It is important to recognise that some firms have shareholders that have utilisation rates of zero.

TasWater's shareholders comprise 29 Councils. These councils are the 'end' shareholders, and they cannot benefit from imputation credits. Accordingly, the councils have utilisation rates of zero.

In this context, a revenue requirement that is reduced to reflect the nature of imputation credits is inappropriate because it results in TasWater under-recovering its revenues. In particular, this approach results in:

- TasWater obtaining a taxation allowance that is less than the actual tax equivalents that it is obliged to pay under Tasmanian Treasury's (appropriate) Tax Equivalent Regime
- TasWater's customers not paying cost-reflective prices for regulated water and sewage services in this respect.

Assuming the previous PSP2 position of a 0.50 gamma is adopted, TasWater's taxation-allowance building block would be lower than reasonable because the tax-payable calculation would be understated and the value of imputation credits would be overstated.

9.4.1 Where a benchmark entity may not need to apply - ownership

It could be argued that a benchmark entity does not have shareholders that are Councils, and we acknowledge this point of view.

However, this view implicitly suggests that economic regulators have the discretion to decide what the ownership structure of regulated firms should be. By this, we mean that economic regulators can effectively dictate whether a firm should be owned by domestic shareholders (individuals, companies or councils), foreign shareholders (individuals, companies or councils), or other entities. We do not consider such discretion exists – nor would it be appropriate.

We consider a key goal of economic regulators is to promote efficient outcomes in markets, not dictate ownership structures for regulated firms.

9.4.2 Where benchmark entity should apply

In contrast, referring to a 'benchmark entity' to derive WACC components like the gearing ratio and cost of debt is reasonable. This is because a regulated entity could game the process if firm-specific parameters (or actuals) were being adopted to determine the WACC. For example, a regulated firm could lower its gearing ratio to increase its share of equity, which could lead to a higher WACC. We accept that gaming of this nature should be discouraged by the regulator (and TER does so effectively). However, to impose the 'benchmark entity' idea on *who* should own a regulated firm, may demonstrate a degree of regulatory overreach.

9.4.3 Change of ownership

A change in our current ownership would be unlikely to alter our view that a gamma of zero best reflects TasWater's bid to remain financially viable.

Hypothetically, we recognise that privatising TasWater could result in a situation where the new owners could benefit from imputation credits. While this outcome is highly unlikely, we support a mechanism in PSP3 that enables the adjusting of revenue requirements during PSP3 in the event that there is a change in TasWater's ownership that impacts the ability of an owner to use imputation credits.

9.5 Conclusion on gamma

As TasWater is owned by 29 Councils, entities which cannot benefit from imputation credits and therefore have utilisation rates of zero, we consider it unreasonable to reduce their taxation allowances in the revenue requirements to reflect a benefit they cannot receive.

We note that the Industry Act applies a 3% pre-tax cost of equity on TasWater, reducing the WACC that TasWater can earn on its 'old assets' - which presumably reflects the view that customers should not pay charges that reflect a commercial WACC on old assets.

As TasWater's revenues are adversely impacted due to a policy position that is inconsistent with cost-reflective pricing in an economic-regulation sense, we consider it reasonable for TasWater to not be penalised in a way that results in an under-recovery of costs. TasWater's taxation allowances should, therefore, not be adjusted downwards to account for imputation credits, since those credits have no value to TasWater's owners.

Gamma is the product of the utilisation rate and distribution rate for imputation credits. Since the utilisation rate of TasWater's shareholders (ie the 29 councils) is zero, gamma should be zero.

If the PSP2 position of a gamma of 0.50 is retained, TasWater's annual taxation-allowance building block would be inappropriately reduced. In particular, it would result in TasWater's tax payable amount being understated and the value of imputation credits to TasWater being overstated.

In addition, TasWater's customers would not be paying cost-reflective prices for water and sewerage services.

9.6 Recommendation

TasWater recommends a gamma of zero (0) for PSP3. We also would support the inclusion of a mechanism to re-determine the gamma – and therefore the annual revenue requirements during PSP3 for TasWater - in the event there is a change of ownership of TasWater that impacts the ability of an owner to utilise imputation credits.

