



**INQUIRY INTO THE CALCULATION OF
REGULATORY DEPRECIATION
ALLOWANCES FOR TASWATER'S NEW
ASSETS**

DRAFT REPORT

AUGUST 2023

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TABLE OF CONTENTS

INVITATION FOR SUBMISSIONS	4
EXECUTIVE SUMMARY.....	5
1 INTRODUCTION	6
1.1 BACKGROUND.....	6
1.2 TERMS OF REFERENCE	7
1.3 APPROACH TO THE INQUIRY AND TIMEFRAMES.....	7
2 REGULATORY DEPRECIATION ALLOWANCES FOR THE CURRENT REGULATORY PERIOD.....	9
2.1 DEPRECIATION ALLOWANCES FOR THE FOURTH REGULATORY PERIOD	9
2.2 DEPRECIATION AND THE COMMENCEMENT DATES OF TASWATER’S CAPEX PROJECTS ..	10
2.3 ASSET LIVES.....	11
3 THE REGULATOR’S ANALYSIS AND FINDINGS.....	14
3.1 TASWATER’S ASSET LIVES AND ASSET CATEGORIES.....	14
3.2 ASSET LIVES IN OTHER JURISDICTIONS.....	16
3.3 DEPRECIATION ON PROJECTS STARTED ON OR BEFORE 30 JUNE 2018.....	18
3.4 DEPRECIATION DATA AND PROCESSES	19
3.5 METHOD FOR CALCULATING REGULATORY DEPRECIATION	20
4 OTHER MATTERS	22
4.1 DEPRECIATION - EXISTING ASSETS	22
5 THE REGULATOR’S PROPOSALS.....	23
APPENDIX A: TERMS OF REFERENCE	25
APPENDIX B: ASSET LIVES - TASWATER AND THE AUSTRALIAN TAX OFFICE	27

INVITATION FOR SUBMISSIONS

The Regulator invites written submissions from interested parties on the matters discussed and the proposals set out in this Report.

It is the Regulator's policy to publish all submissions on the website of the Office of the Tasmanian Economic Regulator (OTTER) unless the author of the submission requests confidentiality in relation to the submission (or any part of the submission). Those parts of a submission requested to be kept confidential should be submitted as an attachment to the parts suitable for publication.

The Regulator will not publish submissions which contain material that the Regulator believes is, or could be viewed as, derogatory or defamatory.

Submissions must be received by close of business on **Friday 29 September 2023**.

To make it easier to publish submissions on OTTER's website, submissions by email are preferred.

Submissions and enquiries may be made to:

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A copy of this Report can be found on OTTER's website www.economicregulator.tas.gov.au.

If any assistance is required in preparing a submission, please contact OTTER at the above email address or by phone: (03) 6145 5899.

EXECUTIVE SUMMARY

The regulatory depreciation allowance is a cost component of the Notional Allowable Revenue used to determine the maximum prices that TasWater can apply during a regulatory period. The Regulator's 2022 Water and Sewerage Price Determination Investigation identified issues relating to TasWater's calculation of regulatory depreciation allowances.

In response, and as set out in its 2022 Final Investigation Report, the Regulator decided to conduct an inquiry to:

- examine how the allowances were calculated for new assets; and
- review the basis of TasWater's asset lives assumptions to ensure they are appropriate and consistent with the lives of equivalent asset types as determined by regulators in other jurisdictions.

The Regulator has reviewed TasWater's asset register and financial model to determine the methods used to calculate regulatory depreciation allowances, asset categories and asset lives.

The inquiry found that the issues the Regulator encountered during the 2022 investigation were more complex than originally thought. In particular, the inquiry found that:

- The different asset lives and asset categories used in TasWater's asset register, capital expenditure depreciation spreadsheet and financial model means it is not possible to track individual assets between the various models / spreadsheets, or to reconcile the information in those spreadsheets.
- The processes whereby TasWater's regulatory depreciation allowances are calculated and the associated relationships and the interactions between the various spreadsheets and models are unclear and are not documented.
- TasWater's asset lives are inconsistent across asset classes and, on average, shorter than those used by water and sewerage utilities in other jurisdictions.

The Regulator's draft proposals to address these issues are set out in Chapter 5 of this Report. These proposals focus on TasWater providing a consistent, transparent approach to the calculation of its regulatory depreciation allowances to allow the Regulator to readily verify those calculations during a price investigation.

The Regulator further proposes TasWater resolve the issues identified from the inquiry in advance of TasWater submitting its proposed price and service plan for the next regulatory period so as the Regulator has time to investigate TasWater's approach and ensure that it can access the relevant data and verify the calculations.

The Regulator also proposes TasWater liaise with OTTER in resolving the identified issues and provides the Regulator with regular updates on progress.

I INTRODUCTION

The Tasmanian Economic Regulator (the Regulator) is conducting an inquiry into TasWater’s current approach to calculating regulatory depreciation allowances for some of TasWater’s water and sewerage infrastructure assets.

This inquiry has arisen as a result of the most recent price determination investigation, which was completed in May 2022. The Regulator decided, in its 2022 Final Investigation Report, to conduct an inquiry into how regulatory depreciation allowances are calculated for new assets. The Regulator also decided to review the basis of TasWater’s asset lives assumptions to ensure they are appropriate and consistent with the lives of equivalent asset types as determined by regulators in other jurisdictions.

