

## 3 DEMAND FORECASTS

The maximum prices that the Regulator determines are a function of TasWater's NAR for each year of the regulatory period and annual demand forecasts for regulated services.

Demand forecasts are important because they affect TasWater's estimated opex costs and also because they affect prices to customers. For example, the greater the number of water connections, the lower the fixed water charges, all other factors being unchanged.

This chapter discusses TasWater's demand forecasts and actual results for the third regulatory period and forecasts for the fourth regulator period with regard to:

- numbers of water and sewerage connections;
- the volume of water supplied; and
- numbers of miscellaneous service transactions.

Actual results and forecasts for the fourth regulatory period presented in this chapter reflect TasWater's most recent Demand Forecasts Model and subsequent advice from TasWater. Some values are different from data in the revised PSP submitted on 13 December 2021.

### 3.1 Regulator's draft decisions

As part of its investigation, the Regulator assessed TasWater's approaches to forecasting demand and intends accepting TasWater's approaches and requiring TasWater to provide further information as set out below.

The Regulator has made the following draft decisions:

1. Accept TasWater's approaches to forecasting the number of water connections, sewerage connections and miscellaneous services for the fourth regulatory period.
2. Require TasWater's response to the Regulator's Draft Report:
  - (a) address inconsistencies between the method of forecasting water use described in its proposed PSP and the method used in its Demand Forecast Model;
  - (b) include additional information to support its forecast of growth in standard water connections being approximately half recent actual growth;
  - (c) include information on how its non-revenue water reduction strategy has contributed to actual water connections and usage and how it contributes to forecast water connections and usage over the fourth regulatory period;
  - (d) explain the decline in sewerage ETs in 2020-21 and the unusually strong growth in trade waste customers in 2018-19;
  - (e) include revised forecasts of sewerage ETs in light of the lower than expected result for 2020-21;

- (f) provide more detail to explain the sharp reduction in total miscellaneous services in the period 2018-19 to 2020-21; and
- (g) include an updated Demand Forecast Model and Financial Model to reflect its advice that miscellaneous services are expected to grow in line with forecast growth in equivalent 20mm water connections.

## 3.2 Water connections and usage

### 3.2.1 Forecast and actual results for the third regulatory period

Table 3.1 contains a summary of TasWater’s forecast 20mm equivalent water connections for the third regulatory period, as set out in the PSP approved in late 2017-18, and the actual number of connections.

Table 3.1 Comparison of forecast and actual demand - 2018-19 to 2020-21 - Equivalent 20mm connections

	2018-19 Equivalent 20mm connections	2019-20 Equivalent 20mm connections	2020-21 Equivalent 20mm connections
Standard connections <sup>a</sup>			
Forecast	240 709	242 471	244 235
Actual	247 009	250 870	255 033
Difference	6 300	8 399	10 798
Difference (%)	1.6	2.5	3.4
Fire service connections			
Forecast	21 130	21 244	21 360
Actual	33 778	33 684	37 718
Difference	12 648	12 440	16 358
Difference (%)	58.9	57.6	75.6

Notes:

a. Includes full and limited service connections, but excludes "not connected" properties, which were not forecast in the third regulatory period.

Actual standard equivalent 20mm connections were higher than forecast for each of the 2018-19, 2019-20 and 2020-21 financial years. TasWater attributed this to stronger than forecast housing conditions.<sup>7</sup> Growth in standard connections has averaged 1.62 per cent per annum from 2015-16 to 2020-21.

Actual equivalent 20mm fire service connections were also higher than forecast. Forecasts for the third regulatory period were based on the actual number of equivalent 20mm fire services connections in 2015-16. The actual result for 2016-17 was 18.0 per cent higher than forecast, which had a flow on effect to the actual results in later years as shown in Table 2.2. In addition, an increase in TasWater’s water installation reviews resulted in the identification of additional fire service connections. Fire service connections are typically 100mm in diameter, and each newly discovered fire service connection therefore equates to 25 equivalent 20mm connections.

