

6 REGULATORY DEPRECIATION

The allowance for the regulatory depreciation of the assets in TasWater's Regulated Asset Base is a major component of TasWater's NAR. TasWater is a relatively capital intensive entity and regulatory depreciation accounts for around 25 per cent of TasWater's annual NAR.

The regulatory depreciation allowance is designed to enable TasWater to recover the cost of investing in assets over the economic life of those assets. The value of the regulatory depreciation allowance is based on:

- the depreciation method used;
- the economic lives of the assets TasWater uses to provide regulated services;
- the rates of depreciation; and
- the value of the assets that make up TasWater's RABs.⁵⁸

TasWater's Asset Register is the primary source of information about the value of its assets and their respective useful lives and rates of depreciation.

This chapter sets out the Regulator's assessment of TasWater's proposed regulatory depreciation allowances and its intended actions based on that assessment.

6.1 Regulator's draft decisions

The Regulator has made the following draft decisions:

1. Reduce TasWater's proposed regulatory depreciation allowances for the fourth regulatory period by \$20.40 million, setting the regulatory depreciation allowance at \$431.25 million for the fourth regulatory period as set out in in Table 6.1.
2. Accept TasWater's proposed regulatory depreciation with respect to its new assets and its existing assets for the PSP3 extension year, 2021-22.
3. Accept the asset lives TasWater's proposes using for its new assets to calculate regulatory depreciation for the fourth regulatory period.
4. Accept TasWater's proposed weighted average depreciation rate for existing assets of 2.28 per cent for the fourth regulatory period.
5. Accept TasWater's reasons for revising regulatory depreciation with respect to its new assets and its existing assets for the years from 2018-19 to 2020-21.
6. Accept the revised regulatory depreciation figures for 2018-19, 2019-20 and 2020-21 as set out in Table 8.10 of TasWater's proposed PSP and the revised new assets opening balance as at 1 July 2018 of \$533.54 million.
7. Require TasWater to explore options to transfer its current Asset Register to a software platform better suited to regulatory requirements.
8. Require TasWater to develop a specific asset register for regulatory pricing purposes.

⁵⁸ See Chapter 2 of this Report for details of TasWater's RAB.

9. Require TasWater to continue to not claim regulatory depreciation on capex until the asset is commissioned for projects that started after 1 July 2018.
10. Conduct an inquiry under section 12(j) of the *Water and Sewerage Industry Act 2008* into alternative approaches to calculating regulatory depreciation for new assets. The inquiry would include, but not be limited to, an assessment of whether the current line by line approach is the most appropriate method and the basis of TasWater's asset lives assumptions. It is expected that the outcomes of this inquiry will be considered in the price investigation for the fifth regulatory period.

Table 6.1 Regulator's intended adjustments to TasWater's proposed regulatory depreciation (\$'000's, nominal)

Existing assets - regulatory depreciation	2022-23	2023-24	2024-25	2025-26
TasWater proposed	51,683	51,414	51,289	50,881
Regulator's Draft Report	48,048	47,399	46,892	46,522
Reduction in regulatory depreciation	3,635	4,015	4,397	4,359
New assets - regulatory depreciation				
TasWater proposed	51,077	57,414	63,948	73,940
Regulator's Draft Report	50,717	56,644	62,770	72,254
Reduction in regulatory depreciation	360	770	1,178	1,686
Total reduction in regulatory depreciation	3,995	4,785	5,575	6,045

6.2 Regulatory depreciation allowances for 2021-22

The following table sets out TasWater's proposed regulatory depreciation allowance for 2021-22 (2020-21 has been included in this table for comparison purposes).