1.1 Background

The regulatory depreciation allowance is a cost component of the Notional Allowable Revenue (NAR) used during a price investigation to determine maximum prices for regulated water and sewerage services that will apply during the next regulatory period. The NAR is the sum of the costs a regulated business incurs in providing regulated water and sewerage service.¹ The regulatory depreciation allowance cost component of the NAR is the return of capital to the utility over the economic life of the assets.²

There is a one-to-one relationship between the depreciation allowance and the NAR such that an increase in regulatory depreciation increases the NAR by the same amount.

Regulatory depreciation is also an input into the calculation of the Regulatory Asset Base (RAB), which is used for calculating the return on capital allowance in the NAR and has the effect of reducing the RAB. Consequently, all other components and inputs held constant, any increase in NAR from an increase in the depreciation allowance is partially offset by a reduction in the return on capital cost component.

TasWater has two main asset categories:

- existing assets; and
- new assets.

Existing assets are those assets transferred prior to 1 July 2011 to the previous regional corporations and subsequently to TasWater. Due to a lack of information on the condition and acquisition dates for these assets, a value weighted average asset life approach has been used in calculating the regulatory depreciation allowance for those assets. The approach to calculating regulatory depreciation on existing assets is not the focus of this inquiry.

¹ This is referred to as the ‘building block approach’.

² Economic life is also referred to as useful life and refers to the length of time the asset is expected to be used in providing a regulated service.

In contrast, the regulatory depreciation allowance for assets acquired and / or constructed by the previous regional corporations, and subsequently, TasWater since 1 July 2009 ('new assets') is currently calculated as the aggregate of the annual depreciation on individual assets using what is referred to as a 'line-by-line' approach. The approach to calculating regulatory depreciation allowances for new assets is the main focus of this inquiry.

In determining the value of the regulatory depreciation allowance, the Regulator has regard to:

- the value and the economic life of the assets that are used to provide regulated services; and
- the method of calculating the depreciation allowance.

As part of a price investigation, the Regulator requires TasWater to submit the data used to calculate the depreciation allowances in order to verify its proposed depreciation allowance. Typically this consists of an asset register which contains details of the applicable capital expenditure (capex), asset disposals, asset lives from which the depreciation allowance is calculated. The Regulator also requires TasWater to provide the calculations and assumptions used to calculate the regulatory depreciation allowances. Most importantly, this information must allow the Regulator to verify how the allowances have been calculated.

1.2 Terms of Reference

The Regulator published Terms of Reference for the Inquiry on 22 September 2022.

In conducting the inquiry, the Terms of Reference provide that the Regulator will consider the following matters:

1. the basis of TasWater's asset lives assumptions;
2. the asset lives applied by regulators in other jurisdictions for equivalent asset types; and
3. any other matters the Regulator considers relevant.

The Regulator is also to have regard to other regulators' approaches to the calculation of regulatory depreciation and, in this context, consider the appropriateness of TasWater continuing to use the line-by-line approach in calculating regulatory depreciation allowances for its new assets.

On 16 May 2023 the Regulator decided to revise the timeframes for the inquiry. The Regulator made this decision to ensure there was sufficient time to fully consider issues associated with TasWater's approach to calculating regulatory depreciation.

The Terms of Reference (incorporating the revised timeframes) are attached, in full, as Appendix A to this Report.

1.3 Approach to the inquiry and timeframes

The Regulator has liaised with TasWater and economic regulators in other Australian jurisdictions during the preparation of this Draft Report.

The Regulator invites written submissions from interested parties on the matters discussed in this Report. Submissions must be received by close of business on Friday 29 September 2023.

A final report will be released by 17 November 2023.

2 REGULATORY DEPRECIATION ALLOWANCES FOR THE CURRENT REGULATORY PERIOD

The regulatory depreciation allowance accounts for around 25 per cent of the NAR. During the 2022 investigation, depreciation for new assets for the 2022-23 financial year was forecast to account for about 12 per cent of the NAR.

TasWater has a substantial capex plan for the fourth regulatory period (1 July 2022 to 30 June 2026). Its continued investment in new assets over this period and beyond, together with the disposal or decommissioning and depreciation of existing assets means that the depreciation for new assets will increase over time as a proportion of TasWater’s depreciation allowance.

2.1 Depreciation allowances for the fourth regulatory period

The Regulator approved TasWater’s proposal to continuing to use a ‘line-by-line’ method to calculate regulatory depreciation for new assets for the fourth regulatory period. This method was first proposed by TasWater in its 2018 Price and Service Plan (PSP) and approved by the Regulator in the 2018 price investigation final report.³ Prior to that time, TasWater used a value weighted average method to calculate regulatory depreciation for new assets.

The line-by-line method involves the value of each new asset being depreciated using a straight-line approach ie the value of an asset is divided by its economic life in years to determine the annual depreciation allowance for that asset. The depreciation allowance for new assets in the NAR in each year of a regulatory period is the sum of the individual assets’ depreciation for that year. This figure is also used in calculating the RAB for new assets in each year of the regulatory period.

The depreciation allowance for existing assets is calculated using a depreciation rate applied to the value of the RAB for existing assets. The depreciation rate is calculated as the inverse of the value weighted average of the remaining useful lives of existing assets.

TasWater’s asset register for both existing and new assets is contained within an Excel spreadsheet. TasWater also maintains a spreadsheet for capex depreciation. Information from the asset register is used in TasWater’s Financial Model which is then used for calculating the NAR.

During the 2021-22 investigation, TasWater provided the Regulator with a copy of each of these spreadsheets. However, the Regulator encountered difficulties opening the asset register due to its size (the register currently contains data relating several hundred thousand assets) and the complexity of the formulae and calculations it contained. TasWater provided the Regulator with another version later in the investigation that could be opened. However,

³ Tasmanian Economic Regulator, *2018 Price Determination Investigation Final Report*, page 159.

the Regulator was unable to manipulate and interrogate the data it contained. As a result, during the investigation, the Regulator was unable to verify the accuracy of the information TasWater had used to calculate its regulatory depreciation allowances.