Table 3.2 contains a summary of TasWater’s forecast and actual water demand during the third regulatory period.

<sup>7</sup> TasWater’s proposed PSP, page 86.

Table 3.2 Comparison of forecast and actual demand - 2018-19 to 2020-21 - Water usage

	2018-19 Water use (ML)	2019-20 Water use (ML)	2020-21 Water use (ML)
Forecast	59 762	60 051	60 339
Actual	61 246	59 444	56 991
Difference	1 484	- 607	-3 348
Difference (%)	2.5	-1.0	-5.5

Actual water usage in 2018-19 was 2.5 per cent higher than the forecast, primarily as a result of higher than forecast growth in 20mm equivalent connections.<sup>8</sup>

Actual water usage in 2019-20 and 2020-21 was lower than forecast and lower on a per connection basis. TasWater attributed this to state-wide water restrictions during the 2019-20 summer period and the ongoing impact of the COVID-19 pandemic, which forced businesses to temporarily slow or close down operations and reduced the number of interstate visitors.<sup>9</sup> Each standard connection used an average 249.0 kL in 2018-19, but this fell to 223.5 kL in 2020-21.

Figure 3.1 in the following section illustrates actual and forecast total water usage and water usage per equivalent 20mm connection.

### 3.2.2 Forecasts for the fourth regulatory period

TasWater submitted the model it used to arrive at forecast connections and water usage for the Regulator's review. As the basis for its connection forecasts, TasWater has primarily used its growth and capacity plans (GCPs) for each water network, which are derived from factors such as:

- Tasmanian Treasury population projections by LGA;
- Australian Bureau of Statistics projections;
- the Tasmanian Government's regional land use strategy growth projections;
- Local government planning data; and
- TasWater's own connection data over the past five years.

Table 3.3 contains a summary of TasWater's forecast equivalent 20mm water connections for standard and fire service connections and forecast water usage.

Table 3.3 TasWater forecast summary for the fourth regulatory period - Water

	2022-23	2023-24	2024-25	2025-26
Equivalent 20mm standard connections (number) <sup>a</sup>	262 074	264 258	266 466	268 699
Equivalent 20mm standard connections (% increase)	0.83	0.83	0.84	0.84
Equivalent 20mm fire service connections (number)	41 456	43 660	45 698	47 588
Equivalent 20mm fire service connections (% increase)	6.12	5.32	4.67	4.13
Water use (ML)	63 471	63 771	64 073	64 379
Water use (% increase)	4.85	0.47	0.47	0.48

Notes:

a. Includes "not connected" properties.

<sup>8</sup> TasWater's proposed PSP, page 87.

<sup>9</sup> Ibid, page 87.

## Water connections

The forecast number of residential and commercial standard water connections takes 2019-20 water connections per LGA as its base. Forecast average annual growth rates per LGA area are derived from TasWater's GCPs for each water system within that LGA. In several LGAs where there is no GCP, TasWater has adopted Treasury's high population growth scenario for the LGA. TasWater did not provide sufficient information for the Regulator to verify the methodology or assumptions underlying the GCPs.

TasWater has forecast 0.76 per cent growth in not connected properties, which make up approximately 1.9 per cent of standard connections; and zero growth in industrial customers, reflecting actual growth of less than 0.1 per cent over the current regulatory period.

Growth in standard connections between 2015-16 and 2020-21 averaged 1.62 per cent per annum. It is not clear on what basis TasWater is forecasting growth of 0.83 to 0.84 per cent only over the next four years.

Forecast growth in fire service connections averages 4.71 per cent per annum over the fourth regulatory period. Underlying growth in fire service connections is forecast to be in line with commercial connection growth. However, the addition of newly discovered fire service connections has been increasing annual growth significantly. The number of additional fire service connections discovered each year is forecast to decline by an average of 10 per cent per annum over the fourth regulatory period as there are fewer uncharged services remaining to be identified<sup>10</sup>, reducing forecast growth from 6.12 per cent in 2022-23 to 4.13 per cent in 2025-26.