Table 6.2 TasWater's proposed regulatory depreciation allowances for the third regulatory period extension year, 2021-22 (\$'000's, nominal)

Category of assets	2020-21	2021-22
Existing assets	52,902	52,125
New assets	44,150	47,826
TOTAL	97,052	99,951

Noting the Regulator's inability to interrogate TasWater's Asset Register to the extent desired (see Section 6.4 below), the Regulator considers TasWater's proposed regulatory depreciation allowances for 2021-22 to be reasonable. As expected, the allowance for new assets is increasing as TasWater's capex increases, while the allowance for existing assets is declining due to disposals and those assets nearing the end of their useful lives. The Regulator therefore intends accepting TasWater's proposed regulatory depreciation allowances for 2021-22.

6.3 Depreciation method

The Regulator is satisfied that TasWater has used a value-weighted average approach in calculating regulatory depreciation for existing assets. This approach was previously approved by the Regulator due to uncertainty about the acquisition dates and the value of the assets at that time and the lack of information about the condition of the assets transferred from the former council owners to the previous regional corporations and subsequently TasWater.⁵⁹

The Regulator is also satisfied that TasWater has used a straight line approach in calculating regulatory depreciation for new assets. Under this approach, the value of each asset is returned to

⁵⁹ Tasmanian Economic Regulator, *2018 Price Determination Investigation Final Report*, page 158.

TasWater evenly each year over each asset's economic life. That is, the value of an asset is divided by its economic life in years to determine the annual allowance for depreciation for that asset.

As approved by the Regulator in 2018⁶⁰, TasWater applies the straight line depreciation approach to each of its assets ie straight line depreciation has been applied on a line by line approach whereby the value and useful life of each asset is recorded in the asset register with the individual amounts of depreciation summed to provide an annual total for regulatory depreciation for new assets.

However, given the growing number of new assets TasWater has and the issues identified in Section 6.4 with respect to TasWater's Asset Register, the Regulator is concerned about the ongoing suitability of using a line by line approach for calculating depreciation on new assets.

The Regulator therefore intends conducting an inquiry, under Section 12(j) of the *Water and Sewerage Industry Act 2008*, into approaches to calculating regulatory depreciation for new assets including, but not limited to, reviewing whether the current line by line approach is the most appropriate method.

6.4 TasWater's Asset Register

TasWater's Asset Register in relation to its existing and new assets is contained within an Excel workbook. Data from the Register is pasted into TasWater's Financial Model. TasWater provided the Regulator with a copy of its Register on 23 July 2021.

However, due to the size of the workbook (around 280 000 rows) and the fact that it contained a large number of complicated formulae, the Regulator was unable to open and analyse the data contained in the Register. Despite extensive liaison between the Regulator and TasWater from late July onwards, the Regulator did not receive a copy of the Register that it could open until mid-September 2021.

Even after that date, the Regulator experienced considerable difficulty opening the Register and its ability to manipulate and interrogate the data contained within the Register was, as a consequence, severely limited. As a result, the Regulator has been unable to verify the accuracy of the information contained in the Register to the extent it expected it would be able to. TasWater also advised that the cells in the Register are not locked, meaning the data could potentially be inadvertently changed or subject to input error.

The shortcomings identified with TasWater's Register have severely limited the Regulator's ability to analyse TasWater's proposed regulatory depreciation.

In relation to TasWater's Register, CCGUS recommended:

...that the Regulator work with TasWater to develop a regulatory asset base for pricing purposes, which is based on a physical asset register system such as MAXIMO. While the financial asset register should align with the physical asset register, the amalgamation of local council into three corporatised entities and now into a single corporate entity, means that the physical asset register is likely inaccurate, and will not be able to inform TasWater of asset condition, asset age and the myriad of other benefits that flow from an accurate and well performing physical asset register.⁶¹

⁶⁰ Tasmanian Economic Regulator, *2018 Price Determination Investigation Final Report*, page 159.

⁶¹ CCGUS' Draft Report, page 91.

The Regulator accepts CCGUS' recommendations and, during the fourth regulatory period, will require TasWater to explore options to transition its Register to a different software platform.⁶² The Regulator also sees benefits for TasWater as it understands that TasWater also experiences difficulty using the Register because of its size and the Excel platform it is stored on.

