

**Dam Safety Management Plan
Annual Progress Report
2023–2024**

Document Approval and Issue Notice

The Dam Safety Management Plan Annual Progress Regulatory Report is a controlled document. Recipients should remove superseded versions from circulation. This document is authorised for issue once it has been approved.

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1. Introduction

Our purpose is to provide exceptional water and sewerage services for a thriving Tasmania. These services are essential for the maintenance of the lifestyle, economy, and public health in Tasmania.

In accordance with the requirements of Section 165G of the *Water Management Act 1999*, as an owner of a portfolio of dams we *“must, so far as is reasonably practicable, maintain and operate the dams so as not to cause, or be likely to cause, material harm or danger to any person or property”*.

TasWater currently has 353 Water and Wastewater storages, lagoons, and weirs within our portfolio of dams. From this portfolio, 42 dams have to date been assessed as having a consequence category of “Significant” and above. A further 14 dams have been identified as potentially having population at risk (PAR) and are subject to further assessment. The remaining dams have a “Low” or “Very Low” Consequence Category.

This document outlines the dam safety management activities that were undertaken in FYFY2023/24, and the Dam Safety Management Plan (DSMP) for FY2024/2025, demonstrating our commitment to improving the risk position of our portfolio of dams over the coming years.

2. Scope

The DSMP addresses the requirements that were set out in the Dam Safety Regulator's letter dated 21 March 2012. The items that were requested and are included in this plan are:

- Work completed during FY2023/24 (for dams with a consequence category of Significant and above),
- Works planned for FY2024/2025, and
- Significant risk reduction works planned for the next five years.

In addition to the information that has been requested by the Dam Safety Regulator, the following information, which provides greater clarity and understanding of our dam safety program, has also been included:

- The dam portfolio and consequence categorisation,
- Current risk position (high risk dams),
- Proposed risk reduction schedule for the next five years.

3. Regulatory Environment

In accordance with the requirements of Section 165G of the *Water Management Act 1999*, as an owner of a portfolio of dams, TasWater *"must, so far as is reasonably practicable, maintain and operate the dams so as not to cause, or be likely to cause, material, environmental harm or danger to any person or property"*.

The *Water Management (Safety of Dams) Regulations 2015* require dam owners to comply with the guidelines developed by the Australian National Committee on Large Dams (ANCOLD). It is noted that, under Tasmanian legislation, the ANCOLD guidelines apply to all off-stream dams greater than 1 ML and all on-stream dams.

The ANCOLD Guidelines on Dam Safety Management (2003) require that "dam risk profiles are available and that risks are being addressed on a priority basis" and states that dam owners should "Give priority to life safety risks over other risk".

For the dams which have a life safety risk, the ANCOLD Guidelines on Risk Assessment (2022) specify individual and societal risk criteria for existing dams which is a function of the number of possible fatalities and the annual probability of failure.

This DSMP provides information about the management of TasWater's dam portfolio with a consequence category rating of 'Significant' or above.

4. FY2023/24 Overview of Dam Activities

A summary of the significant dam safety activities that were performed during FY2023/24 are detailed below.

4.1. Ridgeway Dam

Ridgeway dam continues to exceed the LoT for Societal Risk including the interim risk reduction actions (reservoir level restriction) implemented in July 2019. The reservoir level restrictions shall remain in place until the dam permanent risk mitigation actions are completed.

TasWater has very limited effective interim risk reduction options that can be further implemented, as additional lowering of the water level will introduce new risks such as reduced surety of supply and water quality concerns. Due to the minimal catchment area of the dam, provision of diversion drains, ability to manage and control network inflows into the dam, TasWater has good capacity to manage the interim reservoir level restriction in place. The effectiveness of the risk mitigation actions and controls will continue to be monitored and modified as required.

Phase 1 option investigation work for permanent risk mitigation actions commenced during FY2023/24, which will inform the upgrade and/or decommissioning options. First draft of the options assessment report will be delivered in December 2024.

The Phase 1 investigations are envisaged to be completed in FY2024/25 with the preferred risk mitigation action planned to be implemented commencing FY2026/27.

4.2. Upper Reservoir Dam

Phase 2 upgrade works were completed in FY2022/23 which reduced the Societal risks to an ALARP position. Planning commenced in FY2023/24 for the refurbishment of the outlet and pipe works. Design and scope of works review will continue into Q3 FY24/25 with works to commence Q2 FY25/26.

4.3. Mikany Dam

Phase 1 upgrade works were completed in FY2022/23 which lowered the societal risk from being significantly above the ANCOLD Limit of Tolerability (LoT) to approximately the tolerable limit. Planning has commenced for Phase 2 of the upgrade, which is required to increase the capacity of the spillway to pass at least a 1:10,000 AEP flood.

Detailed design for the spillway upgrade will commence in Q1 of FY2024/25 with the physical spillway upgrade works scheduled for FY2026/27. When Phase 2 is completed, the societal risk will be As Low As Reasonably Practicable (ALARP).

4.4. Isandula Dam

Ongoing interim risk reduction measures are being applied to manage flood loading affects upon the dam, spillway, and parapet wall.

The spillway can safely pass a 1:60 AEP flood but larger floods between 1:60 and 1:600 AEP would potentially instigate instability of, or damage to, the dam's parapet wall,

resulting in overtopping failure of the dam. Scoping for a design to strengthen the parapet wall commenced in 2023/24 and is to be finalised by the end of Q3 FY2024/25.

Throughout FY2023/24 planning to increase and improve the ability to dewater the dam continued, with a final design to install new remote automated outlet and valves at the dam completed. Implementation of the project is on track for completion by in Q2 FY2024/25.

A Dam Safety Review (DSR) including hydrological and structural assessments of Isandula Dam commenced in FY2022/23; and will provide an updated risk assessment and options for dam upgrade, decommissioning and/or divestment. The DSR is due for completion in FY2025/26.

4.5. Pet Dam

Pet dam continues to exceed the LoT for Societal Risk and ongoing interim risk reduction measures are being applied to minimise potential damaging affects upon the spillway from storm generated flood loading. The spillway is in a poor condition and is unable to pass greater than a 1:30 AEP flood without potential of unwarranted damage to the chute occurring.

Options review for the Pet dam upgrade commenced in FY2022/23, which included assessment of three spillway options and review of dam seepage control around the outlet tunnel, foundation, and outlet pipe.

The review is in response to identification of an increased risk of spillway and/or dam failure in construction. There is a need to mitigate against flood events during construction whilst additionally managing water supply risk, which is currently preventing the ability to implement reservoir drawdowns in the construction period.

Dam upgrade design is continuing through FY2023/24 with the dam upgrade to achieve ALARP planned to commence FY2025/26.

4.6. Upper and Lower Prosser Dams

Upper and Lower Prosser Dams now exceed the LoT for Societal Risk following the completion of a risk assessment undertaken in FY 2022/23. The reassessment considered the impacts on stability of the dams relating to new geotechnical inputs derived from investigations carried out in 2020.

Tendering for detailed DSR's for both Upper and Lower Prosser dams were carried out in FY2023/24. DSR's commenced in FY2024/25, and are scheduled to be completed in FY2026/27.

The DSR will provide options for dam upgrade or decommissioning. Work thereafter to reduce the societal risk for both dams to achieve ALARP will be scheduled in line with master water supply planning for the Orford/Triabunna region in approximately 2027.

4.7. Blackman Dams No. 1 and No. 2

DSR at Blackmans No.1 and Blackmans No.2 were completed in FY202/23. Options assessment of both dams commenced in FY2023/24 to inform upgrade decisions and

will allow TasWater to expediate reduction of the identified dam safety risks and address TasWater's strategy for ongoing and future supply requirements.

The options assessment are to be completed in FY2024/25.

4.8. Grassy Dam

A DSR including geotechnical investigations, hydrological and structural analysis of Grassy Dam commenced in FY2022/23. This review will provide an updated risk assessment, and options analysis for dam upgrade. This was due for completion in FY2023/24, however the program of works has been extended due to resourcing delays and the requirement to undertake intrusive site investigations. Completion of the DSR is now planned for FY2025/26.

4.9. North Esk Intake Weir

A DSR focusing upon the structural analysis of the Weir commenced in FY2022/23 to provide an updated risk assessment and options for dam upgrade. This was due for completion in FY2023/24, however the program of works has been extended due to the requirement to undertake intrusive site investigations. Completion of the DSR is now planned for FY2025/26.

4.10. Waratah Dam

FY2023/24 saw the successful completion of the final year, of a three-year program to monitor and undertake environmental management, rehabilitation of regrowth, and reestablishment of natural values of the existing dam site and impoundment following decommissioning of the dam in 2022. Completion works consisted of removal of erosion protection barriers, weed control and planting of 100 native seedlings.

4.11. Tolosa Dam

Planning, design, and dam permit approval for the decommissioning of Tolosa dam was completed in FY2022/23.

Decommissioning works commenced in December 2023 and were finalised in April 2024. The dam embankment has been fully removed and the site rehabilitated into a community parkland, therefore eliminating the societal risk associated with the dam.

The Works as Executed report has been submitted to fulfill permit requirements.

4.12. Dam Surveillance

Independent dam safety surveillance for all our significant consequence category and above dams has continued, with the third year of a five-year surveillance contract successfully completed.

Surveillance activities have been carried out for the north and south of the state in accordance with the regulations and ANCOLD Guidelines. Surveillance activities will continue in FY2024/25.

Ongoing routine inspections have also continued throughout the year, generally achieving a high level of compliance reporting.

4.13. SCADA Upgrade Project

A project to upgrade SCADA systems for 15 of our southern dams was due for completion in FY2021/22 and has been further delayed due to contractual dispute. TasWater are advertising for tenders to deliver the project, with aim to complete the works in Q3 FY2024/25.

4.14. Dam Registration

Since TasWater commenced operations in 2013, consolidation, inspection, and registration of all dam assets has been an ongoing project. The current quantum of our dams, as defined by the Water Management Act 1999 (the Act), is 353.