## Water usage

TasWater stated that Tasmania's and Australia's COVID-19-related border closures reduced demand for water in 2019-20, and water usage was even lower in 2020-21. TasWater has assumed that this factor continues to suppress demand for water in 2021-22. Water usage per equivalent 20mm connection is forecast to be approximately 237 kL per connection from 2019-20 to 2021-22, down from 248 kL in 2018-19.<sup>11</sup>

From 2022-23, water usage per connection is forecast to revert to pre-COVID-19 levels (adjusted for an underlying 0.29 per cent per annum decline in water usage per connection, based on the average annual decline recorded from 2015-16 to 2018-19), resulting in expected exceptionally strong growth in total water usage in 2022-23.

TasWater has forecast that from 2022-23, total water usage will grow by just under 0.5 per cent per annum, reflecting forecast growth in standard connections, partially offset by the forecast decline in water usage per connection.

TasWater has commenced a non-revenue water reduction strategy, which involves a range of projects aimed at identifying and targeting water losses from its systems, including apparent losses from unauthorised water usage and metering inaccuracy. TasWater states that the water meter renewal program included the installation of 190 new meters in 2019-20 capturing previously unmeasured water consumption, with a further 603 planned for 2020-21.<sup>12</sup> However, TasWater's proposed PSP does not discuss how the results of this strategy are reflected in actual and forecast water connections and water usage in its demand forecasts.

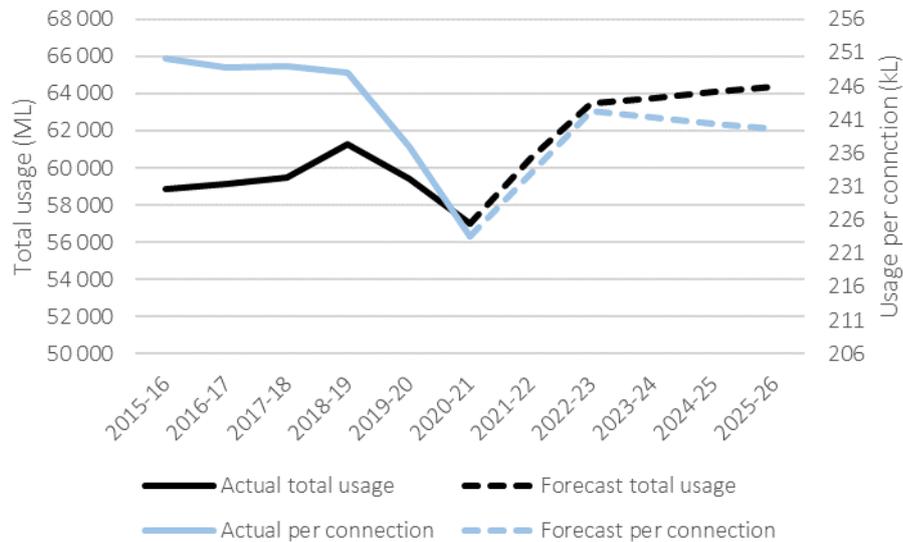
<sup>10</sup> TasWater's proposed PSP, page 90.

<sup>11</sup> TasWater's Financial Model.

<sup>12</sup> TasWater's proposed PSP, page 60.

Figure 3.1 illustrates actual and forecast total water usage and water usage per equivalent 20mm connection. As discussed above, water usage from 2019-20 to 2021-21 has been impacted by state-wide water restrictions during the 2019-20 summer period and the ongoing impact of the COVID-19 pandemic. From 2022-23, growth in connections is forecast to exceed the decline in water usage per connection, resulting in ongoing annual growth.