10 Post-tax nominal 'vanilla' WACC

10.1 WACC for new assets and capex

In summary, we propose the following inputs and WACCs for new assets / new capex.

WACC new assets / capex	PSP3 - Recommended
Gearing	60%
Corporate tax rate	30%
Risk free rate	3.50%
Debt risk premium	2.49%
Debt issuance	0.10%
Pre-tax cost of debt	6.09%
Market risk premium	6.50%
Equity beta	0.70
Cost of equity	8.05%
Gamma	0
Nominal WACC - pre-tax	8.25%
Real WACC - pre-tax	5.61%
Nominal WACC - post-tax vanilla	6.87%

10.2 WACC for existing assets

In summary, we propose the following inputs and WACCs for existing / legacy assets.

Legacy assets	PSP3 - Recommended
Gearing	60%
Corporate tax rate	30%
Risk free rate	3.50%
Debt risk premium	2.49%
Debt issuance	0.10%
Pre-tax cost of debt	6.09%
Market risk premium	6.50%
Equity beta	0.70
Statutory return on equity	3.00%
Gamma	-
Nominal WACC - post-tax vanilla	4.49%

Appendix 14: Schedule of equivalent tenement rates

Our ET methodology and schedule is based on the NSW Water Directorate *Section 64 Determinations of Equivalent Tenements 2009*, updated to reflect changes to water consumption in Tasmania and potential sewage load.

An ET is a measure of the load a property places on the sewerage system. One ET is considered to be the sewage discharge from an average single residential house, under dry weather flows. This has been determined to be 200kL/ET/annum. ET rates for different land uses are calculated as being a factor of this average sewage discharge rate.

For titles with multiple uses, we will use the relevant use type to calculate a total ET figure. For example, a shopping centre with a café and bakery.

Since PSP2 we have reviewed our ETs and have made some adjustments. The following table outlines the change and the reason.

Adjustments to ETs since PSP2

End use code and category	Change	Reason for change
AP05 – Boarding House	Same as nursing home	Consistency, expected similar load
AS06 – Serviced apartments	Same as motel/hotel/resort room – medium density	Expected similar usage, rather than the same as a house
BE02 – supermarket	Removal of trade waste reference	The trade waste load has been removed from the ET calculation, so a reference is no longer needed
BE03 – shopping centre	Removal of trade waste reference	The trade waste load has been removed from the ET calculation, so a reference is no longer needed
BE04 - Office	Discharge factor – 0.95	In response to customer feedback. Detailed examples given by customer suggested sewerage demand significantly above Hotels may be similar, but no representations in relation to the PSP3 process have been received on this front
BE09/BE10	Toilet/shower	Load expected to be predominately trade waste
BE14 - Nursery	Toilet/shower	Most water use expected to be outdoor (to plants)
FM01-FM09	Toilet/shower plus floor area and staff rooms	Significant trade waste load, likely double counting for gross floor area
TL01-TL02	Toilet/shower	As for Manufacturing (end use codes MM01 through MM05)
EF05 - Marina	Floor area of club/function/meeting rooms	Reflects waste water generation rather than number of berths or gross floor area
SF01-03, SF06	Changing clubrooms to club/function/meeting rooms	More descriptive
CF02 – primary and second	Brought in college Removed trade waste discount	Occupation rate same as for secondary in NSW The trade waste load has been removed from the ET calculation, so a discount is no longer needed
CF03	Added TAFE, reduced ET for NSW Water directorate figure	Loading for university expected to be lower than secondary school as food preparation is generally considered separately
CF05-CF06	Amenities and if kitchen area of function/meeting room	Separated into ET rate per public amenity and, if there is a kitchen, an ET rate per floor area of function/meeting room
BE09/BE10	Toilet/shower	Load expected to be predominately trade waste

The following table sets out our ET rates for different property types and the unit of measurement.