During the investigation, the Regulator engaged consultants, the consortium of Carisbrooke Consulting Group, Utilities Regulation Advisory and Strategic Infrastructure Planning Advisory (CCGUS), to review TasWater’s proposed opex and capex. CCGUS recommended TasWater use a physical asset register system on software such as Maximo⁴ to manage the asset register. CCGUS considered that the use of Maximo, or similar software, would make the register more accessible and less prone to errors and potential manipulation.

TasWater asserted during the investigation that it was able to calculate regulatory depreciation using Excel by splitting the new and existing assets into separate workbooks. This substantially reduced the number of assets in each asset register. The Regulator acknowledges that this approach might be workable in the short term, however, it may not be a long-term solution for new assets as the number of new assets will continue to increase. Therefore, in its final report, the Regulator required TasWater to develop and maintain an asset register that was suitable for regulatory pricing purposes.

2.2 Depreciation and the commencement dates of TasWater’s capex projects

Between 1 July 2012 and 30 June 2018 (together the first and second regulatory periods), depreciation was calculated on all capex included in the RAB in the financial year it was incurred, even if the assets were not yet being used to provide regulated services.

However, due to concerns raised about TasWater’s delivery of capex projects and to incentivise TasWater to complete projects in a timely manner, the Regulator decided, in its 2018 investigation final report, that for projects started on or after 1 July 2018, depreciation could only be included in the NAR when the underlying asset is commissioned and used to provide regulated services. However, capex on projects started on or before 30 June 2018 would continue to be depreciated in the year the capex was incurred.

Neither the Regulator’s 2018 Final Report nor its Price and Service Plan Guideline for the third regulatory period provided criteria or guidance on when a project is considered to have been started. During the 2021-22 investigation, the Regulator reviewed TasWater’s proposed price and service plan, other supporting documentation and TasWater’s website in an attempt to verify the start date for the 51 projects TasWater stated had commenced on or before 30 June 2018.

For most of these projects, there were inconsistencies between information sources, or no supporting evidence was available. Further, it became apparent to the Regulator that the scope for a number of the projects had changed significantly from when the original project

⁴ Maximo is a fully integrated enterprise asset management platform marketed by IBM.

had commenced. For example, the original Bryn Estyn water treatment plant major upgrade was expected to cost \$108 million⁵; the upgrade is now expected to cost around \$298 million.⁶

For many of the projects TasWater had identified as having commenced on or before 30 June 2018, TasWater had used multiple start date indicators, including where expenditure was first recorded in TasWater’s finance system for a project or a detailed business case was approved. Consequently, the Regulator experienced difficulties in verifying project start dates.

2.3 Asset lives

During the 2021-22 price investigation, TasWater provided the Regulator with the asset lives and asset categories for new assets as shown in Table 1. These are the asset lives and categories used in the capex depreciation spreadsheet.

The Regulator noted in the price investigation final report that the asset lives TasWater had used 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 eight 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.⁷
- TasWater 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.⁸
- The asset lives for TasWater’s civil assets have been set at up to 90 years whereas Sydney Water’s asset lives for civil assets is 140 years.

Taking new water assets as an example and based on the depreciation rates for those assets in TasWater’s financial model for the current regulatory period, on an annual average basis the asset lives for those assets are between 20 and 30 per cent lower than the rate for equivalent / similar assets in other jurisdictions. The asset lives for TasWater’s new water assets are also significantly shorter than the asset lives of TasWater’s existing assets.

During the inquiry TasWater advised the Regulator that its asset lives were based on the Australian Taxation Office (ATO) asset lives. TasWater also advised that it used the same asset lives and, therefore, the same depreciation rates for tax, accounting, insurance, and regulatory purposes.

⁵ Tasmanian Economic Regulator, *2018 Water and Sewerage Price Determination Investigation Final Report*, page 109.

⁶ CCGUS’ Draft Report, page 112.

⁷ IPART, *Review of prices for Hunter Water Corporation from 1 July 2020 (Draft Report)*, March 2020.

⁸ ESCOSA, *SA Water Regulatory Determination 2020 (Final Determination: Statement of Reasons)*, June 2020.

Table 1: TasWater's asset lives for new assets

MASTER ASSET LIVES TABLE		
Asset Type	Asset sub-type	Asset sub-type typical life (years)
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
Mechanical	Pumps	25
	Motors/ Gearbox	15
	Blowers / air compressors	20
	Diffusers	8
	Belt press	15
	UV systems	25
	Mixers	25
	Valves	25
Electrical	Switchboards	20
	Circuit breakers	20
	Generators	10
	Variable frequency drive (VFD) ⁹	15
	Telemetry	10
	Supervisory control and data acquisition (SCADA) Systems ¹⁰	10
Process Control	Programmable logic controller (PLCs) ¹¹	10
	Instruments	10
	Flow meters	20
	Actuators	10
	Package dosing station	10
	Analysers	7
Fleet	Cars	4

⁹ A variable frequency drive is an electric controller that runs an electric motor by changing the voltage and frequency provided to an electric-powered machine.

¹⁰ SCADA refers to control systems designed to collect, analyse, and visualize data.

¹¹ PLCs are industrial computers used to control and monitor industrial equipment.