Figure 3.1 Actual and forecast water usage - total and per connection



The Regulator considers TasWater's methodology for projecting water usage per equivalent 20mm connection is reasonable. However, inconsistencies have been identified between the method described by TasWater in the proposed PSP and the method and forecasts contained in TasWater's Demand Forecast Model. These inconsistencies relate to the forecast level of water usage per connection when usage is assumed to revert to pre-COVID levels in 2022-23 and to the rate of reduction in underlying water usage per connection. They have been discussed with TasWater, which will provide further advice that the Regulator will consider in preparing the Final Report.

### 3.3 Demand for sewerage services

#### 3.3.1 Forecast versus actual results for the third regulatory period

Table 3.4 contains a summary of the forecast sewerage ETs and the number of trade waste customers for the third regulatory period. Actual sewerage ETs were closely aligned with the forecast numbers of ETs, as shown in Table 3.4.

Table 3.4 Comparison of forecast and actual demand - 2018-19 to 2020-21 - sewerage ETs and trade waste customers

	2018-19	2019-20	2020-21
<b>Sewerage ETs</b>			
Forecast	246 433	247 969	249 512
Actual	246 233	249 520	248 649
Difference	- 199	1 551	- 863
Difference (%)	-0.1	0.6	-0.3
<b>Trade waste customers</b>			
Forecast	3 523	3 538	3 555
Actual	3 667	3 684	3 724 <sup>a</sup>
Difference	144	146	169
Difference (%)	4.1	4.1	4.8

Note:

a. PSP forecast, not actual result.

Actual sewerage ETs have grown by an average 0.49 per cent per annum over the third regulatory period. Data on actual sewerage ETs for 2020-21 was provided by TasWater following submission of the proposed PSP for the fourth regulatory period. This data indicates that there were 871 fewer sewerage ETs in 2020-21 than in 2019-20. TasWater did not provide an explanation for the decline in sewerage ETs.

Underlying growth in trade waste customers of approximately 0.5 per cent per annum since 2015-16 has been distorted by growth of 17.6 per cent in 2018-19, which is not explained in TasWater's proposed PSP. This growth in 2018-19 is the primary driver of the difference between forecasts for the third regulatory period and actual results.

TasWater does not levy volumetric charges on sewerage services<sup>13</sup>, and the volume of sewage treated is not a consideration in this chapter.

### 3.3.2 Forecasts for the fourth regulatory period

TasWater's forecast of the number of sewerage ETs and trade waste customers during the fourth regulatory period are shown in Table 3.5.

Table 3.5 TasWater forecast summary for fourth regulatory period - sewerage (ETs) and trade waste customers

	2022-23	2023-24	2024-25	2025-26
Sewerage ETs (number)	257 901	260 773	263 685	266 638
Sewerage ETs (% increase)	1.11	1.11	1.12	1.12
Trade waste customers (number)	3 807	3 849	3 892	3 935
Trade waste customers (% increase)	1.12	1.10	1.12	1.10

TasWater's Demand Forecast Model for the fourth regulatory period used similar inputs, assumptions and variables to forecast the number of sewerage ETs and trade waste customers as those used to forecast demand for water connections. As with water connections, TasWater states that for residential customers, the number of sewerage connections directly correlates to the number of dwellings within TasWater's serviced land.<sup>14</sup> However, a property with a 20mm water

<sup>13</sup> With the exception of properties used as caravan parks and offices where a discharge factor is applied rather than using ETs to estimate the demand on the system.

<sup>14</sup> TasWater's proposed PSP, page 91.

connection may be assessed as having more than one sewerage ET. As a result, the forecast growth rate for sewerage services is not aligned with the forecast growth rate for equivalent 20mm water connections.

Not connected ETs (included in the Table 3.5 total for sewerage ETs) are forecast to grow at the same rate as connected ETs. Not connected ETs make up 0.46 per cent of total sewerage ETs.