Schedule of ETs for property types

Code	Property Type	ET per unit	Unit
RE00	Unconnected serviced land (ie undeveloped vacant land)	0.6000	lot
RE Standard occupancy			
RE01	Single residential dwelling – Includes all houses, units, flats, apartments, granny flats	1.0000	dwelling
RE01	All other residential properties	1.0000	dwelling
AP Accommodation (permanent)			
AP01	Nursing home/ special care home	0.4500	bed
AP02	Self-care retirement units/villas	1.0000	dwelling
AP03	Self-care retirement – serviced unit (on-site)	1.0000	dwelling
AP04	Self-care retirement – serviced unit (off-site)	1.0000	dwelling
AP05	Boarding house	0.4500	per bed
AS Accommodation (short term)			
AS01	Caravan park – caravan/cabin/camping sites, including long term sites. Previously measured by the property/site's water meter multiplied by the Discharge Factor divided by the Average annual residential water consumption Where: - Discharge Factor is 0.75; and - Average annual residential water consumption for the preceding financial year is based on TasWater's most recent annual performance report	Q3 to Q3 ¹ 0.75	Annual water consumption Discharge factor
AS01	Caravan park – caravan/cabin/camping sites, including long term sites (alternative method). This method applies only where previous year Q3 to current year Q3 annual water consumption data is not available. ⁵⁴ On application, direct measurement of sewage flow may be considered. Customers will pay the costs of supply and installation of meters and meters must meet TasWater's requirements	0.45 0.50	per self-contained cabin per toilet/shower in separate toilet block
AS02	Bed and breakfast/ guest house	0.4500	room
AS03	Services – motel/hotel/resort room – medium density	0.4500	room
AS04	Services – motel/hotel/resort room – high density	0.4500	room
AS05	Backpackers/ hostel	0.2300	bed
AS06	Serviced/unserviced apartments	0.4500	room
AM Accommodation (medical care)			
AM01	Hospital	0.9710	bed
AM02	Hostel (medical)	0.9710	bed
BE Business (excluding food preparation)			
BE01	Single retail shop	0.0030	Gross Building Floor

⁵⁴ Annual water consumption is measured from Q3 in the previous year to Q3 in the current year to allow calculation of prices for the year ahead.

Code	Property Type	ET per unit	Unit
			Area (sqM)
BE02	Supermarket	0.0030	Gross Building Floor Area (sqM)
BE03	Shopping centre	0.0020	Gross Building Floor Area (sqM)
BE04	Office Previous year Q3 to current year Q3 annual water consumption measured by the property/site's water meter multiplied by the Discharge Factor divided by the Average annual residential water consumption ⁵⁵ Where: - Discharge Factor is 0.90; and - Average annual residential water consumption for the preceding financial year based on TasWater's annual performance report	Q3 to Q3 0.95	Annual water consumption Discharge factor
BE05	Hairdresser/ beauty salon	0.8000	basin ⁵⁶
BE06	Laundromat	0.7000	machine ¹
BE07	Medical centre	0.6000	consulting room ¹
BE08	Service station	0.9000	lane
BE09	Car wash (wand wash)	0.6000	toilet/shower
BE10	Car wash (drive through)	0.6000	toilet/shower
BE11	Animal boarding	0.0750 0.0060	per kennel 0.0060 Gross Building Floor Area (sqM) office space
BE13	Airport	case-by-case	case-by-case
BE14	Nursery	0.6000	toilet/shower
MP Meal preparation			
MP01	Restaurant/café	0.0080	Gross Building Floor Area (sqM)
MP02	Take away/fast food - no public amenities	0.0080	Gross Building Floor Area (sqM)
MP03	Take away/fast food - including public amenities	0.0160	Gross Building Floor Area (sqM)
MP04	Catering	0.0080	Gross Building Floor Area (sqM)
FM Food Manufacture			
FM01	Meat – abattoir/smallgoods	0.6000 0.0030	toilet/shower floor area office and staff rooms (sqM)
FM02	Dairy - milk	0.6000	toilet/shower

⁵⁵ Annual water consumption is measured from Q3 in the previous year to Q3 in the current year to allow calculation of prices for the year ahead.