In the report it provided to the Regulator during the 2021-22 price investigation, CCGUS stated that:

“... the use of Australian Taxation 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.”¹²

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.”¹³

While the Regulator agreed with CCGUS’ conclusions, there was insufficient time during the investigation for the Regulator to require TasWater to review and potentially change the useful lives of its new assets.

¹² CCGUS’ Draft Report, page 90.

¹³ Ibid, page 90.

3 THE REGULATOR'S ANALYSIS AND FINDINGS

The Regulator's analysis and findings with respect to asset lives, the impact of the commencement date for capital projects on the calculation of regulatory depreciation and TasWater's approach to calculating regulatory depreciation allowances are set out in the following sections.

3.1 TasWater's asset lives and asset categories

Asset lives may vary for tax, accounting, insurance, and regulatory purposes. For regulatory purposes, asset lives refer to the asset's economic life which is the estimated period during which an asset is the most efficient means to provide a regulated service. At the end of their economic life, assets are fully depreciated and are no longer included in the RAB.

Assigning accurate lives to assets ensures the business recovers the capital cost of providing regulated services from all customers that derive benefits from the use of the regulated assets to provide regulated services.

Applying shorter lives than the expected economic asset life will result in higher regulatory depreciation allowances, and, in turn, a higher NAR and consequently higher prices for current customers compared to future customers. The corollary is that future prices will be too low as the future NAR will not include sufficient depreciation for assets that are still being used to provide regulated services.

During the inquiry TasWater provided the Regulator with another version of its asset register; however, as TasWater had removed most of the formulae so as the register could be opened, the Regulator found it difficult to determine how the values were calculated. The asset register showed that the asset lives ranged from less than one year to 160 years and did not appear to be grouped by asset category. As such, the asset lives in the register are significantly different to the asset lives shown in Table 1. The asset register also uses different asset categories to those shown in Table 1. The capex depreciation spreadsheet TasWater provided contains the same asset lives and categories as shown in Table 1.

The financial model that TasWater provided to the Regulator with its proposed PSP for the fourth regulatory period that was used to calculate the NAR, includes asset categories and depreciation rates for both new and existing assets. It also included depreciation values for new and existing assets and details of capex relating to projects commenced on or before 30 June 2018. The depreciation values in the financial model were sourced from both the asset register and the capex spreadsheet.

Taking the inverse of the depreciation rates for new assets in the financial model, the Regulator determined the assets lives for new assets as shown in Table 2.

Table 2: Asset lives (years) for new assets commissioned by TasWater on or after 1 July 2011 (derived from TasWater’s Financial Model for the fourth regulatory period)

Category	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Average (years)
Dams	31	34	37	40	17	16	22	27	33	38	42	31
Intangible	5	8	9	9	8	8	8	8	8	9	9	8
Land & Buildings -Other	39	39	40	40	39	39	39	39	39	40	40	39
Leasehold	6	6	6	6	6	6	6	6	6	7	7	6
Minor other	7	8	8	8	7	7	8	8	9	9	10	8
Pipe Waste	33	37	38	40	40	40	41	43	44	44	45	40
Pipe Water	24	25	25	27	29	31	32	33	34	34	35	30
Pump Waste	28	29	30	30	27	27	28	29	30	30	31	29
Pump Water	20	22	24	25	23	22	22	23	23	23	23	23
Reservoirs	36	36	37	40	39	38	39	40	41	42	43	39
Treat waste	18	19	20	21	21	21	22	23	24	25	26	22
Treat water	29	29	28	26	20	19	22	23	25	26	27	25
Vehicles	10	10	10	10	8	7	7	8	8	9	9	9

The Regulator notes that while the asset categories in the financial model are generally the same as in the asset register, the asset lives are significantly different to those presented in both the asset register provided to the Regulator during the 2022 investigation and as shown in Table 1. Table 2 shows that over the 10-year period from 1 July 2016 to 30 June 2026, none of TasWater’s new assets categories have an asset life of more than 45 years. This is significantly shorter than the longest asset life in Table 1 of 90 years. Where the categories align, for example, for pipes, the asset life in Table 2 is 35 years compared to 80 years in Table 1.

TasWater has not provided any documentation describing how the models function and interact with one another, the process by which assets are added to the asset register, how asset lives are assigned and how regulatory depreciation is determined. Further, the spreadsheets appear to require a high degree of tacit knowledge to enable the depreciation allowance value to be calculated. During this inquiry, the Regulator also identified an error in the formula for calculating the escalation in the capex spreadsheet and the incorrect use of the declining balance depreciation method (instead of the straight-line method) in this spreadsheet. As CCGUS noted, the Regulator is also concerned about the lack of controls in place with respect to data entry and editing.

It is not clear how the actual asset lives used were determined as the asset schedule in Table 1 is a mix of ATO and non-ATO asset lives. Furthermore, in the case of the dams, a range of asset lives have been used for these assets all of which are different to the ATO’s suggested asset lives. This would indicate that while the assets are part of a dam, the asset lives assigned are for the individual (components) assets that make up that larger asset.

As noted in Section 2.3, the ATO’s asset lives may differ from the asset lives that are appropriate for regulatory purposes. This was also discussed by Advisian in its report to the Independent Pricing and Regulatory Tribunal (IPART) on the economic lives of Hunter Water’s assets¹⁴; for example, Advisian found that asset revaluation and different escalation rates may result in the RAB not aligning with a fixed asset register used for non-regulatory purposes.

In TasWater’s case, as it was unable to provide any guideline or other documentation relating to asset category allocation and how regulatory depreciation is calculated, it is not clear to the Regulator on what basis assets are being classified or asset lives assigned.