In FY2023/24, review of 81 registrations and consequence category dams were completed and review and lodgement of the remaining documentation to Department of Natural Resources and Environment (DNRE) as the Dam Safety Regulator, is expected to be completed by end of Q1 FY 2024/25.

4.15. Dam Consequence Ratings

Within the portfolio there are currently 34 water supply and wastewater dams that have a consequence category of 'Significant' and above, that include a PAR. There are also 8 sewage lagoons/wastewater dams and water supply weirs which have a 'Significant' consequence category but do not have a PAR.

A further 14 dams, weirs, and lagoons which have been identified potentially having PAR and are being assessed further. The assessment and confirmation of the consequence category of these assets is expected to be completed in FY2024/25.

4.16. Societal Risk

At the end of FY2023/24 five dams have a societal risk that exceeds the LoT with interim risk measures in place. These are Pet, Ridgeway, Blackman No. 2, and Upper and Lower Prosser Dams.

DSR's are underway and scheduled to continue beyond FY2023/24 for Isandula, Grassy, Lower Reservoir, Upper & Lower Prosser and Guide Dams.

4.17. Dam Decommissioning and Divestment

TasWater commenced a dam decommissioning and divestment program in FY2023/24, with Stage 1 of the project commencing in February 2024, followed by Stage 2 in May 2024. The dams identified for decommissioning are currently at various stages in the process. Out of 47 dams initially identified for potential decommissioning:

- 15 dams were determined to be either currently in use or potentially needed for future use.
- 19 dams were included in the Stage 1 small dams decommissioning program.
- 3 dams were identified for large dams decommissioning.
- 1 dam was found to be not owned by TasWater and has been removed from the asset register.
- 8 dams were included in the Stage 2 decommissioning program.

Progress for the 19 dams in Stage 1 includes the following:

- Engineering Assessment Reports have been completed for all 19 dams.
- 4 dams have been fully decommissioned and deregistered with the DNRE.
- 4 dams are currently in the process of being divested.
- Flora and Fauna Assessment Reports have been completed for 5 dams, are underway for 2 dams, and are in procurement for 4 dams.
- Permits will be finalised and submitted promptly for the 5 dams with completed Flora and Fauna Assessments.

For the 8 dams included in Stage 2:

- Engineering Assessment Reports have been completed for 4 dams.
- 4 dams will be grouped with the larger dams for decommissioning.
- Flora and Fauna Assessments for 3 dams are pending procurement.
- 1 dam, although breached, is still in use and will require further discussions with the NRE.

4.18. Dam Incidents

No reportable dam safety incidents occurred during FY2023/24.

4.19. Independent Dam Safety Audit

During FY2023/24, TasWater engaged WLF to perform a high-level review of the framework in place for managing Dam Safety including DSR's, surveillance and maintenance, emergency plans and incident investigations. Specifically, the scope included:

- Understanding the broad governance and processes in place in relation to the following key ANCOLD requirements:
 - Safety reviews and consequence category assessments
 - Dam surveillance and maintenance
 - Dam safety emergency plans
 - Dam incident investigations
- Identifying and testing the key controls in place specifically in relation to safety reviews, dam surveillance and dam maintenance as the focus for this audit project.
- A high-level assessment of the application and interaction of TasWater's risk management framework as it specifically applies to:
 - Dam incident response and investigations
 - Dam safety emergency planning
 - Assessments of risk treatments recommended and applied to findings of DSR's and how these recommended treatments are considered against other competing capital requirements.
- Assessing the processes in place to progress the recommendations that arose from the external TasWater Dam Safety Program – Governance and Performance Review.

Audit recommendations:

- Documenting formal process or work instruction for recording, prioritising and responsibility for actioning recommendations made from compliance surveillance activities – actioned.
- Utilising the Dam Compliance Program spreadsheet for monitoring contracted consultant performance – actioned.
- Updating the Dam Safety Management Strategy to include work procedures and instructions related to the application of ANCOLD Guidelines – underway.
- Training and exercise for Engineering out of hours on-call personnel – actioned.

5. Dam Portfolio

TasWater continues to monitor and maintain its extensive dam portfolio. Through FY2023/24, TasWater completed its program to complete preliminary consequence category assessments and register all dams with the Regulator; with the outstanding registrations to be submitted in FY2024/25. The majority of assets for which registration is outstanding were determined to be either Very Low or Low consequence categories, however fourteen sites have been identified as potentially significant.

Detailed dam break assessments were also completed for eight dams during FY2023/24 (Parting Creek, Parting Creek Saddle, Stanley STP Lagoon 1, Wynyard STP, Georgetown STP Maturation Lagoon, Evandale STP Lagoon, Stieglitz STP & Reuse and Scamander STP) that had previously been identified as potentially having a life safety risk. The assessments indicated that only Stanley STP Lagoon No. 1 and Parting Creek Saddle Dam may a life safety risk, with the others found to have either a PAR <1 or PLL <0.1, reducing their consequence categories to Low or Very Low.

As TasWater continues its program to inspect and review consequence categories of the dams, weirs, and lagoons within the portfolio, it is expected that the consequence categories of some dams may increase due to downstream development, increasing demand on the structure, or potential environmental harm. Such structures will be included in subsequent reports as and when changes to the consequence categories are identified.

Tables 1 and 2 describe dams with a consequence category rating of 'Significant' and above:

- Table 1 details the dams with a PAR and
- Table 2 details the dams having a consequence category of 'Significant' that is based on business and environmental impact and having no PAR.

Table 1. TasWater Dams with PAR

No	Dam Name	PAR	PLL	Consequence Category	Notes
1	Flagstaff Gully Dam	1,705	31	Extreme	
2	Ridgeway Dam ⁵	665	30.9	Extreme	
3	Upper Reservoir Dam	1,776	121	Extreme	
4	Limekiln Dam ⁵	7,847	45.5	High A	Redundant Asset
5	Knights Creek Dam ⁵	9,684	19	High A	Redundant Asset
6	Curries River Dam	118	8.3	High A	
7	Lower Reservoir Dam	305	8	High A	
8	Risdon Brook Dam ⁶	138	7	High A	
9	Swansea (Meredith) Dam	150	12	High B	
10	Illabrook Dam ⁶	25	5	High B	Redundant Asset
11	Lake Mikany Dam	24	4.5	High B	
12	Pet Dam ⁶	48	2.3	High B	Increase from High C; under review by TasWater
13	Lake Isandula Dam ⁶	8	2	High B	
14	Westbury Dam	3	2	High B	
15	Lower Prosser Dam	46	2	High C	
16	Upper Prosser Dam	39	5	High C	
17	Conglomerate Dam	152	2	High C	
18	Duckhole Rivulet Dam	17	1.9	High C	
19	Margaret Street Detention Basin	780	4.9	High C	
20	Coles Bay Dam	0.53 ⁷	1.3	High C	
21	Swansea Subsidiary Dam	3	2	Significant	
22	Williams Reservoir	45	0.55	Significant	
23	Bicheno Dam	0.107	0.04	Significant	
24	Blackman River Dam No. 1	1.4	0.71	Significant	
25	Blackman River Dam No. 2	0.27	0.034	Significant	
26	Guide Dam	20	0.3	Significant	
27	Lake Fenton	2	0.03	Significant	
28	Mt Leslie Basin	17	0.187	Significant	
29	Colebrook (Yarlington) Dam	2.25	NA	Significant	Redundant Asset
30	Dunalley STP Primary Sewage Lagoon	0.5	NA	Significant	
31	Dunalley STP Secondary Sewage Lagoons 1 & 2	0.5	NA	Significant	

32	Brady's Creek Dam	>1	NA	Significant	Nominal PAR identified; Some uncertainty exists with this assessment; investigation ongoing
33	Parting Creek Saddle Dam	>1	NA	Significant	Under review by TasWater
34	Stanley STP Lagoon No. 1	>1	NA	Significant	Under review by TasWater

Footnote:

The Definition of PAR and PLL is estimated as weighted PAR and PLL which considers itinerants. Weighted PAR = spatial and exposure probability of people driving into the flood x itinerants Weighted PLL = fatality rate x weighted PAR

¹ The table considers 'Normal' Operation Conditions and excludes implemented interim risk reduction activities which have demonstrated risk reductions.

² PAR – maximum of SDF, DCFDB, or IFF scenario reported

³ PLL – Potential Loss of Life (maximum of SDF, DCFDB, or IFF scenario reported)

⁴ Based on most recent studies or assessments completed by TW.

⁵ Dams have interim reservoir restrictions in place which demonstrate a reduction in PAR and/or PLL.

⁶ Dams have interim reservoir restrictions in place; reduction in PAR or PLL not demonstrated or assessed.

⁷ PAR has been annualised (i.e. equivalent PAR over one-year period) but may be as high as 16 in peak periods.

⁸ Detailed dam break Inundation modelling to determine PLL has not been completed.

Other dams that may have a PAR or PLL which are currently being assessed by TW include:

- Mount Leslie Sludge lagoons, Launceston
- Dover STP Lagoon, Dover
- Orford STP Lagoons, Orford
- Swansea STP Primary Lagoons 1 & 2
- Swansea STP Secondary Treatment Pond No 1
- Swansea STP Secondary Treatment Pond No 2
- Swansea Secondary Pond No 1
- Rokeby STP Emergency Overflow Lagoon 1
- Rokeby STP Emergency Overflow Lagoon 2
- Margate SPS Overflow Basin
- Collinsvale Reuse Lagoon
- Bryn Estyn Sludge Lagoon No 1
- Bryn Estyn Sludge Lagoon No 2
- Bryn Estyn Sludge Lagoon Buffer Tank

Table 2. TasWater Dams with No PAR, but Major Environmental or Business Risks

No	Dam Name	Environmental Impact	Business Risk	Consequence Category
35	Barwick (Kirabati) Effluent Lagoons ⁹	Major	Negligible	Significant
36	Sorell Sludge Lagoons	Major	Negligible	Significant
37	Midway Point Sludge Lagoon	Major	Negligible	Significant
38	Penna Reuse Lagoons	Major	Minor	Significant
39	Georges River Weir	Negligible	Major	Significant
40	Nunamara Weir	Negligible	Major	Significant

41	North Esk Intake Weir	Negligible	Major	Significant
42	Barwick (Kirabati) Effluent Lagoons ⁹	Major	Negligible	Significant

Footnote:

The Definition of PAR and PLL is estimated as weighted PAR and PLL which considers itinerants. Weighted PAR = spatial and exposure probability of people driving into the flood x itinerants Weighted PLL = fatality rate x weighted PAR

⁹Have been identified as having the potential for itinerant PAR, but unlikely to exceed PAR >1.