TasWater's forecasts of sewerage ETs for the fourth regulatory period were based on a forecast of 252 275 sewerage ETs for 2020-21. The actual result for 2020-21 (248 649) was approximately 1.4 per cent below the estimate from which TasWater's forecasts were prepared and, consequently, the forecasts for sewerage ETs over the fourth regulatory period appear to be high.

For this Draft Report, the Regulator has applied the forecast growth rates to the actual ET number for 2020-21 for the purpose of determining draft sewerage prices.

## 3.4 Miscellaneous services transactions

### 3.4.1 Forecast versus actuals for the third regulatory period

Table 3.6 contains a summary of the forecast and actual total miscellaneous services during the third regulatory period. TasWater's most significant miscellaneous services include account establishments, land information certificate requests, and development assessments.

Table 3.6 Comparison of forecast and actual demand - 2018-19 to 2020-21 - Miscellaneous services

	2022-23	2023-24	2024-25	2025-26
Sewerage ETs (number)	257 901	260 773	263 685	266 638
Sewerage ETs (% increase)	1.11	1.11	1.12	1.12
Trade waste customers (number)	3 807	3 849	3 892	3 935
Trade waste customers (% increase)	1.12	1.10	1.12	1.10

TasWater advised that lower than forecast numbers of miscellaneous services were due to changes that TasWater made to the way it provides some miscellaneous services.<sup>15</sup>

TasWater no longer undertakes special meter reads upon the sale of a property, unless requested by the property owner. Instead, an estimate of the volumetric charge is used based on the average of previous use. This estimate is provided at no additional charge, and has resulted in a reduction in special meter reads from the third regulatory period forecasts of approximately 4 600 per annum to ten or less per annum.<sup>16</sup>

TasWater has also implemented a new, automated, process to produce a final customer bill and create a new account when the vendor informs TasWater that a change of ownership has occurred. The introduction of this more efficient process has resulted in TasWater waiving fees for customers that close their accounts using this process.<sup>17</sup>

The actual reduction in total miscellaneous services for 2018-19 to 2020-21, compared to the previous PSP forecasts, is less than the reduction in miscellaneous services attributed to the initiatives described above and in TasWater's proposed PSP for the fourth regulatory period. However, TasWater did not provide disaggregated information on the forecasts of individual

<sup>15</sup> TasWater's proposed PSP, page 87.

<sup>16</sup> Ibid, page 87.

<sup>17</sup> Ibid, page 88.

miscellaneous services for the third regulatory period and the Regulator was unable to reconcile this inconsistency.

TasWater's forecast of total miscellaneous services for the fourth regulatory period are shown in Table 3.7.

Table 3.7 TasWater forecast summary for the fourth regulatory period - miscellaneous services transactions

	2022-23	2023-24	2024-25	2025-26
Miscellaneous services transactions (number)	40 655	41 071	41 492	41 931
Miscellaneous services transactions (% increase)	17.16	1.02	1.02	1.06

TasWater proposes to introduce a suite of new charges for the fourth regulatory period, which are forecast to result in an additional 5 804 miscellaneous service fees in 2022-23, resulting in 17.2 per cent growth in that year. The most significant new fees, in terms of the number of transactions, are an account administration fee for bounced payments and an account administration fee for connections.

The Demand Forecasts chapter of the proposed PSP states that miscellaneous services are forecast to grow in line with forecast growth in equivalent 20mm water connections of 0.83 to 0.84 per cent per annum<sup>18</sup>, which TasWater subsequently confirmed to be correct. However, TasWater's Demand Forecast Model (which informs its Financial Model) shows the number of miscellaneous services (except those that relate to sewerage services) growing at a rate of 1.10 per cent per annum over the fourth regulatory period. The Regulator will require this to be reflected in TasWater's final PSP.

<sup>18</sup> TasWater's proposed PSP, pages 91-92.