The Regulator recommends that TasWater prepare and maintain documentation to demonstrate the process for determining asset category allocations and asset lives for the purpose of calculating regulatory depreciation.

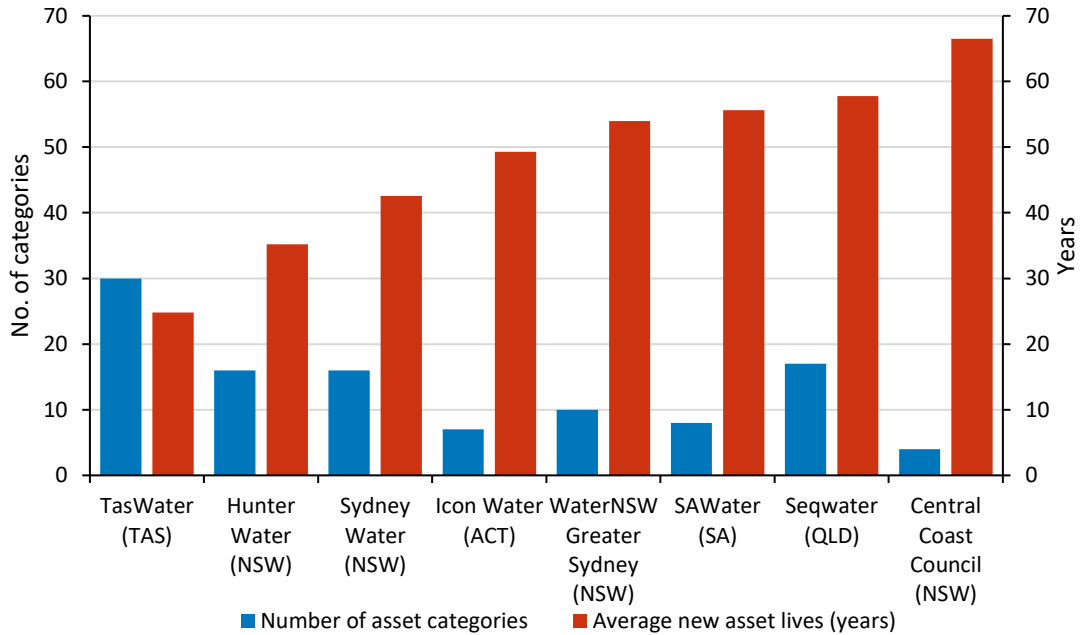
3.2 Asset lives in other jurisdictions

As stated in Section 2.3 of this Report, the Regulator’s 2022 Investigation Final Report found that the asset lives of TasWater’s new assets appear to be shorter than the lives of similar assets in other jurisdictions. In general, utilities in other jurisdictions use some form of aggregated asset category approach whereby all assets in a category have the same asset life. However, the asset categories vary making it difficult to make valid comparisons between TasWater and other utilities.

¹⁴ IPART Hunter Water Economic Life Report, *Advisian*, 12 June 2020 page 9.

Based on a review of asset categories and asset lives in other jurisdictions, TasWater has more asset categories than comparator utilities and the asset categories TasWater uses do not readily align with those used by other utilities. As shown in Figure 1, TasWater has the highest number of asset categories, and the shortest unweighted average asset lives compared to utilities in other jurisdictions.

Figure 1: Number of asset categories and average lives (years) by utility



In reviewing the asset lives applied in other jurisdictions, the Regulator found that the ATO’s asset lives are not always used in other jurisdictions. For example, the ATO’s asset life for dams is 100 years¹⁵; however, both Seqwater and Icon Water have assigned asset lives of 150 years for new dams. Advisian, in its report to IPART on the economic life of Hunter Water’s assets noted that the economic life of dams ‘...can be in the order of 200 years...’¹⁶. Likewise, TasWater does not use the ATO’s asset life for dams. In TasWater’s financial model the average asset life for dams is 31 years, while in Table 2 the longest asset life TasWater uses for new assets is 90 years for concrete. The Regulator expects that the difference is most likely due to TasWater assigning individual asset lives in its asset register while other jurisdictions assign a category asset life to all assets associated with a particular asset category. Without criteria and guidelines for assigning asset lives, the use of individual asset lives may result in multiple asset lives for similar assets, or arbitrary asset life allocation that relies on judgement.

During the 2021-22 investigation, TasWater provided the Regulator with details of new assets commissioned on or after 1 July 2018. The Regulator has used this information to group TasWater’s new assets into broader categories to compare the asset lives for TasWater’s new assets with the asset sub-categories used by Sydney Water and Hunter Water. The Regulator divided new assets into water and wastewater sub-categories and then into Civil, Mechanical, Electrical and Process Control. These categories are similar to the CEMELND (civil, electrical,

¹⁵ Australian Taxation Office, *Taxation Ruling 2022/1 Income tax: effective life of depreciating assets (applicable from 1 July 2022)*, 29 June 2022, page 180.

¹⁶ [IPART Hunter Water Economic Life Report, Advisian, 12 June 2020](#) page 14.

mechanical, electronic, and non-depreciating) asset categories used by Sydney and Hunter Water.^{17,18}

The Regulator then analysed TasWater's new assets for 2019-20 using a weighted average remaining life (WARL) methodology to enable comparisons against Sydney and Hunter Water's asset lives in their respective 2020 price determinations noting that IPART's consultants found the new asset lives for these asset categories were generally reasonable. The comparison is shown in Table 3 below.