6. Current Risk

Currently TasWater has five dams within our portfolio that, including the application of interim risk controls, exceed the ANCOLD Limit of Tolerability for Societal Risk (ANCOLD 2003); being Ridgeway, Pet, Blackmans No.2, and Upper and Lower Prosser Dams. These are the same dams as previously reported last year.

In addition to the five dams above the LoT, Lower Reservoir Dam, as highlighted last year, is also considered highly likely to exceed the LoT based on available evidence obtained from the Upper Reservoir Dam Upgrade. TasWater engaged the market in FY2023/24 and will award a contract early FY2024/25 to carry out a DSR for Lower Reservoir Dam, as well as Upper and Lower Prosser Dams to confirm their risk positions.

TasWater is continuing to progress with design studies and investigations for Pet and Ridgeway Dams; and will continue to monitor and manage their risks through interim risk reduction activities until permanent risk reduction actions are implemented. Construction is planned to commence at Pet in 2025 and Ridgeway in 2027 respectively.

TasWater has additionally commenced an options assessment for addressing the risk at Blackman Dam No.2 in conjunction with TasWater's long term future water supply requirements for Oatlands. TasWater has also commenced design studies relating to the planned spillway upgrade for Lake Mikany in order to move the dam towards ALARP.

Tolosa Dam was decommissioned during FY2023/24, with practical completion achieved in June 2024. The dam no longer poses a dam safety risk; and its removal has additionally reduced the risk posed by Limekiln Gully Dam (as a cascade dam failure event is no longer feasible). Rehabilitation of the site and monitoring of its performance will continue through FY2024/25.

TasWater progressed with the planning to divest or decommission numerous smaller dams which are surplus to requirements and therefore reduce overall dam safety portfolio risk.

Additionally, TasWater has commenced a project to further develop a database containing key risk information (i.e. likelihood, consequence, and risk) relating the entire dams portfolio. The purpose of the portfolio risk database is to allow TasWater to track risks, assess the performance of the portfolio, and readily compare risks with TasWater risk assessments tools to aid in prioritisation of works.

Figure 1 below presents the Societal Risk Plot for TasWater's Portfolio as of the end of FY2023/24. This includes all dams for which TasWater has completed screening level or better quantitative risk assessments. It additionally highlights dams that are subject to

interim operating conditions, have either been subject to dam safety upgrades or are otherwise considered 'New' Dams, and dams that are redundant to TasWater's needs.

Figure 1 below presents the Societal Risk Plot for TasWater's significant and above dams (where information is available to do so).

TasWater ANCOLD (2022) Societal Risk Plot - EOFY 2023/24 - Includes Interim Operating Conditions

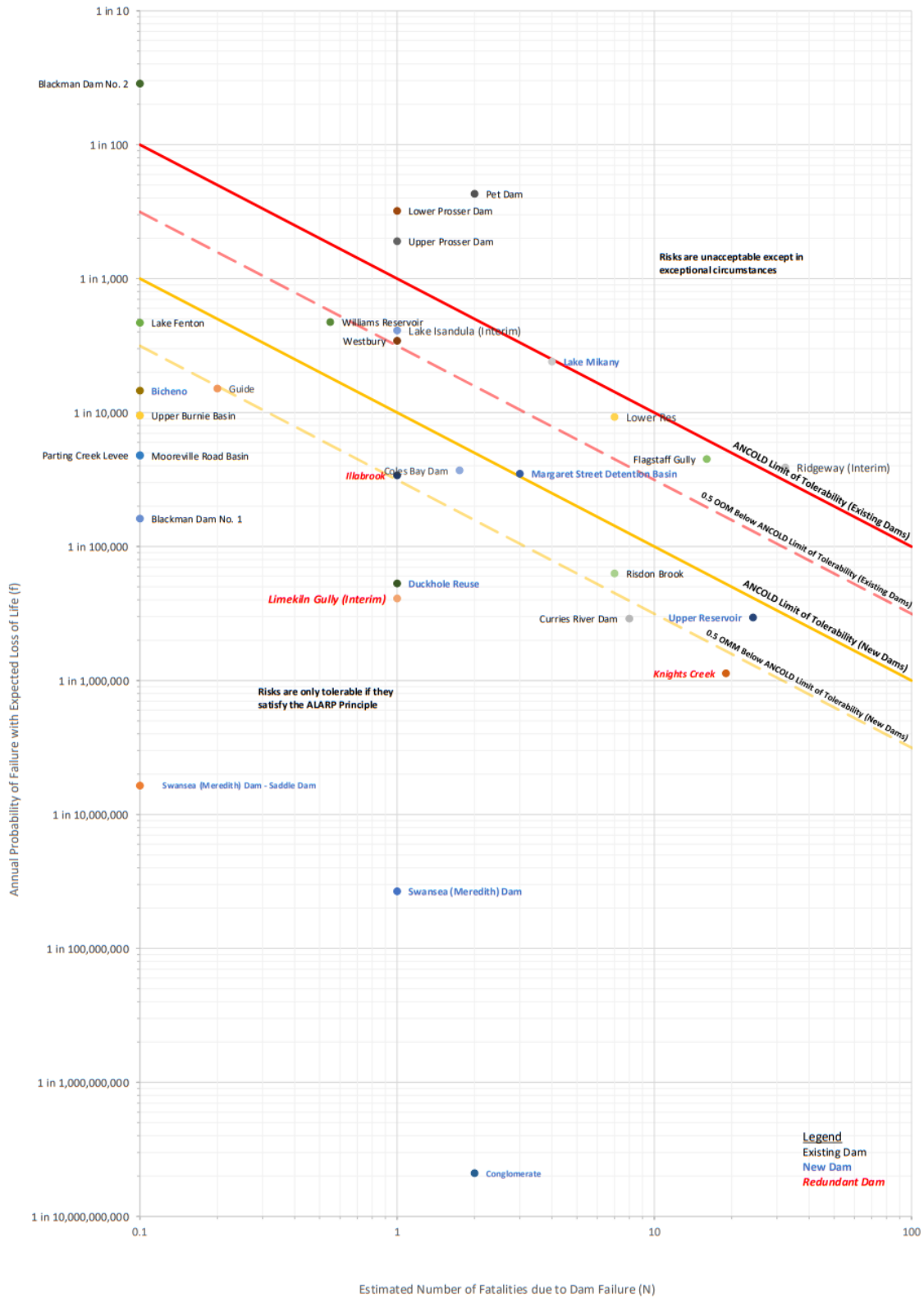


Figure 1 TasWater Portfolio ANCOLD (2003) Societal Risk Plot EOFY 2023/24

7. Dam Safety Risk Management Activities

This section describes the dam safety works that were undertaken during FY2023/24 and the activities planned for FY2024/25. In addition to this, and to provide guidance on our future work, an indicative plan for major risk reduction works is also included at the end of this section.

The items included are:

- Interim risk reduction measures
- Activities completed in FY FY2023/24
- Dam surveillance activities
- Special studies
- Upgrade plan
- Minor works program

7.1. Interim Risk Reduction Measures

Since FY2014/15, several interim risk reduction measures have been implemented and were introduced as a means of quickly reducing the risk posed by the assets. The interim measures that have been implemented are listed in Table 3 below. These measures have continued through FY2023/24 and those that will continue throughout FY2024/25 are also listed.

TasWater will continue to further explore, and where practical, implement additional interim risk mitigation actions where appropriate.

Table 3 Interim Risk Reduction Measures

Dam	Existing or Implemented Interim Risk Reduction Measures	Planned Interim Risk Reduction Measures
	FY2023/24	FY2024/25
Ridgeway (Upgrade)	Reservoir level lowered by 4.0 m ¹⁰ Routine surveillance increased to daily, vegetation removed from the dam's downstream toe and excessive calcite removed from the downstream face (to allow for better viewing of dam structure)	Maintain at -4m below FSL and improve automated monitoring of lake level, extensometers, seepage, and temperature as further interim risk mitigation measures to be installed at the dam and interfaced to TW SCADA.
Tolosa (Decommissioning)	Dam drained to maximum drawdown level, approximately 11m below FSL ¹⁰ (the same measures reported in last year's report).	Dam decommissioned in April 2024. No further actions required.
Limekiln (Divestment/Decommissioning)	Maximum operating level limited to 8m below FSL. ¹⁰ The storage is effectively kept empty and only stores water, for short periods, following significant rainfall events.	The reduced normal operating level will be maintained.
Lower Reservoir (Upgrade)	Maximum operating level limited to 0.9m below FSL. ¹⁰ Additional dam safety monitoring (standpipe/piezometers) installed.	The reduced operating level will be maintained and is generally kept at 0.9m below FSL (there is a noticeable reduction in seepage at this level).
Illabrook (Divestment/Decommissioning)	The outlet kept fully open to enable dewatering of the dam.	The outlet will be kept fully open over winter, with the dam maintained at 50% capacity over summer for firefighting.

