

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 water and sewerage 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 regulatory 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 Forecast Model and subsequent advice from TasWater. Some values are different from data in the revised proposed PSP submitted on 13 December 2021.

As part of its investigation, the Regulator assessed TasWater's approaches to forecasting demand and required TasWater to provide additional information regarding its forecasts.

3.1 Regulator's decisions

The Regulator has made the following decision:

1. Accept TasWater's approaches to forecasting the number of water connections and sewerage connections and the demand for water use and miscellaneous services for the fourth regulatory period.
2. Set demand forecasts for the above categories as set out Tables 3.3, 3.5 and 3.7.

3.2 Differences between the Regulator's decisions in the Draft and Final Report

There were no different decisions between the Draft Report and the Final Report.

Based on information received from TasWater in response to the requirements set out in the Regulator's Draft Report, the Regulator has made changes to TasWater's demand forecasts as follows:

- revised forecasts of total water use based on TasWater's advice that the underlying decline in water use per connection is expected to be 0.36 per cent per annum compared to 0.29 per cent in the proposed PSP (Table 3.3);
- revised forecasts of sewerage ETs, based on a lower than expected actual outcome for 2020-21 (Table 3.5); and

- revised forecasts of miscellaneous transactions to reflect confirmation from TasWater that miscellaneous transactions are expected to grow in line with forecast growth in equivalent 20mm water connections (Table 3.7).

3.2.1 New decisions not set out in the Regulator's Draft Report

The Regulator has not made any new decisions with respect to demand forecasts in this Report.

3.3 Water connections and usage

3.3.1 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 June 2018, 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 ^a			
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.¹² Growth in standard connections has averaged 1.62 per cent per annum from 2015-16 to 2020-21.

¹² TasWater's proposed PSP, page 86.

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 3.2. 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.

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

	2018-19	2019-20	2020-21
	Water use (ML)	Water use (ML)	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.¹³

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 a reduced the number of interstate visitors.¹⁴ 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.

3.3.2 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 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.

¹³ TasWater’s proposed PSP, page 87.

¹⁴ Ibid, page 87.

Table 3.3 contains a summary of TasWater's forecast equivalent 20mm water connections for standard and fire service connections. The Regulator has accepted these forecasts, after applying TasWater's forecasting methodology and the 0.36 per cent underlying decline in demand to water use forecasts.

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) ^a	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)	64 051	64 352	64 656	64 963
Water use (% increase)	4.85	0.47	0.47	0.48

Notes:

a. Includes "not connected" properties.

3.3.2.1 Water connections

The forecast number of residential and commercial standard water connections uses 2019-20 water connections per LGA as its base. Forecast average annual growth rates per LGA are derived from TasWater's GCPs for each water system within that LGA. In several LGAs where there is no GCP, TasWater adopted Treasury's high population growth scenario for the LGA.

TasWater 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. TasWater has forecast more moderate growth of 0.83 to 0.84 per cent over the next four years. TasWater's Regional Towns Water Supply Program, which included the connection of three towns to drinking water supplies¹⁵, contributed to recent high growth. In the Regulator's Draft Report, the Regulator required TasWater to provide further information to support these relatively low growth forecasts, and TasWater subsequently advised that the discovery of new connections through its Installation Data Review Project also contributed to strong growth during this period.

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 identified¹⁶, reducing forecast growth from 6.12 per cent in 2022-23 to 4.13 per cent in 2025-26.

¹⁵ TasWater's proposed PSP, page 46.

¹⁶ Ibid, page 90.

3.3.2.2 Water usage

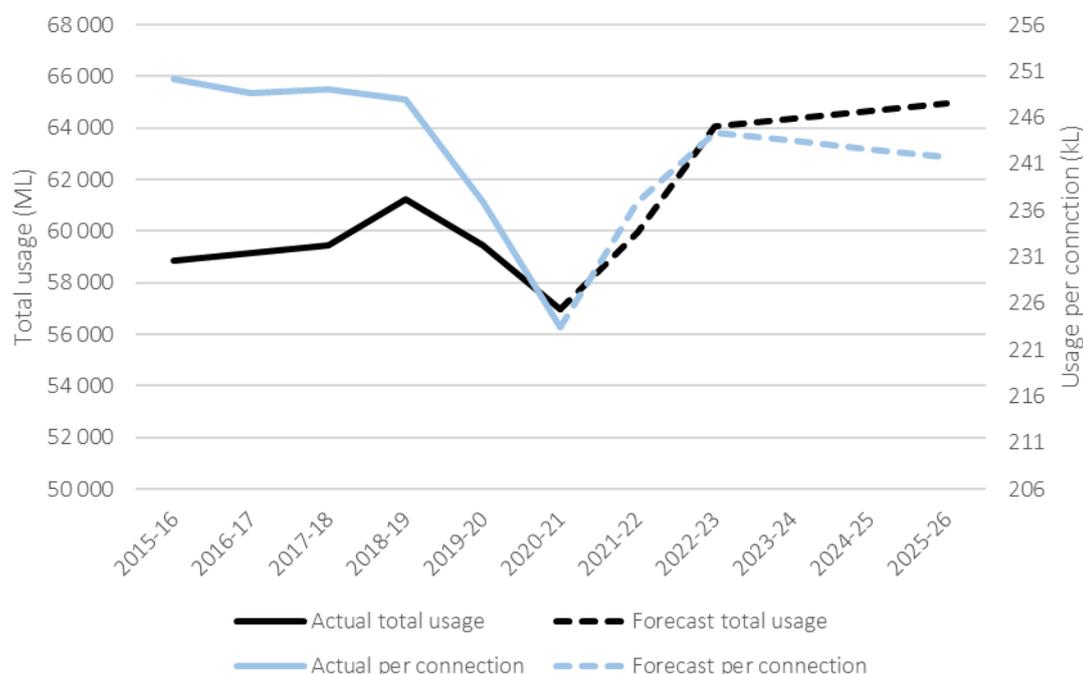
TasWater stated that Tasmania's and Australia's COVID-19-related border closures reduced demand for water in 2019-20, and water usage was even lower in 2020-21. TasWater has assumed that this factor continues to suppress demand for water in 2021-22. Water usage per equivalent 20mm connection is forecast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