Table 3: Comparison of weighted average remaining lives by category and sub-category for TasWater, Sydney Water and Hunter Water

Category	Sub-category	Weighted average remaining life (WARL) (years)		
		TasWater (commissioned on or after 1 July 2018)	Sydney Water (excl. recycled water)	Hunter Water
Water	Civil Assets	77.3	135.1	99.0
	Mechanical	22.8	28.8	32.0
	Electrical	15.0	36.5	32.0
	Process Control	9.0	15.0	N/A
Wastewater	Civil Assets	68.7	90.0	102.0
	Mechanical	19.7	25.0	26.0
	Electrical	15.8	25.0	26.0
	Process Control	12.1	15.0	N/A

As shown in the table, TasWater's WARL was significantly different to both Sydney and Hunter Water's new asset WARL. There are likely to be a number of reasons for the differences, in particular, the type and value of the assets in each asset category as this significantly affects the WARL for each category; for example, Sydney Water and Hunter Water may have invested more in assets with longer asset lives relative to TasWater. These results further highlight the difficulty in comparing asset lives across jurisdictions without possessing detailed information on the underlying assets.

The Regulator recommends that prior to submitting its draft price and service plan for the fifth regulatory period, TasWater reviews its asset lives and prepares documentation to justify its proposed asset lives for the fifth regulatory period.

3.3 Depreciation on projects started on or before 30 June 2018

As discussed in Section 2.1, commencing from the third regulatory period, the Regulator has allowed TasWater to calculate and include depreciation as a component of the NAR only in relation to capex as it is spent for projects that started on or before 30 June 2018. For projects started on or after 1 July 2018, the asset to which the capex relates must be commissioned before the applicable regulatory depreciation is included in the NAR. As discussed earlier, the

¹⁷ Independent Pricing and Regulatory Tribunal, *Review of prices for Sydney Water*, 16 June 2020, page 192.

¹⁸ Independent Pricing and Regulatory Tribunal, *Review of prices for Hunter Water*, 16 June 2020, page 228.

lack of clarity with regards to project ‘start date’ makes reconciling the spreadsheets difficult and may mean that TasWater is claiming depreciation with respect to projects before the Regulator intended that it do so.

Pre-1 July 2018 capex is disaggregated into the categories in Table 1 using a rules-based approach. The rules-based approach apportions the capex based on predetermined percentages into the asset categories (asset sub-type) in Table 1. The asset category capex is then escalated, depreciated, and rolled forward each year. Regulatory depreciation is therefore calculated based on the values in each asset category rather than on individual assets as occurs in the asset register. TasWater states that capex is rolled forward until project commissioning at which point the capex is capitalised. This would suggest that the asset is moved from the capex spreadsheet to the asset register as a new asset. However, the process to do this is not clear as, unlike the asset register, the capex spreadsheet contains asset categories rather than individual assets. Consequently, the depreciation values in the financial model are based not on an individual asset basis for commissioned assets, but on an asset category basis for pre-1 July 2018 capex.

From the review of TasWater’s asset register, the Regulator found it difficult to understand how assets in the register relate to specific projects. As such, it was difficult to determine whether the assets in the register related to projects commenced on or before 30 June 2018 or on or after 1 July 2018. As there are no individual assets in the capex spreadsheet, there is the potential for depreciation to be calculated twice on the same assets. The Regulator also considers it would be helpful to have some documentation on the process linking project capex to the completed new assets in the asset register and ultimately to the financial model used to calculate the NAR.

The Regulator expects depreciation on capex relating to projects commenced on or before 30 June 2018 will decline as these projects are progressively completed and commissioned.

The Regulator recommends TasWater prepare documentation to substantiate the depreciation relating to pre-1 July 2018 capex.

3.4 Depreciation data and processes

The Regulator is concerned about the data integrity and lack of data controls in TasWater’s current approach to calculating its regulatory depreciation allowances. As discussed in Section 2.1, the asset register and other regulatory depreciation information is currently contained in Excel spreadsheets. As each capital project in TasWater’s capital works program creates new assets, the Regulator is concerned about the suitability of this platform as a viable long-term solution to meet TasWater’s obligations and the Regulator’s requirements with respect to regulatory depreciation.

The asset register provided to the Regulator for the inquiry was not that used during the 2021-22 pricing investigation and has had formulae removed. As was the case during that investigation, the Regulator is concerned that TasWater was unable to provide an up-to-date asset register that could be interrogated to verify the regulatory depreciation allowance. Furthermore, the information in the various spreadsheets and worksheets TasWater provided to calculate regulatory depreciation cannot be reconciled to verify TasWater’s depreciation allowances. The Regulator also notes that TasWater was not able to provide a guide or similar document that set out the relationships and interactions between capex, asset creation,

depreciation and disposal and the process used to calculate the regulatory depreciation allowance in the NAR.

It is also not clear to the Regulator how information about assets relating to projects managed by TasWater’s Capital Delivery Office is dealt with for regulatory depreciation purposes.

3.5 Method for calculating regulatory depreciation

In its 2018 Investigation Final Report, the Regulator noted that other Australian regulators did not apply a consistent approach to calculating regulatory depreciation and apply a number of methods including but not limited to:

- a weighted average approach to a number of asset classes with the classes designed to reflect the nature of the regulated entity’s asset base; or
- a weighted average approach to calculating regulatory depreciation on existing assets and a line-by-line approach to calculating regulatory depreciation on new assets (for example, the QCA and the ICRC).¹⁹

Electricity network business are transitioning from a WARL approach to a ‘year-by-year tracking approach’ as the Australian Energy Regulator (AER) considered that the WARL approach was not sufficiently transparent or accurate. In particular, the WARL was applied to all assets and did not differentiate between the expenditure profile in each class. Under the AER’s new method, each year’s capex is grouped into asset categories which are depreciated over approved standard lives. The method is more complex than the WARL, but network businesses contend that the method is preferable as there is better alignment between capital recovery and the economic lives of the assets.