Knights Creek (Divestment/Decommissioning)	The dam is not used for water supply. Even though this dam has a relatively low risk it is being operated at 8m below FSL to minimise erosion in the spillway should the dam spill. ¹¹	The reduced normal operating level will be maintained.
Pet (Upgrade)	To assist in managing flood risk the reservoir level is managed at 1.5m below FSL during the winter months. ¹⁰ Flood early warning system. ¹¹	The same operating restriction will apply.
Isandula (Divestment/Decommissioning)	To assist in managing flood risk the reservoir is managed at 2m below FSL during the winter months. Flood early warning system. ¹¹	The same operating restriction will apply. The scour valve is being upgraded in September 2024 and will be completed November 2024. Strengthening of parapet wall.
Blackman Dam No. 2	Temporary repairs to the spillway (2018) Commissioning of recently installed VW Piezometers Flood early Warning System. ¹¹	Improvements to V- Notches. Remote interface to SCADA integration to be completed.

Footnote:

¹⁰ Reduction in maximum operating level of a dam will result in less volume of water stored in the reservoir and availability of more air space above the reservoir level. As a result, the volume of water released during a dam break and the corresponding peak outflow is significantly less than that with the reservoir level at FSL. The societal risk may also reduce due to a reduction in PLL however, there is no guarantee that the reduction will be below the LoT until a revised risk assessment is undertaken.

¹¹ A detailed Flood Early Warning System (FEWS) model has been development and implemented for this asset.

7.2. Flood Early Warning System (FEWS)

In recent years we have continued to develop our integrated Flood Early Warning System (FEWS) and have implemented it at several of our dams identified as being susceptible to increased flooding risk. The system is a decision support tool that allows decisions to be made during current or forecast extreme hydrological conditions.

The system brings data from a range of sources into one location where it is run through a range of processes such as hydrologic, reservoir system, and catchment models. Spatial overlays then allow for the interpretation of data in context of current Bureau of Meteorology (BoM) flood warnings, radar observations, hydrometric observations and forecast rainfall.

The system that we use is Delft-FEWS, which is a modern application used by similar organisations and flood management authorities, including the BoM and Hydro Tasmania.

The storages that are currently being modelled are:

- Blackmans No. 1 and No. 2, Oatlands
- Curries River Reservoir, Georgetown
- Grassy Reservoir, King Island
- Guide Reservoir, Burnie
- Henderson Dam, Flinders Island
- Lake Isandula, Ulverstone
- Lake Mikany, Smithton
- Pet Reservoir, Burnie

TasWater is taking a continuous improvement approach to FEWS, and additional system upgrades to a web-based system version commenced in FY2023/24. This will allow for greater access to a wider audience of TasWater user and dam managers and will enhance

our flood management warning capabilities and incident and emergency management response functions.

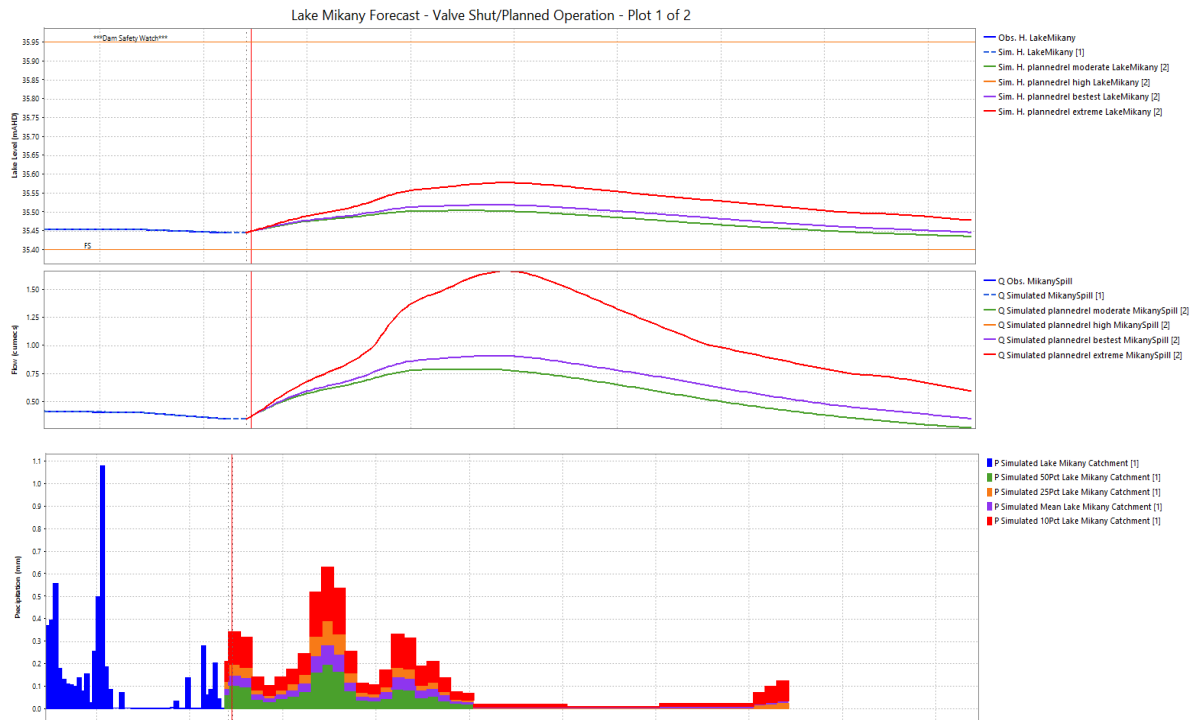


Figure 2 Example of TasWater Flood Early Warning System (FEWS) output for Mikany Dam, Smithton

7.3. Dam Safety Surveillance

7.3.1. Routine Surveillance

Through FY2023/24, TasWater continued to develop routine inspection reporting and compliance across our dam portfolio; with improvements particularly focusing on the frequency of the inspections and content of the routine surveillance reports. As part of our ongoing improvements to our business operation we will continue to implement surveillance updates as required.

In general, except for select sites, routine inspection compliance for FY2023/24 has been considered satisfactory (i.e., >98%). While our aim is to achieve our target of 100% compliance, we believe that the surveillance program continues to improve and is meeting its intent. In instances where our compliance target is not met it is usually because of our personnel being diverted to high priority reactive work (e.g. burst water mains, sewer spills, flooding events).

We are continuing to ensure that our inspection personnel have adequate dam safety training. During this period, we conducted dam safety training courses (selected units related to dam safety contained within Certificate III in Water Operations) by specialist

training provider, Entura clean energy and water institute, for those who are involved in routine surveillance inspections, sampling and dam upgrades (Operations and the CDO).

Compliance for routine surveillance is outlined in Appendix A.

7.3.2. Annual Dam Safety Compliance Activities

Completion of Year 3 of the Major Dam Safety Surveillance Program (FY2021/22 to FY2025/26) undertaken in association with GHD (Separable Portion A: Northern Dams) and Entura (Separable Portion B: Southern Dams) has been successfully completed.

Work for reviewing and drafting scope of work for Major Dam Safety Surveillance Program (FY2026/27 to 2030/31) will commence Q3 2024/25.

TasWater has an improved Operations and Maintenance Manual template, which has been provided to the two surveillance program consultants.

Minor and major reviews are underway for both Dam Safety Emergency Plans and Operations and Maintenance Manuals.

Table 4 below summaries the work performed during FY2023/24 and that planned for FY2024/25.

More detail regarding surveillance activities can be found in Appendix A: Surveillance Activities and Appendix B: Dam safety schedule of activities for significant and above dams.

Table 4 Dam Surveillance and Compliance Activities

Dam Surveillance/Compliance Activity	FY2023/24	FY2024/25
Intermediate Annual Inspections ^{13,14}	22	34
Comprehensive Surveillance Inspections	8	12
Deformation surveys	26	28
Quarterly piezometer readings	6	8
Preparation of Operation & Maintenance Manuals (OMM)	On Hold	2
Review and update OMM	On Hold	13
Preparation of new DSEP	On Hold	1
Preparation of reviews and updates of existing DSEPs	On Hold	15

¹³ The numbers quoted for FY2024/25 are approximate and may change subject to planned upgrades, decommissioning, and or completion of other specialist studies.

¹⁴ Intermediates may also include select Low and Very Low Consequence Category Dams

7.3.3. Special Studies

In addition to those activities described in Table 4, other dam safety activities have also been undertaken during FY2023/24. Table 5 describes this work, noting the baseline for this work was initially defined in the FY2014/15 Annual Progress Report.

Table 5 List of Activities undertaken since FY2015/16 and activities proposed for FY2023/24

Dam	Proposed Dam Safety Tasks for FY2015/16 (Dam Safety Management Plan – Annual Progress Report FY2014/15)	Revised Works and Completion Date (2017 Dam Safety Improvement Plan)	Proposed Dam Safety Tasks for FY2023/24	Actual Dam Safety Tasks Performed for FY2023/24	Proposed Dam Safety Tasks for FY2024/25
Conglomerate Creek Dam	Leakage around the conduit was addressed in FY2014/15. Construct filter buttress in FY2016/17.	Dam upgrade (filter buttress) was completed in FY2017/18.	BAU	BAU	
Upper Reservoir	Outlet conduit and bypass channel repairs FY2015/16. Filter buttress FY2017/18.	Outlet conduit repairs and crest raising FY2019/20. Filter buttress on downstream face of the dam is no longer required.	Outlet works refurbishment to be undertaken by CDO. Task Notice to be prepared. Timing to be confirmed to coincide with water supply requirements and seasonal conditions.	Commencement of design investigations and Scope of works drafted. To be delivered by Dam Infrastructure Minor Improvement Program.	Delivering Stage 3 Outlet Works Upgrade Works Timing to be confirmed to coincide with water supply requirements and seasonal conditions.
Pet Dam	Install localised filter adjacent to spillway right hand side wall, seal open joints in the outlet tunnel, install filter outlet on drain holes in the tunnel, and construct local filter around the conduit, new spillway chute FY2016/17.	Install localised filter adjacent to spillway right hand side wall, seal open joints in the outlet tunnel, install filter outlet on drain holes in the tunnel, construct local filter around the conduit reconstruct spillway crest and spillway FY2019/20.	The options review will be finalised in March 2024 and thereafter detailed investigation and design phase will recommence and continue throughout the remainder of the year.	Options assessment and MCA for Package 1 and Package 2 (spillway) works. Package 1 to move through detail design. Package 2 design investigations recommencement.	Detailed investigation and design phase will Continue throughout the remainder of 2024. Package 1 works to commence construction in 2025/26
Tolosa	Tolosa Dam replacement infrastructure (tanks design), decommission dam and replace with tanks FY2014/15, FY2015/16, and FY2017/18.	Decommission the dam in FY2017/18.	Decommission the dam during summer 2023/24 Undertake Works as executed Report.	Dam Decommissioned	Rehabilitation and monitoring
Swansea	Install clay liner FY2015/16.	Return the dam back to full service, and to manage the societal risk, the upgrade is divided into two components: Phase 1: Construct a downstream drainage filter to mitigate piping.	BAU Implement the improvements to seepage monitoring systems.	BAU Investigation of options for seepage monitoring systems.	BAU Complete construction works for seepage monitoring collection.