⁵⁶ Trade waste ET to be subtracted from total assessment to account for trade waste charges.

Code	Property Type	ET per unit	Unit
		0.0030	floor area office and staff rooms (sqM)
FM03	Dairy – cheese, butter, yoghurt	0.6000	toilet/shower
		0.0030	floor area office and staff rooms (sqM)
FM04	Dairy – ice cream	0.6000	toilet/shower
		0.0030	floor area office and staff rooms (sqM)
FM05	Grain – flour milling/bakery	0.6000	toilet/shower
		0.0030	floor area office and staff rooms (sqM)
FM06	Grain – biscuits & cakes	0.6000	toilet/shower
		0.0030	floor area office and staff rooms (sqM)
FM07	Beverages - beer	0.6000	toilet/shower
		0.0030	floor area office and staff rooms (sqM)
FM08	Beverages – soft drinks & cordials	0.6000	toilet/shower
		0.0030	floor area office and staff rooms (sqM)
FM09	Other – eg confectionery	0.6000	toilet/shower
		0.0030	floor area office and staff rooms (sqM)
TL Textile and Leather			
TL01	Wool – wool scour	0.0040 0.6000	Gross Building Floor Area (sqM) toilet/shower
TL02	Wool – felt & carpet, dyeing & spinning	0.0040 0.6000	Gross Building Floor Area (sqM) toilet/shower
MM Other Industrial, metal processing and manufacturing			
MM01	Factory/workshop/warehouse	0.6000	toilet/shower
MM02	Metal finishing – electroplating, anodising, galvanising	0.6000	toilet/shower
MM03	Engineering – machine shops, sheet metal, foundry, extrusion	0.6000	toilet/shower
MM04	Engineering – rolling	0.6000	toilet/shower
MM05	Manufacturing – concrete products	0.6000	toilet/shower
SL Services			
SL01	Services – laboratories	0.0100	Gross Building Floor

Code	Property Type	ET per unit	Unit
			Area (sqM)
SL02	Services – laundries - industrial	0.0060	GBFA (sqM)
EF Entertainment			
EF01	Licenced club	0.0080	Gross Building Floor Area (sqM)
EF02	Pub/bar	0.0080	Gross Building Floor Area (sqM)
		0.450	accommodation
EF03	Cinema/ theatre/pubic entertainment	0.0140	visitor
EF04	Conference centre	0.0140	visitor
EF05	Marina	0.0080	Gross Building Floor Area (sqM) of club/function/meeting rooms
SF Sporting / spectator facilities			
SF01	Sports stadium	0.6000	0.6000 ETs per amenity + 0.0080 ETs per sqM of club/function/meeting rooms (Gross Building Floor Area)
SF02	Amenities & indoor facilities	0.6000	0.6000 ETs per amenity + 0.0080 ETs per sqM of club/function/meeting rooms (Gross Building Floor Area)
SF03	Hockey field – artificial surface	0.0080	0.6000 ETs per amenity + 0.0080 ETs per sqM of club/function/meeting rooms (Gross Building Floor Area)
SF04	Sports ground irrigated area	0.6000	shower
		0.6000	wc
SF05	Bowling alley	0.5500	lane
SF06	Bowling green	0.0080	0.6000 ETs per amenity + 0.0080 ETs per sqM of club/function/meeting rooms (Gross Building Floor Area)
SF07	Swimming pool – indoor/outdoor	case-by-case	case-by-case
SF08	Gymnasium	0.6000	amenities (shower / WC)
CF Community facilities			
CF01	Child care centre/pre school	0.0570	child
CF02	Education – school (primary, secondary, college)	0.0570	student
CF03	Education – TAFE / university (tertiary)	0.0240	student
CF04	Correction centre	0.7500	person
CF05	Church / place of worship	0.0080	0.6000 ETs per public