However, in terms of intergenerational equity, the Essential Services Commission has concluded that, using a Net Present Value analysis, the impact on businesses is neutral irrespective of whether a line-by-line approach or a weighted average approach is applied.²⁰

The principles that need to be considered in choosing a method for determining regulatory depreciation were stated in the 2018 Investigation Final Report²¹ and are as follows:

1. Administrative simplicity and practicality - consideration needs to be given to the ease with which adjustments can be made by TasWater and verified by the Regulator.
2. Consistency - to avoid price instability the treatment of regulatory depreciation between regulatory periods should be consistent. The decisions made by other regulators should also be considered.
3. Intergenerational equity - customers enjoying the benefits provided by an asset should contribute to the cost of that asset.

¹⁹ Tasmanian Economic Regulator, *2018 Price Determination Investigation Final Report*, page 56.

²⁰ *Ibid*, page 56.

²¹ *Ibid*, page 152.

4. Data integrity - regulatory depreciation calculations should be based on sound, reliable and accurate data sources.

Regardless of the depreciation methodology chosen, the calculation of regulatory depreciation allowance requires an accurate asset register and a standardised, consistent approach to assigning asset lives to assets. With regards to existing assets this refers to the remaining lives, while for new assets this refers to the economic lives taking into consideration design lives and condition assessment for specific assets.

4 OTHER MATTERS

4.1 Depreciation - existing assets

Although out of scope for this inquiry, the Regulator's inquiry confirmed the issues identified during the 2021-22 investigation with respect to TasWater's calculation of regulatory depreciation on its existing assets. That is, TasWater was not able to provide evidence as to how its proposed depreciation rate of 2.28 per cent for existing assets was calculated. The Regulator intends requiring, in the next price and service plan guideline, that TasWater provide the relevant source documents and show the calculation of the depreciation rate for existing assets.

The Regulator also intends continuing to apply a value-weighted average method of calculating regulatory depreciation for existing assets. This method will apply for the entirety of the regulatory period.

Given the relatively static nature of the existing assets the only changes that should occur will be to account for the disposal of assets and the removal of assets reaching the end of their useful life.

With these minor provisos, the Regulator considers that this methodology provides the simplest, most stable, and cost-effective method of calculating regulatory depreciation given the uncertainty as to the age and condition of these assets.

5 THE REGULATOR'S PROPOSALS

This chapter consolidates the Regulator's draft findings and sets out the Regulator's proposals.

The inquiry found that the processes TasWater currently applies to calculate regulatory depreciation allowances and the associated relationships and the interactions between the various spreadsheets and models are unclear and not documented.

The inquiry also found that it is not possible to track individual assets between TasWater's asset register, capex depreciation spreadsheet and financial model, nor reconcile the information contained in those models and spreadsheets due to the different asset lives and asset categories TasWater has used.

Consequently, the Regulator proposes:

- As specified in the Regulator's 2022 Investigation Final Report, the Regulator will require TasWater to develop and maintain an asset register that is suitable for regulatory pricing purposes.
- TasWater prepare and maintain documentation to demonstrate the process for determining asset category allocations and asset lives.
- TasWater review and justify its asset lives.
- TasWater provide to the Regulator its depreciation calculations for both existing and new assets and all supporting information, including but not limited to the relevant models, schedule of asset categories and assets lives, and an overview of the process used to calculate regulatory depreciation allowances for both existing and new assets.
- With respect to projects started on or before 30 June 2018, to address the current uncertainty about project start dates, the Regulator intends including in the guideline for the fifth regulatory period that the commencement date for projects, for the purposes of calculating regulatory depreciation, is the date the project receives final approval from the board or a board sanctioned delegate. In addition, if there are any changes to the original project (excluding cost increases relating to the original project scope) that require board or board delegated senior management approval, the Regulator will treat those changes as constituting the commencement of a new project with the date that the changes were approved treated as the commencement date for that project.
- With respect to new assets Taswater's approach to calculating depreciation must meet the following criteria:
 - A single schedule of asset categories and asset lives.
 - Justification for asset lives and categories used.
 - Any models used in calculating regulatory depreciation must be on the same basis (ie individual assets) and must reconcile to one another.

- Assets (including assets relating to projects managed by TasWater’s Capital Delivery Office) must be traceable from initial expenditure to the asset register then to the end of their economic life via depreciation or disposal.
 - The final approval date provided by the board or by the board delegated senior manager for each project will determine, for the fifth period and beyond, whether the project commenced on or before 30 June 2018 or on or after 1 July 2018 and therefore the timing of the calculation of depreciation for regulatory purposes.
 - Where the project scope has changed since the original project approval was given, the project will be treated as post-1 July 2018 project (apart from where costs change but the original project scope is unchanged).²²
- With respect to existing assets, the depreciation rates to apply to existing assets in the RAB roll forward in the next regulatory period must be the same as determined in the previous regulatory except where disposal of an asset results in a material change in the value weighted remaining asset life used to calculate the applicable depreciation rate or the asset has been fully depreciated and is no longer used or held ready for use in providing regulated services.