		Phase 2: Construct an impermeable membrane within the reservoir to mitigate seepage from the impoundment. The dam upgrade is scheduled for completion in FY2017/18.			
Waratah	Geotechnical investigation and filter design and spillway protection work FY2015/16. Design filter buttress and spillway protection works FY2015/16 Geotechnical investigation and filter design and spillway protection work FY2015/16. install filter buttress and spillway protection FY2017/18 and FY2018/19.	Dewater the dam in FY2016/17 (breach dam) and following this either fully decommission or divest dam in FY2018/19. The dam has been identified as being surplus to our requirements and therefore no longer requires upgrade.	Continue rehabilitation monitoring.	Planting of native flora, continuous rehabilitation and monitoring of the stream.	Dam Decommissioned BAU
Curries River	Geotechnical investigation and DSR.	Geotechnical Investigation and DSR completed.	Complete upgrade options assessment.	No action; reprioritised in favour of higher risk assets.	BAU.
Ridgeway	Foundation investigation and detailed design to upgrade post tensioned anchors. Upgrade post tensioned anchors FY2015/16 and FY2016/17.	Stage 1 – Detailed Investigation and Design FY2017/18 Stage 2 – Dam Upgrade FY2021/22.	Complete structural investigation and analysis, options assessment, and MCA. Upon expected completion in March 2024 determine final dam upgrade requirements which coincide with Greater Hobart Water Strategy so to define preferred option to go to detailed design in late 2024.	Sensitivity Analysis commenced, MCA and Options assessment completed. Additional investigations to finalise and inform options assessment. Work with Greater Hobart Water Strategy.	Finish Sensitivity Analysis, complete Risk Assessment and finalise Options Assessment. Determine final preferred option and progress to detail design.
Westbury	Geotechnical investigation.	DSR.	Further internal grouting of redundant pipelines within dam and engineering assessment for design of scour and outlet pipe sleeving.	No action; reprioritised in favour of higher risk assets.	BAU.
Lower Prosser	Structural footing anchored to foundation FY2015/16 and FY2016/17.	No activity.	Complete DSR with full structural assessment.	DSR Tendering and contract awarding	Progressing and completion of DSR Stages

Upper Prosser	Risk assessment in 2022/23 incorporating the findings of geological and geotechnical studies determined increased risk of sliding on the foundation and overturning.	Risk determined higher than previous assessed, so DSR required.	Complete DSR with full structural assessment	DSR Tendering and contract awarding	Progressing and completion of DSR Stages
Flagstaff Gully	Install full height filter buttress FY2015/16, FY2016/17, and FY2017/18.	Further investigations were identified regarding the dam risk.	BAU	BAU	BAU
Lake Mikany	Install full height filter buttress on embankments A and B FY2014/15, FY2016/17, and FY2017/18.	Business case for the dam upgrade approved by the Board in June 2015.	Planning for spillway upgrade in construction scheduled thereafter.	Planning for spillway upgrade in construction scheduled thereafter.	Detail Design for Spillway upgrade.
Coles Bay	Install full height filter buttress FY2016/17 and FY2017/18.	Portfolio Risk Assessment, geotechnical assessment, DSR.	BAU	BAU	BAU
Lake Isandula	Increase spillway capacity FY2016/17 and FY2017/18.	No activity.	Complete Dam Safety Review	Progressing DSR stages	Completion of DSR
Blackman River Dam No 2	Upgrade Blackman River Dam No.1 and decommission Blackman River Dam No. 2 FY2017/18 and FY2018/19.	Commenced investigation into decommissioning/divestment.	Complete additional hydrology and CCTV of scour and outlet pipe. Update DSR and undertake option assessment to determine dam upgrade / decommissioning and scheduling. Undertake further monitoring Improvements to interface these to SCADA	Completed CCTV of Scour and Outlet Pipe. Task Notice issued for SBC and Options Assessment.	Reviewing SBC and work associated on the options assessment.
Lake Fenton Dam	Not applicable.	Assessed to have a significant consequence category.	Dam Safety Review (Stage 1 hydrology / consequence assessment)	Monitor risk while planning DSR	Plan DSR.
Williams Reservoir	Not applicable.	Risk assessment.	BAU	BAU	Dive inspection investigation of upstream face. Design and implementation of seepage collection system.
Guide Dam	Nat Applicable	Risk Assessment	Dam Safety Review	Draft of DSR Scope of Works and Tender documentation	Award and progress commencement of DSR

Limekiln Gully and Knights Creek Dam	Not applicable.	Consequence and risk assessment commissioned late in FY2015/16.	BAU Timing for decommissioning to be determined this FY.	BAU	BAU
Margaret Street Detention Basin	Not applicable.	Dam upgraded.	BAU	BAU	BAU
Grey Mountain No. 1 and No. 2	Not applicable.	Commence investigation into decommissioning/divestment.	Finalise the decommissioning and complete site rehabilitation.	Scope of Works for final decommissioning stages, community and stakeholder engagement commenced.	Construction work to be completed for dam decommissioning

7.3.4. Indicative Five-Year Improvement Program

Figure 3 below is our indicative schedule and depicts our timing to address our high-risk dams (subject to funding approval). Our schedule commenced in 2014 when we prepared our first Dam Safety Improvement Program (DSIP), and in 2017 this program was revised to reflect our long-term strategy and our current Price and Services Plan. The figure below presents the revised schedule in line with our 2017 DSIP and shows the status of the works, including delays.

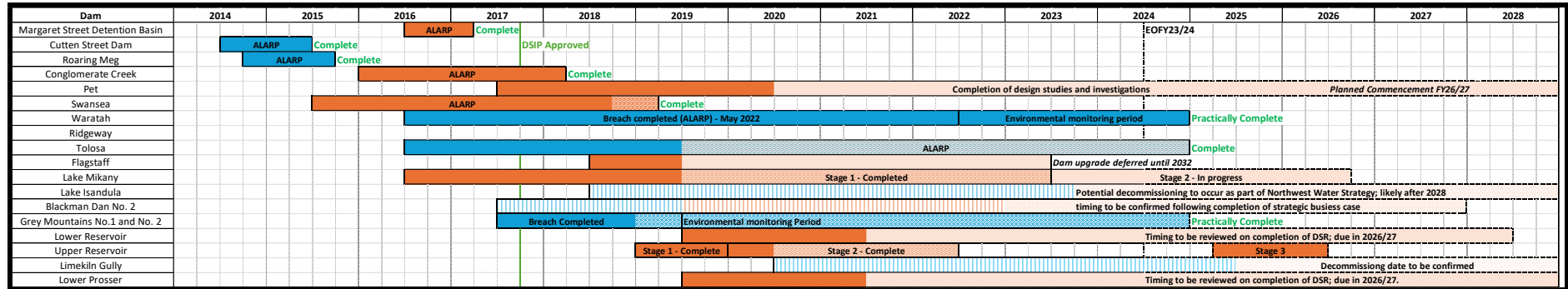
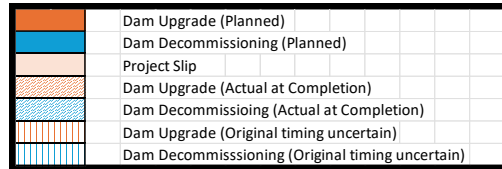


Figure 3 Schedule to Address High Risk Dams



Legend

The following notes apply to the Improvement Program.

1. Margaret Street Detention Basin: The basin was upgraded in FY2016/17. Since the upgrade there have been no serious storms to load the upgraded wall; BAU performance to date has been satisfactory.
2. Cutten Street Dam: The dam was decommissioned in 2015 and the risk is now ALARP (Eliminated).
3. Roaring Meg Dam: The dam was decommissioned in 2015 and the risk is now ALARP (Eliminated).
4. Conglomerate Dam: The Dam was upgraded in 2018 and the risk is now ALARP. BAU performance to date has been satisfactory.
5. Pet Dam: The dam safety upgrade project has been handed to the CDO for implementation. The project is reinvestigating upgrade options as extreme risk in construction has been identified. Thereafter, the project will continue into design phase. The risk exceeds the LoT.
6. Flagstaff Gully Dam: Interim Risk Reduction actions were completed in 2018 to lower the risk below the LoT. A recent risk assessment, utilising information obtained from geotechnical investigations completed in 2020, has been completed and indicates the risk may be near ALARP. TasWater has undertaken an assessment of the risk and deferred the dam upgrade, to be completed no later than 2037.
7. Isandula Dam: The future of this dam is still being evaluated and is the subject of the Northwest Regional Water Strategy. A date when this investigation will be completed is uncertain. The Risk is below the LoT but not ALARP. A DSR is underway and will determine information to establish an updated risk position for applied upgrade, decommissioning or divestment opportunities.
8. Waratah Dam: Waratah dam was Decommissioned in May 2022, reducing the Risk to ALARP (Eliminated). Environmental monitoring shall continue over the next two years.
9. Blackman No. 2 Dam: Interim risk reduction actions were performed in FY2018/19 and an integrated flood warning system has been developed for the dam. A DSR is complete, and the risk is above LoT. The need for dam safety upgrades of both Blackmans Dams No. 1 & 2 will additionally consider future supply requirements. An options assessment is being conducted to establish upgrade or decommission strategy.
10. Swansea Dam: The Dam was upgraded in 2020 and the risk is now ALARP. BAU performance to date has been satisfactory.
11. Limekiln Gully Dam: The dam has been identified as being redundant to the business needs and is planned to be decommissioned. Interim risk mitigations (reduced operating levels) have been implemented and the risk is below the LoT but not yet ALARP.
12. Lake Mikany Dam: Upgrade Works, following several delays Phase 1 works (embankment upgrades) was completed in June 2022. The Risk is now at the LoT but not yet ALARP and Phase 2 to upgrade the spillway capacity and reduce the risk to ALARP has commenced planning and will be delivered separately.
13. Tolosa Dam: The decommissioning of the dam has been commenced in September 2023 and was finished in April 2024.