6.5 Asset lives and rates of depreciation

The accuracy of the asset lives the Regulator uses to calculate TasWater's regulatory depreciation allowance is important. This is because if the asset lives accepted by the Regulator are too short, the prices charged to today's customers would be too high as the regulatory depreciation allowance, and therefore TasWater's NAR, would be too high. The prices to future customers, in turn, would be too low as, effectively, they would not include some depreciation for assets that are still being used and are within their economic lives.

Furthermore, the higher the rate of depreciation results in a larger reduction in the value of these assets within the relevant RAB. While this provides some offsetting benefits to today's customers, as the return on assets is lower, the accumulate benefits of a lower than otherwise RAB are greater for future customers.

Equally, if the asset lives accepted by the Regulator are too long, the prices to today's customers would be too low and the prices for future customers would be too high as they would include depreciation for assets for which the economic life has expired and which may no longer be used.

TasWater proposed a depreciation rate for its existing assets of 2.28 per cent for each year of the fourth regulatory period, which equates to an average useful life of 43.9 years. The Regulator noted that this is a higher rate than the rates approved for the third regulatory period of 1.91 per cent, 1.92 per cent and 1.93 per cent for 2018-19, 2019-20 and 2020-21 respectively.

Due to the issues set out in Section 6.4, the Regulator was unable to confirm the accuracy of TasWater's calculations. As a result, the Regulator considers it has no option other than to accept TasWater's proposed regulatory depreciation rate for existing assets for the fourth regulatory period.

With respect to TasWater's new assets, the Regulator notes that the asset lives of these assets have been set at between four and 90 years as shown in Table 6.3.

The Regulator notes that the asset lives that TasWater has set for its new assets are generally shorter than for similar assets of water utilities in other jurisdictions. For example:

- TasWater assigns mechanical assets an asset life of between 8 and 25 years depending on the asset type; this compares to 25 years for Hunter Water and between 25 and 35 years for Sydney Water.⁶³
- TasWater has set the asset life for pipework as 80 years whereas SA Water adopts a useful life of between 103 and 107 years for these assets.⁶⁴
- The asset lives for TasWater's civil assets has been set at up to 90 years whereas Sydney Water's has set the asset lives for civil assets at 140 years.

⁶² In its draft report, CCGUS identified Maximo as a potential solution from the perspective of making the Register more accessible, less prone to error and manipulation, and allowing asset age and condition information to be recorded, potentially improving the quality of information used for regulatory pricing purposes.

⁶³ IPART, Review of prices for Hunter Water Corporation from 1 July 2020 (draft report), March 2020.

⁶⁴ ESCOSA, SA Water Regulatory Determination 2020 (Final Determination: Statement of Reasons), June 2020.

As noted above, the assumptions regarding asset lives affects the prices for water and sewerage services. As depreciation is a significant expense, the asset lives that are set can have a major impact on customer prices.

Table 6.3 TasWater's asset lives schedule

MASTER ASSET LIVES TABLE		
Asset Type	Asset sub-type	Asset sub-type typical life
Civil Assets	Concrete	90
	Steel tanks	80
	Road pavement	40
	Structural steel	60
	Sand filter media	10
	Trickling filter media	10
	Buildings	40
	Sludge lagoon lining	20
	Pipework	80
	Pumps	25
Mechanical	Motors/ Gearbox	15
	Blowers / air compressors	20
	Diffusers	8
	Belt press	15
	UV systems	25
	Mixers	25
	Valves	25
	Switchboards	20
	Circuit breakers	20
	Generators	10
Electrical	VFD	15
	Telemetry	10
	SCADA System	10
	PLCs	10
	Instruments	10
Process Control	Flow meters	20
	Actuators	10
	Package dosing station	10
	Analysers	7
	Cars	4
Fleet	Cars	4
Preliminaries	Various	N/A
Non-infrastructure	Various	N/A
No new infrastructure	E.g. Maintenance, Investigation	N/A

Source: Information supplied by TasWater.