As previously noted, there is insufficient time during a pricing investigation to resolve possible major issues with regulatory depreciation allowances. The complexity and scope of the task also means that the issues identified cannot be resolved within the conduct of this inquiry. Consequently, the Regulator proposes that TasWater resolve the issues identified in the inquiry in advance of submitting its proposed price and service plan for the next regulatory period. This will allow time for the Regulator to investigate TasWater’s approach, ensure that it can access the relevant data and verify the calculations prior to TasWater submitting its proposed price and service plan.

TasWater’s approach to resolving the issues identified needs to be consistently applied, easy to understand, able to be interrogated and have an easy-to-use guide to support it.

The Regulator also proposes that TasWater liaises with OTTER as it works to resolve the issues identified and provides the Regulator with regular updates on progress.

²² The Regulator does not intend making retrospective adjustments to regulatory depreciation allowances for the fourth regulatory period if it is found that projects that commenced on or after 1 July 2018 have been treated as projects that commenced on or before 30 June 2018.

APPENDIX A: TERMS OF REFERENCE

Inquiry into the calculation of regulatory depreciation allowances for TasWater’s new assets

Terms of Reference

The Tasmanian Economic Regulator is conducting an inquiry under Section 12(j) of the *Water and Sewerage Industry Act 2008* into TasWater’s current approach to calculating the regulatory depreciation allowance for some of TasWater’s water and sewerage infrastructure assets.

Background

The regulatory depreciation allowance is a component of the Notional Allowable Revenue which is used by the Regulator to determine maximum prices for regulated water and sewerage services.

Due to a lack of information on the condition and acquisition dates for assets transferred before 1 July 2011 from councils to the previous regional corporations and subsequently TasWater (‘existing assets’) a value-weighted average asset life approach has been used in calculating the regulatory depreciation allowance for those assets. In contrast, the regulatory depreciation allowance for assets acquired and/or constructed by the previous regional corporations and subsequently TasWater since 1 July 2009 (‘new assets’) is currently calculated as the aggregate of the annual depreciation on individual assets using what is referred to as a ‘line-by-line’ approach.

In its 2022 Water and Sewerage Investigation Final Report, the Regulator decided to conduct an inquiry into how the regulatory depreciation allowance is currently calculated for new assets. The Regulator also decided to review the basis of TasWater’s asset lives assumptions to ensure those assumptions were appropriate and consistent with the lives of equivalent asset types in other jurisdictions.

The outcomes from this inquiry will inform the requirements that the Regulator will include in the Price and Service Plan Guideline that TasWater is to comply with in preparing its proposed Price and Service Plan for the fifth regulatory period.

Software platform for TasWater’s asset register

On a related issue, as set out in the 2022 Final Report, the Regulator requires TasWater to develop, during the fourth regulatory period, an asset register on an appropriate software platform that is suitable for regulatory purposes.

The Regulator expects that the software platform TasWater selects will be capable of addressing the outcomes from this inquiry.

The Regulator also expects that the software platform will be accessible to the Regulator and enable the Regulator to interrogate and verify its contents as required during future price determination investigations.

Scope of inquiry

The Regulator, in conducting the inquiry, will consider the following matters:

1. the basis of TasWater’s asset lives assumptions;
2. the asset lives applied by regulators in other jurisdictions for equivalent asset types; and
3. any other matters the Regulator considers relevant.

The Regulator will also have regard to other regulators’ approaches to the calculation of regulatory depreciation and will, in this context, consider the appropriateness of TasWater continuing to use the line-by-line approach in calculating regulatory depreciation allowances for its new assets.

The Regulator will also carry out public consultation and liaise directly with TasWater during the inquiry.

Outputs

A draft report setting out the Regulator’s draft findings on the calculation of the regulatory depreciation allowance for new assets.

A final report setting out the Regulator’s findings on the calculation of the regulatory depreciation allowance for new assets.

The Regulator expects TasWater to implement any revised regulatory depreciation arrangements for new assets from the start of the fifth regulatory period on 1 July 2026.

Timelines

The timelines for the inquiry are as follows:

Milestone	Target dates
Regulator releases terms of reference	21 September 2022
Regulator conducts research and liaises with TasWater and other state and territory regulators	September 2022 to August 2023
Regulator releases draft report for consultation (<u>as revised on 16 May 2023</u>)	28 August 2023
Consultation period ends (<u>as revised on 16 May 2023</u>)	28 October 2023
Regulator releases final report (<u>as revised on 16 May 2023</u>)	17 November 2023

APPENDIX B: ASSET LIVES - TASWATER AND THE AUSTRALIAN TAX OFFICE

TasWater asset sub-category	Asset life (years)	Matched ATO asset category	Asset life (years)	Page reference in ATO asset schedule ²³
Sludge lagoon lining	20	Sludge treatment lagoons	50	181
Pipework	80	Pipes	80	179
Pumps	25	Pump sets (incorporating switch boards, starters, motors and pumps)	25	180
Blowers / air compressors	20	Aerators and blowers	20	182
Belt press	15	Belt presses	15	182
UV systems	25	UV disinfectors	25	183
Mixers	25	Mixers	25	182
Valves	25	Pressure reducing valves	25	180
Switchboards	20	Switchboards	20	281
Telemetry	10	Telemetry (including modems and remote transfer units)	10	180
SCADA System	10	Control system assets (including SCADA)	10	170
PLCs	10	Control system assets – programmable logic controllers (PLCs) and hardware	10	204
Flow meters	20	Flow meters	20	180
Package dosing station	10	Chemical dosing systems	15	181
Cars	4	Cars (generally)	8	199

²³ Australian Taxation Office, *Taxation Ruling TR 2022/1 - Income tax: effective life of depreciating assets* (applicable from 1 July 2022), 29 June 2022.