7.3.5.Minor Improvement Program

Throughout FY2023/24, 11 projects were successfully completed with a value more than \$560,000.

Overall spend and number of projects delivered was slightly lower than some previous years. This was due in part to staff changes within Dam Infrastructure that has meant backfilling of positions from within the team and working with new employees to assist them getting started.

There has also been time devoted to the small dams decommissioning program that is in the early stages of investigation and planning. This will be realised as gains in coming years as the projects are rolled out.

Most of these tasks are being implemented using our minor works panel agreement for project values up to \$300,000, with additional activities being performed as part of either geotechnical investigations, DSR's, or standalone projects. We anticipate a similar number of projects will be completed in FY2024/25.

Work undertaken throughout FY2023/24 is listed below in Table 6.

Table 6 Minor works activities completed in FY2022/23

Dam	Description of Works	Status
Blackman River Dam	Blanking of scour outlet.	Complete
Bradys Creek Dam	Fencing pre upgrade	Complete
Dunalley STP	Erosion protection	Complete
Dunalley STP	Emergency spillways	Complete
Isandula Dam	Scour modifications design	Complete
Isandula Dam	Parapet wall strengthening design	Complete
Isandula Dam	Blanking of scour outlet	Complete
Isandula Dam	Installation of scour isolation valve	Complete
Lake Mikany	Site drainage works inc. v notches	Complete
	Seismic shed	Complete
Manuka Weir	Weir repairs x 2	Complete
Mole Creek Weir	Weir repairs	Complete
Mountain Creek Weir	Access upgrades	Complete
Vegetation management		Complete
Waratah Dam	Rehabilitation	Complete



Figure 5 Bradys Creek Dam Boundary Clearing and Fence Installation



Figure 6 New outlet pipe, and emergency spillway Dunalley STP.



Figure 7 Erosion Protection Dunalley Lagoon No.3



Figure 8 Stormwater Cut-off drain Dunalley



Figure 9 Erosion Protection Dunalley Lagoon No.1



Figure 10 Manuka River Weir Repairs



Figure 11 Mole Creek Weir Repairs



Figure 12 New Scour Isolation valve Isandula Dam

8. Dam Infrastructure Resources

TasWater's Dam Portfolio is managed internally through TasWater's Dam Infrastructure Section. The section's responsibilities include:

- The overall management, direction, and delivery of the Dam Safety program.
- Technical oversight of the dam safety program and activities within the program.
- The delivery of discrete activities within the dam safety program such as DSR's, Dam Upgrades, and compliance programs.
- Supporting the delivery of discrete activities within the dam safety program, such as compliance programs and minor works.
- Management of day-to-day dam safety activities.
- Delivery of our minor works program.

The team works collaboratively to support the delivery of the program. The team additionally satisfy the relevant competency standards as required under the Water Management (Safety of Dams) Regulations (2015) for the various dam types and consequence categories within TasWater's portfolio. Where necessary, external consultants are engaged to support the delivery of the program.

9. Emergency Management

9.1. Dam safety emergency plan testing

Under the ANCOLD Guidelines for Dam Safety Management (2003), regular testing and evaluation of dam safety emergency plans (DSEP) is required. During FY2023/24, a desk top dam safety exercise was conducted simulating a three different scenario events, leading to failure, at Ridgeway Dam.

The desk top dam safety exercise was conducted simulating a flood loading, sunny day failure and a seismic event scenario. The exercise provided an opportunity for stakeholders from within and external to the business to integrate discussion and later planning for improvements to Dam Infrastructure Team and Emergency Management Teams response to dam safety incidents.

Much of the emergency management discussion emanated from the recent Isandula Dam incident debrief report and SES, Police and TasWater Incident Managers found the session very useful for understanding dam safety actions as detailed in DSEP's, legislative limitations and availability of IT system support applications.

Several 'lessons learnt' and areas for improvement were identified during the exercise and these learnings will be applied to further improve our ability to identify and respond to emergency situations.

The TasWater Dam Infrastructure team is scheduled to participate in the NWREMC Dam Safety exercise in August 2024.

9.2. Dam safety incidents

No reportable dam safety incidents occurred during this period. Monitoring and surveillance activities are proceeding as usual, with the Early Flood Warning System being actively utilised throughout significant forecasted events. These activities remain an ongoing, daily priority to ensure the continued safety and preparedness of the dam system.

9.3. Revision of Dam Safety Emergency Plans and functions

TasWater commenced a review of our DSEP's and Emergency Management Processes which found there was significant overlap of information in DSEP's, OMM's and TasWater's incident management functions.

TasWater identified that this risk could be eliminated by combining the DSEP and OMM into a single plan.

A decision to suspend combining DSEP and OMM's was made as this was not in compliance with the Water Management (Safety of Dams) Regulations 2015 and as discussion with the Regulator, November 2022. However, opportunities for improvements were still identified and updated templates for both documents are completed and internal review finalised.

The new DSEP and OMM templates meet ANCOLD requirements and facilitate integration into TasWater's Incident and Emergency Management Plan and improved functionality and have been distributed to consultants in Q3 FY2023/24 for implementation.

10. Appendices

10.1. Appendix A: Surveillance Activities

Dam	Routine Inspection	FY23/24 Intermediate Inspection	FY23/24 Comprehensive Surveillance	FY23/24 Pore Pressure	FY23/24 Deformation	FY24/25 Intermediate Inspection	FY24/25 Comprehensive Surveillance	FY24/25 Pressure	Pore	FY24/25 Deformation
Extreme Consequence Category										
Ridgeway	100%	✓	●	✓	✓	●	●	●		●
Flagstaff Gully	100%	✓	●	●	✓	●	●	●		●
Upper Reservoir	98%	✓	●	✓	✓	●	●	●		●
High A Consequence Category										
Tolosa	Decommissioned									
Limekiln	100%	✓	●	●	✓	●	●	●		●
Knights Creek	100%	✓	●	●	✓	●	●	●		●
Lower Reservoir	98%	✓	●	✓	✓	●	●	●		●
Risdon Brook	98%	✓	●	N/A	✓	●	●	N/A		●
Curries River	99%	✓	●	●	✓	●	●	●		●
High B Consequence Category										
Lake Mikany	99%	●	✓	●	✓	●	●	●		●
Swansea	100%	✓	●	✓	✓	●	●	●		●
Illabrook	100%	✓	●	●	N/A	●	●	●		N/A
Westbury	99%	✓	●	✓	✓	●	●	●		●
Lake Isandula	98%	●	✓	●	✓	●	●	●		●
High C Consequence Category										
Conglomerate	100%	✓	●	●	✓	●	●	●		●

Dam	Routine Inspection	FY23/24 Intermediate Inspection	FY23/24 Comprehensive Surveillance	FY23/24 Pore Pressure	FY23/24 Deformation	FY24/25 Intermediate Inspection	FY24/25 Comprehensive Surveillance	FY24/25 Pressure	Pore	FY24/25 Deformation
Pet Dam	100%	✓	●	✓	✓	●	●	●		●
Margaret Street Detention Basin	98%	✓	●	●	✓	●	●	●		●
Duckhole Rivulet	99%	✓	●	●	✓	●	●	●		●
Lower Prosser	100%	✓	●	N/A	✓	●	●	N/A		●
Coles Bay	100%	✓	●	●	✓	●	●	●		●
Upper Prosser	100%	✓	●	N/A	✓	●	●	N/A		●
Williams Reservoir	99%	✓	●	N/A	✓	●	●	N/A		●
Significant Consequence Category										
Chimney Saddle Dam	100%	●	●	N/A	N/A	●	●	N/A		N/A
Dunalley STP Primary Lagoon	Reporting Unavailable	✓	●	N/A	N/A	●	●	N/A		N/A
Grassy Dam	100%	●	✓	N/A	●	●	●	N/A		●
Guide Dam	98%	✓	●	N/A	✓	●	●	N/A		●
Sorell STP Sludge Lagoon	100%	✓	●	N/A	N/A	●	●	N/A		N/A
Stanley STP Lagoon 1	Reporting Unavailable	●	●	N/A	N/A	●	●	N/A		N/A
Stieglitz STP & Reuse	98%	●	✓	●	●	●	●	●		●
Stieglitz Reuse	98%	●	✓	●	●	●	●	●		●
Colebrook	100%	●	✓	●	●	●	●	●		●
Waratah	Decommissioned									