The comparison in Table 6.4, is based on the information in TasWater's Financial Model relating to water assets, and shows that, on an annual average basis, the depreciation rates for new assets are between 20 and 30 per cent higher than the rate for existing water assets, even though the asset values for existing assets and new assets are similar. This indicates that the asset lives for TasWater's new water assets are significantly shorter than the asset lives of TasWater's existing assets.

Table 6.4 Comparison of average depreciation rates for existing and new assets

Description	2022-23	2023-24	2024-25	2025-26
Closing RAB - Existing Water Assets (000's)	1 177 770	1 168 534	1 164 486	1 163 254
Depreciation (000's)	27 480	27 352	27 178	27 151
Average depreciation rate (%)	2.33	2.34	2.33	2.33
Closing RAB - New Water Assets (000's)	997 425	1 093 146	1 188 980	1 266 369
Depreciation (000's)	30 283	33 251	34 930	36 343
Average depreciation rate (%)	3.04	3.04	2.94	2.87

The Regulator also understands that TasWater uses the same asset lives and, therefore, the same depreciation rates, for tax, accounting, insurance and regulatory purposes.

In its Draft Report, CCGUS came to a similar conclusion and stated that:

“... the use of Australian Tax Office (ATO) asset lives has a tendency to allow shorter lives which allows ‘accelerated depreciation’ where the tax life is less than the asset’s useful life. This has the effect of increasing depreciation allowances and reducing overall tax paid. It also provides an incentive for any business to continue to invest in the latest technology, which usually has the advantage of increasing the productivity of any business.

From a regulatory point of view, the use of an asset life which is less than its useful life, has the effect of increasing depreciation in the regulatory RAB, which in turn flows to a slightly higher cost to recover from customers. This is not an optimal outcome (where it is shown to occur) as it decreases the efficiency of the regulated industry sector under analysis.”⁶⁵

and

... TasWater is using financial asset lives from its financial asset register to undertake its regulatory pricing analysis. The preferred approach is to use the physical asset register.⁶⁶

While the Regulator agrees with CCGUS’ conclusions, there is insufficient time before the start of the fourth regulatory period for TasWater to review and potentially change the useful lives of its assets (particularly given the number of TasWater’ assets). The Regulator therefore intends accepting the asset useful lives TasWater’s proposes using to calculate regulatory depreciation for the fourth regulatory period.

However, in conjunction with the Regulator’s intended requirements with respect to TasWater’s asset register and as part of the Regulator’s intended inquiry under section 12(j) of the *Water and Sewerage Industry Act 2008* during the fourth regulatory period, the Regulator also intends to review the basis of TasWater’s asset lives assumptions.

If the Regulator assesses that the asset lives set by TasWater for the fourth regulatory period were too high, and this has had an impact on prices over this period, the Regulator intends to consider whether an adjustment to the regulatory depreciation allowance over the fifth regulatory period would be appropriate.

6.6 Variances between TasWater’s financial models

The Regulator has found that for each of the 2018-19, 2019-20 and 2020-21 financial years, the regulatory depreciation values for both existing and new assets in TasWater’s Financial Model for the fourth regulatory period differed from the values TasWater submitted and the Regulator approved for the third regulatory period.

These variances resulted in TasWater’s regulated revenue requirement for the third regulatory period being around \$4 million higher than it ought to have been (ie relatively higher regulatory depreciation has been offset to some extent by the relatively lower inflation adjustment and a relatively lower return on capital on a lower RAB due to the higher regulatory depreciation). However, there has been no effect on prices over the third regulatory period as TasWater applied a lower than maximum price increase in 2018-19 (4.16 per cent compared to the Regulator’s determination of a 4.6 per cent price increase) followed by two years of price freezes and the application of the 3.5 per cent price cap in 2021-22.