Code	Property Type	ET per unit	Unit
		0.6000	amenity and if kitchen, 0.0080 ETs per sqM of function/meeting rooms (Gross Building Floor Area)
CF06	Community centre/ hall	0.0080 0.6000	0.6000 ETs per public amenity and if kitchen catering, 0.0080 ETs per sqM of function/meeting rooms (Gross Building Floor Area)
CF07	Parks/ gardens/ reserves	0.6000	per amenity
CF08	Public amenities (per shower)	0.6000	shower
CF09	Public amenities (per WC)	0.6000	WC
Other			
CP00	Telstra/TasNetworks/Council - properties that do not have any sewerage facilities (eg exchanges, substations and roundabouts/parks that do not have any buildings, or small pieces of lands) (this may include private parcels that have no likelihood of future development)	null	null
CP01	Telstra/TasNetworks/Council - properties that have sewer facilities (eg exchanges, substations and roundabouts/parks that have small buildings as well). Bigger buildings to be assessed per sq metre under the office code (code BE04)	1	default 1ET
ET00	Mixed use, a generic code for properties which might have multiple use, such as multiple use freehold titles	case-by-case	case-by-case
RU01	Residential property with a water connection and no sewer connection (not within serviced land)	null	null
NR01	Non-residential property with a water connection and no sewer connection (not within serviced land)	null	null
MH01	Motor home dump points (located outside caravan parks)	1	default 1ET
NULL	Properties with no sewer connections	null	null

Appendix 15: Schedule of prices

Regulated water and sewerage prices (\$)

Prices	FY2018/19	FY2019/20	FY2020/21
Water - \$ per 20mm connection	344.64	360.49	377.07
Water - \$ per kl	1.07	1.12	1.17
Sewerage - per ET	661.32	691.74	723.56

Fixed water connection price by connection size (\$)

Connection size	Multiplier	FY2018/19	FY2019/20	FY2020/21
20	1.00	344.64	360.49	377.07
25	1.56	538.49	563.26	589.17
30	2.25	775.43	811.10	848.41
32	2.56	882.27	922.85	965.30
40	4.00	1,378.54	1,441.96	1,508.29
50	6.25	2,153.98	2,253.06	2,356.70
65	10.56	3,640.22	3,807.67	3,982.82
75	14.06	4,846.44	5,069.38	5,302.57
80	16.00	5,514.18	5,767.83	6,033.15
100	25.00	8,615.90	9,012.23	9,426.80
150	56.25	19,385.78	20,277.53	21,210.29
200	100.00	34,463.61	36,048.93	37,707.18
250	156.25	53,849.39	56,326.46	58,917.48

Fire service charge by connection size (\$)

Connection size	Multiplier	FY2018/19	FY2019/20	FY2020/21
20	1.00	86.16	90.12	94.27
25	1.56	134.62	140.82	147.29
30	2.25	193.86	202.78	212.10
32	2.56	220.57	230.71	241.33
40	4.00	344.64	360.49	377.07
50	6.25	538.49	563.26	589.17
65	10.56	910.05	951.92	995.71
75	14.06	1,211.61	1,267.35	1,325.64
80	16.00	1,378.54	1,441.96	1,508.29
100	25.00	2,153.98	2,253.06	2,356.70
150	56.25	4,846.44	5,069.38	5,302.57
200	100.00	8,615.90	9,012.23	9,426.80
250	156.25	13,462.35	14,081.61	14,729.37

Trade waste application fee (\$)

Trade waste application fee	FY2018/19	FY2019/20	FY2020/21
Category 1	193.00	201.88	211.16
Category 2A	386.00	403.76	422.33
Category 2B	386.00	403.76	422.33
Category 2C	386.00	403.76	422.33

Trade waste annual prices (\$)

Trade waste annual price	FY2018/19	FY2019/20	FY2020/21
Category 1	572.25	598.57	626.10
Category 2A	938.01	981.16	1,026.29
Category 2B	1,316.29	1,376.84	1,440.17
Category 2C	1,974.09	2,064.90	2,159.89

Trade waste non-compliance (minor) fees (\$)