From 2022-23, water usage per connection is forecast to revert to pre-COVID levels (adjusted for an underlying 0.36 per cent per annum decline in water usage per connection). While TasWater's proposed PSP indicated an underlying decline of 0.29 per cent per annum, TasWater subsequently advised (after inconsistencies were identified) that the average annual decline was 0.36 per cent per annum from 2015-16 to 2018-19. The reversion to pre-COVID levels results in strong growth in total water usage in 2022-23.

From 2022-23, the Regulator has set forecast growth in total water usage at 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.

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 to be reasonable. Forecast water use displayed in Table 3.3 and Figure 3.1 reflect the methodology described in TasWater's proposed PSP and subsequent advice regarding the rate of underlying decline in water use per connection.

3.4 Demand for sewerage services

3.4.1 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. The table shows that actual sewerage ETs were closely aligned with the forecast numbers of ETs.

Actual sewerage ETs grew 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. There were 871 fewer sewerage ETs in 2020-21 than in 2019-20. TasWater subsequently advised that this was largely attributable to the ongoing implementation of the new discharge factor methodology for properties used as offices that was introduced during the third regulatory period.

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
Sewerage ETs			
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
Trade waste customers			
Forecast	3 523	3 538	3 555
Actual	3 667	3 684	3 724 ^a
Difference	144	146	169
Difference (%)	4.1	4.1	4.8

Note:

a. PSP forecast, not actual result.

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. TasWater attributed the growth in 2018-19 to efforts during the second regulatory period to identify and categorise trade waste customers. This strong growth during 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 services¹⁷, and so the volume of sewage treated does not impact on prices.

3.4.2 Forecasts for the fourth regulatory period

TasWater's forecast of the number of sewerage ETs and trade waste customers during the fourth regulatory period, which have been accepted by the Regulator, 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)	253 256	256 041	258 858	261 707
Sewerage ETs (% increase)	-0.71	1.10	1.10	1.10
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 stated that for residential customers, the number of sewerage connections directly correlates to the number of dwellings within TasWater's serviced land.¹⁸ However, a property with a 20mm water connection may be assessed as having more than one sewerage ET. As a result, the forecast growth rate for sewerage services has not been 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 provided revised forecasts of sewerage ETs for the fourth regulatory period following publication of the Draft Report. Revised forecasts are based on lower than forecast actual sewerage ETs for 2020-21.

3.5 Miscellaneous services transactions

3.5.1 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 in terms of numbers include account establishments, land information certificate requests and development assessments.

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.¹⁹

¹⁷ Exceptions are properties used as caravan parks and offices where a discharge factor is applied rather than using ETs to estimate the demand on the system.

¹⁸ TasWater's proposed PSP, page 91.

¹⁹ Ibid, page 87.

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

	2018-19	2019-20	2020-21
Forecast	36 665	36 767	36 867
Actual	35 470	34 071	34 407
Difference	- 1 195	- 2 696	- 2 460
Difference (%)	-3.3	-7.3	-6.7

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.²⁰

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.²¹

Applying TasWater's growth rate method to data set out in TasWater's Demand Forecast Model, the Regulator has accepted the forecasts of total miscellaneous services for the fourth regulatory period as shown in Table 3.7. These forecasts are based on miscellaneous services growing in line with forecast growth in equivalent 20mm water connections of 0.83 to 0.84 per cent per annum from 2023-24.

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	40 993	41 336	41 682
Miscellaneous services transactions (% increase)	17.16	0.83	0.84	0.84

As set out in Section 8.12.1 of this Report, TasWater proposes introducing 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.

²⁰ TasWater's proposed PSP, page 87.

²¹ Ibid, page 88.