Dam	Routine Inspection	FY23/24 Intermediate Inspection	FY23/24 Comprehensive Surveillance	FY23/24 Pore Pressure	FY23/24 Deformation	FY24/25 Intermediate Inspection	FY24/25 Comprehensive Surveillance	FY24/25 Pore Pressure	Pore	FY24/25 Deformation
Nunamarra	Reporting Unavailable	●	✓	●	N/A	●	●	●		N/A
George River Weir	98%	✓	●	●	N/A	●	●	●		N/A
Mount Leslie Basin	100%	✓	●	●	✓	●	●	●		●
Mount Leslie Sludge Lagoon 1 & 2	100%	✓	●	●	N/A	●	●	●		N/A
North Esk Intake Weir	93%	●	✓	●	✓	●	●	●		●
Parting Creek	100%	●	✓	●	●	●	●	●		●

% Inspection Compliance

- ✓ Activity scheduled and completed. FY2023/24
- Activity Scheduled for FY2024/25
- Activity to be determined in FY2024/25
- Did not meet goal in FY2023/24
- Not required in FY2024/25

10.2. Appendix B: Dam Safety Schedule of Activities for Significant and above dams

Dam	Routine Inspection	Intermediate Inspection	Comprehensive Surveillance	Dam Safety Review	Rainfall	Storage Level	Seepage	Chemical	Pore Pressure	Surface Movement Control	Surface Movement Normal	Internal Movement Stress
Barwick (Kiribati) Effluent Lagoon	Currently scheduled monthly but being updated to Weekly	Two-yearly	Five-yearly	Not Planned	Weekly	Not measured	Not measured	Not required	Not required	No survey targets	No survey targets.	Not required
Bicheno	Weekly	Two-yearly	Five-yearly	Planned FY2030/31	Weekly +Telemetry	Weekly +Telemetry	Weekly +Telemetry	Not required	Not required	Five-yearly	Two- yearly	Not required
Blackman River No. 1	Twice- weekly	Two-yearly	Five-yearly	Completed 2022/23	Twice-weekly	Telemetry	Twice-weekly	Not required	Three-monthly +Telemetry	Five-yearly	Two- yearly	Not required.
Blackman River No. 2	Twice- weekly	Two-yearly	Five-yearly	Completed 2022/23	Twice-weekly	Telemetry	Twice-weekly	Not required	Three-monthly +Telemetry	Five-yearly	Two- yearly	Not required
Bradys Creek dam	Monthly	Two-yearly	Five-yearly	Planned FY2027/28	Not measured	Not measured	Not measured	Not required	Not required	No survey targets	No survey targets	Not Required
Colebrook (Yarlington) Dam	Weekly	Two-yearly	Five-yearly	Planned FY2028/29 pending divestment/d ecommissioning	Weekly	weekly	Not measured	Not required	Not required	No survey targets	No survey targets	Not required
Coles Bay	Tri- weekly	Annual	Five-yearly	Completed FY2017/18	Twice - Tri-weekly	Tri-Weekly +Telemetry	Tri-Weekly +Telemetry	Not required	Annual	Five-yearly	Two- yearly	Not required
Conglomerate	Tri-weekly	Annual	Five-yearly	Recently Upgraded	Tri-weekly +Telemetry	Tri-weekly +Telemetry	Tri-weekly +Telemetry	Not required	Not required	Five-yearly	Annual	Not required
Curries River	Tri-weekly	Annual	Five-yearly	Completed in FY2017/18	Tri-weekly +Telemetry	Tri-Weekly +Telemetry	Tri-weekly +Telemetry	Not required	Not measures	Five-yearly	Annual	Not measured
Duckhole Rivulet	Tri-weekly	Annual	Five-yearly	Planned FY2033/34	Tri-weekly	Tri-Weekly +Telemetry	Tri-weekly +Telemetry	Not required	Not required	Five-yearly	Annual	Not required
Dunalley STP Lagoons	Weekly	Two-yearly	Five-yearly	Not Planned	Telemetry	Not measured	Not measured	Not required	Not required	No survey targets	No survey targets	Not Required

Flagstaff Gully	Daily	Annual	Five-yearly	Completed FY2016/17	Daily +Telemetry	Daily +Telemetry	Daily +Telemetry	Not required	Not required	Five-yearly	Annual	Not required
Georges River Weir	Weekly	Two-yearly	Five-yearly	To be determined	Weekly	Not measured	Not required	Not required	Not required	No survey targets	No survey targets	Not required
Grassy Dam	Weekly	Annually	Five yearly	In Progress	Weekly	Weekly +Telemetry	Not required	Not required	Not required	Not measured	Not measured	Not required
Guide	Weekly	Two-yearly	Five-yearly	Planned for FY25/26	Weekly +Telemetry	Weekly +Telemetry	Weekly +Telemetry	Not required	Not required	Five-yearly	Two- yearly	Not required
Illabrook	Tri-weekly	Annual	Five-yearly	Planned FY2024/25 pending decommissioning	Twice-weekly	Twice-weekly +Telemetry	Not measured	Not required	Not required	No survey targets	No survey targets	Not required
Knights Creek	Daily	Annual	Five-yearly	FY2026/27 (On Hold)	Daily	Daily +Telemetry	Daily +Telemetry	Not required	Not required	Five-yearly	Annual	Not required
Lake Fenton	Weekly	Two-yearly	Five-yearly	Planned FY2024/25	Weekly	Weekly +Telemetry	Not Measured	Not required	Not required	No survey targets	No survey targets	Not required
Lake Isandula	Tri-Weekly	Annual	Five-yearly	In Progress	Tri-Weekly +Telemetry	Tri-Weekly +Telemetry	Tri-Weekly +Telemetry	Not required	Not required	Five-yearly	Annual	Not required
Lake Mikany	Tri-Weekly	Annual	Five-yearly	Pending Upgrade	Tri-Weekly +Telemetry	Tri-Weekly +Telemetry	Tri-Weekly +Telemetry	Not required	Not Required	Five-yearly	Annual	Not required
Limekiln	Daily	Annual	Five-yearly	FY2026/27 (On Hold)	Daily	Daily +Telemetry	Daily +Telemetry	Not required	Annually	Five-yearly	Annual	Not required
Lower Reservoir	Tri-weekly	Annual	Five-yearly	Commenced 2024/25	Tri-weekly +Telemetry	Tri-weekly +Telemetry	Tri-weekly +Telemetry	Not required	Three-monthly +Telemetry	Five-yearly	Annual	Not required
Lower Prosser	Tri-weekly	Annual	Five-yearly	Commenced 2024/25	Tri-weekly	Tri-Weekly +Telemetry	Not measured	Not required	Not required	Five-yearly	Two- yearly	Not required
Margaret Street	Weekly	Annual	Five-yearly	Recently Upgraded	Weekly +Telemetry	Weekly +Telemetry	Not measured	Not required	Not required	Five-yearly	Annual	Not required

Detention Basin												
Midway Point Sludge Lagoon	monthly	Two-yearly	Five-yearly	To be determined	Weekly	Not measured	Not measured	Not required	Not required	No survey targets	No survey targets.	Not required
Mount Leslie Basin	Weekly	Two-yearly	Five-yearly	Revised FY25/26	Weekly	Weekly	Not measured	Not required	Not required	Five-yearly	Two- Yearly	Not required
Mount Leslie Sludge Lagoon 1 & 2	Weekly	Two-yearly	Five-yearly	To be performed as part of basin inspection (TBC)	Weekly	Not measured	Not measured	Not required	Not required	No survey targets	No survey targets	Not required
North Esk Intake Weir	Weekly	Two-yearly	Five-yearly	In progress	Not Measured	Weekly	Not measured	Not required	Not required	Five-yearly	Two- Yearly	Not required
Nunamara Weir	Weekly routine inspections being developed	Two-Yearly	Five yearly	Not Planned	Weekly	Weekly	Not required	Not required	Not required	Not required	Not required	Not required
Penna Reuse Lagoons	Currently scheduled monthly but being updated to Weekly	Two-yearly	Five-yearly	Not Planned	Not measured	Not measured	Not measured	Not required	Not required	No survey targets	No survey targets	Not Required
Pet	Tri-Weekly	Annual	Five-yearly	Upgrade Pending	Tri-Weekly +Telemetry	Tri-Weekly +Telemetry	Tri-Weekly +Telemetry	Three-monthly	Not required	Five-yearly	Annual	Not required
Ridgeway	Daily	Annual	Five-yearly	Risk based upgrade review in progress	Daily	Dally +Telemetry	Daily +Telemetry	Not required	Three-monthly +Telemetry	Two-yearly	Annual	Three-monthly + Telemetry
Risdon Brook	Tri-weekly	Annual	Five-yearly	Revised schedule for FY2025/26	Tri-weekly	Tri-weekly +Telemetry	Tri-weekly +Telemetry	Not required	Not required	Five-yearly	Annual	Not required
Sorell Sludge Lagoon	Currently scheduled monthly but being updated to Weekly	Two-yearly	Five-yearly	To be determined	Weekly	Not measured	Not measured	Not required	Not required	No survey targets	No survey targets.	Not required
Stieglitz Reuse Dam	Weekly	Two-yearly	Five-yearly	Revised Portfolio risk assessment planned FY26/27	Weekly	Weekly	Weekly	Not required	Not required	Five-yearly	Two-yearly.	Not required

Stieglitz STP Lagoons	Weekly	Two-yearly	Five-yearly	Revised Portfolio risk assessment planned FY26/27	Weekly	Weekly	Weekly	Not required	Not required	Five-yearly	Two- yearly	Not required
Swansea	Tri-weekly	Annual	Five-yearly	Recently Upgraded – next due FY2040/41	Tri-weekly +Telemetry	Tri-weekly +Telemetry	Tri-weekly +Telemetry	Not required	Three-monthly +Telemetry	Two-yearly	Annual	Not required
Tolosa	Decommissioned	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Upper Reservoir	Tri-weekly	Annual	Five-yearly	Completed in FY2017/18	Tri-weekly	Tri-weekly +Telemetry	Tri-weekly +Telemetry	Not required	Three-monthly +Telemetry	Five-yearly	Annual	Not required
Upper Prosser	Monthly	Annually	Five-yearly	Commenced 2024/25	Not measured	Monthly +Telemetry	Not required	Not required	Not required	No survey targets	No survey targets	Not required
Waratah	Decommissioned	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Westbury	Tri-weekly	Annual	Five-yearly	Completed FY2017/18	Tri-weekly +Telemetry	Tri-weekly +Telemetry	Tri-weekly +Telemetry	Not required	Three-monthly	Five-yearly	Annual	Not required
Williams Reservoir	Tri-weekly	Annual	Five-yearly	Revised schedule FY26/27	Weekly	Weekly +Telemetry	Not measured	Not required	Not required	Five-yearly	Annual	Not required