⁶⁵ CCGUS’ Draft Report, page 90.

⁶⁶ Ibid, page 90.

Correcting these third regulatory period variances as set out above flow on to the fourth regulatory period as the relatively lower regulatory depreciation for the previous period leads to the RAB being higher and TasWater therefore receiving a relatively higher return on assets on that higher RAB for the fourth regulatory period. TasWater's RAB and return on assets are discussed further in chapters 2 and 7 respectively of this Draft Report.

TasWater provided the following reasons for the figures covering the third regulatory period being changed:

1. The Financial Model prepared for the PSP3 investigation was created by Marsden Jacob Associates (MJA) as part of the third regulatory period investigation. Prior to the fourth regulatory period investigation, TasWater could not locate, or obtain from MJA, a copy of the financial model that correlated to the final third regulatory period numbers. For the proposed PSP, an earlier version of the financial model that closely reconciled to the final third regulatory period numbers was used as the starting point, and the 2018-19 opening balance from the RAB used to roll forward the asset base.
2. Depreciation had been incorrectly calculated using the diminishing value method in MJA's model for the third regulatory period, rather than the required straight line method.
3. Depreciation had been incorrectly calculated on disposed assets in the MJA model.
4. New asset costs had been incorrectly allocated to existing assets in the MJA model. In its proposed PSP for the fourth regulatory period, these costs have been reallocated to new assets.

The Regulator also found that the 30 June 2018 closing balance for new water and sewerage assets of \$659.15 million in Table 10.2 of the 2018 Investigation Final Report differs from the 1 July 2018 opening balance in TasWater's Asset Register Summary (\$533.54 million). TasWater advised that the \$125.62 million variance was due to the reasons set out above. The Regulator considers this explanation to be reasonable noting, in particular, the incorrect allocation of new asset costs to existing asset costs (4. above) although the Regulator notes that TasWater did not disclose, and the Regulator has been unable to ascertain, the magnitude of this cost misallocation.

The Regulator intends to accept TasWater's explanation of the reasons for the changes and also intends accepting the revised regulatory depreciation values for both existing and new asset as set out in TasWater's Financial Model for the fourth regulatory period requires TasWater's RAB calculation to use the depreciation values set out in Table 6.5.

Table 6.5 Regulatory depreciation allowances for the third regulatory period (excluding the extension year, 2021-22) as restated by TasWater in its proposed PSP for the fourth regulatory period (\$'000s, nominal)

	2018-19	2019-20	2020-21
New Assets			
<i>Third regulatory period</i> ^{Note 1}			
Water	16 692	18 551	20 190
Sewerage	19 596	21 778	23 702
	36 288	40 329	43 892
<i>Fourth regulatory period</i> ^{Note 2}			
Water	12 523	18 410	24 996
Sewerage	10 657	15 200	19 154
	23 180	33 611	44 150
<i>Difference</i>			
Water	(4 169)	-141	4 806
Sewerage	(8 939)	(6 578)	(4 548)
	(13 108)	(6 718)	258
Existing Assets			
<i>Third regulatory period</i> ^{Note 1}			
Water	28 010	28 473	28 945
Sewerage	25 814	24 946	26 668
	53 845	53 377	55 613
<i>Fourth regulatory period</i> ^{Note 2}			
Water	28 704	28 431	28 165
Sewerage	25 141	24 946	24 738
	53 845	53 377	52 903
<i>Difference</i>			
Water	694	-42	-780
Sewerage	-673	(1 292)	(1 930)
	21	(1 334)	(2 710)

Notes:

- 1 Tasmanian Economic Regulator, 2018 Water and Sewerage Investigation Final Report, (May 2018), Tables 8.8 and 8.9.
- 2 TasWater's proposed PSP, Table 8.10.