Trade waste non-compliance (minor) fee	FY2018/19	FY2019/20	FY2020/21
Category 1	1,144.58	1,197.23	1,252.30
Category 2A	1,876.02	1,962.32	2,052.59
Category 2B	2,632.61	2,753.71	2,880.39
Category 2C	3,948.32	4,129.94	4,319.91

Trade waste non-compliance (major) fees (\$)

Trade waste non-compliance (major) fee	FY2018/19	FY2019/20	FY2020/21
Category 1	1,716.82	1,795.79	1,878.40
Category 2A	2,814.12	2,943.57	3,078.97
Category 2B	3,948.94	4,130.59	4,320.60
Category 2C	5,922.54	6,194.97	6,479.94

Trade waste site constraint fee (\$)

Trade waste site constraint fee	FY2018/19	FY2019/20	FY2020/21
All trade waste categories	1,097.30	1,147.77	1,200.57

Trade waste macerator fee (\$)

Trade waste macerator fee	FY2018/19	FY2019/20	FY2020/21
All trade waste categories	50.00	52.30	54.71

Prices for miscellaneous services (\$)

Service	FY2018/19	FY2019/20	FY2020/21
Water Connections			
Standard 20mm water connection	2,225.76	2,309.06	2,417.50
Standard 25mm water connection	2,443.27	2,535.52	2,655.86
Non-standard water connection	POA	POA	POA
20mm meter supply & installation	408.80	422.06	438.65
>20mm meter supply & installation	POA	POA	POA
Sewer Connections			
Standard 100mm sewerage connection	1,596.41	1,652.14	1,723.40
Non-standard sewer connection	POA	POA	POA
Disconnection			
Standard disconnection (water and/or sewerage)	455.02	471.46	492.67
Relocation			
Standard water connection relocation - under 3 metres	1,490.03	1,545.76	1,618.28
Water connection relocation - greater than 3 metres	POA	POA	POA
Fire Service			
Fire service installation	POA	POA	POA
Water Metering Fees			
Special meter reads	59.55	61.17	63.08
Meter testing - onsite	79.97	81.99	84.47
Meter testing - offsite	POA	POA	POA
Meter downsizing (50mm to 20mm)	374.55	389.22	408.51
Meter downsizing (all others)	POA	POA	POA
Sundry Fees			
Right to information request	39.25	39.75	40.25
Pressure and Flow Testing	105.76	108.55	112.01
Land Information Certificate (section 56ZQ) request	39.25	39.75	40.25
Account establishment and closure	48.84	49.81	50.81

Development assessment fees (\$)

Development Applications	FY2018/19	FY2019/20	FY2020/21
Minor	216.49	226.45	236.87
Medium	359.35	375.88	393.17
Major	691.24	723.04	756.30
Significant	1,165.99	1,219.62	1,275.72
Certificate for Certifiable Works (CCW) / Certificate for compliance (BAs & PAs)	FY2018/19	FY2019/20	FY2020/21
Minor	158.42	165.70	173.33
Medium	249.65	261.13	273.14
Major	300.01	313.81	328.25
Significant	417.61	436.81	456.91
CCW Exemption	40.60	42.46	44.42
Engineering design approval	FY2018/19	FY2019/20	FY2020/21
Minor	182.42	190.81	199.59
Medium	260.45	272.43	284.97
Major	300.01	313.81	328.25
Significant	417.61	436.81	456.91
Consent to Register and Legal Document	FY2018/19	FY2019/20	FY2020/21
Minor	148.84	155.68	162.84
Medium	148.84	155.68	162.84
Major	148.84	155.68	162.84
Significant	148.84	155.68	162.84

Other regulated services fees (\$)

Service	FY2018/19	FY2019/20	FY2020/21
Private filling stations (\$/kL)	1.07	1.12	1.17
Public filling stations (\$/kL)	1.65	1.72	1.80
Security deposit (one off fee for public filling stations)	52.30	54.71	57.22
Portable metered standpipes (pro rata for time of use) (\$/kL)	1.07	1.12	1.17
e-card credit top up (processing fee)	6.04	6.31	6.60