10.3. Appendix C: Dam Decommissioning and Divestment Update

Dam	Location	LGA	Capacity (ML)	Progress	Estimated Completion Date	Notes
Agnes Weir	Cygnets	Huon Valley	2.6	In progress - small	Mar 26	Advice from legal stated would need Fed Gov approval due to the funding scheme - council and the landowner have expressed interest in purchasing. In discussions with Matt Jordan about potential discussions with Fed Gov.
Beaconsfield STP Reed Bed	Beaconsfield	West Tamar	0.8	Stage 2	Mar 26	Decommissioning process begun - engineering assessment and permit requirements are undergoing. Flora Fauna has been commissioned but are waiting on procurement.
Cam WTP Weir	Somerset	Waratah-Wynyard	1	In progress - small	June 25	Decommissioning process begun - Finalised Eng Assessment including review by class 1 engineer. Flora Fauna in progress for permit requirement.
Colebrook Dam	Colebrook	Southern Midlands	20	In progress - small	Mar 26	Under real estate for divestment - With Judy Ray + Legal
Coles Bay Intake Weir	Coles Bay	Glamorgan-Spring Bay		May be needed		Awaiting final water strategy decision - decommission/divestment opportunity
Cutten Street No.1 Dam	Queenstown	West Coast Council	0.48	In progress - small	May 25	Decommissioning process begun - engineering assessment and permit requirements are undergoing. Flora Fauna has been commissioned but are waiting on procurement.
Cutten Street No.2 Dam	Queenstown	West Coast Council	0.6	In progress - small	May 25	Decommissioning process begun - engineering assessment and permit requirements are undergoing. Flora Fauna has been commissioned but are waiting on procurement.
Donneleys Road Weir	Geeveston	Huon Valley	0.35	In progress - small	Mar 26	Decommissioning process begun. Flora Fauna has been completed. Permit is being prepared for submission.
Frank St Lower Dam S T MARYS	St Marys	Break O'Day		May be needed		Awaiting final water strategy for decommission/divestment opportunity. Decommissioning is on hold.
Frank St Upper Dam S T MARYS	St Marys	Break O'Day		May be needed		Awaiting final water strategy for decommission/divestment opportunity. Decommissioning is on hold.
Gawler Weir	Gawler	Central Coast		Currently in use		Awaiting final water strategy for decommission/divestment opportunity. Decommissioning is on hold.
Gawler WTP Treated Water Storage	Gawler	Central Coast		Currently in use		Awaiting final water strategy for decommission/divestment opportunity. Decommissioning is on hold.
Guiding Star Weir	Branxholm	Dorset	Breached	Decommissioned	Sept 24	Dam breached. Letter issued to NRE confirming decommissioned. Dam status changed to decommissioned on NRE register. No further work needed. Can be removed from TasWater systems.
Illabrook Reservoir Dam	Lachlan	Derwent Valley	41.8	In progress - large	Aug 26	Commences FY24/25 for Investigations (expect Task Notice for CDO)
Isandula Dam	Gawler	Central Coast		Currently in use		Awaiting final water strategy for decommission/divestment opportunity. Decommissioning is on hold.

Jacksons Road Weir	South Franklin	Huon Valley	0.1	In progress - small	Mar 26	Decommissioning process begun. Flora Fauna has been completed. Permit is being prepared for submission.
Judbury Weir	Judbury	Huon Valley	0.3	In progress - small	Mar 26	Decommissioning process begun - engineering assessment and permit requirements are undergoing. Flora Fauna has been commissioned but are waiting on procurement.
Knights Creek Dam	Glenorchy	Glenorchy	528	In progress - large	Aug 26	Commences FYFY 24/25 for Investigations (expect Task Notice for CDO)
Knights Creek Intake Weir	Glenorchy	Glenorchy	Unkn own	Stage 2	Mar 26	Decommission/divestment - to be packaged with Knights Creek Dam decommissioning project
Knights Creek Monitoring Weir	Glenorchy	Glenorchy	Unkn own	Stage 2	Mar 26	Decommission/divestment - to be packaged with Knights Creek Dam decommissioning project
Liffey River Weir - Carrick	Carrick	Meander Valley	0.3	In progress - small	Mar 25	Discussions with NRE Water Monitoring team, for Divestment
Limekiln Gully Dam	Glenorchy	Glenorchy	336	In progress - large	Mar 26	Commences FYFY 24/25 for Investigations (expect Task Notice for CDO)
Margisons Creek Dam	St Marys	Break O'Day		May be needed		Awaiting final water strategy for decommission/divestment opportunity. Decommissioning is on hold.
McGowans Creek Intake Weir Lilydale	Lilydale	Launceston	0.1	In progress - small	Nov 24	Arrangements for divestment underway
Merton Weir No.1	Glenorchy	Glenorchy	0.1	Stage 2	Mar 26	Decommission/divestment - to be packaged with Limekiln Dam as it controls inflow
Merton Weir No.2	Glenorchy	Glenorchy	Unkn own	Stage 2	Mar 26	Decommission/divestment - to be packaged with Knights Creek Dam decommissioning project
Mount Leslie Sludge Lagoons	Blackstone Heights	Meander Valley		May be needed		Awaiting final water strategy for decommission/divestment opportunity. Decommissioning is on hold.
Mount Road Basin Dam	Burnie	Burnie		May be needed		Awaiting final water strategy for decommission/divestment opportunity. Decommissioning is on hold.
Mountain Creek Weir	Rosebery	West Coast Council		Currently in use		Awaiting final water strategy for decommission/divestment opportunity. Decommissioning is on hold.
Mountain River Weir	Mountain River	Huon Valley		Currently in use		Still in use - to be removed from list of surplus/divest/decommissioning lists
Mt Leslie Basin Dam	Blackstone Heights	Meander Valley		May be needed		Awaiting final water strategy for decommission/divestment opportunity. Decommissioning is on hold.
Nichols Rivulet Weir	Cygnets	Huon Valley	0.6	In progress - small	Mar 26	Decommissioning process begun. Flora Fauna has been completed. Permit is being prepared for submission.
Orford STP Holding Pond	Orford	Glamorgan-Spring Bay		Not owned by TasWater		Holding Pond is "Reuse Dam" which is not owned by TasWater - letter has been drafted and is awaiting approval from Robin Cooper
Pioneer Dam	Pioneer	Dorset	Breached	Decommissioned	Sept 24	Dam breached. Letter issued to NRE confirming decommissioned. Dam status changed to decommissioned on NRE register. No further work needed. Can be removed from TasWater systems.

Rocky Creek Weir	Lilydale	Launceston	0.2	In progress - small	Mar 25	Decommissioning process begun - Finalised Eng Assessment including review by class 1 engineer. Flora Fauna in progress for permit requirement.
Rossarden Water Storage Dam	Rossarden	Northern Midlands	Breached	Stage 2	Sept 24	Dam Breached. Issuing a letter to NRE to update records of Decommissioning Dam - however the dam is still being used partially. Will ask NRE for feedback.
Ruby Flats Dam	Branxholm	Dorset	Breached	Decommissioned	Sept 24	Dam breached. Letter issued to NRE confirming decommissioned. Dam status changed to decommissioned on NRE register. No further work needed. Can be removed from TasWater systems.
South Creek Weir No.1	Geeveston	Huon Valley	0.2	In progress - small	Nov 25	Decommissioning process begun. Flora Fauna has been completed. Permit is being prepared for submission.
South Creek Weir No.2	Geeveston	Huon Valley	0.2	In progress - small	Nov 25	Decommissioning process begun. Flora Fauna has been completed. Permit is being prepared for submission.
South No. 1 Dam	Queenstown	West Coast Council	Breached	Decommissioned	Sept 24	Dam breached. Letter issued to NRE confirming decommissioned. Dam status changed to decommissioned on NRE register. No further work needed. Can be removed from TasWater systems.
South No. 2 Dam	Queenstown	West Coast Council	0.2	In progress - small	May 25	Decommissioning process begun - engineering assessment and permit requirements are undergoing. Flora Fauna has been commissioned but are waiting on procurement.
Southern Tin Mine Dam	Coles Bay	Glamorgan-Spring Bay		May be needed		Awaiting final water strategy for decommission/divestment opportunity. Decommissioning is on hold.
Swansea WTP Sludge Lagoon No.1	Swansea	Glamorgan-Spring Bay		Currently in use		Awaiting confirmation from Water Asset Performance of Dam not existing
Tolosa Reservoir Dam	Glenorchy	Glenorchy		Decommissioned		Completion by CDO Completion by CDO
Township Creek Reservoir Dam	Fingal	Break O'Day		May be needed		Awaiting final water strategy for decommission/divestment opportunity. Decommissioning is on hold.
Triabunna STP Old Lagoon No.1	Triabunna	Glamorgan-Spring Bay	2	Stage 2	Mar 26	Decommissioning process begun - engineering assessment and permit requirements are undergoing. Flora Fauna has been commissioned but are waiting on procurement.
Triabunna STP Old Lagoon No.2	Triabunna	Glamorgan-Spring Bay	1.7	Stage 2	Mar 26	Decommissioning process begun - engineering assessment and permit requirements are undergoing. Flora Fauna has been commissioned but are waiting on procurement.