6.7 Variances between TasWater's Asset Register and financial models

The Regulator's review revealed several instances where the regulatory depreciation values in TasWater's Asset Register with respect to existing assets were different from the figures in TasWater's Financial Model for the fourth regulatory period.

As the Regulator has been unable to ascertain which figures are correct, the Regulator intends accepting the lower values from each source, as set out in the Table 6.6.

Table 6.6 Variations between TasWater's Asset Register and proposed PSP - proposed regulatory depreciation for existing assets for the fourth regulatory period (\$'000s)

	2022-23	2023-24	2024-25	2025-26
Water	27 480	27 351	27 178	27 151
Sewerage	24 203	24 062	24 110	23 730
<i>Proposed PSP</i>	51 683	51 414	51 289	50 881
<i>Asset Register</i>	48 048	47 399	46 892	46 522
Reduction in regulatory depreciation	(3 635)	(4 015)	(4 397)	(4 359)

6.8 TasWater capex projects commencing before and from 1 July 2018

The Regulator's decision to not allow regulatory depreciation on capex for projects starting from 1 July 2018 until the asset is commissioned was intended to incentivise TasWater to complete projects in a timely manner. It is unclear from TasWater's proposed PSP and supporting information what impact this decision has had on improving the timeliness of project delivery.

The Regulator reviewed TasWater's PSP3 and proposed PSP submissions, including supporting documentation, and TasWater's website, to attempt to verify the start date for the 51 projects TasWater claimed, in its proposed PSP, to have commenced prior to 1 July 2018. For most projects, there were inconsistencies between information sources, or no supporting evidence was available. Further it became apparent to the Regulator that the scope of a number of the listed projects had changed significantly from when those projects had commenced, according to TasWater. For example, the original Bryn Estyn water treatment plant major upgrade was expected to cost \$108m⁶⁷; the upgrade is now expected to cost around \$298m.⁶⁸

A number of the projects identified by TasWater as commencing on or after 1 July 2018 also have completion dates beyond 30 June 2026 meaning that regulatory depreciation will not be calculated until the project has been completed and commissioned and therefore will not affect costs and, in turn, prices for the fourth regulatory period.

The Regulator did not provide criteria or guidance on when a project is considered to have started in its *2018 Water and Sewerage Price Determination Final Report* (2018 Investigation Final Report), or in its PSP Guideline for this price investigation.

This has led to TasWater using multiple start date indicators, including where expenditure was recorded on a project in TasWater's finance system before 30 June 2018 or a detailed business case or approval to investigate the project was approved on or before 30 June 2018. The Regulator has therefore experienced difficulties in verifying project start dates.

Given the difficulty involved in determining whether a project has commenced before 1 July 2018, the Regulator does not intend taking any further action to verify project start dates.

For projects that TasWater reports as starting after 1 July 2018, the Regulator does, however, intend to require TasWater to continue to not claim regulatory depreciation on capex until the asset is commissioned.

⁶⁷ Tasmanian Economic Regulator, *2018 Water and Sewerage Price Determination Investigation Final Report*, page 109.

⁶⁸ CCGUS' Draft Report, page 112.

6.9 Global adjustments to capex

The Regulator intends reducing TasWater's proposed capex by five per cent for the fourth regulatory period. These adjustments have a flow-on effect on regulatory depreciation.

The capex adjustments result in reductions in TasWater's proposed capex of \$11.3 million, \$11.7 million, \$11.4 million and \$11.0 million in 2022-23, 2023-24, 2024-25 and 2025-26 respectively. The impact on TasWater's new assets regulatory depreciation allowances is set out in Table 6.7.

Table 6.7 Impact of global adjustments to TasWater's proposed capex on regulatory depreciation allowances for new assets for the fourth regulatory period (\$'000s)

	2022-23	2023-24	2024-25	2025-26
Regulator's draft reductions	360	770	1 178	1 686